



La reterritorialisation des activités agricoles dans la planification foncière et alimentaire

Tianzhu Liu

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Reterritorialisation of agricultural activities in land-use and food planning policies

*La reterritorialisation des activités agricoles dans la planification foncière
et alimentaire*

Thèse de doctorat de l'université Paris-Saclay

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sous la direction de **Romain MELOT**, Directeur de Recherche, et le co-encadrement de
Frédéric WALLET, Ingénieur de Recherche

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Tianzhu LIU

Composition du Jury

Membres du jury avec voix délibérative

Mayté BANZO

Professeure, Université Bordeaux Montaigne

Présidente

Claire ARAGAU

Professeure, École d'Urbanisme de Paris-UPEC

Rapporteur & Examinatrice

Vincent SIMOULIN

Professeur, Université Toulouse-Jean Jaurès

Rapporteur & Examinateur

Lise CORNILLEAU

Maitresse de Conférences, UVSQ

Examinatrice

Willem KORTHALS ALTES

Professor, Technische Universiteit Delft (Pays-Bas)

Invité

Titre : La reterritorialisation des activités agricoles dans la planification foncière et alimentaire

Mots clés : Accès au foncier, Aménagement du territoire, Diversification des activités agricoles, Politique alimentaire, Préservation des terres agricoles, Système alimentaire local

Résumé : La reterritorialisation des activités agricoles (RAA) renvoie au renforcement de la production alimentaire locale et de ses activités de diversification, orientées vers les consommateurs locaux. La RAA contribue à façonner le système alimentaire local, un sujet qui fait l'objet d'études croissantes dans les domaines de la planification territoriale. Planifier la RAA implique la prise en compte des systèmes agri-alimentaires, ainsi que la résolution des défis liés à la gouvernance des terres agricoles, en se rapportant à deux politiques de planification locale : la planification foncière, une politique organisant les droits fonciers et de construction sur la base de règles juridiquement contraignantes, et la planification alimentaire, un nouveau type de politique stratégique, dédié à la promotion de systèmes alimentaires locaux. L'absence de liens entre la planification foncière et alimentaire peut entraîner une inadéquation entre les règlements d'utilisation des sols et les activités souhaitées et entraver la mise en œuvre de la RAA. Cependant, il n'existe pas une vision globale de la manière dont les politiques de planification alimentaire et foncière s'organisent et se coordonnent pour soutenir la RAA.

Cette recherche vise à améliorer la compréhension des approches de planification de la RAA, en étudiant les politiques de planification foncière et alimentaire et leurs intersections. Dans une perspective de sociologie de

l'action publique, la recherche est menée en s'appuyant sur le cadre théorique de l'instrumentation et de l'intégration des politiques publiques, et en se référant aux travaux sur les systèmes agri-alimentaires. La recherche s'appuie sur l'analyse de documents et des entretiens demi-directifs avec des acteurs locaux, issus d'un échantillon d'études de cas dans deux régions françaises (l'Occitanie et la Normandie) et aux Pays-Bas.

La recherche identifie les modalités de conception locale des instruments politiques pour la RAA en se basant sur l'analyse des jeux d'acteurs. Elle montre qu'une priorité est accordée au "local" par rapport à la transition "agroécologique" dans le cadre de compromis entre les acteurs et dans un contexte de coexistence des modèles agri-alimentaires. L'intégration directe entre la planification foncière et alimentaire reste marginale, mais présente un fort potentiel. Les résultats empiriques offrent un éclairage sur les organisations institutionnelles impliquées dans la planification intégrée des RAA. Cette recherche portant sur des cas très diversifiés montre qu'il n'existe pas de modèle de gouvernance unique pour la planification de la RAA. Elle soulève en définitive la question de l'organisation institutionnelle et de la restructuration des relations de pouvoir dans le domaine des politiques agricoles territorialisées.

Title: Reterritorialisation of agricultural activities in land-use and food planning policies

Keywords: Access to land, Farm diversification, Food policy, Farmland preservation, Local food system, Spatial planning

Abstract: Reterritorialisation of agricultural activities (RAA) refers to the reinforcement of local food production and its diversification activities oriented towards local consumers. RAA helps shape the local food system, an increasingly studied topic in planning fields. Planning RAA implies addressing agri-food systems as well as tackling farmland issues, referring to two local planning policies: land-use planning, a policy dealing with land and building rights with legally binding rules, and food planning, a new type of strategic policy dedicated to promoting a local food system. Missing links between land-use and food planning may cause a mismatch between land-use regulations and desired activities and hinder the implementation of RAA. However, there is no comprehensive understanding of how food and land-use planning work and interact to support RAA.

This research aims to improve understanding of the planning approaches for RAA by investigating land-use and food planning policies and their intersections. As a sociological analysis of public policies, the research is

developed within the theoretical framework of policy instrumentation and policy integration and with reference to research on food systems. The research is achieved through document analysis and semi-structured interviews with local stakeholders based on a sample of case studies in two French regions (i.e., Occitania and Normandy) and the Netherlands.

The research identifies the local design of policy instruments for RAA, starting from the analysis of the interplay between stakeholders. It shows that "local" is prioritised over "agroecological" transition as trade-offs between stakeholders in the co-existence of agri-food models. Direct integration between land-use and food planning is still marginal but with potential. The empirical findings give insights into the institutional organisations involved in integrated RAA planning. This research with highly diversified cases shows no one unique governance model for RAA planning. It finally raises the question of institutional organisation and the restructuring of power relations in the field of local agricultural policies.

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Contexte et objectifs

La reterritorialisation des activités agricoles (RAA) renvoie au renforcement de la production alimentaire locale et de ses activités de diversification, orientées vers les consommateurs locaux. La RAA contribue à façonner le système alimentaire local, un sujet qui fait l'objet d'études croissantes dans les domaines de la planification territoriale. Planifier la RAA implique la prise en compte des systèmes agri-alimentaires, ainsi que la résolution des défis liés à la gouvernance des terres agricoles, en se rapportant à deux politiques de planification locale : la planification foncière et la planification alimentaire. La planification foncière est une politique qui organise les droits fonciers et de construction sur la base de règles juridiquement contraignantes. Elle est caractérisée par une histoire ancienne, en particulier dans les pays développés. La planification alimentaire est un nouveau type de politique stratégique, dédié à la promotion de systèmes alimentaires locaux. Il s'agit d'un dispositif émergeant désigné sous différentes dénominations, telles que « stratégie alimentaire », « politique alimentaire » et « planification des systèmes alimentaires », et dont l'objectif commun d'améliorer le système alimentaire local. L'absence de liens entre la planification foncière et alimentaire peut entraîner une inadéquation entre les règlements d'utilisation des sols et les activités souhaitées et entraver la mise en œuvre de la RAA. Par exemple, un projet d'exploitation agricole multifonctionnelle favorisé par la planification alimentaire peut être entravé par des réglementations monofonctionnelles strictes dans le cadre de la planification foncière. Nous partons de l'hypothèse qu'il n'existe pas une vision globale de la manière dont les politiques de planification alimentaire et foncière s'organisent et se coordonnent pour soutenir la RAA.

De ce fait, cette recherche vise à améliorer la compréhension des approches de planification de la RAA, en étudiant les politiques de planification foncière et alimentaire et leurs intersections. La recherche se base sur des études empiriques en France et aux Pays-Bas, à la suite d'une revue de la littérature internationale.

Cadre théorique, méthodologie et cas d'études

Dans une perspective de sociologie de l'action publique, la recherche est menée en s'appuyant sur le cadre théorique de l'instrumentation et de l'intégration des politiques publiques. Les théories de l'instrumentation des politiques publiques soulignent que différents types d'instruments politiques sont mobilisés dans le cadre des relations sociales entre les institutions politiques et les gouvernés.

Elles visent en particulier à comprendre comment les jeux d'acteurs impactent la conception des instruments politiques au niveau local. L'intégration des politiques publiques est un concept clé pour comprendre l'élaboration de politiques intégrées, face à des enjeux transversaux. Dans cette recherche, la planification foncière et alimentaire se situent à l'intersection de différentes politiques sectorielles et à différents niveaux de décision. Enfin, la recherche fait référence aux travaux sur les systèmes agri-alimentaires. Trois principaux champs d'action sont identifiés : la préservation de terres agricoles et l'accès au foncier, la transition des pratiques agricoles vers des systèmes durables et la structuration des circuits locaux.

La recherche s'appuie sur l'analyse de documents et des entretiens demi-directifs avec des acteurs locaux, issus d'un échantillon d'études de cas dans deux régions françaises (l'Occitanie et la Normandie) et aux Pays-Bas. Ont été identifiés les territoires où les deux dispositifs, planification foncière et alimentaire, existent conjointement. Ces deux dispositifs correspondent aux plans locaux d'urbanismes intercommunaux (PLUi) et aux projets alimentaires territoriaux (PAT) en France. Aux Pays-Bas, « Omgevingsvisie » et « Bestemmingsplan » au niveau municipal sont étudiés comme équivalents de la planification foncière, et le « Voedsel-agenda », « -visie », « -akkoord », « -strategie » sont identifiés comme relevant de la planification alimentaire. Les projets de planification foncière étudiés sont à l'échelle intercommunale (en France) et municipale (aux Pays-Bas) et sont portés par les collectivités locales, alors que les projets alimentaires se situent à différentes échelles du territoire et sont menés par différents porteurs de projets, comme les collectivités, les territoires de projet, la chambre d'Agriculture et les organisations civiles.

Dans le cadre de l'analyse documentaire, les plans d'urbanisme et alimentaires disponibles ont été examinés en identifiant les objectifs et les instruments politiques associés de la RAA. En ce qui concerne le travail d'enquête, 61 entretiens en France et 14 aux Pays-Bas ont été réalisés. Les entretiens ont principalement concerné des responsables des projets de planification alimentaire et foncière. Dans certains cas, d'autres acteurs ont été interrogés, tels que des élus locaux et des agents des administrations et organismes agricoles aux échelles départementale et régionale (notamment, : chambre d'Agriculture, direction régionale de l'Alimentation, de l'Agriculture et de la Forêt, DRAAF). Une grille a structuré les entretiens et a été adaptée en fonction du profil de la personne enquêtée et du contexte territorial : le calendrier du projet, les caractéristiques agricoles du territoire, les mesures de planification sur la RAA et le mécanisme de gouvernance. Tous les entretiens ont été enregistrés, retranscrits et codés à l'aide du logiciel d'analyse qualitative Atlas.ti. en fonction des thèmes.

Quatre chapitres structurent ce manuscrit. Le premier chapitre est consacré aux

objectifs et aux instruments politiques mobilisés dans des documents d'urbanisme et de planification alimentaire. Il se base sur l'analyse documentaire, qui a permis d'offrir une vision globale des résultats de la politique et des divers instruments mobilisés. Le deuxième chapitre porte sur les liens existants et manquants entre planification d'urbanisme et planification alimentaire, en étudiant les trois champs d'action de la RAA (la préservation de terres agricoles et l'accès au foncier, la transition des pratiques agricoles vers des systèmes durables et la structuration des circuits locaux). Les enquêtes permettent de comprendre les usages sociaux des instruments par les acteurs locaux, ainsi que les facteurs qui expliquent l'existence ou le défaut de liens entre les deux types de politiques publiques. Le troisième chapitre se concentre sur les mécanismes de gouvernance qui peuvent intervenir dans la planification de la RAA. La collaboration entre les acteurs intersectoriels, à différentes échelles et entre secteurs publics et privés est analysée. Ces trois premiers chapitres sont basés sur les études de cas menées en France. Le quatrième chapitre est consacré à la compréhension de la manière dont les acteurs se saisissent localement des éléments de cadrage nationaux pour planifier la RAA, en comparant les dispositifs dans deux pays, la France et les Pays-Bas. L'étude permet d'identifier les « styles » de la planification pour la RAA dans les deux pays.

Résultats, contributions et perspectives

Les analyses ont débouché sur deux catégories principales de résultats, l'une sur l'instrumentation de politiques publiques et l'autre sur l'intégration des politiques. En ce qui concerne l'instrumentation des politiques publiques, la recherche identifie les modalités de conception locale des instruments politiques pour la RAA en se basant sur l'analyse des jeux d'acteurs. L'étude sur la conception locale des instruments de politiques publiques associés à la RAA met en évidence l'utilisation stratégique des règles juridiques par les acteurs locaux dans des cadres de planification distincts (cf. planification foncière et alimentaire), ce qui se traduit par une grande diversité d'instruments innovants. Les résultats concernant les instruments de la planification foncière présentent la façon dont les acteurs locaux mobilisent les marges de manœuvre accordées par les règles juridiques, représentées par le Code de l'Urbanisme, pour atteindre différents objectifs. Les collectivités locales appliquent, adaptent (ex : création de sous-secteurs pour le maraîchage en zone agricole) ou ignorent (ex : en choisissant de ne pas autoriser les constructions liées à la diversification des activités agricoles) les règles pour s'adapter aux contextes locaux. Au contraire, Les résultats concernant la planification alimentaire soulignent la flexibilité d'un nouveau champ de politique locale, (cf. le programme financier national « appel à projets » et le dispositif de labellisation des PAT). Co-construits par les porteurs de projet et les parties prenantes, les instruments de planification alimentaire sont soit basés sur des instruments juridiques, soit nouvellement

créés, ce qui montre un haut degré de flexibilité et de diversité dans ce nouveau domaine de politique locale sur la RAA.

Entre ces instruments de politiques publiques mobilisés, la recherche montre que la priorité est accordée au « local » par rapport à la transition « agroécologique » dans le cadre de compromis entre les acteurs et dans un contexte de coexistence des modèles agri-alimentaires. L'analyse documentaire montre clairement que les instruments sont beaucoup plus mobilisés pour la préservation de terres agricoles et l'accès au foncier et la structuration des circuits locaux que pour la transition des pratiques agricoles. Ce constat est ensuite confirmé et explicité par les entretiens avec les acteurs locaux, tout en montrant que les objectifs économiques et politiques l'emportent nettement sur les considérations environnementales, dans le but notamment d'éviter les conflits entre les acteurs représentant différents modèles agricoles. De manière générale, la « neutralité » de la planification alimentaire sur cette question est à la fois une limite, du fait de la difficulté à promouvoir une vision partagée de la transition agroécologique, et une opportunité de compromis flexibles, car elle maintient un dialogue entre représentants de modèles agricoles divergents.

En comparant les instruments de politiques mobilisés dans les deux dispositifs, la recherche révèle que les liens existants entre planification foncière et alimentaire sont encore marginaux, et que les liens manquants proviennent à la fois de la complexité du processus et des tensions politiques entre les acteurs locaux. L'accès au foncier est le champ d'action qui présente le lien le plus fort entre planification foncière et alimentaire, au travers de l'objectif commun de préservation des terres agricoles. Cependant, les instruments d'action foncière nécessitent un temps important pour leur mise en œuvre. Ces délais sont un frein pour l'engagement des acteurs locaux. En termes de transition des pratiques agricoles, les contraintes majeures à l'intégration de la planification foncière et alimentaire sont le manque de légitimité et la confrontation entre les acteurs des modèles agri-alimentaires coexistants. En ce qui concerne la structuration des circuits locaux, le défaut de liens entre planification foncière et alimentaire découle de la déconnexion entre les sujets traités par ces politiques. Par exemple, la planification foncière se concentre sur les droits de construction individuels alors que la planification alimentaire vise principalement à développer des équipements alimentaires collectifs. Néanmoins, malgré l'insuffisance des liens, il existe un fort potentiel de complémentarités et de synergies entre les instruments de planification foncière et alimentaire. Les instruments de « soft law » de la planification alimentaire et les mesures de « hard law » de la planification foncière sont un élément de complémentarité entre les deux politiques. Toutefois, les instruments politiques novateurs, qui créent des complémentarités et des synergies entre les deux procédures, doivent s'appuyer sur des mécanismes de gouvernance bien structurés.

En matière d'intégration des politiques publiques, on relève que la planification intégrée de la RAA constitue un moyen d'explorer les organisations institutionnelles. Les observations des personnes enquêtées au niveau local mettent en évidence la complémentarité entre la planification foncière "réglementaire" et la planification alimentaire "volontaire" en termes d'efficacité de la gouvernance. Intégrer la planification foncière est important pour la planification alimentaire quant à sa légitimité et sa mise en œuvre sur le long terme dans une perspective de développement territorial. Inversement, l'intégration de la planification alimentaire permet à la planification foncière de s'appuyer sur de l'expertise produites sur les thématiques agri-alimentaires, de renforcer les arguments et de sensibiliser les élus pour ce qui est de l'intégration territoriale de l'agriculture, d'inciter à la conception innovante de réglementations locales et de faire monter en compétence les acteurs impliqués dans le processus d'élaboration des projets de planification foncière.

Les études de cas analysées permettent de documenter les facteurs qui affectent l'intégration entre planification foncière et alimentaire. En particulier, l'étude met en évidence différentes formes d'organisations institutionnelles. En termes de collaboration intersectorielle, des cas exemplaires montrent bien que la formalisation d'échanges entre services facilite la coordination entre les politiques de planification. En ce qui concerne la collaboration entre territoires, des expérimentations sont organisées pour établir des contrats ou des conventions de réciprocité. Bien que volontaires et non contraignants, ces contrats ou conventions formalisent dans une certaine mesure les relations de collaboration entre les territoires. En matière de collaboration entre les institutions publiques et les acteurs de la société civile, on note l'institution de comités de pilotage qui visent à impliquer un large spectre d'acteurs. La formalisation d'institutions en la matière a l'avantage de clarifier les responsabilités et l'obligation de rendre des comptes, favorisant ainsi un engagement des parties prenantes à long terme.

Enfin, cette recherche, qui s'appuie sur des études de cas variées, montre bien qu'il n'existe pas de modèle de gouvernance unique pour la planification de la RAA. Des contextes différents se traduisent par des réponses stratégiques locales, ainsi que des défis et des obstacles spécifiques. Les cas étudiés traitent de la planification alimentaire à des échelles très diverses, d'une commune, d'une intercommunalité, d'un pôle territorial, d'un parc régional et d'un département. La recherche montre que différentes échelles peuvent être pertinentes et que les institutions territoriales fonctionnent à la fois comme porteurs de projets concrets et comme « facilitateurs » et « médiateurs » pour coordonner les actions menées par différents acteurs.

L'étude, menée sur des territoires urbains et ruraux, relève également que les stratégies organisationnelles diffèrent selon les territoires en termes de

ressources humaines. Alors que les territoires urbains ont la capacité de formaliser des équipes intersectorielles, les territoires ruraux bénéficient de la proximité entre collègues dans des équipes réduites, ce qui permet une collaboration informelle mais étroite, basée sur des routines.

Au-delà de la des cas étudiés en France, l'analyse entre la France et les Pays-Bas a permis de proposer des pistes de comparaison internationale. L'analyse montre que des cadres institutionnels spécifiques au niveau national suscitent des réponses locales différentes en termes d'instruments de planification et d'organisations institutionnelles au niveau local. Le dispositif PAT à l'échelle nationale en France façonne la relation entre les territoires locaux et l'Etat, ce qui a un impact sur les stratégies locales en matière de RAA, avec un accent sur l'agriculture professionnelle. Au contraire, les projets alimentaires aux Pays-Bas partent principalement d'initiatives « bottom-up » et les territoires locaux s'appuient davantage sur les organisations de la société civile et l'interaction avec les acteurs non agricoles. Ainsi, les enjeux centraux des projets sont davantage centrés sur des objectifs de santé (création d'un environnement alimentaire dans la perspective d'une « healthy city ») et la promotion de projets d'agriculture urbaine .

En conclusion, cette thèse contribue à la compréhension de l'action publique territoriale appliquée aux enjeux agri-alimentaires , en particulier le modèle de gouvernance applicable dans le domaine de la planification, notamment la planification foncière et alimentaire. L'étude empirique permet de montrer la pertinence du cadre théorique de l'instrumentation de l'action publique et de l'intégration des politiques publiques pour des recherches sur les systèmes alimentaires. Elle ouvre des perspectives sur des recherches futures sur les questions de planification transversale. Les instruments politiques divers et innovants qui ont été identifiés et analysés pourront servir de référence aux décideurs politiques dans ce nouveau domaine politique local sur la RAA. Les mécanismes de gouvernance facilitateurs analysés peuvent suggérer certaines directions pour une planification plus intégrée.

Les résultats de cette recherche ouvrent plusieurs pistes pour des études futures. Celles-ci incluent, par exemple, la manière d'explorer une planification plus intégrée ; la compréhension systématique de la corrélation entre la configuration des territoires et les politiques de planification ; et la répartition des responsabilités et des compétences entre les différents niveaux de décision. La thèse constate que la planification de la RAA évolue dans des contextes changeant et sous des influences complexes, de la pandémie Covid-19 aux crises géopolitiques. La prise en compte, sur une temporalité longue, des facteurs de changement des politiques de planification appliquées à la reterritorialisation des activités agricoles mérite également d'être menée à l'avenir.

I. GENERAL INTRODUCTION

I.1 PLANNING THE RETERRITORIALISATION OF AGRICULTURAL ACTIVITIES

I.1.1 RAA as a new issue in the planning field

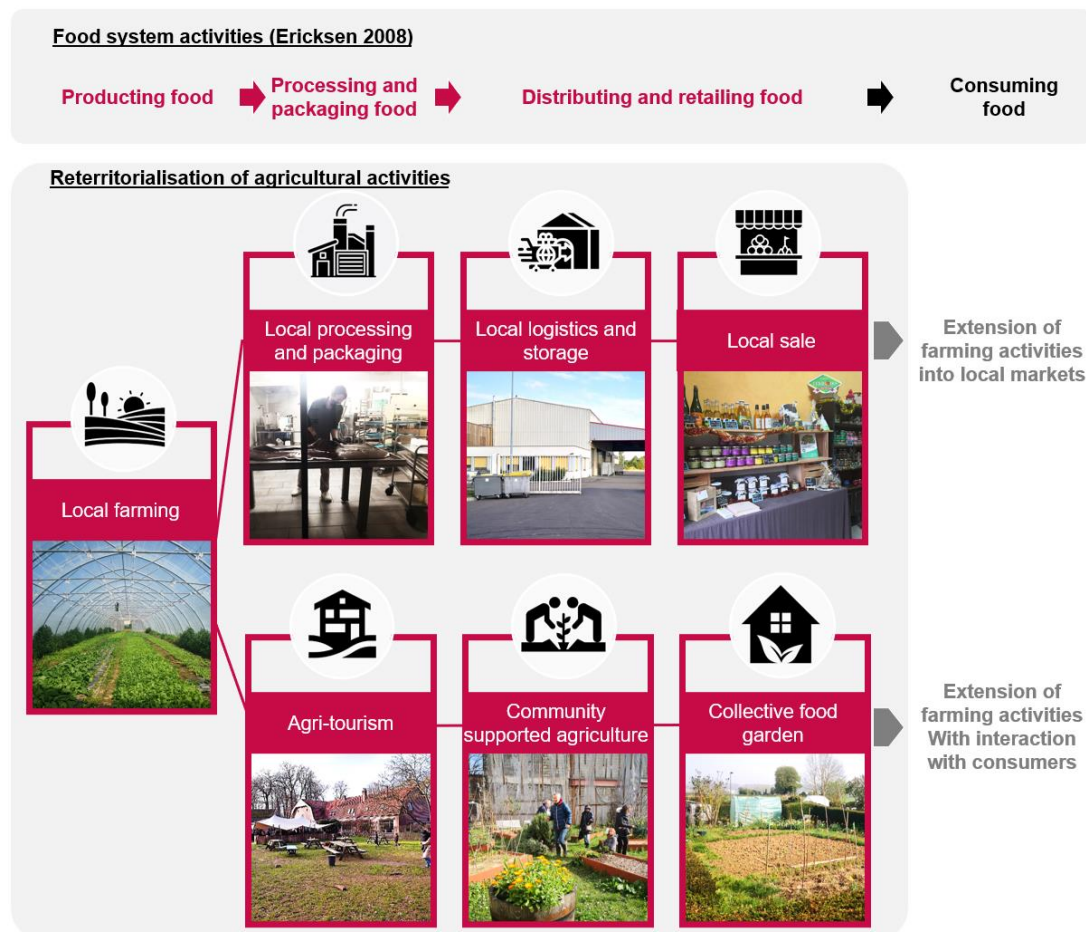
Local food systems have been a research topic in the planning field for over two decades since the introduction by Pothukuchi & Kaufman (1999, 2000). Such systems involve locally produced food consumed by local consumers instead of on the global market. This creates a closer link between consumers and producers, in terms of geographical, but also social and cultural value (Feagan, 2007; Eriksen, 2013; Enthoven & Van den Broeck, 2021). Strategies of supplying consumers with local food in proximity has existed since ancient times (Bognon, 2015; Daviron et al., 2017), but in recent years it has been reintroduced and recognised as a solution to the negative consequences of the global food system in terms of product quality, climate, water quality and food security (Feagan, 2007; Sonnino, 2009; Allen, 2010; Morgan & Sonnino, 2010). Covid-19 and increasing climate change have reinforced this interest in local food systems, thus making them a current issue.

Planning and local food systems share many concerns about health, economy, land use, transportation and social justice (Pothukuchi & Kaufman, 1999; Brinkley, 2013; Mui et al., 2021). Creating a local food system requires producers to shift from global-oriented to local-oriented activities, which I call the **“reterritorialisation of agricultural activities” (RAA)**. RAA¹ consists of local food production and its diversification activities oriented towards local consumers (e.g., farming, local processing, local food transport and logistics, local sale, community-supported agriculture, agritourism) (Figure I. 1). RAA could bring benefits such as increasing in farmers’ incomes, provision of healthy food for citizens, rebuilding connections between rural and urban societies, and reductions in environmental impacts, under well-established conditions (Renting et al., 2003; Wiskerke, 2009; Kiss et al., 2019; Lamine, 2020; Majewski et al., 2020; Stein & Santini, 2021). Planning interventions are important to support RAA in the pervading context in which the food system operates on a global as opposed to local scale. Addressing RAA with planning policies implies understanding agri-food systems as well as tackling farmland issues. Land-use

¹ RAA does not equal short supply chain activities. While a short supply chain can be achieved over a long distance (i.e., an “extended short food supply chain”), RAA can be linked to conventional and long supply chains to reach local consumers (Renting et al., 2003; Bloom & Hinrichs, 2011; Enthoven & Van den Broeck, 2021). RAA also include diversification activities (e.g., agritourism, educational services such as public reception and school visits), which have greater scope than short supply chains.

planning and food planning are two types of local policies that can affect RAA.

Figure I. 1. Composition of the reterritorialisation of agricultural activities (RAA) and its relation with local food system.



Note. Photograph by the author, 2021.

I.1.2 Agriculture in land-use planning: regaining the place with RAA

Land-use planning is a mainstream planning type linked to RAA, as land is a primary resource for agricultural activities. Beyond the diversity of planning systems across countries, land-use planning usually works on the allocation of spatial resources and building rights (Hengstermann & Hartmann, 2018). In Western countries where the modern planning system was formed, agri-food issues were previously included in their early stages of planning. In Europe, the Garden City as an early modern planning model covering the entire food cycle was proposed and practised in the late 19th and early 20th centuries (Cabannes & Marocchino, 2018). In the USA, early professional planners considered the local supply chain and regional economy and planned for regional infrastructure and suburban farmland preservation (Vitiello & Brinkley 2014).

Agriculture and planning, however, were gradually detached during the 20th century. Such detachment started with the separation of agriculture and city.

First, urbanisation was at an unprecedented rapid speed in most western countries (Ritchie & Roser, 2018). Incentivised by urbanisation and modern economic development, farmland in city moved out and peri-urban farmland has been reduced in most conurbations of developed countries. Although the decline in agricultural activities was not homogeneous between metropolitan areas, such as in Europe, in many of these areas, market gardening belts around cities shrunk dramatically (Amati, 2016). Second, food system industrialisation aggravated the detachment between agriculture and the city. Reduced transport costs and times, improved product conservation conditions and the search for productivity through specialisation and economies of scale have played key roles. Hence, geographical proximity was no longer a precondition to supply food to the city (Pothukuchi & Kaufman, 1999; Mason & Knowd, 2010; Vitiello & Brinkley, 2014). Third, sanitary and noise disturbance caused by farming activities was conflictual with major urban functions and accelerated the pace to evacuate agriculture from cities (Mcclintock et al., 2012; Vitiello & Brinkley, 2014; Dobeles & Zvirbule, 2020; Leech & Strunk, 2021).

In developed countries, local land-use planning has had an urban focus and has been less focused in rural areas (Cloke, 2013). Therefore, the link between agriculture and land-use planning has been less visible along with the separation between city and agriculture. Land-use planning in many countries and areas has integrated a strand of farmland preservation to prevent disordered urban sprawl (Alterman, 1997; Daniels, 2020; Perrin et al., 2020). However, such peri-urban farmland preservation might also be a transient land-use strategy for future urban development in the planning agenda (Mason & Knowd, 2010; James, 2014; Ilieva, 2016). Such transient farmland then disappears or transfers to be more hybrid open spaces under the social maintenance (Poulot et al., 2016). Moreover, farmland preservation has been emphasised to reach quantitative goals but not how farming activities are organised (Perrin et al., 2020).

Consequently, planners have lacked current knowledge of agri-food issues in their training and practices (Pothukuchi & Kaufman, 2000; Raja et al., 2008). Such lack of knowledge poses challenges to RAA because RAA can only be developed in favourable land use contexts. RAA engages land use issues not only for farmland preservation but also for operating diversified activities, which are a new challenge for land-use planning. For example, RAA-associated activities may require building rights for on-farm sales, a good location to reach consumers, and small-size farms, which are not traditional issues land-use planning deals with (Nichol, 2003; Horst & Gwin 2018). RAA might be hindered without the adaptation of land-use planning regulations.

I.1.3 Food planning: a new type of local policy to improve RAA

Food planning is a new type of local policy *"that is adopted to address one or, typically, more food system activities with the explicit aim of steering food system outcomes in a desired direction"* (Candel, 2020, p. 922). It emerged in the last two decades as a type of local policy used to address the local food system (Pothukuchi & Kaufman, 2000). Food planning is a response to the deficiencies of national and international productivist models, which are found with limited ability to solve local problems (e.g., equal food access) (Sonnino, 2016). It is often designed as a response to the negative effects of a globalised food system, including increasing rates of diet-related diseases, climate change, unfair prices paid to farmers, food insecurity experienced by growing populations, and the consequent food injustice (Pothukuchi, 2009; Morgan & Sonnino, 2010; Brinkley, 2013; Sonnino, 2016; Yoon & Song, 2018). Food planning emerged firstly in North America and the United Kingdom (see, for example, (Blay-Palmer, 2009; Carey, 2013) and then expanded to other developed nations but also developing areas (Filippini et al., 2019). Food planning is launched with diverse reasons. Some were driven by bottom-up citizen movements and food policy councils, while others were initiated by governments' political willingness (see, for example, (Moragues-Faus & Morgan, 2015; Pothukuchi, 2015; Calori et al., 2017; Cretella, 2019). International initiatives, represented by the Milan Urban Food Policy Pact that set up a collaboration framework between cities to develop sustainable urban food systems, driven by metropolitan areas largely stimulate food planning projects in the world (MUFPP, 2015; Candel, 2020).

Food planning projects vary and even have different names (e.g., "urban food strategy", "food charter", and "food system planning") but are designed similarly to planning documents. They have a similar format consisting of a vision statement and an action plan (Sonnino, 2016). As a new type of policy, there is no common framework for food planning in terms of contents or governance models. As to contents, the overarching interests and instruments are related to various socio-political contexts. In terms of governance models, meaning *"framework for a typology of organisational forms of public action"* (Simoulin, 2003, p. 307), food planning is organised differently according to institutional contexts. Nevertheless, RAA, as an essential component in shaping the local food system, is an unignorable issue of food planning.

I.1.4 Why RAA in land-use and food planning?

RAA shapes a local food system and is intimately related to producers' activities. The academic field of local food system planning has emphasised mitigating the rural-urban divide and bringing back food and agriculture to the city (Morgan, 2009). However, researchers identified that until recently, food planning largely focuses on food access and consumption (that is to say, urban

aspects) but lacks emphasis on the transition of food production (Dehaene & Tornaghi, 2021; Deh-Tor, 2021). Such findings resonate with the results based on previous empirical food planning policies studies. Studies show that urban agriculture has been emphasised by local governments in food planning, linked to the scheme of creating a healthy food environment (Doernberg et al., 2019; Sibbing et al., 2019). However, agriculture (more than urban agriculture) may have been neglected by local governments (Sonnino, 2009; Sibbing et al., 2019). Professional farmers are sometimes excluded from food planning projects (Prové et al., 2019). It might be linked to the fact that agriculture and its industrialisation have been managed from the perspective of modernisation and sectoral regulation in a dialogue between the state and dominant agricultural actors. As a result, farming issues have been taken for granted as farmers' own businesses but not local governments' competences. However, shaping local food systems is based on a scaled-up RAA that goes beyond urban agriculture and includes a broader transition of professional farmers. RAA is worthy of a more detailed study.

Land-use and food planning policies are two major types of local policies that affect RAA. Food planning is a new type of local policy that is emerging. It has a focus on local food and agriculture issues. By contrast, land-use planning is a long-standing policy and works on land and spatial resources organisation of the territory. While food planning is mainly strategic, land-use planning contains spatially-based rules that are legally binding (Figure I. 2).

Scholars have emphasised the fact that food planning should be cross-sectoral and coherent with land-use planning (Pothukuchi & Kaufman, 1999; APA, 2007; Raja et al., 2008; Brinkley, 2013; Vitiello & Brinkley, 2014). The Milan Urban Food Policy Pact Monitoring Framework explicitly refers to land-use planning as a lever to achieve food planning goals to "*protect the local agricultural resource base and use*" (FAO, 2019, p. 24). I hypothesise that missing links between land-use and food planning procedures and strategies may hinder the implementation of RAA. For example, a multi-functional farming project supported by food planning can be hindered by overly strict mono-functional land-use regulations (Crivits et al., 2016). However, at present, we lack a comprehensive understanding of how food and land-use planning work and interact to support RAA.

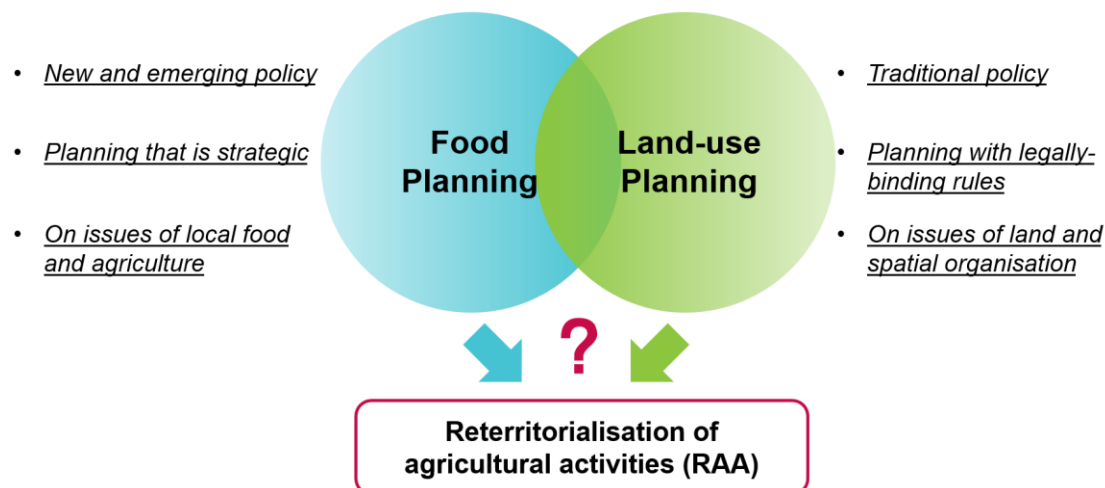
I.2 RESEARCH PURPOSE AND QUESTIONS

The overarching goal of this thesis project is to improve understanding of the planning approaches for RAA by investigating land-use and food planning policies as well as their intersections. Research to fulfil the goal is guided by four research questions:

1. What are the policy goals and instruments for RAA applied in land-use and food planning?
2. What and why are the links and missing links between land-use and food planning policies on RAA?
3. What kinds of governance mechanisms can affect RAA planning?
4. How do institutional settings at the national level affect local stakeholders' approaches to planning RAA?

The results will improve the understanding of RAA planning processes and policies. It will also suggest avenues for creating synergies between the two types of planning policies, both in planning practices and academic research fields.

Figure I. 2. Diagram of the central research question.



I.3 THEORETICAL FRAMEWORK

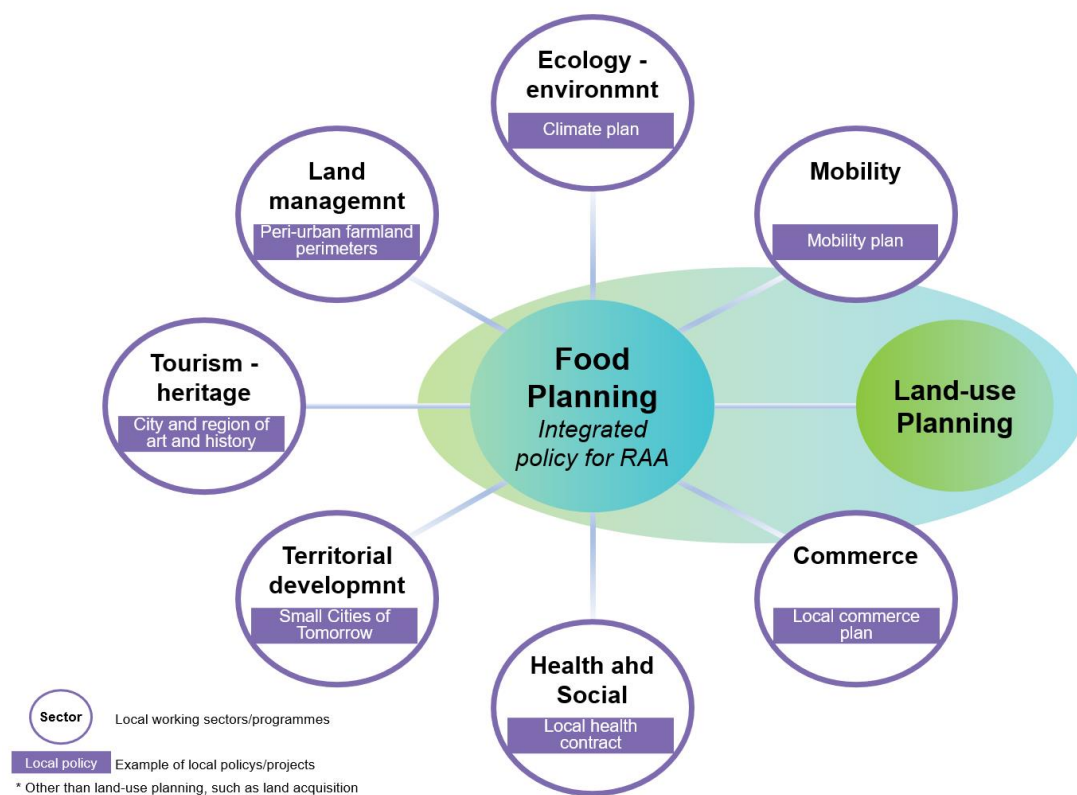
Following a sociological approach to public policies, I understand land-use and food planning through two major theory frames: policy integration and policy instrumentation. I then mobilise local food system theories to understand RAA.

I.3.1 Understanding RAA planning from policy integration

Policy integration is a key concept in the research agenda on complex policy issues facing the growing multiplicity of policy organisations, actions and instruments (Milhorance et al., 2022). It is important in issues like food security and climate change which are cross-cutting in terms of jurisdictions, governance levels and policy domains (Candel & Biesbroek, 2016) and has drawn particular attention in environment policies (Jordan & Lenschow, 2010). Stead and Meijers (2009) applied policy integration in the field of planning studies, defining that policy integration "concerns the management of cross-cutting issues in policymaking that transcend the boundaries of established policy fields, and

that do not correspond to the institutional responsibilities of individual (government) departments" (p. 321). This thesis research is on integrated policymaking of RAA, an issue that requires mobilising cross-cutting competences (Figure I. 3). The focus is to understand how the integration of land-use planning (as a long-running implemented policy that affects RAA) is achieved (or not) in food planning (a new policy surrounding RAA). It is worth reminding that Figure I. 3 is built surrounding the issue of RAA, which explains why food planning is at the centre. In fact, as local spatial planning, land-use planning has the mission to achieve integrated objectives that correlate to diverse sectoral, scale and stakeholder issues (Nadin, 2007).

Figure I. 3. RAA-associated sectors and programmes.



Note. Adapted based on Bodiguel et al. (2018). This diagram does not refers to a certain government level.

As concepts, "integration", "coordination", "cooperation" and "coherence" have been used alternatively in much literature (Milhorance et al., 2022). Researchers (Stead & Meijers, 2009; Cejudo & Michel, 2017) claimed that these concepts have some important differences. Though with slight nuances in interpreting these concepts, these authors hold a shared opinion that policy integration is specific. While other concepts are still based on sectoral issues, policy integration encompasses a policy decision process that targets complex issues by involving various public bodies in a joint decision decision process. Following these insights from the literature, I propose to consider a gradient of integration

which goes from cooperation and coordination between policies to full integration.

Policy integration can be understood from both policy outputs (policy goals and instruments) and policy inputs (a process of governing) (see for example: (Nilsson & Persson, 2003; Stead & Meijers, 2009; Jordan & Lenschow, 2010; Cejudo & Michel, 2017). Another dimension is the consequences/outcomes of policy integration (solved complex problems) (Nilsson & Persson, 2003; Cejudo & Michel, 2017), which is not taken into consideration in this thesis research for two reasons. First, the measurement of policy outcome effectiveness, namely the extent to which policy instruments change the status quo, is very difficult (Jordan & Lenschow, 2010). Second, it is too early to evaluate the consequences of policy instruments as most studied food and land-use planning projects are still ongoing or recently validated. Therefore, I focus on the policy inputs and outputs.

Regarding **policy outputs**, visions (or goals) and instruments are concerned. Holden (2012) identifies integrating visions and agendas as the first normative dimension of integration (others are latterly presented in policy inputs). From the choice of policy instruments, Howlett and Del Rio (2015) propose four types of interaction between instruments, which are from weak to strong integration:

- (1) a strong conflict: the effect of an instrument is reduced with the combination of another instrument;
- (2) a weak conflict (partial complementarity): the addition of an instrument to another leads to a positive effect on the combination, but lower than the one that would take place if both were used separately;
- (3) a situation of full complementarity between policy instruments;
- (4) a situation of synergy where adding policy instruments magnifies the impact of the combination

Such categorisation provides an analytical frame to evaluate at the policy instruments level the policy integration output. The authors emphasise that the effective design is to avoid conflicts and promote complementarity and synergies.

As to **policy inputs**, Stead and Meijers (2009) concluded that policy integration includes the process of cooperation and coordination, but *"requires more interaction, accessibility and compatibility, leads to more interdependence [...] needs more formal institutional arrangements, involves more resources, requires stakeholders to give up more autonomy and is more comprehensive in terms of time, space and actors"* (p. 322). Lafferty and Hovden (2003), with a focus on environmental policy integration, have proposed an analytical framework with

two dimensions: horizontal dimension, which focuses on cross-sectoral integration and vertical dimension, which is on cross-scale integration. Such a framework provides a relatively comprehensive form to analyse policy integration and has been leveraged by many researchers, e.g., Waston et al. (2008), through studying waste policy integration and Jordan and Lenschow (2010), through a synthetic review. They also claim that though this framework is proposed, in reality, policy integration is seldom along both dimensions simultaneously; usually, vertical integration is more common and influential than horizontal one (Lafferty & Hovden, 2003).

Beyond the above two dimensions of integration which are intra-governmental behaviours, Holden (2012, p. 312) introduced the new dimension of involving diverse stakeholders as *"effective use of the energy, resources, and information of different publics is also considered key to overcoming the implementation gap, that is, the failures to put new policies and plans into practice."* Altogether, policy integration brings into issues of the wide range of stakeholders (i.e., cross-sectoral, multi-scale, institutional and non-institutional). To understand policy integration in a sociological perspective, it is essential to comprehend the interplay between these stakeholders, in terms of their interests, power relations and behaviours in the use of rules.

Policy integration, referring to the evolution of policy inputs and outputs when integrating cross-cutting issues, is further understood as a policy learning process (Holden, 2012). Such a process entails bringing together different knowledge forms and creating new knowledge, which leads to better policies. Atkinson and Klausen (2011) concluded that knowledge has to do with sense-making, capacity to act and decision-making. They propose three types of knowledge: scientific/expert/professional, steering/institutional/economic, and everyday/milieu/local knowledge (ibid, p. 4). Through a comparative analysis in European countries, they identify the general dominant place of expert knowledge in integrated policymaking. However, it is filtered by political process, namely institutional knowledge. Comparatively, local knowledge plays a less important role.

Finally, researchers work to understand what facilitates and prohibits policy integration. Many authors have worked on that. I adopt the proposition by Stead and Meijers (2009), who developed in the field of planning studies and based on previous classifications. Stead and Meijers (2009, pp. 324–327) proposed five main categories of facilitators/inhibitors:

- 1) political factors (e.g., the commitment of policy integration by political leadership);
- 2) institutional/organisational factors (e.g., the existence of a central overview and coordination capacity to achieve integrated issues);

- 3) economic/financial factors (e.g., an incentive structure that stimulates integration);
- 4) process, management and instrumental factors (practical issues, e.g., dialogue between policy domains); and
- 5) behavioural, cultural and personal factors (e.g., historical relations of dealing with cross-cutting issues).

These five categories of factors provide analytical perspectives to understand what policy integration causes. Among these categories, the 2) institutional/organisational, 4) process, management and instrumental and 5) behavioural, cultural and personal factors are of particular interest in this research which focuses on the sociological understanding of policymaking.

I.3.2 Policy instrumentation: understanding the public policy from the use of policy instruments

The second group of theories involved in this research is **policy instrumentation**. Public policy instruments, as tools that government bodies use to achieve their policy goals, are an essential component in public policy (Howlett, 2014). As Lascoumes and Le Galès, two sociologists, defined, it *"constitutes a device that is both technical and social, that organises specific social relations between the state and those it is addressed to, according to the representations and meanings it carries"* (2007, p. 4). Such a definition emphasises the social and political relationship between government bodies and the governed that policy instruments shape. It brings policy instruments from the neutral technical device into the political implementation stage, aiming to understand how local actors make choices of policy instruments within the legal framework to achieve their objectives.

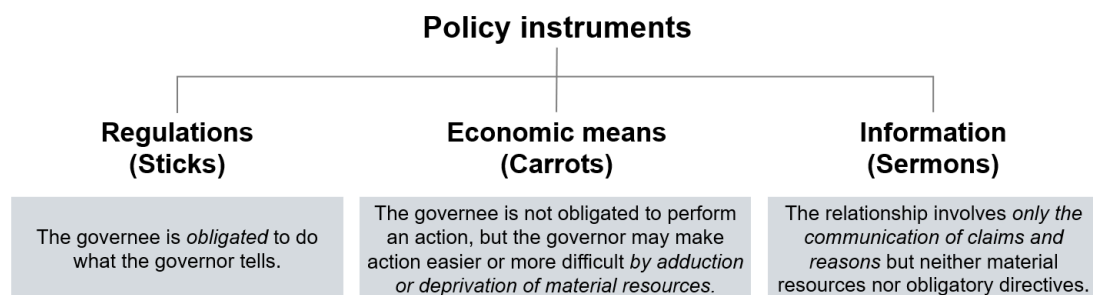
The authors further developed the term "policy instrumentation", meaning *"the set of problems posed by the choice and use of instruments (techniques, methods of operation, devices) that allow government policy to be made material and operational"* (Lascoumes & Le Gales, 2007, p. 4). They address issues of both understanding the driver of the choices of instruments and envisaging the effects of such choices. Therefore, policy instrumentation is political. It helps understand governance capacity and models as well as the change in public policy (Lascoumes & Le Gales, 2007). Such a conceptualisation of policy instrumentation emphasises the importance of empirical investigating through a sociological lens to understand policymaking as a result of local actors' choices and interplay. Researchers not only analyse institutional processes as external objects but also investigate in field inquiry subjective interpretation made by local stakeholders as embedded in a complex system of social relations. In my research, it corresponds to the understanding of local stakeholders' (e.g.,

elected officials, civil servants, farmers' organisations, experts) strategical mobilisation of legal rules for RAA planning.

Public policy instrument typologies have been made to provide generic forms of instruments so that facilitating policymakers to understand the effects and make choices among instruments. Vedung (1998) has developed a basic scheme of policy instruments typology based on the concept of power, namely the authoritative force involved in the governance efforts (Figure I. 4). Regulations, economic means, and information constitute the three types of instruments. As the figure shows, each type of instrument represents the power relation between government bodies and the governed.

This typology provides an understanding of the nature of instruments. Regulations influence people by means of formulated rules and directives; economic policy instruments hand out or take away material resources, inciting people in cash or in kind; and information attempts to influence people through the transfer of knowledge, the communication of reasoned argument, and persuasion. In principle, "*regulation is more constraining for addressees than economic means, and the latter are more constraining than information*" (Vedung, 1998, p. 35).

Figure I. 4. *Typology of policy instruments.*



Note. Adapted from Vedung (1998, pp. 30–31).

Although Vedung's classification of policy instrument typology clearly defines the different power relations, it does not focus on the local stakeholders' active mobilisation of rules and resources. The classification made by Hood (1983) based on resources mobilised can compensate for that: the information they possess as a central policy actor (nodality), their legal powers (authority), their financial resources (treasure), and the organisational capacities available to them (organisation). Though the classifications are by large similar, the one developed by Hood implies an active use of resources by local stakeholders. Based on that, Lascoumes and Le Galès (2007) divided policy instruments into two large and five small categories in engaging factors of resources mobilised, political relations organised and types of legitimacy assigned by such relations. Two traditional types are 1) legislative and regulatory and 2) economic and fiscal

instruments. Three others are “new public policy instruments” that contain less intervention from public regulations but more in the form of communication and consultation. They are 3) agreement-based and incentive-based, 4) information-based and communication-based and 5) de facto and de jure standards best practices instruments. Despite the different classifications, the typologies both provide a generic form of understanding the various power relationships imposed by the government body/policy maker and the potential effects the types of instruments may generate. In my research, I stick to applying Vedung’s typology but with an emphasis on understanding the local mobilisation of resources by stakeholders.

Howlett (2014) extends the policy instruments from substantive to procedural ones. The author claims that while substantive instruments affect the production, distribution and delivery of goods and services in society, procedural instruments affect them indirectly; instead, they affect actors’ behaviour in policy implementation. Procedural instruments are in the forms of, for example, education, training, institutional reform, creation of advisory committees, government re-organisation, and inter-governmental agreements (Howlett, 2019, p. 148). Some can overlap with the informational instruments as defined by Vedung (1998) (e.g., education can be treated as a form of delivering informational services), while the importance is the emphasis on institutional reforms and relationships. Such a theoretical categorisation corresponds to social sciences methodological approaches: empirical inquiries on social relations are needed to be conducted in order to understand how procedural instruments are set and applied.

Howlett (2014) also develops a “policy design” framework to understand the policy formulation process of making choices of policy instruments according to their functions and effects. The comprehensive dimensions of policy design include the content (what), the designer (who), the methods (how) and the rationale (why). Among them, it is important to understand that policy design is increasingly made by a series of actors in which, as identified by Howlett, government decision-makers are embedded in a more complex web of “policy advisors.” These are both “traditional” political advisors in government as well as civil actors in non-governmental organisations (NGOs), think tanks and other similar organisations. They also include less formal or professional forms of advice from colleagues, friends, relatives, members of the public, and political party members, among others. Their interplay leads to the selection of policy instruments.

Policy instrumentation theories have been applied in the fields of planning and land studies. The collective book “instruments of land policy” (Gerber, Hartmann, et al., 2018) represents an application. It departs from the understanding that policy instruments derive from mutual effects between

institutions and actors. Institutions constrain the actors' behaviour from a top-down manner, while actors may resist formal rules from the bottom-up to defend their interests and leading to both formal and informal rules (Gerber, Hengstermann, et al., 2018). Such an understanding goes beyond the old dichotomy between top-down and bottom-up manners. It focuses on a dynamic and interactive interplay between formal rules and local stakeholders, noticing that local stakeholders actively interpret and make use of the legal rules. The book provides a series of land policy instruments for planners to understand how they are used (differently) in various contexts and the effects they produce (Hengstermann & Hartmann, 2018). By using policy instrumentation theories, researchers understand actions as instruments and interpret them from the social relations they create. A case is Pinson's (2005) interpretation of urban projects as an instrument to achieve planning policy goals. Through this lens, the author identifies that using projects to achieve planning goals represents a turn from goal-led to process-led planning. Projects are more about formulating a platform for gathering resources and allowing dialogue and negotiation between local actors rather than achieving the goal itself. The use of such instruments also represents a turn of governments' role from controllers to mobilisers (mobilising local actors) (Pinson, 2005).

Bengston et al. (2004) applied and adapted Vedung's (1998) policy instruments typology to compare land use instruments to achieve different policy goals (i.e., protect open space and control urban growth boundary). The policy instruments typology provides an analytical framework to make such comparative analysis possible and to provide a comprehensive overview of policy instruments in terms of types and policy levels. Such analysis using a typology of policy instruments also enables bringing together the policy instruments so that instruments' complementarity and reinforcement are identified. The authors claim the use of multiple, mutually reinforcing policy instruments is far more effective than relying on a single technique.

Policy instrumentation has also been applied in the local food planning field, though more recently. Doernberg et al. (2019) apply and adjust the typology of Vedung (1998) and develop a systematic approach to understand how cities can intervene in food policies. Such an exercise allows a comprehensive understanding of a new public policy type in terms of what instruments are used and what governance capacities are behind.

Although policy instruments are usually deconstructed brutally into exclusive categories (e.g., carrots versus sticks as proposed by Vedung), policy instrumentation theories and empirical studies tend to address the multiple combinations of policy instruments which may generate complementarity and reinforce each other (see, for example, Bengston et al., 2004; Howlett, 2014). Relative theory can be found in research discussing the various functions of

rules by distinguishing “hard” and “soft” laws. While “hard” planning (i.e., rules with legally-binding effects) is more directive with legal certainty, “soft”, non-statutory and informal planning could be more efficient and innovative (Allmendinger & Haughton, 2010). By applying the concepts of soft law and hard law in Finland city-regional planning, Mattila & Heinilä (2022) argue that what is essential is *“the overall architecture for the interplay of different kinds of soft and hard, or communication- and law-based aspects and elements in planning systems and not the categorical, and in our opinion unnecessarily simple, choice between formal and informal steering.”*

Finally, although policy instrumentation generally provides a local lens to understand the choice of policy instruments, there are unignorable contextual factors which explain certain common or, by contrast, specific features between countries (Atkinson & Klausen, 2011). Such commonalities and disparities bring the issue of the style of public policy and the cause, raising the question of comparing national policy styles. The comparative public policy analysis theory seeks *“what accounts for the observed patterns in public policy”* (Lodge, 2007, p. 275) and proposes three aspects to understand the cause: socio-economic factors, the responsive government to external pressure and institutions. Among them, I focus the most on the institutional effects. Francou and Mavrot (2020) argue that the state can have different roles by categorising it as managerial state, participatory state and normative state. These roles shape the different relations between the state and local actors, thus affecting the styles of local actors’ use of policy instruments. In this research, one of the issues is to understand from a cross-national lens how the national institutional framework on RAA affects the local actors’ behaviours in policy instrumentation.

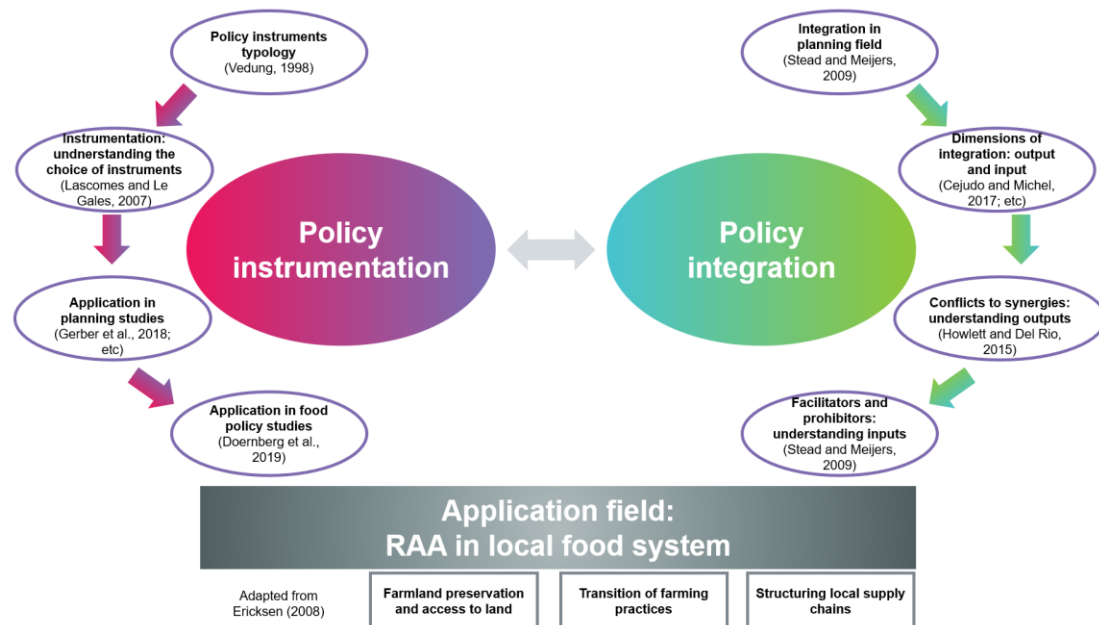
Overall, policy instrumentation theories provide a framework to understand public policy (in this research, land-use and food planning). Typologies of policy instruments provide a structure to understand the power relationship the instruments shape. The use of policy instruments results from local actors’ social use within a social system of power relations. Local interpretations and uses of the rule lead to the use of policy instruments that are not the same as normative rules and even conflict with them. Understanding the local use of policy instruments and the driver of the use helps comprehend the effectiveness of public policy and further gives implications on public policy design.

1.3.3 Linking policy integration and instrumentation in the application field of RAA

When linking policy instrumentation and policy integration, it can be identified that they are both based on a common background: the increasing complexity of policy issues, which implies the diversification of policy instruments, actors and governance models (see, for example, Howlett, 2014; Lascoumes & Le gales,

2007; Steadand & Meijers, 2009). Therefore, this research aims to understand policy integration (RAA in land-use and food planning) through public instrumentation (what, why and how the policy instruments are mobilised by local stakeholders with engaging issues of effects the instruments take). This is also based on the application in the study field of RAA. Figure I. 5 presents a diagram showing the integral theoretical framework that guides this thesis research.

Figure I. 5. *Diagram of the theoretical framework of the thesis research.*

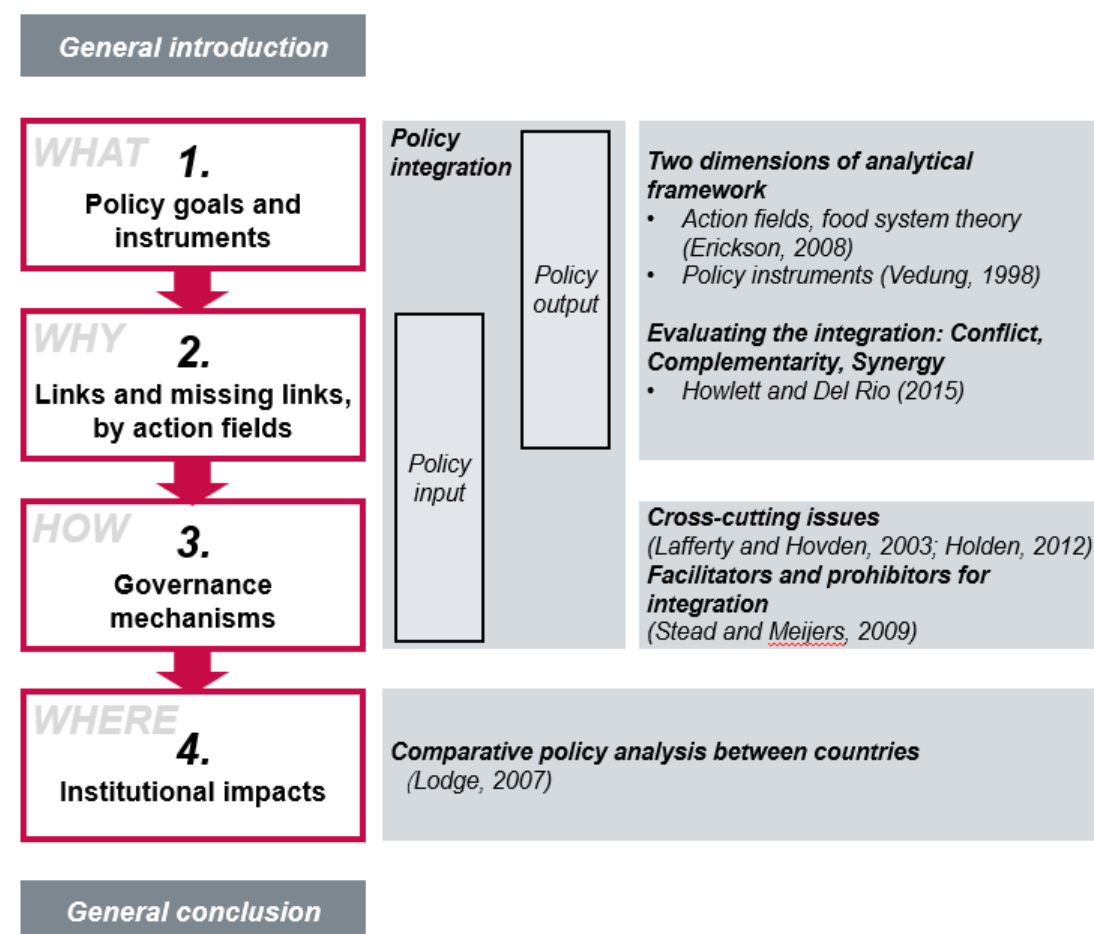


The application study field of RAA is understood from a food system perspective. The research addresses the agri-food system from a perspective of a system: both in terms of sectors (from production to consumption) and stakeholders (Lamine, 2020). From a systematic approach, Ericksen's (2008) definition of the food system can be adapted to understand RAA. He identifies food system components as producing food, processing and packaging food, distributing and retailing food, and consuming food. The first three stages are relevant to RAA and are regrouped into three RAA-associated action fields. Producing activities can be divided into (1) land access and (2) farming practices. Processing, packaging, distribution, and retailing activities can be regrouped into the classification (3) structuring local food chains. It is worth noting that I focus on RAA, which links to producers' production and diversification activities. Retailing activities are only included when they are associated with RAA (e.g., farmers' market, producers' shops, on-farm sales, drive-through).

In light of this theoretical framework with conceptual and analytical tools, I associate the analytical frame with the sequence of research subquestions (Figure I. 6). The first three research subquestions are to be understood from policy outputs and inputs in French contexts. Subquestions one and two aim to

understand the policy instruments and links, while theories provide the analytical framework for policy instrument typologies, action fields and the way to understand the degree of policy integration. The third subquestion aims to understand the governance mechanisms affecting planning, which is supported by integration theories that provide angles of cross-cutting issues and the facilitating factors to understand the different levels of integration. The fourth subquestion is supported by the comparative policy analysis theory to understand the planning policy styles shaped by institutional settings with a cross-national lens. The structure (Figure I. 6) also corresponds to the composition of chapters, which is explained in the I.7 chapter outlines.

Figure I. 6. Application of theories to the research questions.



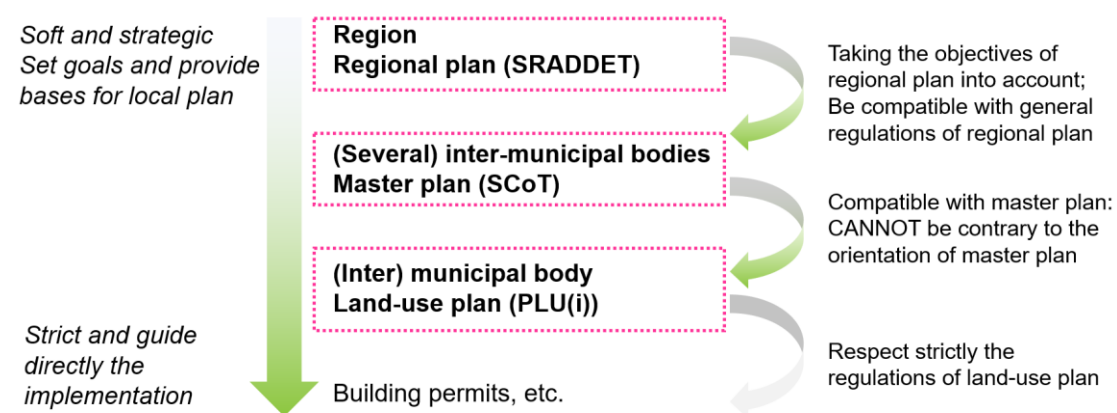
I.4 FRANCE: A FERTILE GROUND TO STUDY AGRICULTURE IN TERRITORIAL PLANNING

This thesis project is mainly conducted in France. The actual French context of land-use and food planning provides a fertile ground to study the RAA issues: a land-use planning evolution from municipal to inter-municipal scale and a national law-defined food planning scheme.

I.4.1 Land-use planning: from municipal to inter-municipal

The French spatial planning system is three tiers: 1) regional plan at the scale of the region, 2) master plan at the scale of one or a group of inter-municipal bodies and 3) local land-use plan at the scale of a group of municipalities or municipality². Planning at each scale has its responsibility and the necessity to be compatible with supra-scale plans (Figure I. 7). In this research, I focus on inter-municipal land-use planning (*plans locaux d'urbanisme intercommunaux*, hereinafter referred to as "**land-use planning**"). Land-use planning has both missions of defining territorial development orientations and enacting legally-binding regulations.

Figure I. 7. Three-tiers spatial planning system in France.



Note. Based on French Planning Code (*Code de l'urbanisme*).

SRADDET: *Schéma régional d'aménagement, de développement durable et d'égalité de territoire*, direct translation in English: *Regional plan for planning, sustainable development and territorial equality*.

SCoT: *Schéma de cohérence territoriale*, direct translation in English: *Territorial coherence plan*.

PLU(i): *Plan local d'urbanisme (intercommunal)*, direct translation in English: *(inter-municipal) Local land-use plan*.

Since the decentralisation reforms in the early 1980s, land-use planning became the responsibility of the municipality (*commune*)³. Spatial planning instruments

² Usually, master plan is at a larger scale than land-use plan. In some cases, they can be at the same scale of an inter-municipal body. In such a case, there might be "land-use plan valid as master plan" (*PLUi valant SCoT*).

³ Land-use planning at the municipal scale could be in three forms: 1) an established land-use plan with all the required components, 2) a simplified municipal map (*carte communale*) that defines buildable zones and non-buildable zones and 3) applying national rules (*règlement national d'urbanisme*) when there are no documents in place.

were also established at the supra-municipal scale (master plan, regional plan), but land-use planning as a lever regulating land use at the plot scale and directly impacting property rights (*droit opposable aux tiers*) was the competence of municipal councils. Such a competence has been transferred to the inter-municipal bodies (*intercommunalités* or *EPCI, établissement public de coopération intercommunale*), first proposed in 2010 and then generalised in 2014 by laws (Table I. 1). From 2017, the competence of land-use planning is automatically transferred from municipalities to inter-municipal bodies except for the agreed objection by the elected officials. As the French municipalities are small and numerous⁴, this change in the planning scale is helpful for better coordination concerning farmland use and environmental issues, as well as better mobilising human resources, especially for rural and peri-urban municipalities.

Table I. 1 shows a chronological evolution of land-use planning management. The evolution presents a tendency towards strict farmland preservation visions, from the establishment of exclusive agricultural zoning to today's no net land take (*zéro artificialisation nette, ZAN*) schemes. Detailed land-use planning associated with RAA rules is latterly presented in chapter 1.1.

Table I. 1. Major evolution of land-use planning through time.

Year	Law	Major evolution of land-use planning
1967	Land orientation law (<i>loi d'orientation foncière</i> ⁵)	Creation of the land-use planning (<i>POS, plan d'occupation des sols</i>) and establishment of exclusive agricultural zoning. Only farmers are allowed to build in agricultural zones.
1983	Decentralisation laws	Land-use planning and building permits management responsibility are transferred to municipalities
2000	Urban Renewal law (<i>loi SRU</i> ⁶)	Land-use planning evolves from soil occupation plan (<i>POS, plan d'occupation des sols</i>) to land-use plan (<i>PLU, plan local d'urbanisme</i>). Clear intention to limit the farmland conversion and to promote more compact urban patterns. Only buildings "necessary" to farming activities are allowed in agricultural zones.
2010	Environment law (<i>loi "Grenelle II"</i> ,	Land-use plans have to contribute to preserve farmland, reduce the land take and fight against

⁴ French municipalities are numerous and on average small. In January 2022, France had in total of 34,955 municipalities.

⁵ Loi n° 67-1253 du 30 décembre 1967 d'orientation foncière.

⁶ Loi n° 2000-1208 du 13 décembre 2000 relative à la solidarité et au renouvellement urbains.

Year	Law	Major evolution of land-use planning
	<i>engagement national pour l'environnement</i>)	urban sprawl. Encouragement of the transfer of responsibility from municipal to inter-municipal bodies.
2014	Law for access to housing and renovated urbanism (<i>loi ALUR</i> ⁷)	Generalisation of the transfer of responsibility from municipal to inter-municipal bodies starting from March 2017. Derogations can be made based on "blocking minority", meaning that if more than 25% of the municipalities that represent 20% of the population vote against the transfer of responsibility, planning rights can be kept for municipalities.
2021	Climate and Resilience law (<i>loi Climat et Résilience</i> ⁸)	Introduction of the goal of "no net land take" (<i>zéro artificialisation nette, ZAN</i>) by 2050 as a commitment to the European Union goals.

Developing a land-use planning project takes a relatively long time, especially at the inter-municipal scale. Technical work takes time for such planning at a relatively large scale. And a series of administrative processes (see also chapter 1.1) have to go through to approve the plan, including prescription, several times deliberation, request for advice from associated bodies and the public, et cetera. Land-use planning, with its form as regulatory documents, has to last several years to be approved and put into implementation. Food planning, on the contrary, is operated with a different logic.

I.4.2 Food planning: a national framework and local implementation

French food planning is a newly created type of local policy, entitled "*projet alimentaire territorial*" (direct translation to English: territorial food project, hereinafter referred to as "**food planning**"). Food planning is issued by the Agriculture Law (*loi LAAAF*⁹) in 2014 and is registered in the Rural Code (*Code rural et de la pêche maritime*). It is established to meet the expectations of the National Food Programme (*Programme National pour l'Alimentation*) and the regional sustainable agriculture plans. As defined by the law, food planning aims "*to bring closer producers, processors, distributors, public authorities and consumers and develop local agriculture and improve food quality*" (Rural Code, L. 1). The objective of food planning is "*to structure the agricultural economy and*

⁷ Loi n° 2014-366 du 24 mars 2014 pour l'accès au logement et un urbanisme rénové.

⁸ Loi n° 2021-1104 du 22 août 2021 portant lutte contre le dérèglement climatique et renforcement de la résilience face à ses effets.

⁹ Loi n° 2014-1170 du 13 octobre 2014 d'avenir pour l'agriculture, l'alimentation et la forêt.

implement a local food system." It is engaged in *"reinforcing local supply chains and developing the consumption through short supply chains, particularly linked to organic food."* Such commitment is reinforced by the Food Law (*Loi EGalim*¹⁰) in 2018 by complementing a strand of *"fight against food waste and food insecurity."*

Food planning is not a compulsory responsibility for any type of public authority. However, the state encouraged local stakeholders to launch food planning projects through annual financial programmes, charged by the Ministry of Agriculture and Food (renamed Ministry of Agriculture and Food Sovereignty in 2022, hereinafter referred to as "Ministry of Agriculture"). The "Call for Projects" has been held each year to finance local initiatives that meet the expectations of the National Food Programme¹¹, with an accent to facilitate the launch of food planning projects (as well as support the launched projects starting from 2017). Initiated and principally invested by the Ministry of Agriculture, the Environment Agency (ADEME) and the Ministry of Health joined the annual financial programmes as financers since 2016 and 2017, respectively, and the General Commission of Territorial Equity participated in 2018. In 2020, the French state launched a national recovery plan (*plan de relance*) for the Covid-19 pandemic. On agriculture and food issues, the recovery plan aimed to regain food sovereignty, accelerate agroecological transition, and facilitate adaptation to climate change. Food planning as a cross-thematic solution gained an investment of 80 million euros in the recovery plan framework. Among the total, 77 million was dedicated to implementing food planning project actions and three were for new food planning projects. Figure I. 8 shows the national annual financial programme budgets by year.

The national framework has gradually reinforced the formality requirements of food planning. Initially, the flexible framework was voluntarily settled to leave a large room for manoeuvre for the local territories to incite their commitment in food planning. Then, the national labelling programme, the evolution of "Call for Projects", and the associated laws in evolution have provided a more formalised framework for food planning in terms of both working themes and working methods.

The Ministry of Agriculture developed the food planning labelling programme in 2017, which grants a national label of "food plan" to the authorised projects that meet the national requirements. Such a labelling programme is not attached to funding but gives food planning visibility and, to a certain extent, legitimacy. The labelling criteria include various technical instructions on

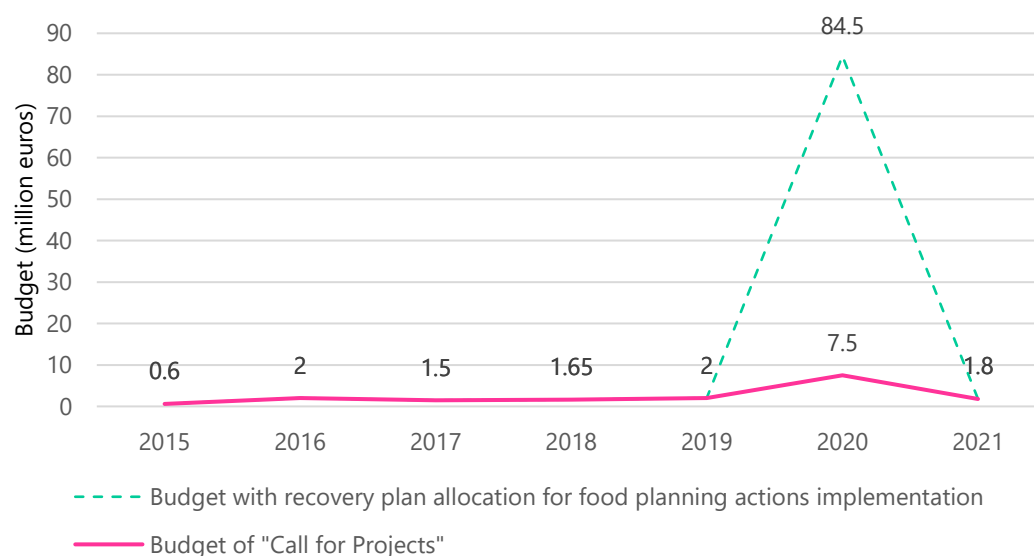
¹⁰ Loi n° 2018-938 du 30 octobre 2018 pour l'équilibre des relations commerciales dans le secteur agricole et alimentaire et une alimentation saine, durable et accessible à tous.

¹¹ With four priority areas: social justice, food education to young generation, anti-food waste and territorial integration and enhancement of the food heritage.

governance models and operational working methods, reinforcing the institutionalisation. For example, a collective and participative working process, a governance body that oversees the implementation of operational actions, the cross-cutting features of the planning and the coherence to the national food programme are major criteria for labelling. Such criteria evolved in 2020 with more specified requirements, showing the improvement in formality. For instance, the steering committee has to include at least one local authority, and the commitment of partners has to be in the form of a signed contract or a letter (Ministry of Agriculture, 2020 & 2017¹²). The labelling criteria have been included in the requirements in the “Call for Project” selection since 2019.

Figure I. 8. Budgets dedicated to food planning projects by year.

National annual financial programme (Call for Projects) and the recovery plan.



Note. Based on “call for project” documents.

* No data is found for the year 2014.

* In 2020 the funding of call for projects includes the 3 million euros’ investment from recovery plan targeting the new emerging food planning projects.

* In 2020 the number of 84.5 includes both the recovery plan allocation (77 for implementing actions and 3 for new projects) for food planning and the funding from annual financial programme (4.5) to finance new food plans.

The “Call for Projects” financial programme has also increasingly specified requirements for food planning projects. Since 2018, food planning has become one of the two emphasised topics of the “Call for Projects” with specified

¹² Two food planning labelling instruction documents: Dispositif de reconnaissance officielle des projets alimentaires territoriaux (PAT) (DGAL/SDPAL/2020-758 du 09/12/2020), December 2020. Reconnaissance des Projets Alimentaires Territoriaux (PAT), March 2017.

requirements from economic, environmental, and social dimensions and selection criteria. Such requirements and criteria have been increasingly detailed over time. For example, the requirements on the environmental dimension have evolved much, including the evolution of farming practices, diversification of protein-based food, introduction of legumes, mitigation and adaptation to climate change, and improved logistics and processing.

The selection criteria have also evolved following the update of legal requirements. A notable specification is that since the Food Law's (*loi EGalim*, 2018) requirement on collective catering provision with sustainable food, collective catering as a criterion has been added with a detailed extension in 2019:

The degree to which the objectives of supplying collective catering with sustainable and quality products (organic, other quality food labels, level 2 environmental certification and High Environmental Value food (Haute Valeur Environnementale) are taken into account. (Call for Project requirement 2019, p10)

More recently, the resilience perspective has been added by the Climate and Resilience law (*loi Climat et Résilience*, 2021), defining that food planning has to "contribute to the guarantee of the national food sovereignty" (Rural Code, L. 111-2-2).

The "Call for Projects" and the food planning labelling system are not obligatory for food planning projects¹³. However, they do formulate a certain framework as an incentive from the perspective of finance and legitimacy. Although food planning is not compulsory for local governments, increasing numbers of projects have emerged in recent years; a total of 373 food planning projects have been recognised by the Ministry of Agriculture through April 2022 (Ministry of Agriculture, 2022). The national framework also affects the way local territories work on food planning: local territories select local initiatives and adjust the agenda to meet the national framework's requirements, and the actions are related to the budget disposed of by the financial programme. Therefore, food planning is distinct from land-use planning in terms of implementation; food planning has much flexibility and depends much on local working methods.

The law does not define any responsible body for launching and managing food planning projects. Both public and private stakeholders (in the private case, having to be non-profit or for-profit but with collective interests) are eligible to apply for funding through "Call for Projects." Food planning itself is not an

¹³ Some local territories developed food planning but did not ask for labelling.

embedded competence for any local public authorities. Contrarily, it has to be based on mobilising diverse local competences.

Overall, French food planning is framed through national laws, financial programmes and a labelling system. There are three key points: the Agriculture Law (*loi LAAAF*, 2014), which introduced the programme, the Food law (*loi EGalim*, 2018), which introduced collective catering as an important lever and a criterion to fund food planning and the recovery plan based on the Covid-19 pandemic (2020) to accelerate the change.

Altogether, the two elements provide a favourable context to study RAA planning: the land-use planning evolution from municipal to inter-municipal scale provided a better scale to engage issues of agriculture and food; the food planning national frame with an emphasis on shaping local short supply chain and the responsible body from the Ministry of Agriculture provided a supportive system for the transition of RAA.

Recently, the French state has put increasing emphasis on enhancing coherence between planning policies. For example, the Territorial Recovery and Ecological Transition Contracts (*CRTE, contrats de relance et de transition écologique*), as a type of local-state contract, has a mission to be an “integrator.” In October 2022, the Prime Minister announced the programme of developing local “ecological planning” (*planification écologique*). This programme is especially emphasised to find the coherence between separate local programmes, among which food is a component of the major working strands. Such programmes all demonstrate the state’s ambition of developing coherent planning policies.

Therefore, studying the coherence between land-use and food planning policies is of great importance in actuality in the French context. Yet, land as the fundamental resource to address food provision and larger issues of climate change mitigation has not been sufficiently addressed in integrated local planning schemes, making this thesis research a current issue.

Finally, the understanding of the French system can be reinforced through a cross-nation comparative lens. An international comparative analysis is introduced between France and the Netherlands. Such analysis can enable a better understanding of how much influence the fertile ground provided by the French state brings into the planning approaches. The detailed comparative contexts are presented in chapter 4.

1.5 CASE STUDY AREAS

In France, two regions were chosen for empirical studies: Normandy and Occitania. They were the regions with the most territories that developed both land-use and food planning policies (identified in September 2020). In 2022,

Occitania has a surface area of 72,724 square kilometres with a population of 6.05 million, with an average density of 83.2 persons per square kilometre; Normandy has a surface area of 29,905 square kilometres with a population of 3.31 million, with an average density of 110.4 persons per square kilometre (Insee, 2022b). The utilised agricultural area¹⁴ in Normandy and Occitania is 69% and 48%, respectively (Insee, 2021). Regarding agricultural production and landscape, Normandy is dominated by livestock with the landscape of bocage, while Occitania has diverse farming systems with crops, vineyards, and livestock. Figure I. 10 presents the principal farm types in the two regions.

I identified (updated progressively until April 2021) the territories that have developed land-use and food planning projects (including ongoing projects, Figure I. 9). It is noteworthy that land-use and food planning are not at the same spatial scale. Land-use planning is at the inter-municipal scale, with some territories containing them at the infra-inter-municipal scale, whereas food planning is at diverse scales from municipal (*communes*), inter-municipal (*intercommunalité* or *EPCI*, *établissement public de coopération intercommunale*, meaning a group of municipalities), territorial cluster (rural cluster: *PETR*, *pôle d'équilibre territorial et rural*; urban cluster: *pôle métropolitain*; meaning a group of inter-municipal bodies), regional park (*PNR*, *parc naturel régional*, containing adhered municipalities in rural territories) and departmental (*département*¹⁵) scales. The information on food planning projects was from the official sites of national food planning network (*RnPAT*¹⁶) and the state's regional agriculture and food office (*DRAAF*) in Normandy and Occitania. Information on land-use planning was obtained from the national interactive platform for planning (*Géoportail*¹⁷) and official sites of inter-municipal bodies.

Territories for which interviews were not able to be achieved were afterwards excluded. In total, 40 food planning projects and 89 land-use planning projects were included in this study.

This thesis research also includes a comparative study between France and the Netherlands. In order to facilitate reading and understanding, the studied Dutch

¹⁴ The utilised agricultural area (UAA) is a standardised notion in European agricultural statistics. It includes arable land (including temporary pastures, fallow land, greenhouse crops, family gardens, etc.), the areas always under grass cover, and permanent crops (vines, orchards, etc).

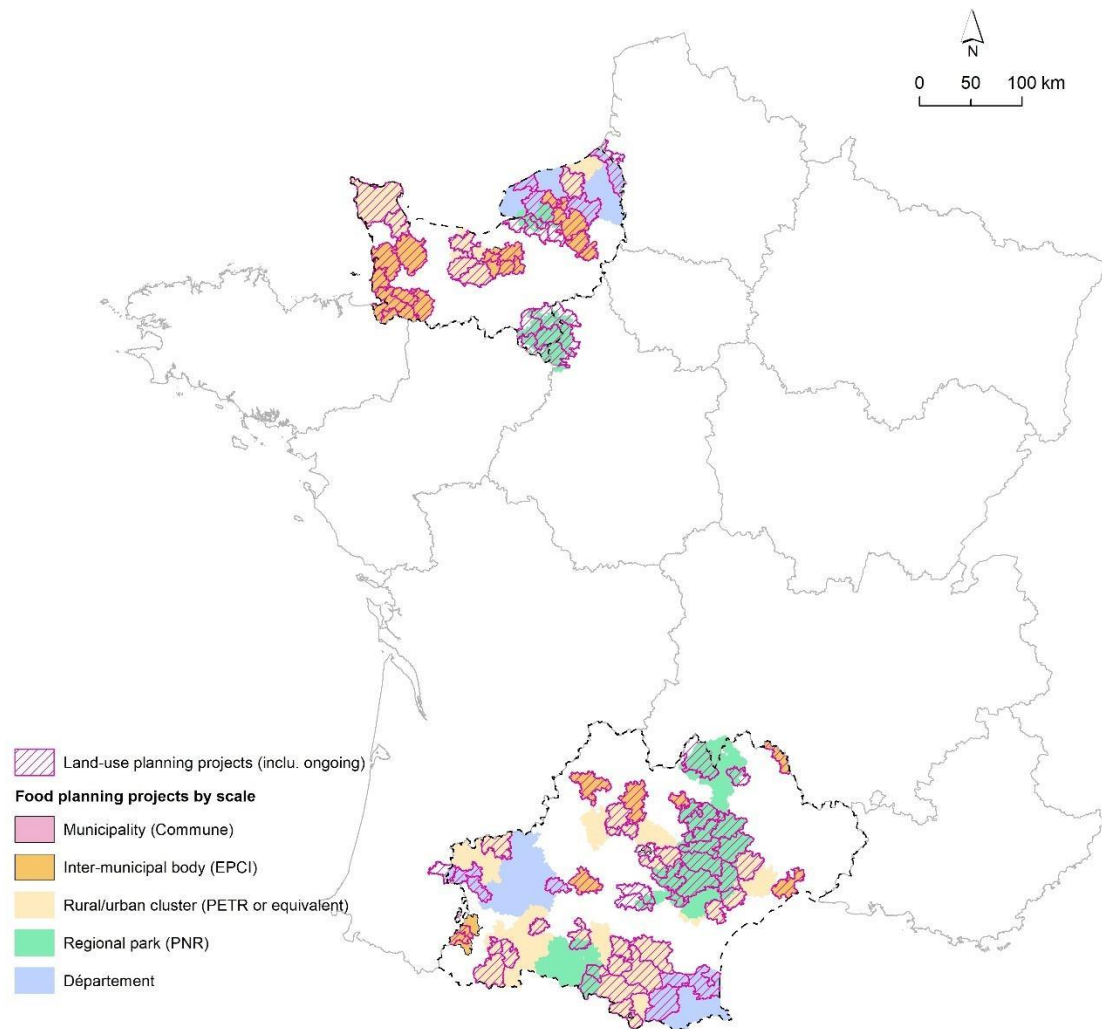
¹⁵ Department (*département*) is the second level of local territory (first: region, third: municipality). In English, it is similar to "county" or "province." I use "department" in this manuscript to facilitate understanding in a French context.

¹⁶ Official website: <https://rnpat.fr/>

¹⁷ Official website: www.geoportail-urbanisme.gouv.fr/map/. This site aims at centralising land-use plans but is not yet comprehensive.

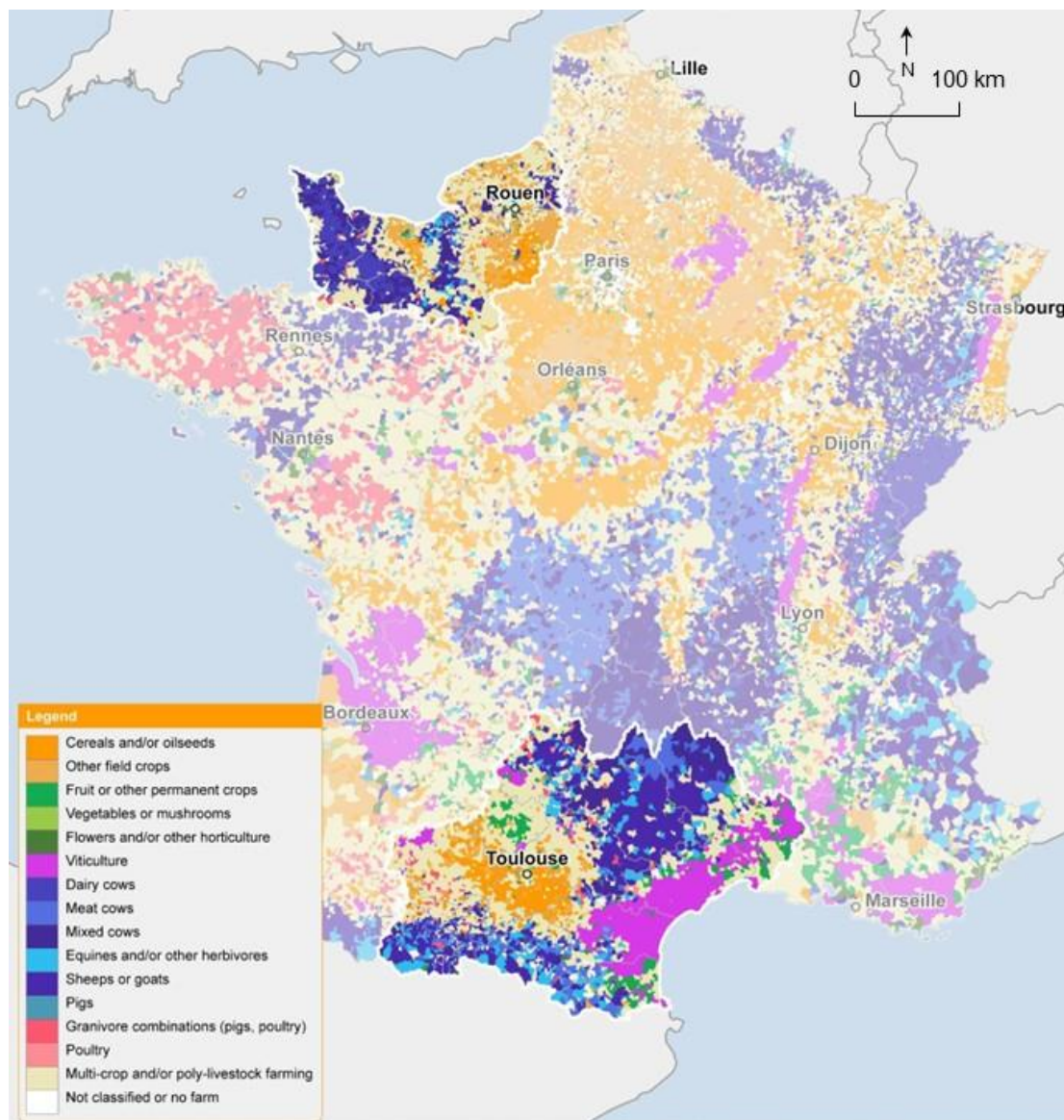
cases and the contextual differences between France and the Netherlands are presented in chapter 4.

Figure I. 9. Case study areas in France.



Note. Overlapping areas might be hidden.

Figure I. 10. *Specialisation of agricultural production in France.*



Note. From Agreste, 2020¹⁸

I.6 GENERAL METHODOLOGY

This thesis project was conducted through the following stages: an international literature review, collection of empirical data, analysis of data and writing. I conducted the literature review by applying a method provided by Hagen-Zanker & Mallett (2013), which is based on a systematic literature review retrieval method but with social science-adapted analysis. I collected empirical data from official planning documents and semi-structured interviews. While semi-structured interviews and the literature review are used throughout,

¹⁸ Official interactive website:

<https://stats.agriculture.gouv.fr/cartostat/#view=map11&c=indicator>

document analysis mainly served chapter 1. In this general introduction, I present the general data collection and analysis methods. The detailed document analysis methods are presented in chapter 1 to facilitate fluent reading.

I.6.1 Method of a review of international literature

1) Data collection

I searched for scientific publications based on the literature review retrieval method of Hagen-Zanker & Mallett (2013). This method adheres to some of the core principles of a systematic review to broaden the range of data and provide a transparent procedure while giving more flexibility to social science researchers. I searched academic databases using search strings, then performed the screening based on inclusion and exclusion criteria and finally completed the literature search by snowballing, capturing grey literature and adding papers for areas with fewer samples after performing the above retrieval procedures.

Firstly, I searched the SCOPUS databases for two types of academic papers. One type was food planning and RAA papers, while the other was papers about land-use planning dealing with RAA. I used SCOPUS queries, selected only journal-style papers published in English and searched publications from the past 22 years, because food planning issues emerged around two decades ago.¹⁹ I used 12 July 2022 as the last publication date. I identified 868 papers from the "land-use planning" group query and 655 papers from the "food planning" group query.

¹⁹ To define "agricultural activities", I used ("agricultur*" OR "farm*" OR "food*"). The query ("land use plan*" OR "urban plan*") was used to define "land-use planning", because urban planning refers to land-use planning in some contexts. The query ("food plan*" OR "food strateg*" OR "food poli*" OR "food system plan*") was used for "food planning." I used (local* OR municip* OR communit* OR territor* OR urban OR city) to limit the results to policy studies at the local level. SCOPUS query for "food planning" group: TITLE-ABS ("food plan*" OR "food strateg*" OR "focod poli*" OR "food system plan*") OR AUTHKEY ("food plan*" OR "food strateg*" OR "food poli*" OR "food system plan*") AND TITLE-ABS (local* OR municip* OR communit* OR territor* OR urban OR city) OR AUTHKEY (local* OR municip* OR communit* OR territor* OR urban OR city) AND PUBYEAR > 1999 AND (LIMIT-TO (SUBJAREA, "SOCI")) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "re")) AND (LIMIT-TO (LANGUAGE, "English")). SCOPUS query for "land use planning" group: TITLE-ABS ("agricultur*" OR "farm*" OR "food*") OR AUTHKEY ("agricultur*" OR "farm*" OR "food*") AND TITLE-ABS ("land use plan*" OR "urban plan*") OR AUTHKEY ("land use plan*" OR "urban plan*") AND TITLE-ABS (local* OR municip* OR communit* OR territor* OR urban OR city) OR AUTHKEY (local* OR municip* OR communit* OR territor* OR urban OR city) AND PUBYEAR > 1999 AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "re")) AND (LIMIT-TO (SUBJAREA, "SOCI")) AND (LIMIT-TO (LANGUAGE, "English")).

I then screened the results based on the inclusion and exclusion criteria. I included papers that addressed planning projects (food planning, land-use planning or both) and issues related to RAA in the same study. I included studies in advanced economies by referring to the International Monetary Fund classification.²⁰ I excluded studies that focused on global- or national-level policies. I excluded studies performed from a technical perspective (e.g., archaeology, botanical issues, nutrition, water, flood, climate change, soil science, GIS, remote sensing). I excluded studies performed in a particular context such as war-time policies and those focused on a general context. I excluded papers that were only case studies in developing economies. Using these criteria for each paper, I initially reviewed the title and the abstract followed by the entire publication. I completed the collection of papers using the snowballing method, namely by searching for additional publications included in the reference lists of already identified publications.

I also added grey literature such as reports from academic associations, agencies or relevant networks not published in academic journals. Finally, I added papers from developed areas in Asia and Australia, because these two areas lacked papers for analysis after screening. I found papers using the search keywords, "name of the area", "planning" and "agriculture or food" in the SCOPUS database and Google Scholar.

2) Data Analysis

The data analysis was driven by the research questions. I initially categorised each paper into "food planning study", "land-use planning study" or "both" by adhering to the principles associated with the definitions of the planning policy type(s) as defined in the Introduction above. To answer the question as to how food and land-use planning address RAA, I identified papers on empirical planning projects. I recorded the RAA-associated interests and policy instruments of the planning projects, the case study areas and the planning types.

Regarding the question about the intersections between these two planning policies, I firstly identified whether land-use planning was mentioned in a food planning paper or vice versa; if this was the case, I noted the topic in common. Three major categories were defined after the first round of the review: access to land, collective infrastructure and farming practices. During the second round

²⁰ In the World Economic Outlook made by the International Monetary Fund, countries were divided into two groups: advanced economies and emerging and developing economies. <https://www.imf.org/external/pubs/ft/weo/2020/01/weodata/groups.htm> (Accessed 12 July 2022).

of the review, I allocated the papers to the three categories.

For the question about the governance mechanisms that facilitate coherent planning policies for RAA, I initially obtained information from papers discussing both land-use and food planning. In the first round of the review, I identified major elements that contributed to more coherent RAA planning, namely cross-sector collaboration, multi-level governance and co-governance between top-down and bottom-up processes. During the second round of the review, I included other papers that contributed to those elements and assigned them to one or more sub-categories. Appendix A (Supplementary material) provides additional details for each of the included studies.

3) Description of literature set

A total of 154 publications were reviewed (Figure I. 11). The rising curve represents the growing number of publications in recent years, thus confirming the pertinence of this review. Table I. 2 presents the classification of the reviewed publications according to the planning types. Overall, 25 publications studied both land-use and food planning, thus confirming that research explicitly addressing the link between these two planning policies is only just now emerging. Our review was primarily based on ex-post comparisons of papers dedicated to a single policy.

Figure I. 11. Reviewed publications: selection process (a) and number of publications by year (b).

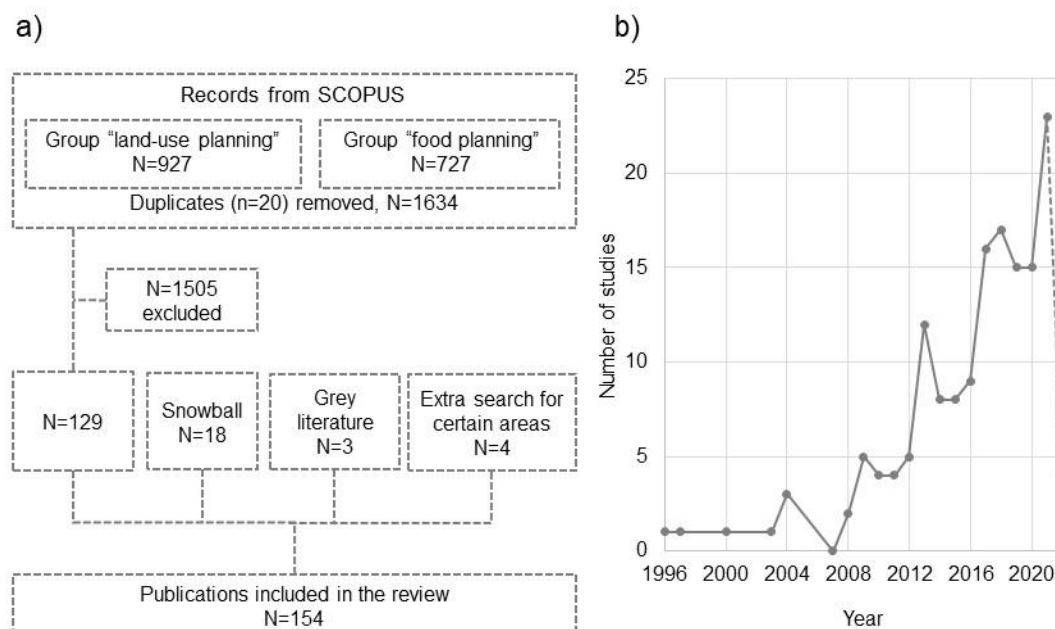


Table I. 2. Classification of the reviewed papers by studied planning types.

Studied planning types	Number of reviewed publications
Both land-use and food planning	25
Land-use planning	63 (with study/discussion on food planning: 9)
Food planning	66 (with study/discussion on land-use planning: 36)
Total	154

Results of the literature review are presented in each chapter's introduction. They facilitate identifying key issues to be addressed in each chapter and situating the French situation in a larger context.

I.6.2 Document analysis

I conducted a planning documents analysis to identify local policy goals and instruments. Land-use and food planning documents were analysed, respectively. Analytical frameworks and analysing techniques were not the same as the two planning policies are largely different. First, land-use planning has a regulated form of outputs that have to meet the requirements defined by the Planning Code (*Code de l'urbanisme*), whereas food planning has no guidelines and is decided by project leaders. Second, land-use planning documents are always long with multiple sections corresponding to different stages of planning issues, while food planning documents are relatively short. Third, land-use planning includes comprehensive territorial issues with agriculture as only a small part of the planning; in contrast, food planning focuses on agriculture and food topics. In order to facilitate reading, detailed document analysis methods are presented in chapter 1 (1.1.1 and 1.2.1) followed by the results.

I.6.3 Semi-structured interviews

1) Interviewees

I conducted semi-structured interviews with local stakeholders related to the planning projects. The central idea was to understand (1) Initiation and progress of planning project(s), (2) Characteristics, challenges, and planning strategies for RAA, (3) Associated actors and their roles in the planning project(s), (4) (Potential) interactions between land-use and food planning. Major group of interviewees were project managers of land-use and food planning projects (in most cases, civil servants). Other actors include other local civil servants, elected officials, staff in planning agencies, civil servants working in the departmental or regional scale authorities or organisations. For interviews with stakeholders working at departmental and regional scale institutions or organisations (e.g., Chamber of Agriculture, the state's service of agricultural and food (*DRAAF*)). I

asked questions related to (3) and (4) and added questions on regional characteristics. Particularly, where applicable, I contacted land-use and food planning project managers (in no case they were the same person) for one interview. This was to facilitate the understanding of links between two planning policies. When land-use and food planning is not at the same scale, I contacted the food planning project leader with his or her colleagues in charge of planning issues.

In total, 61 interviews were conducted in France²¹ and 14 interviews were conducted in the Netherlands from January 2021 to February 2022. The in-depth semi-structured interviewees lasted from 45 minutes to three hours. In-person and on-site interviewees were requested, but some were made by video-conference due to the Covid-19 pandemic restrictions. Appendix 2 contains a list of detailed information about interviews. Every interview was recorded, transcribed and coded with the qualitative analysis software Atlas.ti 9 according to the topics.

2) *Frame of interview questions*

A frame of interview questions was established to guide the semi-structured interviews. The frame was firstly defined after a first stage of document analysis, then modified and evolved along time according to the new information obtained from the interviews and the update of the actuality. The semi-structured interviews followed a frame of interview questions.

- **Progress of food planning projects**

Initiation, schedule and the evolution of the planning projects.

- **RAA-associated territorial features and challenges**

Features of agriculture of the territory.

Major problems encountered with agriculture in the territory.

RAA-associated dynamics in the territory.

- **Planning interventions and local initiatives that facilitate RAA, and the reason for the choices, on the following activities:**

Farmland preservation (in relation with the no net land take scheme (*zéro artificialisation nette, ZAN*))

Farmer's set-up,

Diversification (processing and distribution, agrotourism, etc) of agricultural activities,

²¹ Among 61 interviews in France, 23 were conducted by the author and PhD supervisors. Others were conducted by the author. Interview language was French. Fourteen interviews in the Netherlands were conducted by the author in English.

Ecological transition of farming practices (organic farming),
Establishment of collective food infrastructures (e.g., processing, distribution),
Urban agriculture (including collective food gardens), and
The use of public land and public buildings in the food projects.

- **Governance of the planning projects**

Major stakeholders' participation in the planning projects and their roles.

Food planning-associated:

Definition/understanding of "local" / "proximity."

Collaboration with neighbouring/supra-scale/infra-scale territories.

The (possible) links between the two planning projects.

- **Extra information**

Actuality: effects on planning by the electoral change and by Covid-19 pandemic.

I.7 CHAPTER OUTLINES

The manuscript is organised into four chapters corresponding to the research sub-questions. Figure I. 6 presents a chapter outline corresponding to the mobilised theories derived from the theoretical framework. Each chapter starts with a literature review²², which identifies key issues to be addressed in each chapter and situates the French situation in a larger context.

Chapter 1 presents the results of the planning documents analysis and provides an overview of the place of RAA and the relevant policy instruments mobilised in French land-use and food planning projects. Chapter 2 analyses the results of semi-structured interviews undertaken in France to reveal the links and missing links between land-use and food planning by action fields and the driving forces of the use of instruments. Chapter 3 identifies from evidence-based cases the governance mechanisms that affect RAA planning. It addresses the issue of collaboration between cross-sectoral, cross-scalar and public-private actors.

After the first three chapters focusing on French case studies, chapter 4 moves beyond the French boundary and presents a comparative analysis²³ between France and the Netherlands. This chapter depicts how national institutional settings affect local actors' interplay and the planning approaches,

²² An individual literature review was done at the first stage of the PhD. The content is separated into chapters to facilitate reading and understanding.

²³ This work is achieved based on an international exchange stay from November 2021 to January 2022 in Delft University of Technology, the Netherlands.

demonstrating the “styles” of RAA planning. Finally, in the General Conclusion, I conclude and discuss the results, by answering the research question and giving insights into future practices and research agenda.

This manuscript targets both French and international readers. I use English-translated terms. To facilitate understanding for French readers, I quote in the bracket commonly used French acronyms when referring to special terms of laws, planning-associated terms and organisations. A glossary in appendix 1 is useful to facilitate the understanding.

Planning RAA is a cross-cutting issue, referring to a wide range of disciplines. The author (I) have a bachelor's and master's training background in urban planning and a PhD training in sociology. The PhD has been under the supervision of a sociologist and an economist specialising in the institutional economy. Many researchers in other disciplines, such as geography, political science and public health, also engage in the local food system and RAA issues. In this manuscript, specific terms are explained (in the text or the footnotes) to facilitate understanding by readers from different disciplines.

Chapter 1. WHAT PLANNING INSTRUMENTS FOR THE RETERRITORIALISATION OF AGRICULTURE?

INTRODUCTION

This first chapter aims to provide an overview of the place of RAA and the relevant policy instruments mobilised in French land-use and food planning projects. It requires a better understanding of how food planning addresses RAA as it is a new type of local planning policy. Although land-use planning is a traditional type of planning policy, RAA is still a new issue and needs a thorough comprehension. I conducted a systematic document analysis to identify them.

I start by presenting an international literature review to understand what is happening in the world. Such a review helps to identify existing methods and research gaps. It also provides a reference frame to understand the following empirical research. Then I present the methods and results of document analysis of land-use and food planning projects, respectively. I conclude by comparing the two planning policies.

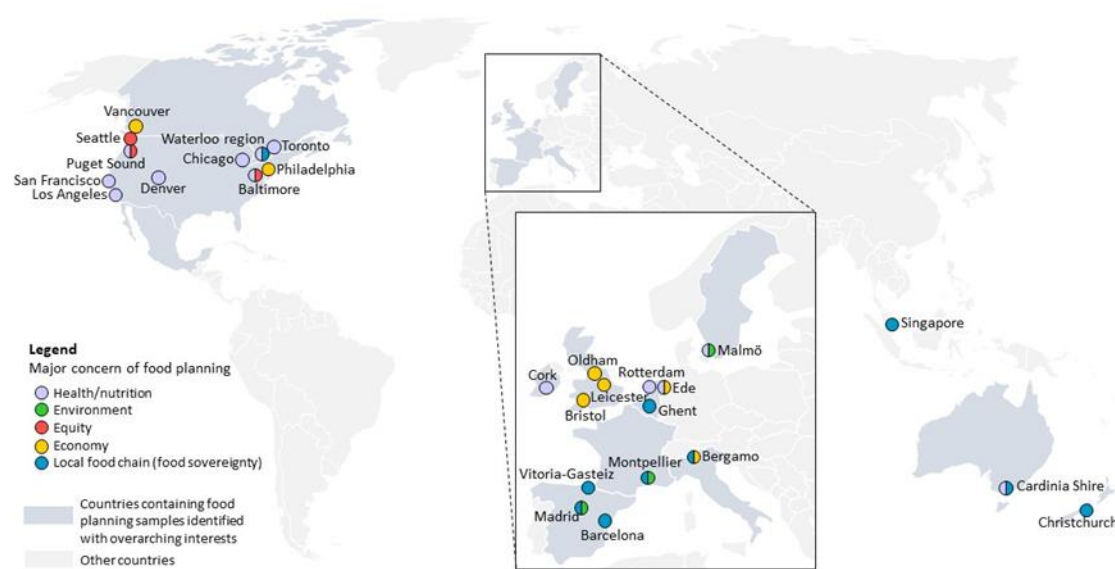
A state-of-the-art

RAA refers to different types of activities: professional farming in rural and peri-urban areas, alternative forms of urban agriculture within the built-up environment as well as food processing and trade activities. As shown in the international literature, planning projects rarely consider all the activities included in RAA in the real world. Here drawn from the literature, I present the shared and divergent interests between land-use and food planning as well as the complementary policy instruments that they mobilise. They are based on the findings of the literature on planning projects.

1) Shared and Divergent Interests

The literature shows that food planning projects generally aim to achieve various goals (i.e., food justice, health, environment, economic development and food sovereignty) through similar RAA-associated activities: local agriculture (food production) and local food provision (linking production and consumers) (Sonnino & Spayde, 2014; Ilieva, 2017; Filippini et al., 2019; Candel, 2020). However, food planning projects with comprehensive goals may have different main interests (Sonnino & Spayde, 2014; Moragues-Faus & Carroll, 2018), which influence the RAA focal points. Figure 1. 1 depicts the distribution of the overarching interests of food planning based on the empirical findings of the reviewed literature.

Figure 1. 1 Review: distribution of the overarching interests of food planning.



Note. Author based on the reviewed literature.

Empirical studies from the reviewed literature show that food planning projects in North America tend to focus on health and equity (e.g., Santo et al., 2014; Horst, 2017; Jablonski et al., 2019; Candel, 2020; Cohen & Ilieva, 2020). Researchers argued that this focus comes from the profound impact of the food justice movement on society (Vitiello & Brinkley, 2014; Pothukuchi, 2015; Prové et al., 2019; Cohen & Ilieva, 2020). The focal point of RAA in North America's food planning is urban agriculture and urban food distribution, which increase food access and build a healthy and more equitable environment (Bedore, 2014; Horst, 2017; Valley & Wittman, 2019; Prové et al., 2019; Candel, 2020).

In contrast with food planning projects in North America, projects in Europe tend to emphasise the environmental and economic performance of local supply chains (e.g., Crivits et al., 2016; Prové et al., 2019; Candel, 2020; Giambartolomei et al., 2021; Zerbian & de Luis Romero, 2021). The climate change policy framework and the European Common Agricultural Policy, which emphasises endogenous economic development, can partly explain this emphasis (Prové et al., 2019). Food planning in Europe focuses on professional agriculture, as it engages with issues of farmland preservation, environmental protection and regional development at a larger scale than non-professional urban agriculture (Filippini et al., 2019; Prové et al., 2019). More specifically, food planning in Southern Europe tends to explicitly emphasise RAA and to highlight local food provision and the associated issues of agroecology, high-value products and agritourism (Candel, 2020; Perrin & Baysse-Lainé, 2020; Giambartolomei et al., 2021; Zerbian & De Luis Romero, 2021). These areas are characterised by the rather embedded culture of quality food products and a less de-territorialised food system (Calori et al., 2017; Ilieva, 2017).

Similar to Southern Europe, food planning projects in the distinct contexts of the island countries of Singapore, Australia and New Zealand place a direct emphasis on RAA. They aim to improve local food supplies to cope with the uncertainties triggered by natural and economic crises and thus reinforce resilience (Haylock & Connelly, 2018; Diehl et al., 2020; Lourival & Rose, 2020).

According to the literature, land-use planning projects show comparatively fewer regional features than food planning projects with RAA. Land-use planning involves RAA mainly from farmland preservation and urban agriculture perspectives. Land-use planning typically aims to preserve farmland to contain urban sprawl and guarantee land for food production (Alterman 1997; Vitiello and Brinkley 2014). However, some researchers (Brinkley, 2013; James & O'Neill, 2016; Perrin et al., 2020) criticised the predominant focus of land-use planning on farmland quantity; farmland quality and the construction needs of farming activities are always neglected. Recent studies have shown that land-use planning in certain areas has now begun to recognise and emphasise RAA in the form of the multifunctionality of farmland and the diversification of agricultural activities (Camaioni et al., 2016; Scheromm et al., 2019). However, Gulinck and colleagues (2018, p. 5) argued that farmland preservation implemented via land-use planning is still "urban-biased", since local food production as a "rural" function may give way to other farmland preservation priorities such as nature conservation, energy production, landscape, recreation, municipality branding and cultural functions (Perrin, 2013; Brinkley, 2013; Olsson et al., 2016; Tedesco et al., 2017; Gulinck et al., 2018; Perrin et al., 2020). Consequently, some farmland may be protected, but the protected land may be used for recreational purposes such as equestrian activities instead for farming (Perrin, 2013; Olsson et al., 2016; James & O'Neill, 2016).

The multifunctionality of urban agriculture has attracted increasing attention from land-use planning projects in terms of addressing various issues: tackling food insecurity, increasing self-sufficiency, creating a healthy environment, increasing social inclusion and promoting economic development (Mason & Knowd, 2010; Lovell, 2010; Hodgson et al., 2011, pp. 20–21; Thompson & Kent, 2016; Meenar et al., 2017; Coppola, 2019; Dias & Marat-Mendes, 2021). Hence, while land-use planning projects address the production activities of farmland preservation and urban agriculture, they often neglect local food provision activities, which are another component of RAA (i.e., transportation and distribution facilities for locally produced food) (Desjardins et al., 2011; Brinkley, 2013; Edmonds & Carsjens, 2021).

2) Complementary Policy Instruments

Studies on food planning projects demonstrate that they can leverage diverse policy instruments to improve RAA. Such policy instruments either facilitate

local food production or connect local production and consumption. Food planning projects leverage land management instruments to facilitate local food production. Some projects refer to land-use regulations in the context of preserving farmland or removing barriers to urban agriculture (e.g., Cretella & Buenger, 2016; Horst, 2017; Michel & Soulard, 2019; Candel, 2020; Diehl et al., 2020; Mattioni et al., 2022). Several food planning projects intervene in the land market to foster RAA. For example, some local governments (or governments with partners) make publicly owned land and/or buildings available to farmers or community food gardeners (e.g., Mansfield & Mendes, 2013; Horst, 2017; Perrin & Baysse-Lainé, 2020; Resler & Hagolani-Albov, 2021; Vara-Sánchez et al., 2021). Several studies show that other land-associated instruments are leveraged by certain food planning projects such as working with land banks to allocate land to local farming or modifying land lease terms (Prové et al., 2019; Diehl et al., 2020; Vara-Sánchez et al., 2021). Food planning projects may also develop instruments that go beyond land management such as economic incentives to encourage farming (i.e., direct investments and awards, grants and direct or indirect subsidies for farming activities) (e.g., Cretella & Buenger, 2016; Horst, 2017; Filippini et al., 2019; Candel, 2020; Morley & Morgan, 2021).

Sonnino et al. (2019) identified two major interventions to connect local food production and consumption: “physical instruments” (e.g., farmers’ markets, processing centres, wholesale markets) and “invisible instruments” (i.e., public procurement). Farmers’ markets are a type of physical infrastructure frequently emphasised in food planning projects. For example, local governments create dedicated locations, modify planning regulations, set rules and requirements and remove administrative barriers for farmers’ markets (Sonnino & Spayde, 2014; Candel, 2020; Vara-Sánchez et al., 2021). Some food planning projects support other forms of physical infrastructure such as local processing industries, wholesale markets and food hubs that connect local producers (Blay-Palmer, 2009; Morgan & Sonnino, 2010; Mansfield & Mendes, 2013; Sonnino & Spayde, 2014; Candel, 2020). Public procurement, an “invisible infrastructure”, helps connect producers and consumers via massive purchasing power. For example, several food planning projects leverage municipalities and school canteens to purchase from local farmers, sometimes including a certain percentage of organic food as a requirement (Morgan & Sonnino, 2010; Sonnino & Spayde, 2014; Filippini et al., 2019; Michel & Soulard, 2019; Tefft et al., 2020; Cohen & Ilieva, 2020). Although food infrastructure has been included in several food planning projects, it has nevertheless been identified by many scholars as the “missing middle” that still requires greater attention in food planning projects (Donald, 2008; Moragues-Faus & Marsden, 2017; Sonnino et al., 2019; Sibbing et al., 2019; Candel, 2020; Clark et al., 2020).

Other than the instruments described above, numerous studies show that food planning projects generally facilitate RAA by providing information and

communication services. These services include giving farmers information and technical advice about land access and farm operations, making inventories of potential land for farming, organising networks among farmers, processors and customers as well as labelling local products (e.g., Mansfield & Mendes, 2013; Moragues-Faus et al., 2013; Cretella & Buenger, 2016; Filippini et al., 2019; Candel, 2020). A comparative study shows that these informational instruments, which are non-regulatory, are more prevalent in food plans (Candel, 2020). Overall, food planning as a new type of planning is mostly strategic. It mobilises diverse instruments that are mainly non-regulatory.

Unlike food planning, land-use planning is based on territorial strategies and involves regulatory instruments. Land-use planning usually preserves farmland via the delineation of agricultural zones with regulations governing constructions and establishing urban-rural limits (e.g., urban growth boundaries, greenbelt buffers) (e.g., Alterman, 1997; Daniels, 2000; Wegener et al., 2012; Lazzarini, 2018; Perrin & Nougaredes, 2020; Daniels, 2020; Han et al., 2022). There are two major criticisms of these farmland preservation instruments. The first is that strict regulations alone can guarantee neither the preservation of farmland nor the development of agricultural activities (Paül & McKenzie, 2013; McFarland, 2015; Abrantes et al., 2016; Spataru et al., 2020; Diehl, 2020), since land-use regulation decisions depend on changes over time under local political pressure (Lenihan et al., 2009; Perrin et al., 2018; Horst & Gwin, 2018; Skog, 2018; Scheromm et al., 2019; Perrin et al., 2020). The second criticism relates to the diversification of agricultural activities, which requires on-farm constructions such as on-farm sales and agritourism. Studies show that mono-functional land use and inflexibility (e.g., strong restrictions on mixed-use development in agricultural zones) are likely to hinder these activities (Nichol, 2003; Perrin, 2013; Brinkley, 2013; Korthals Altes & Van Rij, 2013; Horst & Gwin, 2018; Perrin & Nougaredes, 2020).

Concerning the issue of multifunctionality, the literature shows that land-use planning has been gradually adapted to be compatible with urban agriculture, which has been hindered by mono-functional land-use zoning and overly strict urban controls (Tornaghi, 2012; Koopmans et al., 2017; Marat-Mendes, Borges, et al., 2021). Some cities integrate urban agriculture into land-use planning by creating new zoning categories, delimiting new dedicated districts with incentives and permitting agriculture in urban function zones (Hodgson et al., 2011; Thibert, 2012; Huang & Drescher, 2015; Thompson & Kent, 2016; Siegner et al., 2018; Coppola, 2019; Corkery et al., 2021). Some cities elaborate regulations and guidelines to regulate land use (e.g., withdrawal distances, community garden building heights, backyard animal requirements) (McClintock et al., 2014; Meenar et al., 2017; Halvey et al., 2020; Dias & Marat-Mendes, 2021). Evidence also shows that regulations can be adapted to encourage urban farming in the private sector by, for example, supporting roof

farms via an exemption of gross floor area ratios (Diehl et al., 2020) or creating rules for residents to dedicate a certain percentage of their gardens to food production (Van der Gaast et al., 2020; Jansma & Wertheim-Heck, 2021). The process of adapting land-use planning to urban agriculture is not homogenous, with some studies even claiming that it inadequately incorporates urban agriculture and still hinders its development (Gerster-Bentaya, 2013; Halloran & Magid, 2013; Koopmans et al., 2017; Klimas & Lideika, 2018; Gómez-Villarino & Ruiz-Garcia, 2020; Hanna & Wallace, 2021). To sum up, land-use planning uses regulatory instruments to manage agricultural activities. These instruments need to adapt to the needs of RAA for a range of diverse activities, with new attempts occurring in urban agriculture within cities.

Overall, the literature review provides a general overview of the place of RAA and instruments mobilised in land-use and food planning. Regarding food planning, it shows highly diverse situations of food planning across the world, represented by different focuses on RAA and corresponding mobilised instruments. A systematic analysis of French food planning is not yet made, which further confirms the necessity of this chapter's work. Regarding land-use planning, the literature mainly shows research on recognising the multifunctionality of RAA in urban areas, representing that agriculture may regain its place in land-use planning. However, there is no comprehensive understanding of what types of instruments land-use planning can be mobilised for RAA.

Moreover, the literature shows that land-use and food planning integration has not yet been addressed with a policy instruments dimension. Therefore, in this chapter, I performed document analyses of land-use and food planning to understand the place of RAA and policy instruments mobilised thoroughly. Based on that, I specifically focus on comparing the goals and instruments of the two planning policies.

1.1 LAND-USE PLANNING: ADAPTED INSTRUMENTS WITHIN A REGULATORY FRAMEWORK

This first sub-chapter aims to identify how local authorities address agricultural activities in land-use planning projects in France by presenting the policy outputs in land-use planning documents. To do so, I analysed land-use planning documents to present an overview of RAA-associated objectives (as policy goals) and regulations (as policy instruments) (Howlett & Giest, 2012). Such an analysis allows for providing a comprehensive panorama of the planning approaches taken in the territories. I first introduce the methods and dataset, then present the results of policy goals and instruments.

1.1.1 Description of the dataset and analysis methods

1) Land-use planning projects distribution and progress

Figure 1. 2 shows examined land-use planning projects in Normandy and Occitania in this thesis project. Land-use planning projects were not in the same progress: some land-use planning projects were approved, some were not but had finished all the technical work, some had formulated general strategies, but the zoning plan and written regulations were not finished, some were just in the phase of territorial diagnosis or formulating strategies and some just launched the project without any technical work done. Figure 1. 3 presents a general procedure of land-use planning elaboration. This section presents an analysis based on available documents (pink and blue in Figure 1. 2).

Available land-use planning documents had different states of progress. According to the Planning Code, a full finished land-use planning projects must consist of five parts: overview report (*rapport de présentation*), strategic project (*PADD, projet d'aménagement et de développement durable*), design guidelines (*OAPs, orientations d'aménagement et de programmation*), planning regulations as exposed in by-laws (*règlement*) and appendix (*annexes*). Table 1. 1 presents studied land-use planning documents.

Table 1. 1. Numbers of studied land-use planning projects by region and by available document type.

Region	Normandy	Occitania	Total	Corresponding progress
Documents with strategic project	24	36	60	Territorial analysis and strategies defined; regulations not finished.
Documents with regulations	18	27	45	Approved or with all technical work finished but waiting for approval.

Note. The collection of land-use planning projects was made in September 2020 and updated in September 2021. Available documents were finally updated in September 2022.

Figure 1. 2. Studied land-use planning projects by progress.

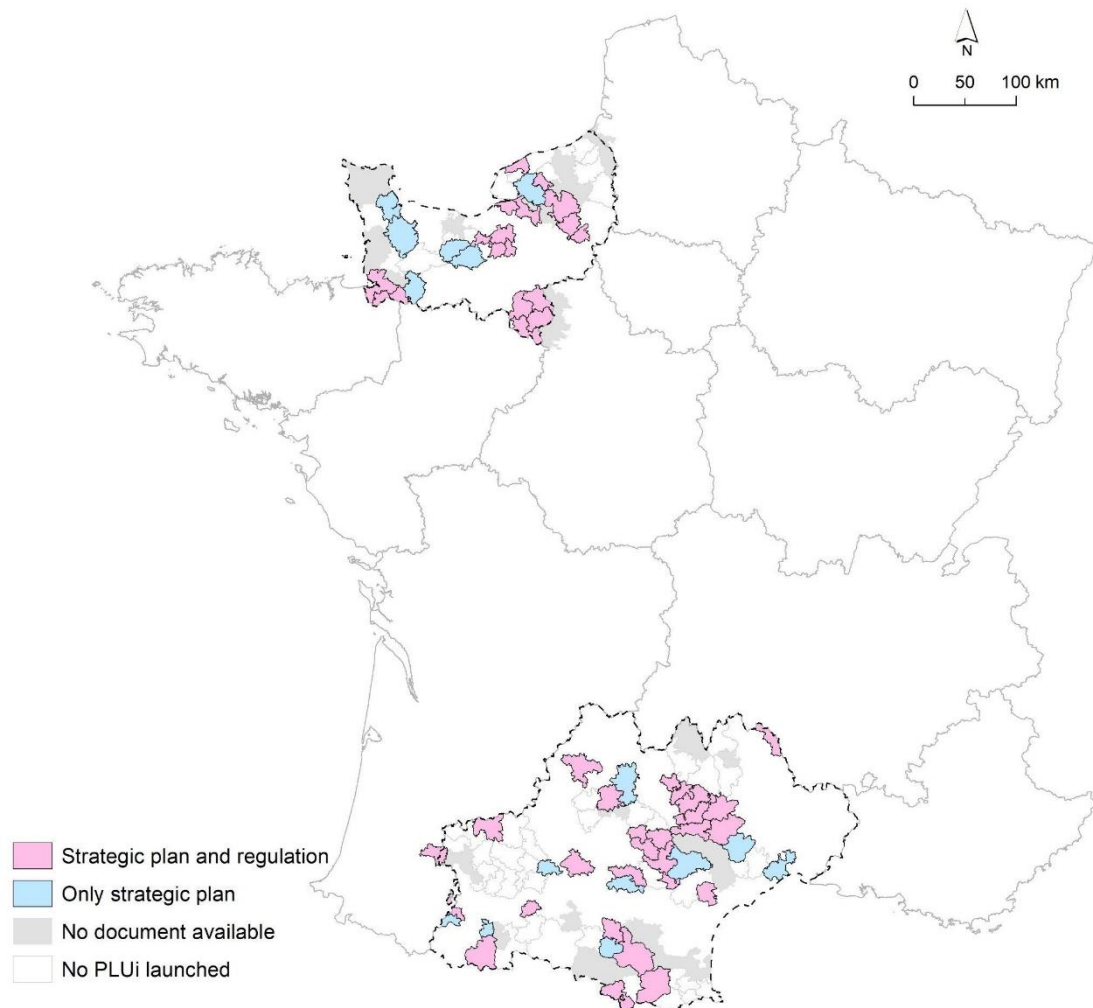
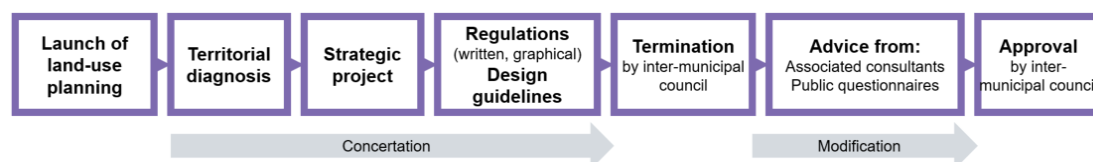


Figure 1. 3. Procedure of land-use planning elaboration.

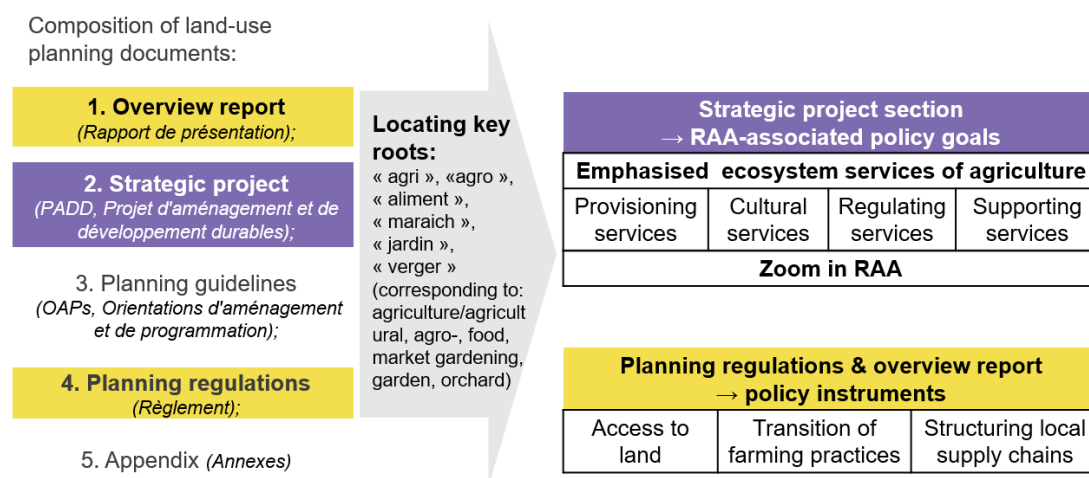


2) Analytical framework

The document analysis of land-use plans aimed to identify the main RAA-associated objectives and the applied planning regulations (i.e., policy instruments). In the targeted sections of documents, I applied the method developed to analyse land-use planning documents by locating keywords (Scheromm et al., 2019). Such method allowed gaining efficiency as the documents are very thick and contain numerous non-agricultural associated

issues. I searched for the word roots “agr”, “aliment”, “jardin”, “maraich” and “verger” in the text of each document as indicating words related to agriculture in French (“agriculture” - agriculture, “agricole”- agricultural, “alimentation” - food, “maraîchage/maraîcher”-market gardening, “jardin”- garden and “verger”-orchard). Word roots associated with “livestock” were not searched because they were always with the text found by searching “agriculture.” This search enabled to highlighting of excerpts from documents to be analysed in more detail. In the analysis, the quantified goal of farmland preservation was not considered as it is a compulsory component in all land-use planning projects. Figure 1. 4 shows the analytical framework.

Figure 1. 4. Analytical framework of land-use planning document analysis.



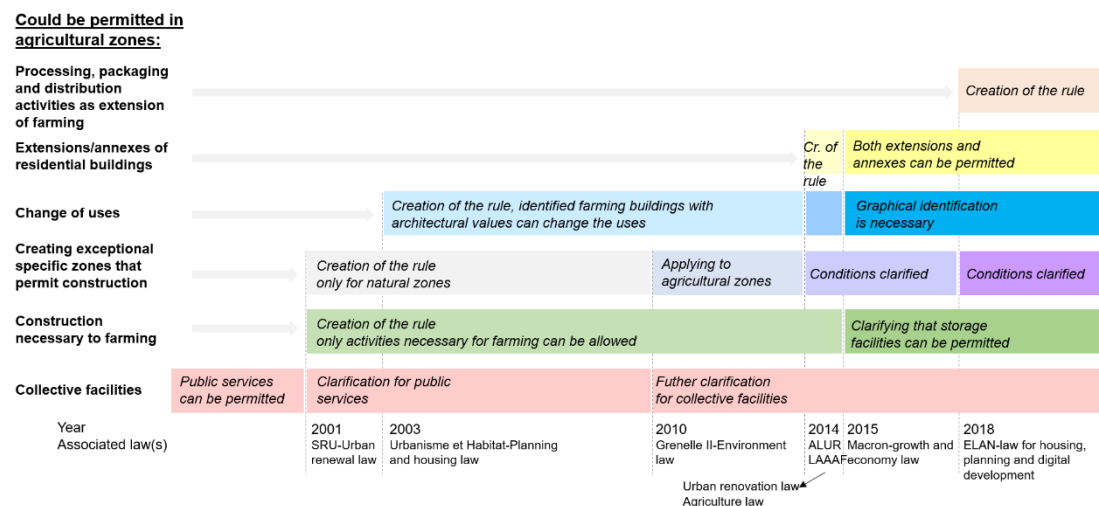
To identify **the place of RAA** in land-use planning, the analysis focused on the strategic project section (*PADD*) by extracting the text. I interpreted the (sub) headings of the strategic projects as planning goals, which could represent the place of a certain topic in the planning. The original intention was to identify what contents of RAA were in the (sub) headings. However, through a first turn of the documents overview, I identified that the (sub) headings were usually not detailed in RAA but were more general descriptions of agricultural orientations. This was because land-use planning as territorial planning contained numerous issues, among which agriculture is only a small component and within which RAA is only mentioned in the text but not emphasised as a goal. Therefore, this analysis of strategic projects was conducted in two steps: first, I analysed the most valued function of agriculture from (sub) headings, and second, I zoomed in on RAA activities to identify what activities were involved in strategic projects.

First, to identify the most valued functions of agricultural activities, I departed from the multifunctionality of agriculture. Four categories were made by applying the concept and classification of ecosystem services (Millennium Ecosystem Assessment, 2005): 1) provisioning services which include food provision, employment and local economy, 2) cultural services which link to

landscape and heritage regarding the aesthetic aspect of agriculture, 3) regulating services which have a consideration on water and soil quality, climate change, and anti-crises, and 4) supporting services which relate to the continuous ecological corridors. I evaluated that a certain function was essential in planning goals if the excerpt corresponded to sections or subsections titles. Second, with a zoom-in on RAA, the subcategories have been made related to the concrete activities (e.g., food processing, local sale, agri-tourism).

To identify the applied **planning regulations** for RAA, I focused on the part of planning regulations (*Règlement*) and the overview report that explains the choice of regulations (*Rapport de présentation*). The same keywords used in strategic project part were applied in regulation part to locate the texts. A thorough analysis of written regulations (*Règlement écrit*) was made by such an approach, complemented by adding explanatory information from the overview report and visual comprehension from the graphical regulations (zoning plan). The identified regulations (as policy instruments) were categorised by the action fields identified in the general introduction (1.3): farmland preservation and land access, transition of farming practices and structuring local supply chains. It is worth noting that statements in regulations and overview reports might not be coherent due to technical errors during planning document formulation. In such cases, I adopted the statements in planning regulations.

Figure 1. 5. Six major types of construction that can be permitted in agricultural zones.



Note. Based on the Planning Code (Code de l'urbanisme).

Land-use planning has to follow the rules defined by the Planning Code. I identified RAA-associated rules on construction activities from the Planning Code (Figure 1. 5). When there are legal rules, local actors may mobilise them, decide not to mobilise them or interpret them in a specific way (Blankenburg, 1994). Therefore, legal rules and local implementation can differ (Gerber, Hengstermann, et al., 2018). So, the major task of the planning instruments analysis was to identify how local planning authorities strategically mobilised

the legal rules given by the Planning Code in developing land-use planning projects.

1.1.2 Place of RAA in land-use planning strategic goals

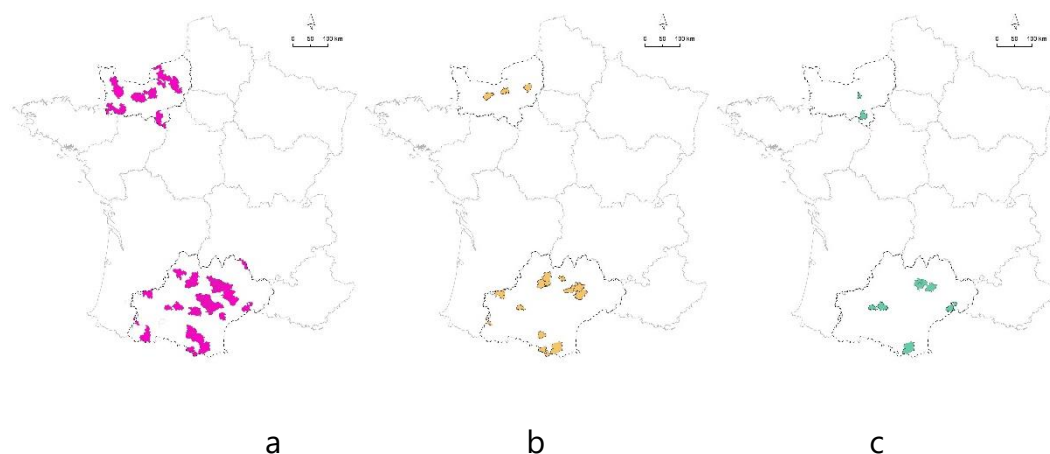
This section presents the results of the document analysis of land-use planning strategic projects, which reveal the place of RAA. I first present the most valued agricultural functions among its multifunctions. Then I demonstrate the involved RAA activities.

1) Valued agricultural functions in planning goals

The valued agricultural function was assessed by using ecosystem services classification. Figure 1. 6 shows that the provisioning services were the most emphasised function, with 85% of the documents mentioning them in the section or sub-section headings. Agriculture was emphasised for its function that contributes to local economic development and employment. For example, one goal of inter-municipal body Thoré Montagne Noire (strategic project, p. 10²⁴) was *"to compose and promote a sustainable economic development of the territory by supporting agricultural activity and tourism."* This was followed by the cultural services: 25% of the documents addressed agriculture as a landscape and heritage component. It might be connected to the fact that planning has an approach integrating spatial and esthetic dimensions of the resource management.

Figure 1. 6. Emphasised ecosystem services of agricultural activities in strategic projects.

a) provisioning, b) cultural, c) supporting and/or regulating services.



By contrast, only 16.67% of documents underlined agriculture as supportive

²⁴ Source: the quotes in chapter 1.1 were from land-use planning documents of the inter-municipal body. These documents were obtained from Geoportail or inter-municipal bodies' official websites.

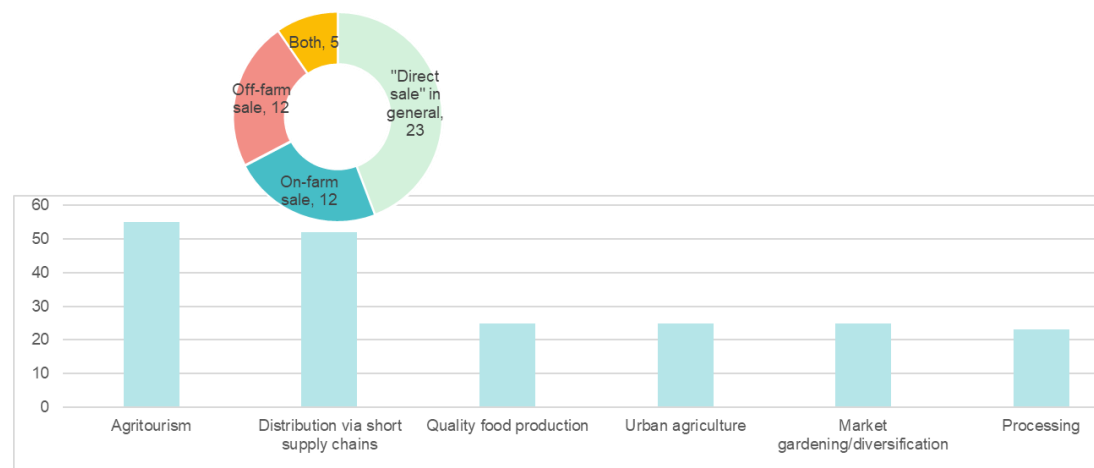
service which corresponds to the ecological corridors and/or as regulating service, emphasising the conflicts between agricultural activities and the residential areas or the agricultural activities and the water quality. For example, a land-use planning project defined its main goal: *"the valley network, agriculture and natural spaces as the foundation of the Pays d'Auge"* (inter-municipal body Pays d'Auge, strategic project, p. 23). Such results revealed that land-use planning largely emphasised the "core" agricultural function related to food production and as an economic activity, whereas landscape, heritage and conservation functions were not systematically connected to agriculture.

2) Zoom-in: RAA-associated activities in strategic projects

When zooming in on the provisioning services of agriculture, I identified the specific RAA-associated activities involved in the strategic projects (PADD). Figure 1. 7 presents the overview of the involved activities. Some activities were widespread, whereas others were emerging and less addressed. Agritourism and distribution through short supply chains were the most highlighted ($n=55$, 91.7% and $n=52$, 86.7%, respectively). Three other activities, i.e., improving quality food production (including organic food), urban agriculture (mainly in the forms of food gardens) and market gardening or general diversifying products, were addressed respectively by 25 land-use planning projects (41.7%). Processing activities were slightly less addressed ($n=23$, 38.3%). In effect, land-use planning projects often address several issues to achieve its general goal of economic development and employment maintenance, for example: *"Encourage and facilitate diversification projects for farms and specific productions: allow the development of activities around green tourism, based on the rich resources of the agricultural sector (rural cottages, on-farm cottages, stopover cottages, eco-cottages, bed and breakfasts, etc.); develop "short supply chains" and in proximity and allow the development of activities linked to production and processing - sale"* (inter-municipal body Ténarèze, strategic project, pp. 15-16).

Regarding distribution via short supply chains, Figure 1. 7 shows that most strategic projects (PADD) generally described encouraging the development of direct sales ($n=23$). By contrast, other documents clarified the type of short supply chain distribution activities to develop. Some documents clarified the on-farm direct sales ($n=12$), and some others emphasised the creation of producers' shops or farmers' markets ($n=12$). Only a few cases addressed both on-farm and off-farm sales ($n=5$), for example, *"promotion of short supply chains (on-farm sales, local markets, et cetera.)"* (inter-municipal body Pyrénées Audoises, strategic project, p28). Although not frequently involved, direct sales via collective or private catering (counted into off-farm sale) was also engaged in seven strategic project documents, for example: *"to strengthen and encourage the creation businesses that promote local products and know-how: [...] restaurants using local products"* (inter-municipal body Mortagne au Perch, strategic project, p. 25).

Figure 1. 7. Number of strategic projects mentioning RAA by theme.



Note. Local food production was not involved because it was engaged in the compulsory issue of farmland preservation.

More than integrating concrete activities of RAA, some land-use planning strategic projects (*PADD*) mentioned their direct link to food planning. Totally eight strategic plans (13.3%) directly mentioned the integration of food planning, for example: “*Saint-Lô is already involved in the development of strategic documents such as [...] the food planning [...] the land-use planning project allows to do a synthesis and to translate them into regulations*” (inter-municipal body Saint-Lô, strategic project, 2019, p. 7). Such integration in strategic projects showed a direct political willingness to integrate land-use and food planning.

In synthesis, the analysis of the most valued functions of agriculture in land-use planning projects showed that agriculture’s provisioning services (economic development, food production, local employment) had a leading place. The multifunctionality of agriculture seems not sufficiently addressed in terms of heritage and landscape, ecological and environmental functions.

RAA-associated activities, though not directly emphasised as goals, constituted a component of provisioning services in land-use planning projects strategic projects. Their presence showed that farming activities, rather than solely farmland quantity, started to draw attention to land-use planning. Diversification activities of food production, processing, direct sales, and especially agritourism, were recognised by territories in their strategic projects. Other issues associated with urban agriculture, product diversification and quality food production were also addressed. This finding resonates with the previous studies’ results, showing that land-use planning in certain areas has now begun to recognise and emphasise RAA in the form of the multifunctionality of farmland and the diversification of agricultural activities (Camaioni et al., 2016; Scheromm et al., 2019). However, the extent to which these goals and ambitions emphasised by strategic plans can be achieved largely depends on the policy instruments applied.

1.1.3 RAA-associated planning regulations

This section presents the results of RAA-associated regulations (policy instruments) applied in land-use planning based on document analysis of regulations and overview reports. Other than the general and compulsory instrument of creating agricultural zones to protect farmland, Figure 1. 8 shows a series of regulations adopted in case study projects. They were ranked by the action fields (see General Introduction I.3), namely preserving farmland (instruments on preserved agricultural zones and urban agriculture), transition of farming activities (instruments on market gardening) and structuring short supply chains (instruments on agritourism, processing and commerce). Such a classification allowed a detailed understanding of RAA-associated issues. It was also applied in analysis of food planning, thus enabling a comparison between two types of planning policies.

Figure 1. 8. Number of land-use plans using instruments for RAA by theme.

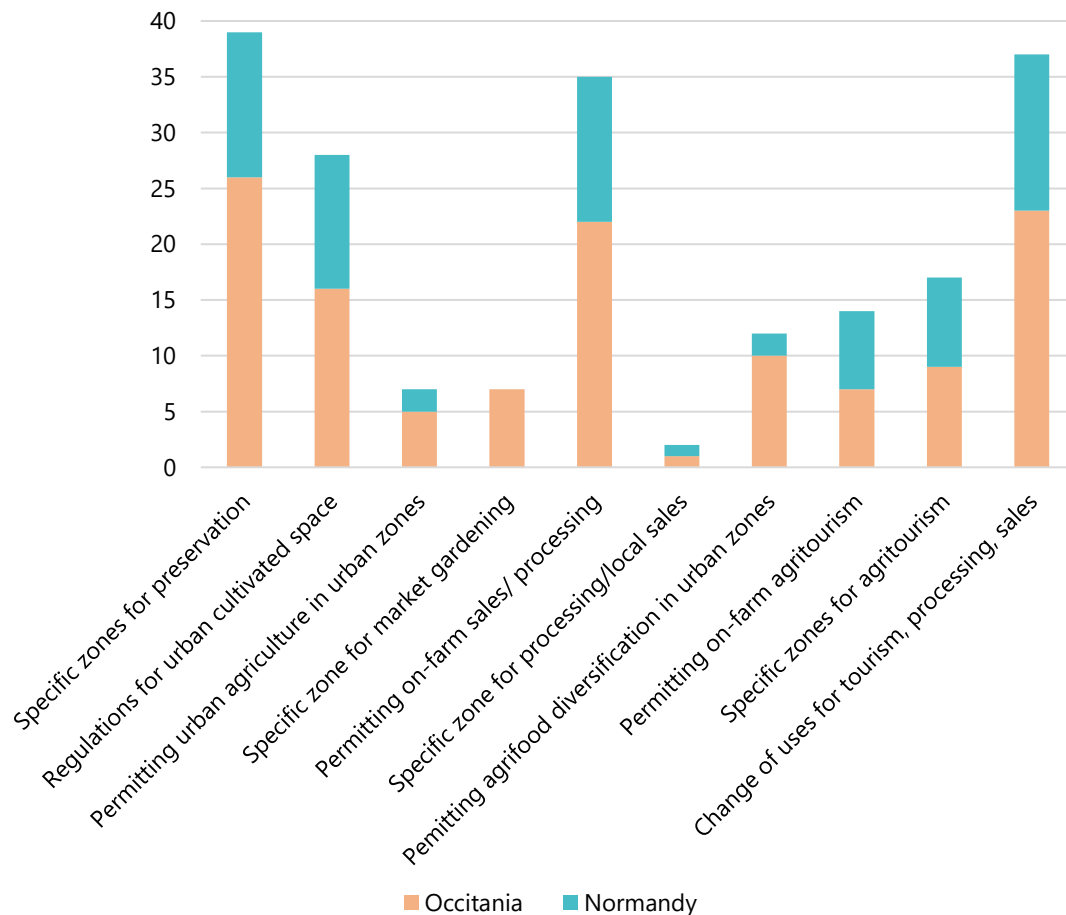


Figure 1. 8 shows a contrasting picture of regulation practices; some were widely applied by territories, whereas others were rarely present, for which I provide a detailed analysis in the following.

1) Farmland preservation and access to land

Preserving farmland via agricultural zones is the principal instrument defined by the Planning Code (L. 121-1). By applying rules for construction possibilities, agricultural zones aim to help preserve farmland from urbanisation as well as give possibilities for producers to access land. Other than this general instrument, I identified two specified instruments that facilitate farmland preservation and land access. In agricultural areas, it is about delimitating agricultural areas with stricter regulations; in urbanised areas, it is about preserving food-associated spaces.

Preserving specific agricultural areas with stricter regulations

A large amount of land-use planning projects created **specific agricultural zones with more elaborated rules than regular agricultural zones** (Figure 1. 9; $n=39$, 86.7%). Rules for construction in these zones are usually stricter than in general agricultural zones. Some regulations are very strict by forbidding any construction even related to farming activities (dark yellow on the map, $n=10$, 22.2%). Some others are less strict with permission for extensions and annexes of existing buildings (orange-yellow on the map, $n=20$, 44.4%). And the rest cases are with softer rules, setting more conditions than regular agricultural zones for giving permits to constructions (light yellow on the map, $n=9$, 20.0). For example, when general agricultural zones permitted *"buildings, installations and developments directly necessary for agricultural activity"*, protected specific zones also permitted them, but with the added condition of the proximity to existing buildings: *"Buildings, developments and installations that are essential for agricultural activities provided that they are located within a radius of 100 metres at any point of one of the buildings forming the agricultural farm"* (Inter-municipal body Yvetot Normandie, regulations, p. 107).

According to the explanation of planning documents, these specific zones were created for (one or several of the) three major types of reasons: 1) protecting farmland with strong ecological and environmental features, for example, *"where strong environmental issues have been identified or areas affected by flood risks"* (inter-municipal body Centre Tarn, overview report, p. 56); 2) protecting farmland for landscape and heritage reasons, for example, to protect *"a certain landscape interest, particularly in terms of preserving views and integrating buildings"* (inter-municipal body Yvetot Normandie, overview report, p. 93) and 3) protecting farmland in the proximity to urban areas which are threatened by urban sprawl.

It is worth noting that the creation of specific zones for preservation might be a local strategy to achieve goals other than farmland preservation. A previous study in Paris region shows that municipalities are not concerned with farmland preservation; instead, they wish to avoid disturbances between farming

activities and residence and fear the conversion from farming buildings to second homes (Cabaret, 2015). Studied cases in this research show that strict preservation zones could also be a strategy to facilitate future urban development. Figure 1. 10 presents an example of strictly protected zones created for farmland in the proximity of the built environment. The protected zones were between urbanised areas and agricultural or natural spaces and were small in size. The overview report provided the argument that such zones could also be for future urban development. So, restricting buildings were rather for facilitating future development than favour farming.

Figure 1. 9. Territories applying specific agricultural zones for preservation in land-use plan.

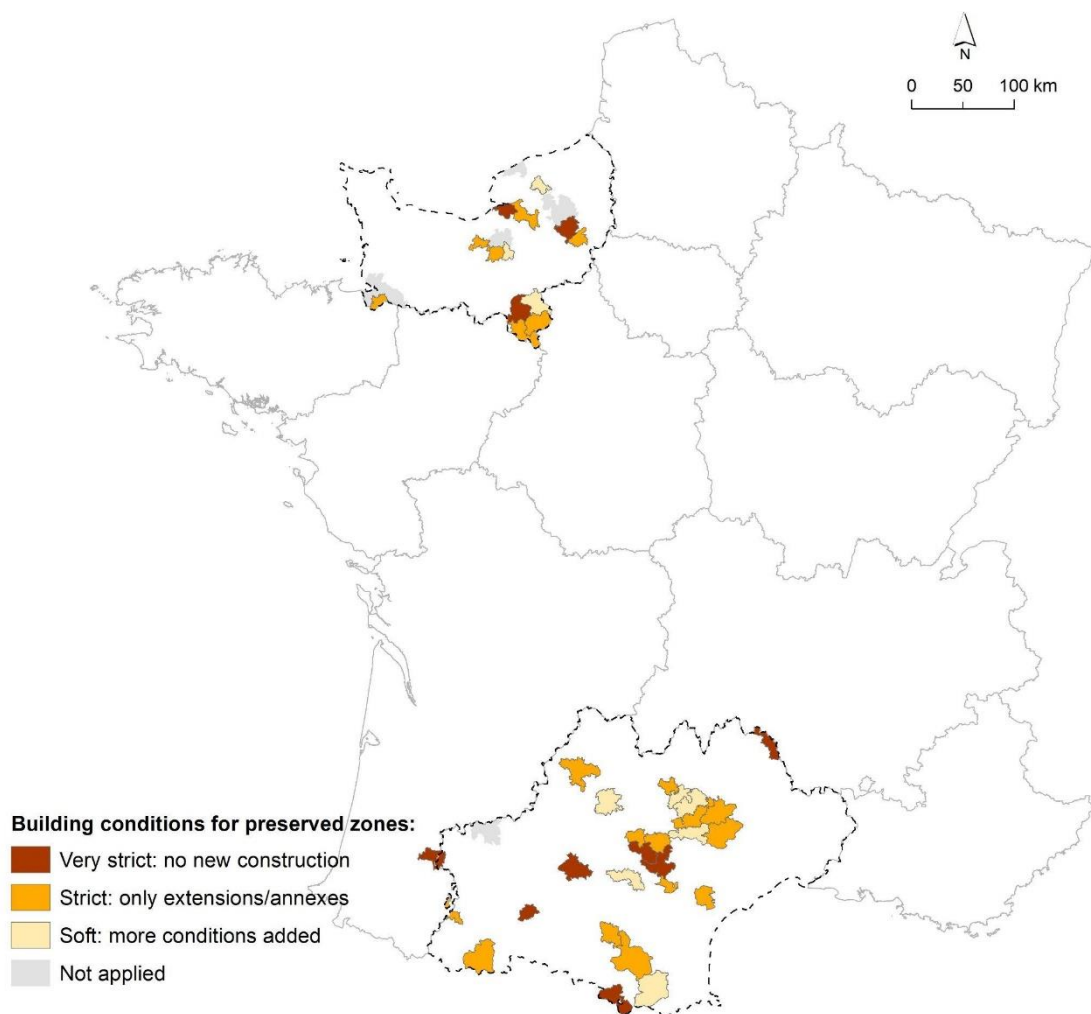
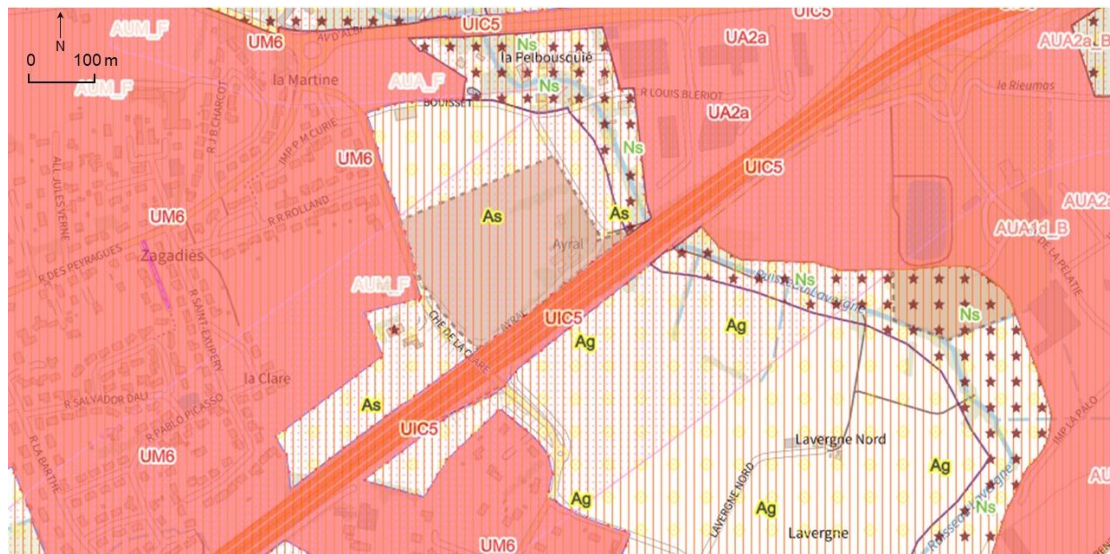


Figure 1. 10. Example of specific zones for preservation that protect farmland in proximity to built areas.



Note. Rules applied to the specific zone As are stricter than Ag (general agricultural zones in which necessary construction for agricultural activities is permitted). From www.geoportail-urbanisme.gouv.fr, accessed 7 October 2022, inter-municipal body Grand Albigeoise, land-use plan: zoning regulations.

The zones As, called strict agricultural zones (204 hectares), identify sectors where new construction is prohibited in principle except for exceptions mentioned in the regulations. Depending on the situation, these areas can act as buffer zones for longer-term urban development. (inter-municipal body Grand Albigeoise, overview report, p. 467)

Authorising agriculture in the urban areas

Urban agriculture is in the form of food gardens, orchards or professional farms in the urban centre or urban fringe in the land-use planning projects. Regulations identified contain two major types: preserving cultivated space in urban zones (Figure 1. 11, filled with colours) and authorising agriculture in urban areas (Figure 1. 11, with slash or outline). Territories that applied at least one urban agriculture-associated regulation account for the vast majority of the sample, including both urban and rural territories.

A large proportion (62.2%) of the land-use planning projects adopted **regulations to preserve cultivated space (e.g., food gardens, orchards)**. Two major types of instruments were applied. One was the creation of specific zones for gardens, by clarifying that these are for food gardens (*jardins familiaux, jardins partagés, jardins cultivés* in French) ($n=18$, 40.0%). For example, "The area of the Nj sub-zone, with gardens, meadows and family orchards to be preserved, corresponds to the spaces used for this type of use, generally in proximity to urban areas." (inter-municipal body Millau Grands Causses, overview report, p. 215). In such zones, small-scale shelters were usually permitted. Another

instrument was setting the easement²⁵ (*servitude*) for ecological or landscape reasons to protect food gardens or orchards ($n=10$, 22.2%). The creation of this easement is based on article L. 151-23²⁶ of the Planning Code, which aims to protect urban cultivated land. The application of this instrument demonstrates how land-use planning achieves multifunctionality in urban zones (i.e., urban function with agriculture). Figure 1. 12 presents an example of the application of this instrument. In this case, no new construction was allowed in the urban residential zone with this easement (regulations, p. 5). And identified parcels were tiny and on the border of natural areas.

Other than the previous two instruments that preserve urban agricultural activities through the graphical identification of land parcels, some territories **permitted agriculture in urban zones by applying descriptive written regulations** ($n=6$, 13.3%). It represents different legal functions: the previous two instruments with graphical identifications are protective, whereas this instrument, through general description in written regulations without graphical specification, is rather an incentive. In general, urban zones are not compatible with agricultural activities in consideration of the farms' nuisance to inhabitants. Nevertheless, in the land-use planning projects of these territories, certain zones (residential zones and/or economic zones) were identified in which farming activities and construction were permitted when conditions were met. It is worth noting that some land-use planning projects identified this possibility for agricultural activities in urban zones but only for processing, packaging, storage and distribution activities; they were not considered as supporting urban agriculture but were analysed in the sub-section "structuring local supply chains."

Two territories integrated the issue of urban agriculture with roof gardens (4.4%). One of them is the inter-municipal body of Yvetot Normandie. The land-use planning projects **integrated the issue of urban agriculture into its urban building requirement**. It required that the flat roofs of new buildings must be functionalised, and urban agriculture is one of the solutions: "*urban agriculture (food garden, beehive...)*" (inter-municipal body Yvetot Normandie, regulations, p. 26).

²⁵ Easement is a constraint which is asserted on the owner of a property (servient land), for the benefit of the owner of another property (dominant land).

²⁶ Planning Code, Article L. 151-23: In urban zones, it may locate cultivated land and undeveloped areas necessary for the maintenance of ecological continuity to be protected and unbuildable regardless of the facilities which, if any, serve them.

Figure 1. 11. Territories applying urban agriculture instruments agriculture in land-use plan.

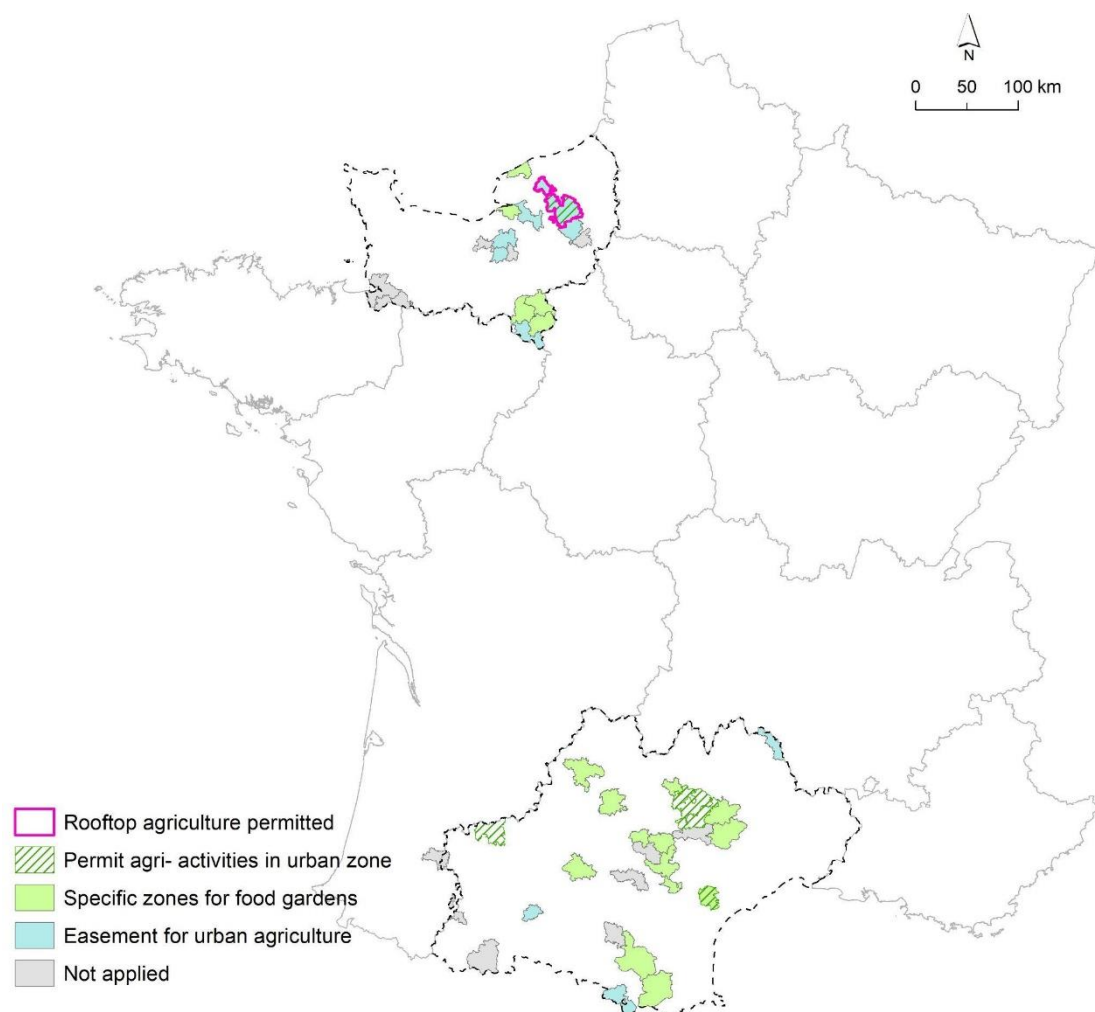
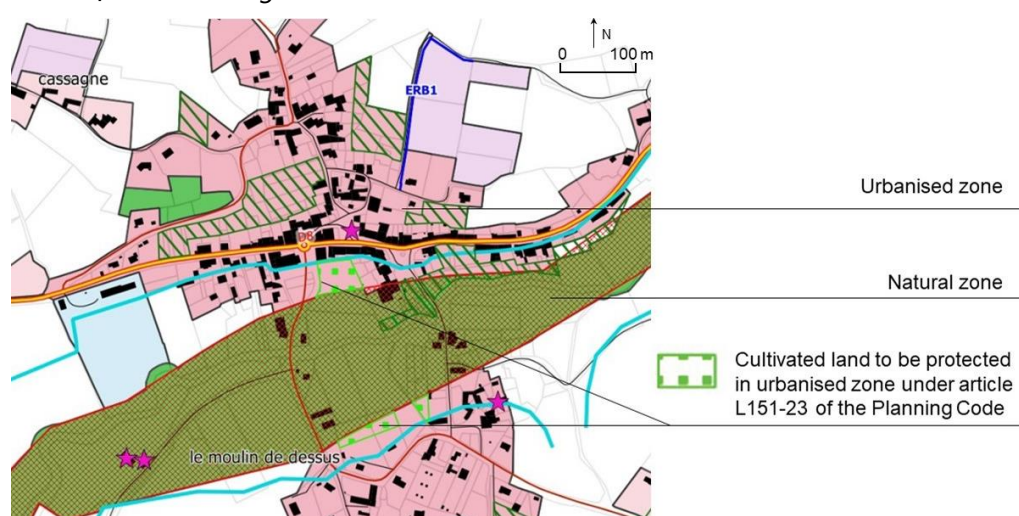


Figure 1. 12. Example of cultivated land to be protected in urbanised zone under article L151-23 of the Planning Code.



Note. Adapted from geoportail-urbanisme.gouv.fr, accessed 7 October 2022, inter-municipal body Coeur et Coteaux du Comminges, graphic regulations, municipality of Aulon 31420.

Among all the studied cases, the metropolis Rouen presented a special focus and efforts in authorising and encouraging urban agriculture. First, land-use planning projects used the term "urban agriculture" and defined it as such: *"Urban agriculture is implemented and practised on the territory by farmers and inhabitants in their daily life. It is the agriculture that is: 1) professional or not, with an economic, social, cultural or leisure dimension, 2) which can be oriented towards short supply chains or self-consumption as well as towards long supply chains"* (Inter-municipal body Metropolis Rouen, regulations, p14). Second, it permitted construction for urban agriculture as a function that could be mixed with others in urban zones when environmental requirements were met:

Authorise urban agriculture in urban and mixed urbanisation zones dominated by housing and their associated sectors; except in industrial zones (UXI and IAUXI) given the intended purpose of the zone and the risk of pollution of agricultural production in these constrained sectors, on condition that they do not lead to a protection perimeter for classified facilities for the protection of the environment²⁷ and are compatible with the functioning of the district. (Inter-municipal body Metropolis Rouen, Overview report, p. 156).

Third, it encouraged the diverse forms of urban agriculture by clearly defining the permission of on-soil and on-rooftop urban agriculture on condition of no conflicts between agriculture and inhabitants, such as: *"examples: agricultural production facilities and greenhouses set-up on roofs or in open spaces, animal shelters, beehives, etc."* (Metropolis Rouen, Report, p158).

Overall, land-use planning addressed urban agriculture by applying different instruments to preserve or incentivise farming activity in urban areas. However, a challenge might be the co-existence of food production spaces and effective urban uses (e.g., residential and official buildings) in densely urbanised areas. Moreover, competition might exist between urban agriculture and other open spaces for public leisure use. In dense urban areas, how to make trade-offs between these functions is a tricky question.

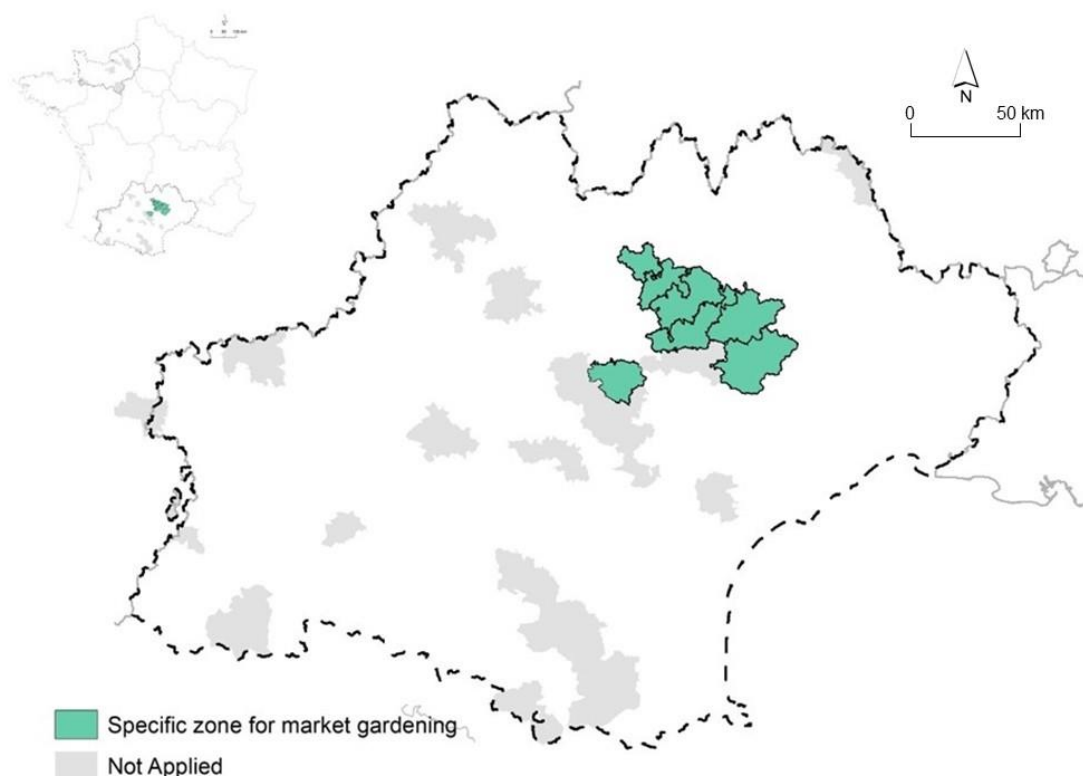
2) Transition of farming practices

The only instrument identified associated with the transition of farming practices was about preserving and encouraging market gardening (or also with other vegetable and fruit production activities, such as arboriculture and orchard activities). Figure 1. 13 shows that seven land-use planning projects created **specific zones in agricultural areas for market gardening** (15.56%), all located in the region of Occitania. Such zones were created to preserve

²⁷ Classified facilities protection perimeter refers to the sanitary regulation that avoids farming disturbance (usually from breeding facilities) to inhabitants. This perimeter is later presented in chapter 2.1.

suitable land for market gardening and to reinforce the value of this activity. According to the description in overview reports, they were also initiated with issues of protecting the valley bottom landscape, improving diversification of farming activities, facilitating short supply chains or issues related to maintaining activities in flood risk areas. For example: *"this identification highlights the desire to promote short supply chains"* (inter-municipal body Rodez, overview report, p. 166).

Figure 1. 13. Territories applying specific zones for market gardening in land-use plan. Only in Occitania.



The creation of specific zones for market gardening is associated with regulations for building rights. Four territories clarified that construction should be necessary to market gardening activities. For example, the inter-municipal body of Muse et des Rases du Tarn regulated that in the specific zone for market gardening only permit construction and facilities that are: *"greenhouses and buildings necessary for market gardening activities"* (regulations, p. 73). By contrast, the other three territories did not mention that buildings should be for market gardening activities, although the specific zone was created for that purpose. They authorised general construction necessary for agricultural activities, in some cases with an additional rule to prohibit new on-farm housing.

Some documents (n=3) clarified that the delimitation of such zones was based on existing or to-be-established market gardening areas, such as "to preserve areas occupied by market gardening in order to consolidate this activity" (inter-

municipal body Rodez, overview report, p. 166). In one territory, the market gardening zone was created based on a protected agricultural area (ZAP²⁸) (inter-municipal body Millau Grands Causses, overview report, p. 290).

By creating specific zones for market gardening, planning regulations might be an incentive for this activity or, in a more strict way, exclude other agricultural activities. To a certain extent, planning regulations play a role in arbitrating competition between farmers exercising different productions. It should also be noted that all these seven territories are in two departments of Occitania (Aveyron and Tarn), presenting a certain form of "cluster." Two reasons provide possible explanations. First, setting specific zones for a certain type of production is, to a certain extent, innovative, and territories might learn from their neighbouring territories when developing land-use planning, through elected officials, civil servants and shared contacted persons working in supra-inter-municipal scale bodies (e.g., regional park). Second, the Chambers of Agriculture (important farmers' support organisation) may have played a role in supporting (or opposed to) the application of such innovative regulations. Since the regulation for supporting market gardening might generate competition between farmers, the Chambers of Agriculture might be reluctant to have it. As they usually work at the departmental scale, it might explain why market gardening specific zones were created in only two departments (with most in one department). Chapter 2 will help to understand this point by combining semi-structured interviews.

3) Structuring local supply chains

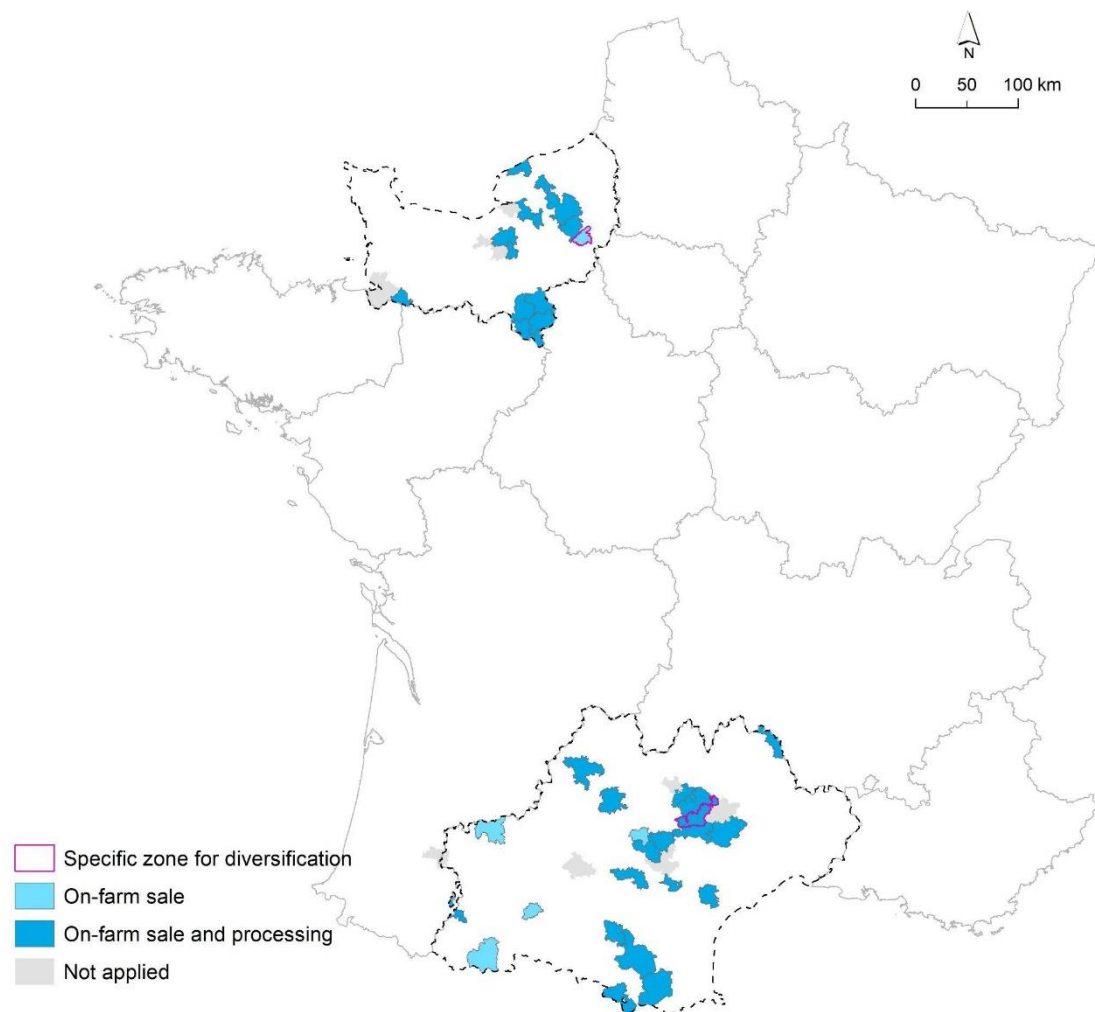
Permitting agri-food processing and distribution facilities

Land-use planning regulates processing and distribution activities in agricultural or urban areas. Examined projects applied two regulations in agricultural areas to facilitate agri-food processing and distribution facilities. Most land-use planning projects **permitted on-farm distribution and/or processing facilities' construction in agricultural zones** (the total of light and dark blue in Figure 1. 14, $n=35$, 79.6%). They should be a part of the extension of farming activities. Most of the documents only referred to the statement of the Planning Code (i.e., permitting processing, packaging and distribution activities that are the extension of producing activities), whereas some documents precisely defined the permitted activities in agricultural zones with clarified conditions, such as, "*(authorising) places for the direct sale of products*

²⁸ Protected Agriculture Zone (*Zone Agricole Protégée*, ZAP) is a land instrument to preserve long-term agricultural land uses through imposing public utility easement (*servitude*). It should be delimited and validated by the state service at départemental scale (préfecture). After the approval of the Protected Agriculture Zone, it becomes appendix of land-use plans as easement.

originating solely from the farm, provided that they are located close to the dwelling or the farm building" (inter-municipal body Aure Louron, regulations, p. 57). It is noteworthy that this written regulation might be "borderline" by imposing rules for the origin of traded food products. Planning authorities were overstepping their competencies as this kind of regulation might not be relevant for planning.

Figure 1. 14. Territories applying instruments facilitating on-farm processing and distribution facilities in land-use plan.

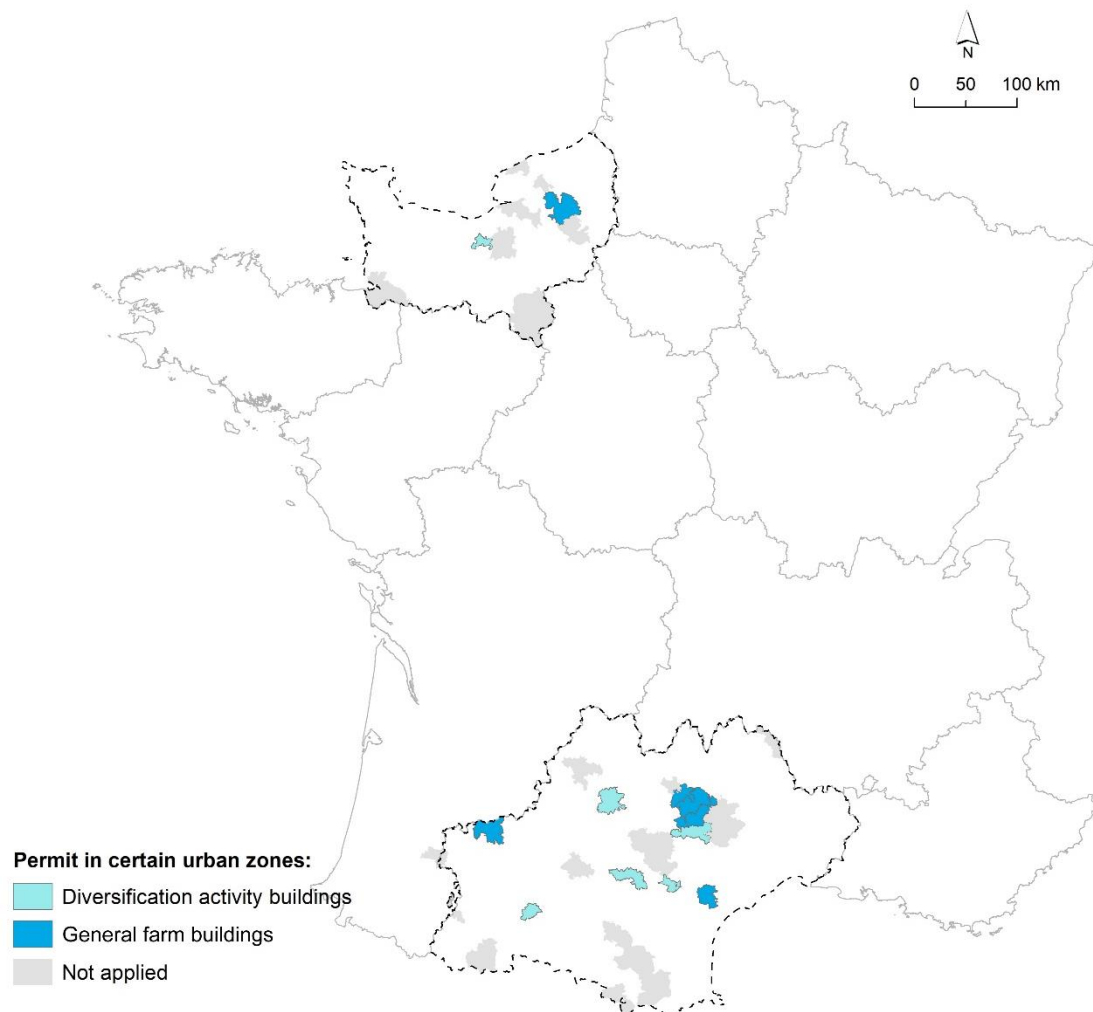


A few land-use planning projects created **exceptional specific zones (STECAL²⁹) for agri-food processing and distribution** ($n=2$, 4.4%). For example, one land-use planning project created a specific zone in agricultural areas for a cheese factory project and permitted the buildings for craft, retail, wholesale trade, industry, storage and offices (*inter-municipal body Muse et des Raspes du Tarn, regulations, 2021, p. 71*). Such zones were exceptional cases as

²⁹ Exceptional specific zones are "sectors of limited size and capacity" (in French: *secteurs de taille et de capacité d'accueil limitées* - STECAL). In agricultural and natural zones, such sectors with limited surfaces could be settled to authorise exceptional building activities.

they contained exceptional building rights. They were created to permit defined projects. The application of this regulation presents that local authorities could give certain priority to projects that they wish to support, meaning that RAA can be facilitated by regulatory rules if it receives high political commitment.

Figure 1. 15. Territories applying permitting agricultural construction in urban zones in land-use plan.



It is worth noting that although the Housing law (*loi ELAN*, 2018) added that on-farm diversification activities could be permitted in agricultural zones, not all documents after 2018 applied this in their documents ($n=10$). It shows that legal instruments are not necessarily mobilised by local actors. The other way around, in one particular case, although the document was formulated in 2014 before the launch of the Housing law (*loi ELAN*, 2018), it explicitly permitted the diversification of agricultural activities, although the Planning Code at that time did not clearly authorise such activities. It permitted in agricultural zones buildings necessary to agricultural activities "which do not fall within the agricultural use but have a close link with the products of the farm: commercial premises or preparation and packaging workshops, accessory to the main farm building" (inter-municipal body Haut Allier, regulations, 2014, p. 99). This is a

large interpretation of the legal concept of “necessary for agricultural uses.” It shows how local authorities use the leeway given by legislation.

Other than diversification activities in agricultural areas, another instrument was to **explicitly permit such activities in urban areas**. Figure 1. 15 shows 12 land-use planning projects that adopted this instrument. Six of them permitted general construction for farming activities with conditions in certain urban zones. Another six projects only permitted construction for agricultural storage, packaging, distribution and/or processing activities in certain urban zones. They represent the compromise made between facilitating agricultural activities and maintaining urban functions. For example, one territory defined that only urban economic zones (zone Ux and AUx, urban zones dedicated for economic activities) permitted *“farm buildings that do not present any nuisance and are intended for storage, packaging and marketing”* (inter-municipal body Terres d’Aurignac-CC Coeur et Coteaux du Comminges, regulations, p. 58). Traditionally, such zones are dedicated to industrial activities for more lucrative uses. The introduction of agriculture-associated activities presents a sign of a change in planning policy design.

Permitting agri-tourism construction

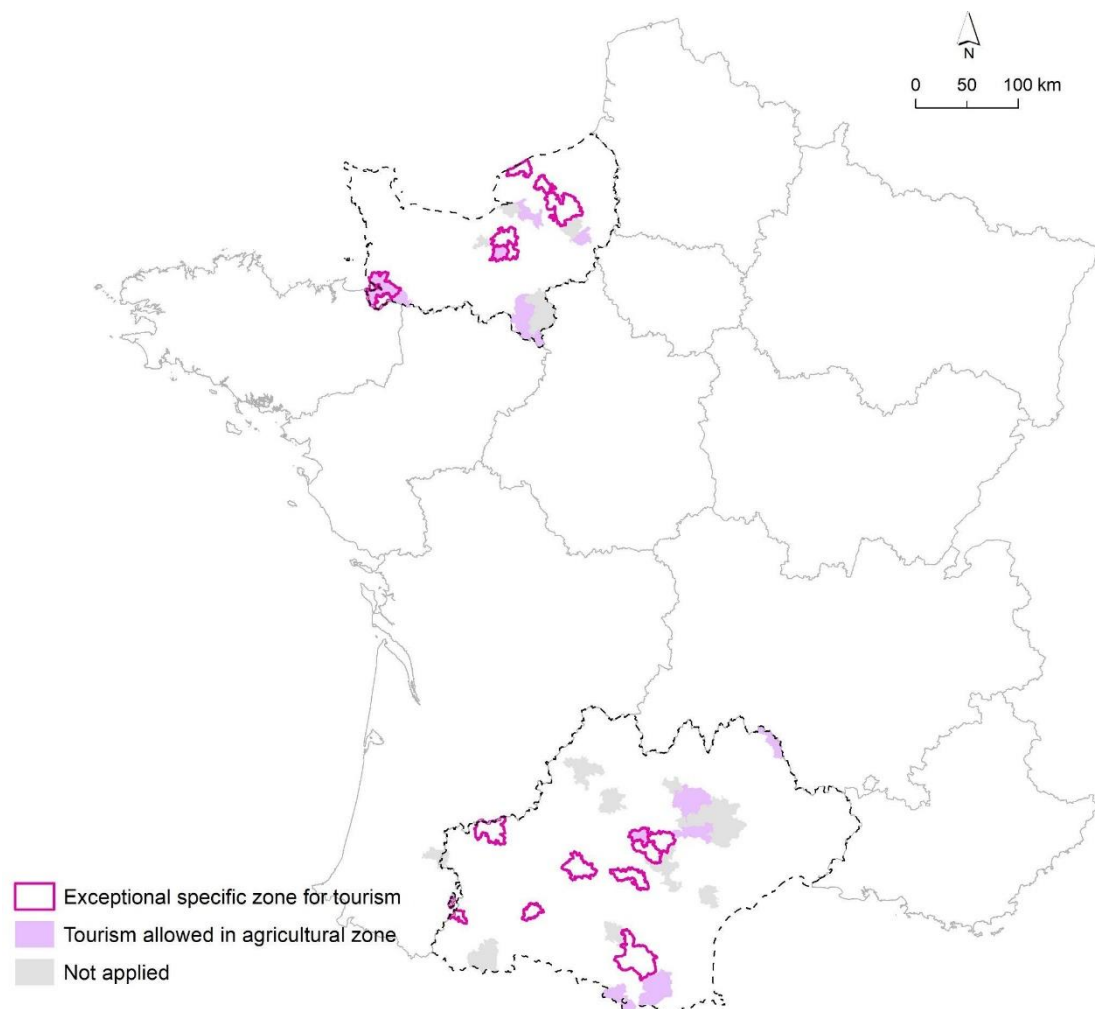
Agri-tourism activities are a type of diversification activity, although not necessarily directly linked to the food supply chain. Nevertheless, they can reinforce the value of local products, for example, by introducing tourists to consume on-farm or by raising awareness of consumers of the culture and savoir-faire of the local products. They are also an important component of farmers’ revenues.

Figure 1. 16 shows that most land-use planning projects applied at least an instrument to facilitate agritourism activities. Some land-use planning projects **permitted on-farm agri-tourism activities** (filled in purple in Figure 1. 16, $n=14$, 31.1%). They were mainly about on-farm camping sites, hosting areas for on-farm visits and/or on-farm bed and breakfasts and should be a part of the extension of farming activities. For example, one land-use planning project permitted in agricultural zones: *“an educational farm activity linked to the farm”* and *“a farm campsite”* on condition that certain conditions were met (inter-municipal body Saint Affricain, Roquefort, Sept Vallons, regulations, p. 135 & p. 139).

Another applied instrument was the **creation of specific zones for tourism activities** ($n=17$, 37.8%). They were exceptional zones (STECAL), meaning that an exceptional construction permit that is not “necessary” to agricultural activities could be given. Rules were different. Some specific zones defined that activities had to be linked to farming activities, which are often identified (as existing activities or farmers’ future projects), for example, *“taking into account*

the existing tourist facilities and sites corresponding to the right of way currently occupied. This is an area in St-Pierre de Mailloc linked to the activities of an educational farm" (inter-municipal body Pays de l'Obriquet, overview report, p. 274). By contrast, others permitted touristic also construction that is not necessarily linked to farming, for example, "*(authorising) new construction for tourist accommodation, linked or not to an agricultural activity, under conditions*" (inter-municipal body Pays de Livarot, regulations, p. 49). The different uses of creating exceptional zones show how local territories mobilise the legal rules differently according to their wish to support local activities.

Figure 1. 16. Territories applying policy instruments for agri-tourism in land-use plan.

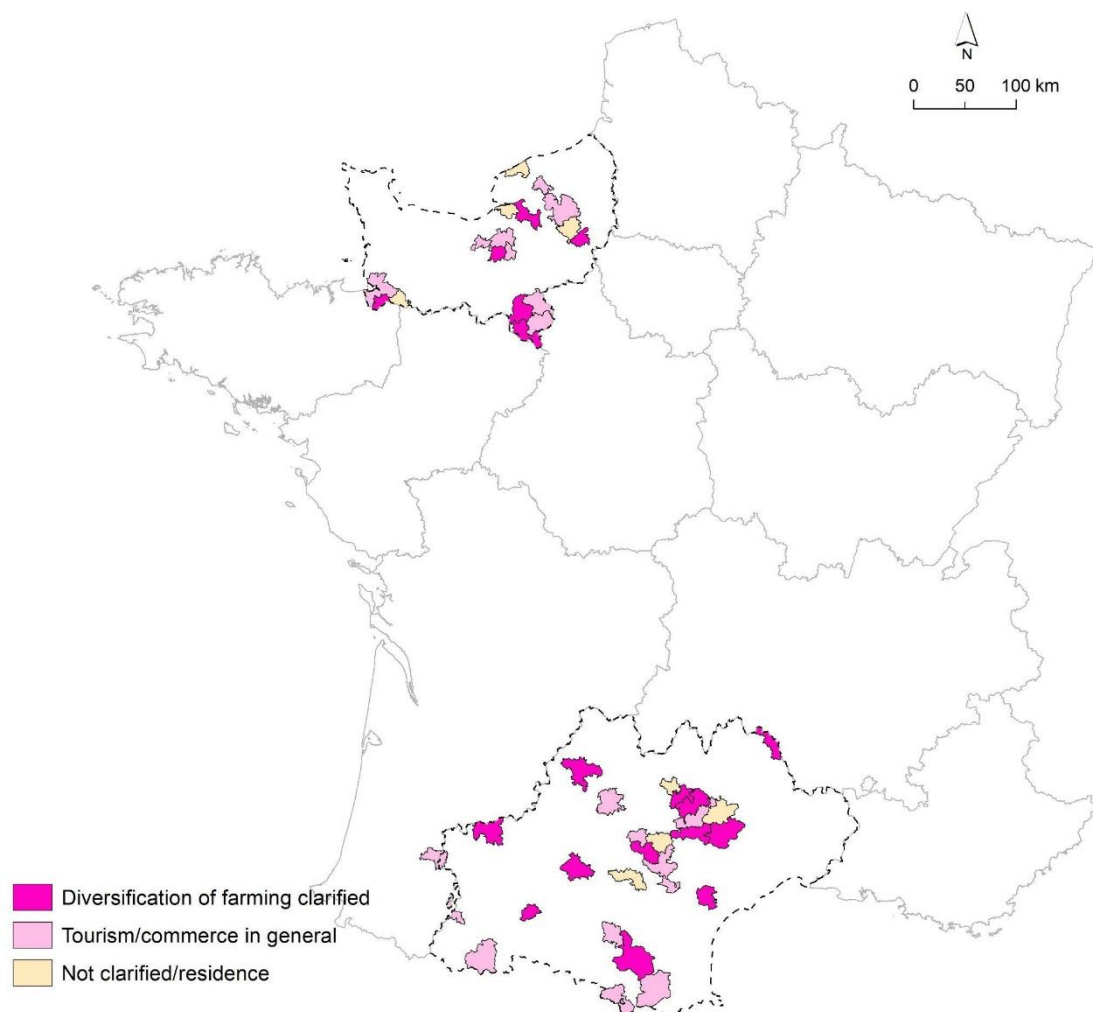


Change of the uses of buildings for the diversification of agricultural activities

Conversion and reuse of vacant buildings is an issue and a challenge in public policies for rural development. This is especially the case in countries where the enlargement of farms has led to the abandonment of ancient farm buildings. Figure 1. 17 shows that *all* the analysed land-use planning projects adopted **the change of uses of abandoned farming buildings** as an instrument. Most land-use planning projects clarified the targeted use of such buildings with

tourism and/or commerce activities ($n=37$, except yellow in the figure). Some defined the targeted usage with a wide range of possibilities, containing tourism and usually detailed commerce, without clarifying the link with farming activities (light rose in the figure, $n=19$, 42.2%). A general statement was to permit the targeted uses that are *“Handicraft, Catering, Service activities where customers are received, Hotel and tourist accommodation, Housing.”*

Figure 1. 17. Territories applying change of the uses in land-use plan.



Others clearly defined or emphasised that the targeted uses contained or targeted the diversification of farming activities (dark rose in the figure, $n=18$, 40%). Some of them clarified the requirement in targeted uses, for instance, *“changes of uses intended for the diversification of the agricultural activity, provided that they are linked to a complementary activity dependent on the agricultural activity: on-farm camping, natural camping areas and rural cottages set up in the existing farm buildings”* (Inter-municipal body Haut Allier), and *“premises for the direct sales of products from the farm only”* (Inter-municipal body Ténarèze). Others clarified in the statements that the goals were to develop diversification activities, such as *“A wide range of sub-uses has also been defined for the change of uses for the purpose of*

enabling the development and diversification of activities" (Inter-municipal body Centre Tarn). The targeted use of changed buildings presents that agriculture and associated activities are treated as an economic activity like others (handicrafts, business) for the revitalisation of rural areas. Traditionnally, planning practices tend to consider agriculture in a more narrow way, not as an economic activity likely to contribute to territorial revitalisation.

In synthesis, a series of instruments to facilitate RAA have been identified from land-use planning cases in the three action fields. Some of them are "regular" instruments that are already clearly defined by the Planning Code (e.g., permitting on-farm diversification). They were usually more frequently applied but still with some exceptional territories that decided not to adopt them. Other instruments are rather "innovative", meaning that territories develop regulations that are neither explicitly defined by the Planning Code nor frequently used at the local level (e.g., specific zones for market gardening). The diversity of instruments present the different ways that territories explored to facilitate RAA via land-use planning. Regarding the action fields, instruments for farmland preservation and structuring local supply chains were more applied than for the transition of farming practices, in terms of quantity of instruments but also the number of territories engaged. Two reasons might explain the fact. First, land-use planning is limited in engaging issues of farming practices. Second, local authorities were less motivated to intervene in the issue.

Local authorities strategically mobilised regulations under the legal framework to achieve their goals. Different types of instruments have been mobilised: graphical or written regulations, permitting or restrictive. They were to achieve different functions, protective (e.g., delimitating zones for certain types of activities), encouraging (e.g., allowing urban roof agriculture through written regulations) or derogative (e.g., exceptional zones for extra building rights). For the same type of instruments, local authorities imposed different specification conditions to achieve specific goals, such as adding conditions of proximity with existing buildings and adding the compulsory link between diversification activities and production activity. They all represent the trade-offs between preserving farmland and leaving room for local agricultural development.

It is worth reminding that not all locally adopted regulations are legally effective. Although some regulations are detailed with the link to local food, it might be a good wish and had a symbolic rather than pragmatic function (Lascoumes & Le Gales, 2007). For example, the statement of "products from the farm only" depends on a tracking system that might not be able to be developed, at least not in the existing planning system.

In planning practice, this inventory of regulations as policy instruments can be an example for other territories. In planning studies, this analysis of land-use

planning goals and instruments also provides an analytical framework adapted for analysing both strategic plans and regulations based on the previous method developed by (Scheromm et al., 2019). They used keywords tracking methods to analyse agriculture-associated strategies in land-use planning strategic project documents. The application of this method in this research extends the use to regulations, providing an avenue for analysing a sectorial issue among thick planning documents.

This document analysis only involved planning regulations but not design guidelines (OAP). This was basically because design guidelines were still very much on urban issues and were not agricultural. Therefore, a systematic analysis was not made. Instead, the examination of the application of design guidelines was made during the semi-structured interviews by raising questions on land-use planning strategies for RAA. The motivation of territories' choices of adopting or not certain instruments to facilitate RAA will help in understanding the efficiency of policy design and implementation for RAA. These technical decisions are highly linked to political interests and debates. This will also be presented in chapter 2 with detailed information obtained from semi-structured interviews.

When comparing RAA-associated goals and instruments, I identified a gap between ambitions and regulations concerning some themes. Although the Planning Code regulates that the planning regulations should implement defined goals in strategic projects, the regulations are not always capable of doing so. Some of them were coherent, for example, the theme of agritourism. Other themes mentioned by strategic plans were not always applied by regulations. The theme of developing quality food production, for example, was not interpreted by any regulation. In the overview report of inter-municipal Millau Grands Causse, it was clearly stated that certain themes identified by the strategic project could not be interpreted by regulations: "*1) encouraging extensive and quality agricultural activities and building a diversification project the Roquefort system and 2) ensuring the success of Pérail protected designation of origin (AOP³⁰) project*" is "*not concerned by the land-use plan*" (p. 290).

Such a fact indicates that the territorial ambitions identified by land-use planning could not only be achieved by planning regulations. Other local policies, including food planning, could be a lever to achieve certain ambitions outside of the capacity of land-use regulations and fill the gap between land-use planning goals and instruments.

³⁰ Appellation d'origine protégée: a label that identifies an agricultural product whose stages of production and processing are carried out in a defined geographical area and using recognised and traditional know-how.

1.2 FOOD PLANNING: DIVERSE INSTRUMENTS FORSTERED WITH AN INNOVATIVE FRAMEWORK

This sub-chapter aims to identify how territories address RAA in food planning projects. Similar to what was done in 1.1 concerning land-use planning, I conducted a document analysis of food plans to identify RAA-associated policy goals and instruments. The analysis led to understand the place of RAA in food planning and the policy instruments mobilised in this new policy field. I first introduce the methods and dataset. I then present the results of policy goals and instruments.

1.2.1 Description of the dataset and analysis methods

1) Food planning at diverse scales and with different project leaders

The sample of food planning projects contained a large variety of cases. Only 29 of the 40 projects included in this thesis (see General Introduction 1.5) were studied in this sub-chapter due to the availability of food planning documents. Documents for other food plans were not finished or not available to be provided. Figure 1. 18 shows the spatial distribution with scales of the 29 projects. Most examined food planning documents were at the inter-municipal or rural cluster scales. Other cases were at the scale of the regional park, municipality and department. In this sub-chapter 1.2, the policy goals and instruments analysis did not engage the factor of scale. The analysis of the comparison of food planning between scales is addressed later (see chapter 3.2).

Figure 1. 18. Studied food plans by spatial scale.

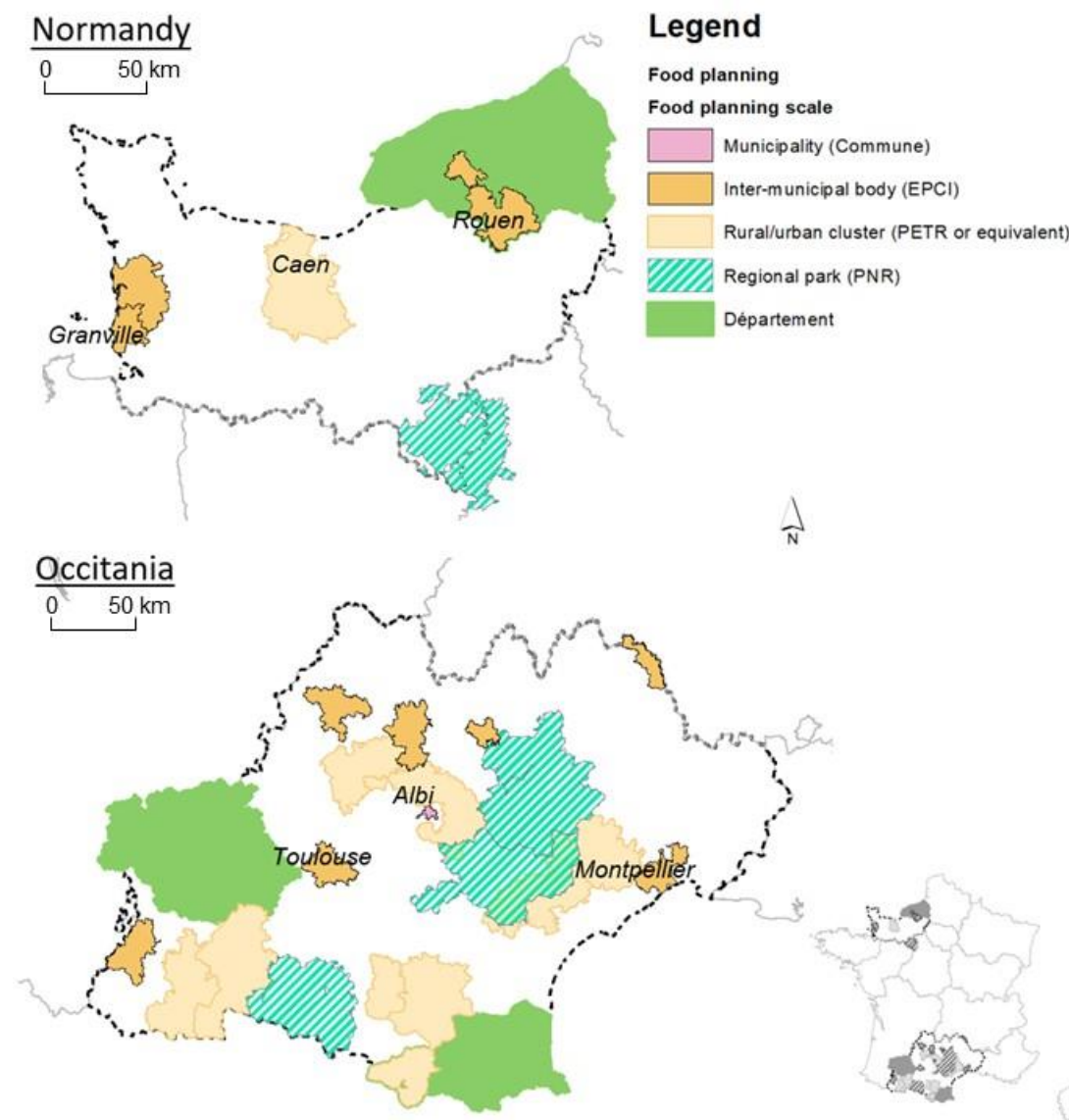


Figure 1. 18 shows studied projects by spatial scale. It is worth noting that a project at a certain spatial scale does not mean that it was managed by the public authority at that scale. For example, the food planning project of the rural cluster Pays Cathares was actually managed by two inter-municipal bodies that composed the ancient rural cluster; the food planning project of department Pyrénées-Orientales was managed by an association composed of multi-public institutions but not the departmental council. Besides, not all food planning projects were managed by public institutions. Three were exceptions, i.e., managed by associations or a cooperative. Table 1. 2 shows these cases.

Table 1. 2. Food planning projects with project leaders that were not public authority at its scale.

Spatial scale of food planning	Projects that the administrative level of the project leader territory \neq spatial level
(Inter-) municipal body (<i>commune, EPCI</i>)	No
Territorial cluster (<i>PETR/Pays/Pôle métropolitain</i>)	N=4: Food planning Pays Haute Vallée de l'Aude was managed by a cooperative Maison Paysanne. Food planning Pays Pyrénées Catalanes was managed by a local association Chemin Faisant. Food planning Pays Cathares was managed by two inter-municipal bodies*. Food planning Pays Cotentin was managed by two inter-municipal bodies**
Regional park (<i>PNR</i>)	N=1: Regional park Grands Causses was in charge of a food planning projects but the perimeter includes a rural cluster.
Department (<i>Département</i>)	N=1: Food planning Pyrénées-Orientales was managed by an association that groups several public institutions.

Note.

* Originally the food planning project was launched by the administrative body of the rural cluster Pays Pyrénées Cathares. Since the New Organisation law (Loi NOTRe³¹, 2015), the administrative body of Pays Pyrénées Cathares did not exist anymore, and the competencies were transferred to the rural cluster of Ariège, the two inter-municipal bodies, and the Pays d'art et d'histoire des Pyrénées Cathares. So, the mission of agriculture was eliminated from Pays Cathares, and the two inter-municipal bodies have obtained the competences. But the two inter-municipal bodies took charge of the original food planning project at the scale of the ancient rural cluster of Pays des Pyrénées Cathares.

** It was the scale of the ancient rural cluster.

2) Food planning in progress and available documents

Totally **29 documents** (among 40 investigated projects in the whole thesis) were available and enabled the quantitative document analysis on policy goals and instruments of food planning projects. These documents were obtained from both online resources and interviewees, as not all documents were published. A systematic online check of updated documents has been made in May 2022. I analysed the latest version of food planning projects that I could reach through to the date of documents collection.

³¹ Loi n° 2015-991 du 7 août 2015 portant nouvelle organisation territoriale de la République

Food planning documents do not have a standard form but are all composed of identified goals and descriptions of actions. Analysed documents have different levels of detail according to the maturity level of projects. Some documents are detailed with action sheets with responsible actors and/or with estimated budget. Some documents are only with general objectives and simplified description of actions (Table 1. 3).

Table 1. 3. *food planning projects by degree of detail of documents.*

Degree of detail	Territory of projects	Number
Goals and clearly described actions lists with responsible actors. Sometimes with schedule and/or estimated budget	Municipality: Albi Inter-municipal bodies: Granville Terre et Mer, Coutances Mer et Bocage, Haut Allier, Grand Cahors Rural clusters: Pyrénées Comminges, Haut Languedoc et Vignoble, Haute Vallée de l'Aude, Pays Midi Quercy, Pyrénées Cathares, Pays des Nestes, Albigeois et Bastides	12
Goals with action lists	Inter-municipal bodies: Rodez, Ouest Aveyron Rural clusters: Coeur d'Hérault, Pyrénées Catalanes Regional parks: Haut-Languedoc, Grands Causse, Perche, Pyrénées Ariègeoises Departments: Seine-Maritime, Pyrénées-Orientales	10
Goals with detailed action descriptions	Inter-municipal body: Metropolis Rouen, Metropolis Montpellier Urban cluster: Caen	3
Goals and roughly described actions/form as "road map"	Inter-municipal body: Yvetot Normandie, Metropolis Toulouse, Tarbes Lourdes Pyrénées Department: Gers	4

3) Year of the documents

Figure 1. 19. *Number of analysed food planning documents published per year.*

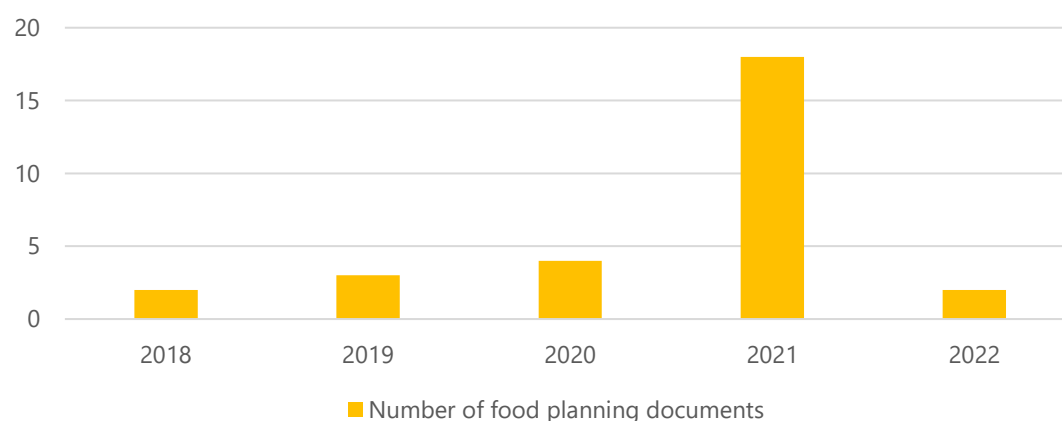


Figure 1. 19 shows the number of analysed food planning projects documents published from 2018 to 2022. It presents a stable slight increase from 2018 to 2020 and a dramatic climb in 2021 thanks to the incentive from the recovery plan's (*plan de relance*, for reminding, I.4 has presented its essential investment in food planning projects). It is worth noting that the identification of studied case was made in 2021 and the update of available documents were made on May 2022; therefore, the number of 2022 remains low.

4) Method of analysis

To analyse the documents, I coded all documents for policy goals and policy instruments with the programme Atlas.ti. For goals, I coded the headings of strategies inductively by themes. For instruments, I coded each RAA-associated action in the action lists or description of actions. The description of policy instruments is not always explicit and could not be categorised. So, some instruments were not coded, for example, *“Support for the development of local agricultural supply chains: market gardening and vegetables, fruit, cereals, pulses, local organic pork...”* (food plan, department Gers³²).

Food planning projects have different ways and extents of details when describing policy instruments. Some instruments were described by the project without being differentiated the “ownership”, for example, *“Develop a shared processing facility to allow producers to process their products by Fonlabour”* (Municipality Albi) and *“Setting up public food management? (régies alimentaires)”* (Urban cluster Caen). Actually, these two actions will not be managed by the municipality Albi or urban cluster Caen but by their partners. Other instruments were described with clarification of responsibility of project leaders. For example, by stating *“To this end, the Metropolis has set up a system to help municipalities introduce local and sustainable products, including organic products, into their menus”* (Metropolis Rouen), the food planning project leader clarified that this instrument was about “facilitating” municipalities. In the analysis, I respected what have been described in the food planning projects documents. If the wording was “develop”, “create” or “implement”, I interpreted the instrument as direct intervention without referring to the project leaders’ responsibility. It also means that I analysed the policy instruments of food planning (operated by the project leader and partners) but not simply instruments of the project leader.

For the coding of instruments, two dimensions of categorisations were applied. The first dimension was the **typology of policy instruments** as defined by

³² Source: the quotes in chapter 1.2 were from food planning documents. These documents were either validated or ongoing working documents. Most of them were obtained from food planning project managers. A few were available online on the official websites.

Vedung (1998) and applied by Doernberg et al., (2019) in the food planning field (Table 1. 4), which demonstrates the power relations shaped between government bodies and the governed. The second dimension was the **action fields** that the instrument belongs to. RAA action fields (see General Introduction I.3) were identified from Ericksen's (2008) definition of the food system component: (1) farmland preservation and access to land, (2) transition of farming practices and (3) structuring local food chains.

Table 1. 4. *Typology of RAA-associated policy instruments.*

Note. Adapted from Doernberg et al., (2019)-table 4 and Vedung (1998) with French context.

Instrument type	Subtype
Regulatory instruments	
Formal planning	Land-use and development planning
Direct regulation	Procurement regulation/local business act
Economic instruments	
Economic means in kind	Public procurement/provision of services and infrastructure/contracts and leasing conditions on city-owned properties/vouchers
Economic means in cash	Taxes, fees, duties/subsidies, compensation payments
Informational instruments	
	Information, education, advice/public relations/labelling/qualification, training/appeals and self-commitments/analysis, surveys/networking

This section is also supported by some semi-structured interviews in order to better understand the particularity of policy goals. The associated interviewed questions were mainly about the initiation and evolution of food planning projects.

1.2.2 Policy Goals

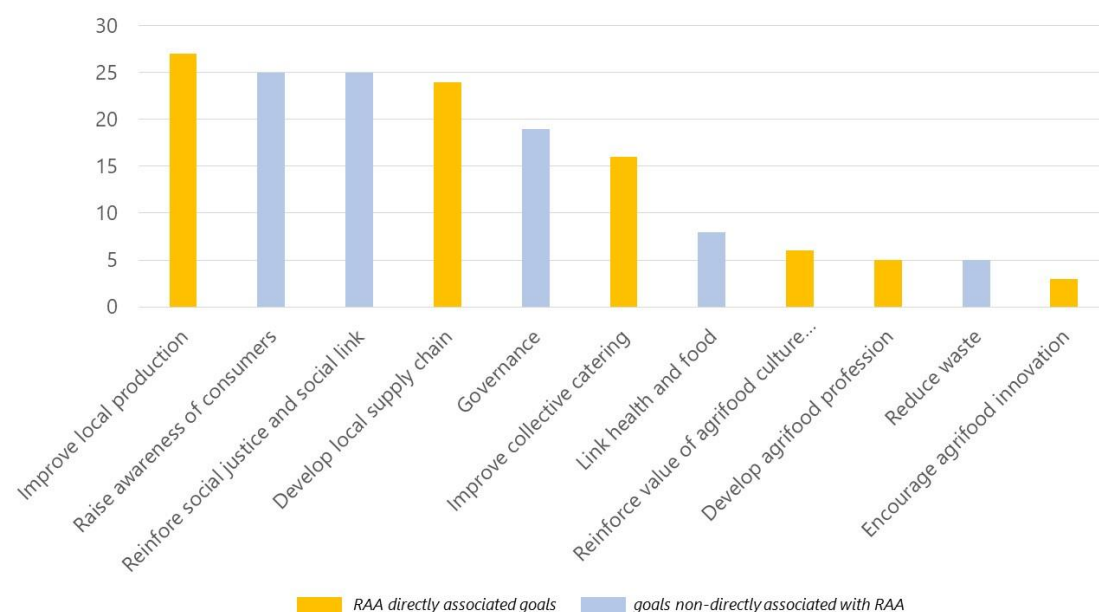
1) *Policy goals of French food planning and the place of RAA*

The analysis led to an overview of food planning goals. Figure 1. 20 presents goals and the number of food planning projects that targeted them. Goals were distinguished by being directly or non-directly linked to RAA. Yellow bars are goals directly linked to RAA, meaning the goal itself refers to RAA-associated activities (i.e., local production, processing and packaging, logistics and sale, agri-tourism, community-supported agriculture). Others, in blue, are goals non-directly associated with RAA. They are goals rather related to the consumption side of the food system or the management of the food planning. The figure shows that, in general, some goals were shared by most of the food plans (e.g., improving local production, raising awareness of consumers), whereas some were only emerging and targeted by a few territories (e.g., reducing waste,

encouraging agri-food innovation).

Yellow bars are goals directly associated with RAA, showing that globally RAA has a leading place in all goals. Among the six goals with more than half food planning projects targeted, two RAA-associated goals (improving local production and developing local supply chain) are respectively the first and the fourth frequently targeted by food planning projects. Three other goals are also directly linked to RAA (i.e., reinforcing the value of agri-food culture and heritage, developing the agri-food profession and encouraging agri-food innovation).

Figure 1. 20. Goals and number of food planning projects that addressed them.



Improving local food production can be recognised as the overarching goal as it was the most targeted goal by food planning projects ($n=27$). This goal contains four topics: 1) Improving environmental farming transition, 2) preserving farmland and resources, 3) facilitating farmers' regeneration through farm transfers, 4) diversifying local products and 5) encouraging self-growing by professional farmers or non-professional gardeners. It indicates issues on farmland availability, environmental transition as well as self-production. Food planning projects goals often include more than one of these topics, for example, "*reducing environmental impact of the food sector (waste, water, soil, hedges, land)*" (Inter-municipal body Granville Terre et Mer) which contains topics of preserving farmland and improving environmental performance of farming.

Developing local supply chains was a goal of 24 food planning projects. Typical goals are like "*Supporting the structuring of local production*" (regional park Grands Causses) and "*Strengthen and support short supply chains in the territory*" (Midi Quercy). It is worth noting that although short supply chain does not equal to

local, it was usually used with the embedded meaning of local supply, for example, by using the description "in the territory." All food planning projects included at least one of the above two goals (i.e., developing local supply chains and improving local food production).

The other three goals were less frequently referred to than the above two highly targeted goals. Developing the agri-food profession ($n=5$) and enhancing the value of agri-food culture and heritage ($n=6$) were two RAA-associated goals less targeted by food planning projects. The development of agri-food professionals was mainly about keeping the agricultural employment of the territory, and the development of agri-food culture and heritage helped territorial marketing and tourism. These two goals refer to territorial development through agriculture and food. Improving agri-food innovation was targeted by three food planning projects. For example: *"Contribute to the development of innovations and the emergence of new professions in agriculture and the agri-food industry"* (inter-municipal body Metropolis Montpellier).

Blue bars are goals not directly linked to RAA. They are about other stages of the food system (i.e., consumption and waste), achieving global goals (i.e., health and social justice) or the avenue of organising the food planning projects (i.e., governance).

Raising awareness of consumers and improving social justice and social link were frequently addressed issues of food planning projects ($n=25$ for each). The former is about increasing consumers' awareness of purchasing sustainable and local food. The latter is mainly about increasing high-quality and local food accessible to all. These two goals are often integrated, such as, *"quality, local and sustainable consumption for all"* (regional park Haut-Languedoc). Although they are mainly about food consumption and relate indirectly to RAA by affecting the market to affect producers' behaviours, they may integrate issues directly linked to RAA. For example, *"promoting access to quality food for all, and raising awareness about food while fostering social links with farmers"* (regional park Pyrénées Ariégeoises). Such a statement revealed that consumer awareness was not only limited to individually targeted "food education" initiatives but also increasingly designed in relation to new social links between farmers and consumers. Hence, it also creates a link to RAA.

Governance, referring to how the local stakeholders work together to achieve the local food system, was another goal targeted by 19 food planning projects. For instance, *"Governance, cooperation and communication. Objective: to continue the deployment of the food planning and the human network in a co-construction approach, with a broadening of the actors and shared governance; to develop collaborative tools and communication facilitating the technical work, the coordination of the territory and enhancing the actions"* (Association Chemin Faisant, rural

cluster Pyrénées Catalanes). Integrating such a goal in the food planning documents implies the posture of food planning as a lever of territorial management and coordination. It should be noted that this can also be a local choice in the form of food planning document. Some food plans did not list governance as a goal but also made efforts to formulate facilitating governance models in practice.

Improving collective catering (or, in some cases, catering outside of family), as a goal targeted by 16 food planning projects, could be an important component of RAA. Some food planning projects only addressed this goal by mentioning improving more sustainable cuisine practices, for example, *"support collective catering"* (inter-municipal body Haut Allier). In contrast, some food planning projects clarified this goal by integrating local sourcing of food, such as, *"developing the supply of organic, quality, local products in collective catering"* (regional park Perche), and *"promotion of collective catering in short supply chains, in particular by encouraging integration through economic activity => the challenge of "good processing/better selling"* (inter-municipal body Yvetot). In such way, collective catering can help structure local food chains by its massive procurement power (Sonnino et al., 2019).

Other goals were addressed less. Improving health through food was targeted by eight food plans. Usually, the goal of improving health is in relation to the awareness of consumers or social justice, such as, *"recognising the link between food and health"* (rural cluster Midi Quercy) and *"structuring a local organisation to facilitate access to healthy and sustainable food"* (inter-municipal body Haut Allier).

Another goal is reducing waste ($n=5$), which was mainly about improve consumers' behaviour, except one of them included producers' actions: *"reducing food waste and the production of food waste from producer to consumer"* (Metropolis Rouen).

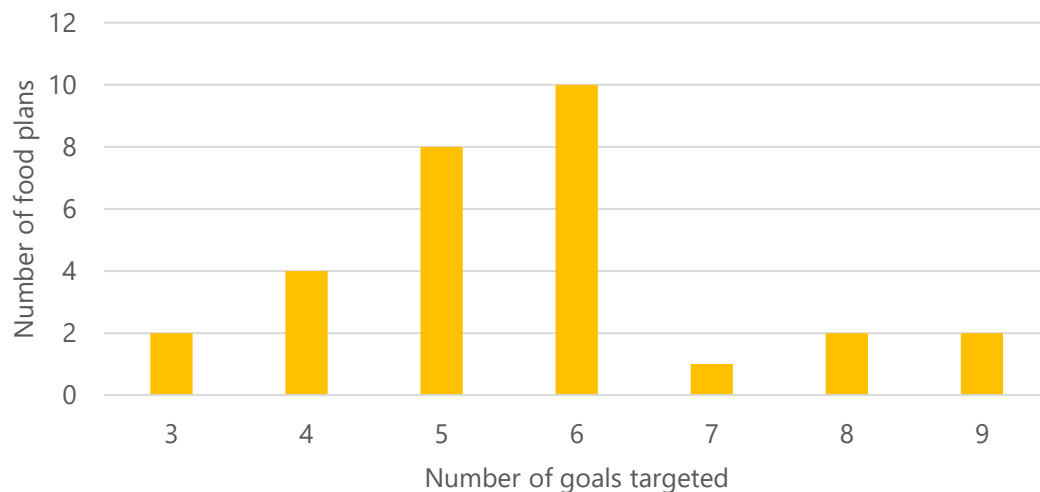
Overall, RAA has a key position in the policy goals of food planning projects. Improving local production and developing local supply chains as two major components of RAA are goals adopted by most food planning projects. Every food planning project has adopted at least one of them. Other RAA directly linked goals are about reinforcing heritage and culture value, improving the agri-food profession and innovation. Other goals can affect RAA indirectly, especially collective catering, a massive public procurement power to incite the local supply chain.

2) RAA among systematic goals

Food planning projects studied cases overall show a systematic approach, meaning targeting goals were not about a single perspective of food systems. Figure 1. 21 shows that analysed food planning projects targeted three to nine

types of goals. Most of them targeted five or six goals. RAA-associated activities constitute one or several goals among many goals. According to the interviewees, some food plans had started with a relatively comprehensive approach, while others specifically focused on a certain theme associated with their embedded competences. However, for the latter cases, food plans could evolve to cover more themes and shape more systematic goals.

Figure 1. 21. Number of food planning projects by number of goals targeted.



For some food planning projects, RAA-associated activities were the main, if not the only, goal(s) when food planning projects were initiated. But then, the policy goals extended toward multiple themes. An emblematic case is the food planning of the inter-municipal body Grand Cahors. The food planning had a strong entry point of improving local market gardening production with all the actions developed surrounding this topic. With the evolution of the project, the local authority realised that a food plan should deal with food system issues to fully structure the supply chain. Therefore, the food planning enlarged from solely production issues to a wider scope which also included local consumers' more responsible consumption, as reported by the interviewee:

I find that the old (food planning project) were too focused on the actions of the inter-municipal body and that it had only two essential actions, which were the vegetable centre and the farm incubator. [...] And what I would like to bring out in the update is a much more global approach [...] So, this morning I proposed to the elected official in charge of the territorial food project to do it in three axes with 1° production, 2° there transformation and distribution, second axis, and 3° third axis consumption. [civil servant, inter-municipal body Grand Cahors, Occitania, 2021/10/05]

Many rural territories had the entry point of developing local agricultural economy, as the territories historically worked on developing short supply chains (e.g., regional parks Perche and Grands Causses), sometimes together

with collective catering (e.g., rural cluster Albigeois Bastides). But the idea of developing food planning pushed it into a global thinking framework and developed systematic goals. For example, the inter-municipal body Granville Terre et Mer worked already in 2017 on short supply chain structuring from the perspective of economic development. It was not recognised by the Call for Project in that it was only from an economic perspective. Therefore, the inter-municipal body re-worked the project to develop a more systematic food planning projects that integrated social, environmental and economic consideration.

Some food planning projects were initiated with topics not directly associated with RAA (e.g., collective catering, health) but finally extended to have RAA as a goal. The Chamber of Agriculture started the food planning projects of Pyrénées-Orientales by developing a food hub (or "platform", a centrally located facility with a business management structure facilitating the aggregation, storage, processing, distributions, and/or marketing of locally/regionally produced food products, (USDA, 2017)) to improve collective catering in the department. The food planning project was started by conducting a study and connecting other partners. However, Covid-19 enlarged the ambition of "collective catering" to a food planning project that also focused on other themes around food economy and accessibility. For example, now, one of the goals of this food planning was to "*recreate and maintain the link between the food and the population*" (food plan of department Pyrénées-Orientales). And the goal of developing a food hub was not limited to collective catering. As the interviewee reported:

It (the food planning) started with collective catering. The objective was to encourage local supply for collective catering. [...] When we created the association, in November 2020, the elected representatives had somewhat broadened their objectives in relation to this association, because they had experienced the lock down. [...] (they) felt very strongly the need to encourage local supply chains, the sale of agricultural products closer to the consumer, etc. [...] As a result, this (Covid) was an opportunity to broaden the association's objectives and to propose that the association carry out a food planning project that is broader than just collective catering, but that really embraces themes around the food economy, food accessibility, environmental education, food, taking health into account and the link to land and planning. [staff, Chamber of Agriculture Pyrénées-Orientales, Occitania, 2021/09/24]

Concerning the food planning of department Gers, interviewees told a similar story: the food planning project was initially designed from a single focus on collective catering and was then enlarged to a wider scope. The departmental council had been working on collective catering for more than ten years and started the food planning projects by working with inter-municipal bodies on this issue to reinforce the involvement of farmers. Covid-19 enlarged the question from collective catering to agriculture, direct sales and other short

supply chain activities.

As an emblematic case, the inter-municipal body Haut Allier presented how food planning was initiated around the topics of "health" and "equity" and extended to emphasise RAA. The food planning project started with the Local Health Contract (CLS, *contrat local de santé*³³) and focused on improving health and equity. However, the local authority quickly realised that the approach of nutrition and education could neither achieve equal food supply nor include diverse actors surrounding local food issues. They realised that the provision of high-quality food would be vital to achieving these topics. Later on, by making use of the opportunity of collective catering local sourcing projects developed by the departmental council, the inter-municipal body was able to seek solutions by linking consumption and local production. And RAA (local production and local supply chain) came to be an essential strand in food planning. Such a change was accompanied by the recruitment of a skilled person in agricultural issues; this point will be discussed in chapter 3.1. An interviewee reported the evolution of the process:

Initially, we worked on health and food issues within the framework of the local health contract (contrat local de santé). So we worked on nutrition, food education, etc. But one of the local health contract's objectives is to fight against social and territorial inequalities in health. And these nutrition education actions did not enable us to structurally modify how people eat and access quality food for the most precarious people. And also, [...] collective catering, particularly school catering, can be a tool for equity in a territory and access to quality food for all children, which, in terms of health, has an interesting impact. [...] In 2017, there began to be a departmental dynamic around these (quality) food issues [...] A3: (now) The idea is to work between the producer and the consumer, to work on both sides. In the first project, we did not involve the producers very much; it was more of an analysis of the population's expectations regarding food. And then we realised that if we did not change the working attitude of the producers, we might not be able to have a local offer in line with the demand that we have to develop. [civil servants, inter-municipal body Haut Allier, Occitania, 2021/10/04]

Overall, the studied cases provide evidence of an evolving food planning scheme with issues extending towards a systematic approach. On the one hand, food plans started with RAA and extended to a broader scope, thus connecting RAA with other wider topics. On the other hand, food plans that started without an RAA focus were more or less obliged to extend to RAA by recognising that

³³ The local health contract (CLS, *contrat local de santé*) is a tool jointly developed by the regional health agency and local authority to reduce territorial and social inequalities in health. It is the expression of local dynamics shared between actors and partners on the ground to implement actions as close as possible to the populations.

food production and supply are an inevitable pre-condition to achieve other associated goals. The evolving processes help us understand the place of RAA in food planning.

In synthesis, RAA had a central place in French food planning projects. Two RAA-directly associated goals (improving local production and developing local supply chains) were vitally targeted goals by food planning projects. Some projects also targeted other RAA-directly associated goals (reinforcing the value of agri-food culture and heritage, developing the agri-food profession and encouraging agri-food innovation). RAA may also be linked with non-directly associated goals: improving health, increasing social justice, etc. This finding is different from previous the study's finding that "*RAA was just a means to achieve comprehensive goals of food planning*" (Sonnino, 2016). Many French food planning projects did target RAA as an "end goal" and developed many themes surrounding that.

In the meantime, RAA was also a means to achieve other goals (e.g., collective catering, local sourcing, social justice, health) in an environment where food planning projects tend to be systematic. As an interviewee observed from the regional level, a tendency was that food planning goals were becoming more comprehensive and covered many perspectives due to the requirement of financers and the competencies that the authorities want to reclaim [*staff, Chamber of Agriculture of the region of Normandy, 2021/06/11*].

However, this interviewee also claimed that some issues were still neglected by food planning projects, for example, health. This document analysis proved this claim. The neglected place of health presents a contrasted finding compared to international findings, which have demonstrated that health is a strong focus of food planning (e.g., Sibbing et al., 2019; Morgan & Sonnino, 2010). "Improving a healthy environment" as an emphasised goal in many international food plans was not an issue in any studied French food planning projects. A potential reason is that many French food planning projects followed the national frame which emphasised economic, environmental and social values but less health.

The study provides evidence on how food plans could evolve, enlarging or shifting goals and connecting cross-sectoral themes (e.g., health and agriculture). However, scaling up towards more systematic goals and approaches also raises challenges to public policy design in terms of local competences and cross-sectoral collaborative work. Finally, although diverse goals and the leading place of RAA have been presented, how much the goals mean to the food planning projects in implementation depends on employed policy instruments and the following implementation.

1.2.3 RAA-associated policy instruments in food planning projects

1) An overview of policy instruments

The analysis of policy instruments mobilised by food planning led to an overview of these instruments by action fields and by typology of instruments. Table 1. 5 and Figure 1. 22 show that food planning projects employed a wide range of RAA-associated policy instruments to achieve their goals. Figure 1. 22 shows that policy instruments dedicated to access to land and to structure local supply chains are much more than these for the transition of farming practices, whether in terms of the number of instruments or the number of projects that used the instruments. Combing Table 1. 5, it is clear that informational and economic instruments were much more frequently adopted than regulatory ones by food planning projects.

Figure 1. 22 also demonstrates that among the ten most frequently adopted instruments, the top five were informational and aimed to structure local supply chains or increase farmland preservation and access. This is followed by three economic instruments that aimed to develop local food facilities and two informational instruments that envisaged developing local farmland strategy or making maps to increase local food visibility to consumers. By contrast, the two most used regulatory instruments were only adopted by less than a quarter of food planning projects. In the following, I will present the policy instruments by typologies. The policy instruments adopted by action fields will be presented in detail in chapter 2.

Table 1. 5. *Incidence of different types of policy instruments applied in the studied food planning projects.*

No.	Instrument type	Instruments employed	Nb of food planning projects
Farmland preservation and access to land			
1	Regulatory	Leverage land-use planning and associated tools to preserve farmland	7
2	Economic	Use publicly-owned land (or buildings) for local farming*	12
3		Create farm incubators to facilitate new farmers and new practices	12
4		Create collective food gardens	11
5		Develop professional integration farms	5
6		Fallow land reclaim	3
7		Plant edible trees in public space	3

No .	Instrument type	Instruments employed	Nb of food planning projects
8		Financial support for farmers' transfer	2
9		Develop publicly-owned farm to supply collective canteens	2
10		Agro-park projects as demonstrative projects	2
11	Informational	Information, advice and networking to facilitate farmers' transfer/set-up	17
12		Local farmland strategy, monitoring and management (publicly-owned land, farm transfer, fallow land, etc))	13
13		Analysis, information and organisation to facilitate food gardens	9
14		Train local authorities on land preservation tools (elected officials, professionals)	9
15		Analysis of farm incubators possibilities	3
Transition of farming practices***			
16	Economic	Leverage agro-environmental compensation in biodiversity/climate change strategies	3
17		Financial support for ecological transition farmers	2
18		Environmental lease for publicly-owned land	1
19	Informational	Information, communication and advice to facilitate farmers' ecological transition (e.g., agroecological farming, agroforestry practices, planting hedges)	12
20		Analysis and strategies to help diversify local production types	9
Structuring local supply chain			
21	Regulatory	Adapt procurement contract specifications of collective catering to increasing local and/or sustainable food sourcing**	6
22		Modify local regulations to improve local products' visibility	1
23	Economic	Develop local producers' distribution space (farmers' markets, drive-throughs, producers' shops, third places, etc.)	13
24		Create local processing facilities	13
25		Create local food hubs/logistics/storage facilities	13
26	Informational	Analysis, advice, communication to facilitate collective catering to increase local and/or sustainable food**	26
27		Activities to connect consumers and the agriculture profession (farm visits, events, agritourism, etc.)	16

No.	Instrument type	Instruments employed	Nb of food planning projects
28		Analysis and strategies for local food infrastructure	16
29		Training, information, advice and strategies to facilitate farmers in local sales (incl. supply collective catering)	16
30		Make maps and brochures to increase local initiatives' visibility to consumers	13
31		Networking professionals in short supply chains	12
32		Umbrella brand for local food	5

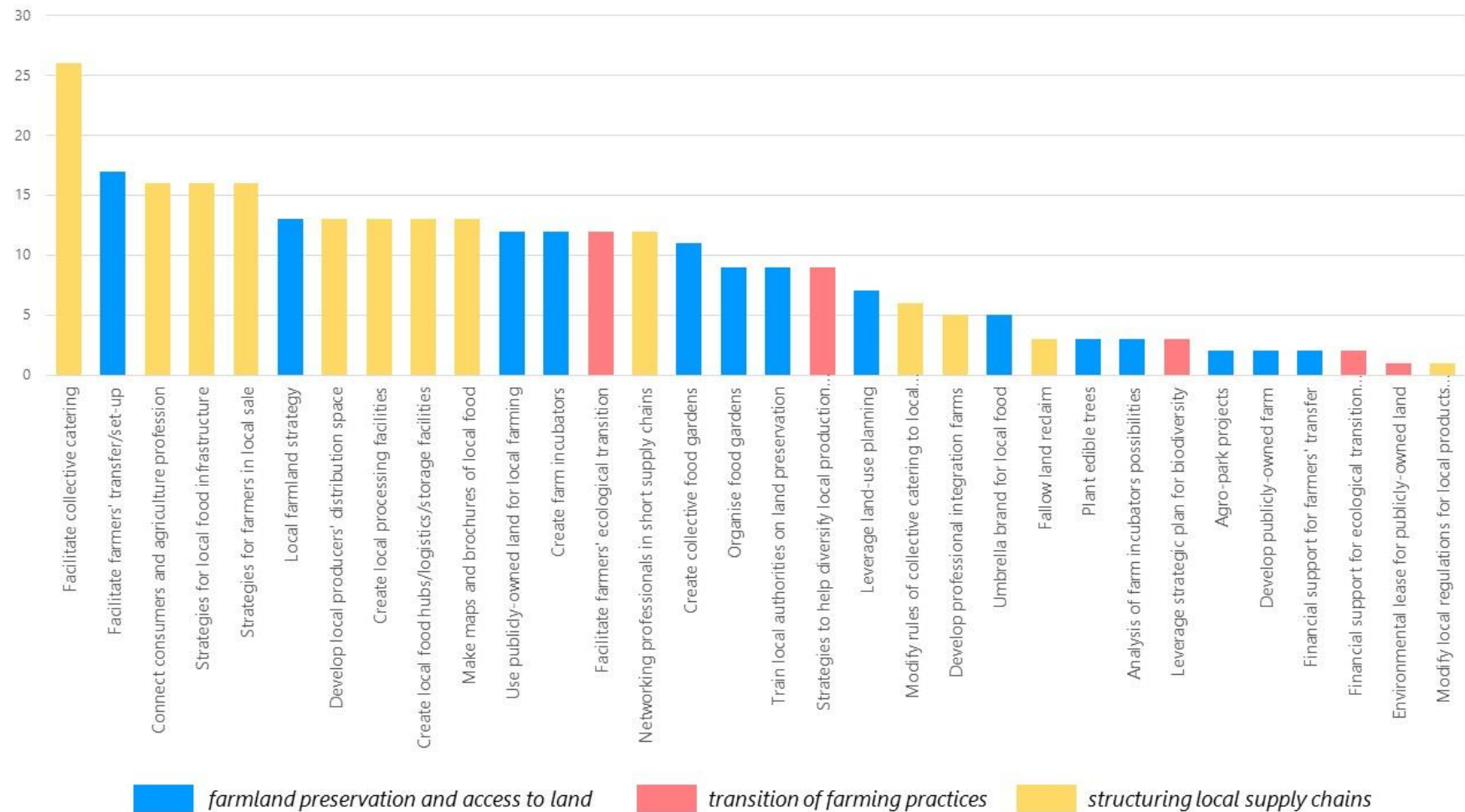
Note.

* Publicly-owned land use may overlap with some other instruments, e.g., creating agro-parks, as such projects may use publicly-owned land. They were categorised as two instruments because they represent two types of action: 1) mobilising land and 2) developing projects.

** These two instruments lead to the economic effect: the mobilisation of public procurement power. They were classified as informational instruments according to how the instruments were operated.

*** Some land-associated instruments may also contribute to the transition of farming practices (e.g., farm incubator for organic market gardening). They were not separately presented 1) to avoid repeating and 2) because the transition of farming practices was not the major intention of the instruments.

Figure 1. 22. Policy instruments used by the number of food planning projects.



Note. Colours represent action fields.

2) Regulatory instruments

The regulatory instrument referred to by the food planning projects documents to preserve farmland was leveraging land-use planning (master plan or land-use plan) and associated instruments ($n=7$, 24.1%). Food planning documents either referred directly to the land-use planning (e.g., *"Protection of natural and agricultural areas through land-use planning: delimitation of agricultural and natural areas and formulation of protective regulations for these areas"*, food planning_inter-municipal body Granville Terre et Mer) or proposed methods to engage food in planning (e.g., *"Method of identification of agricultural land at stake (SAGECE farmland assessment method) and of the pressures they face in order to identify them in land-use planning documents"*, food planning_regional park Haut-Languedoc). In order to structure local supply chains, six food planning projects included adapting procurement contracts specifications of collective catering to local sourcing (20.7). This included both direct intervention (when the food planning projects leader is responsible for collective catering) or facilitating authorities to do the modification (e.g., *"Advising local authorities on the drafting of specifications and the choice of criteria to define the quality of products"*, food planning_Urban Cluster Caen). One food planning project was initiated to modify local acts to increase local products' visibility (*"strengthening the Small Business Act on food and making it a lever of visibility for local products"*, food planning_Metropolis Toulouse). No regulatory instrument was used to facilitate the transition of farming practices.

3) Economic instruments

Food planning projects used various economic instruments to increase local farmers' access to land and structure local supply chains. Most applied instruments were developing local projects, which usually contained mobilising land and building and investment in the material. This included developing local food infrastructure (i.e., local processing centres, local food hubs or logistics and producers' distribution spaces; $n=13$ for each infrastructure type) and initiating local farming projects (i.e., creating farm incubators ($n=12$), creating local food gardens ($n=11$) and less frequently, developing professional social integration farms ($n=5$), publicly-owned farm ($n=2$) and agro-park as demonstrative ($n=2$)). Food planning projects may intervene in the land market. Eleven food planning projects dedicated publicly-owned land ($n=12$) to local farming activities. Three planned to reclaim fallow land. One indicated applying the environmental lease for publicly-owned land. Three food planning projects in urban areas planned to plant edible trees in public spaces to introduce food-associated nature elements into urban areas. Two food planning projects included financial support to facilitate farmers' transfer, for example, by donating vouchers to farmers (food planning Pays Pyrénées Cathares). Three projects connected to biodiversity and environment-associated programmes that refer to the environmental compensation for farmers.

4) Informational instruments

Informational instruments were the main instrument type used in French food planning projects and addressed all three RAA-associated action fields. Almost all food planning projects contained instruments for facilitating collective catering transition in local and sustainable sourcing (n=26). Food planning projects may provide information, advice, training and networking activities to facilitate farmers' access to land, ecological transition and reinforce local supply chains. Many food planning projects used this type of instrument to facilitate farmers' transfer/set-up (n=17), help connect professionals (producers, processors, restaurants and canteens) (n=12), encourage ecological transition (n=12), increase local authorities' land preservation awareness and knowledge (n=9) and/or improve farmers' local supply chain capacity (n=6). Strategies and analysis were another type of instrument adopted. Some food planning projects planned to develop strategies or conduct analysis for local food infrastructure (n=16), local sale avenues (n=16), local farmland preservation and use (n=13), local scale avenues (n=14), production diversification (n=9), better organising food gardens (n=9), and/or farm incubators (n=3). Food planning projects may provide occasions to better connect consumers and producers. Two instruments adopted by many food planning projects were activities and events to connect consumers and the agricultural profession (n=16) and making maps and brochures to increase local initiatives' visibility to consumers (both professional and non-professional) (n=13). Five food planning projects planned to develop an umbrella brand for local food.

5) Connected policy instruments and action fields

Results show that instruments between different action fields were connected. Figure 1. 23 presents a diagram showing the connected action fields and instruments. The most iconic connection is the vitally leveraged collective catering as a driver to incite farmers' set-up and reinforce the supply chain because it provides a potentially ensured outlet avenue for the upstream activities. An example is "testing a local supply logistics platform" (food planning inter-municipal body Ouest Aveyron) to achieve the goal of better collective catering. Another example is that the regional park Haut-Languedoc adopted a series of instruments to incite farmers' set-up by guaranteeing the outlet through collective catering:

Objective 4.2 : Place collective catering as a lever for the set-up of farmers

4.2.1 : As soon as farmers are set up, encourage exchanges and collective approaches (e.g. setting up a subscription to guarantee a certain number of purchases that encourage the setting up of farmers)

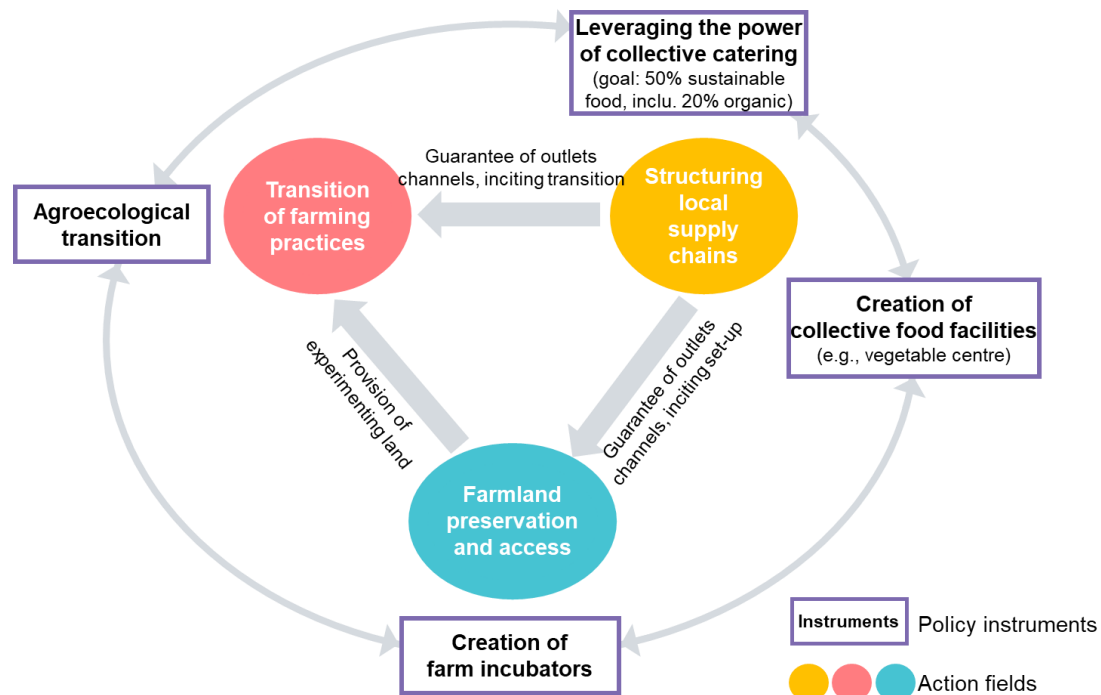
4.2.2: Develop the pooling of meat purchases to enhance the value of an entire animal

4.2.3 : Creation of local management systems (*régies locales*) for organic market gardening and agroforestry (dedicated to collective catering)

Source: translated from food planning regional park Haut-Languedoc, 2022

Transition of farming practices was connected with local supply chain structuration in that farmers need a guaranteed market (with processing and outlet) as incentives to make transitions. For instance, "Work on the structuring of agricultural supply chains in order to offer outlets to farmers who change their practices" (Metropolis Rouen). Farmland preservation and access to land strategies were linked to ecological transition strategies. For example, an instrument in Metropolis Montpellier was "Mobilise public land to set up farmers, as a means of stimulating and experimenting (of the agroecological and food transition)."

Figure 1. 23. Diagram of connections between policy action fields and between policy instruments (as examples).



In synthesis, the analysis of policy instruments shows various policy instruments mobilised in French food planning projects, with economic and informational instruments much more adopted than regulatory ones. This result is similar to findings in other countries' local food policies (Doernberg et al., 2019; Sibbing et al., 2019; Candel, 2020). One of the explanations by Sibbing et al. (2019) on the choice of applying non-coercive instruments may fit the French situation; they have argued that local authorities are reluctant to adopt coercive instruments because food is a personal issue and they do not wish to impose strict rules to market players. The lack of using regulatory instruments is also likely because the available regulatory instruments are limited and have to be based on national legal frameworks. In contrast, there are more spaces to apply

and even design innovative informational and economic instruments.

Further, the tendency of using more informational and economic instruments is also likely linked to the willingness of authorities to provide a flexible framework to incite the commitment of actors and the development of food planning. At the level of the state central government, the major issue has been to encourage local territories to develop food planning projects. Hence, it is reasonable to define a largely flexible framework within which each territory could define and design its food plan according to its challenges, local configuration of actors and competences at its disposal. At the level of local authorities, the aim has been to mobilise the actors and not to slow them down by imposing rules and objectives that were too difficult to implement. Both flexible frameworks given by the central government and the local public authorities are linked to the fact that food planning projects were initially poorly funded (see Figure I. 8 on the national investment in food planning). Therefore, incentive from a flexible framework has been applied to compensate for the lack of financial incentive.

One applied regulatory instrument was leveraging land-use planning to preserve farmland. My results show that only seven (less than a quarter of) food planning projects referred to this instrument, although land-use planning and master planning are well-known local planning policies. I find two possible explanations for this fact. First, land-use plans were not mentioned in the food planning documents because it only implies internal work without requiring additional investment. Particularly, some food planning documents were prepared as action lists for applying for national funding; therefore, the land-use plan or master plan (*SCoT*) was not listed because it was not to be funded by the national programme. Second, it is possible that land-use plans were not considered relevant to food planning projects by project leaders because they were considered only for farmland preservation but not capable of dealing with “local food” issues (discussed in 3.1).

Different from the finding by international studies that middle-stage food infrastructure has been a “missing middle” in local food strategies (Sibbing et al., 2019; Sonnino et al., 2019; Candel, 2020), this research demonstrates that French food planning projects do not fit this finding. By contrast, developing middle-stage food infrastructure had a significant place in food planning projects. Making analysis and strategies for local food infrastructure was the third most frequently used instrument. Creating local food hubs/logistics/storage facilities and creating local processing facilities were both the sixth-ranked instruments, adopted by around half of food planning projects. It is also worth noting that as the “invisible” food infrastructure emphasised by Sonnino (2016), collective catering as a public procurement origin was a highly mobilised lever by French food planning projects. This is highly likely to be linked to the financial programme that made the investment

possible (especially in 2020, supported by the recovery plan) and the Food law (*loi EGalim*, 2018) that defined school catering's sourcing from sustainable food as a quantitative goal (see 1.4 in General Introduction). The many instruments referred to collective catering (e.g., farmers' set-up, establishing facilities) proved that French food planning project leaders actively leveraged collective catering as a strong lever to promote RAA and the whole local food system. Besides, the central focus of food planning projects on the local economy and local food supply chain consolidation defined by the Agriculture Law (*loi LAAAF*, 2014) may facilitate the prevalence of the development of local food infrastructure projects. Nevertheless, despite the prevalence of the adoption of collective food infrastructure-associated policy instruments, the effective implementation of such infrastructure is still challenging.

In general, I have identified many more RAA-associated policy instruments in French food planning projects compared to existing international studies on food planning instruments (e.g., Doernberg et al., 2019; Sibbing et al., 2019; Candel, 2020). They are either commonly used or innovative ones and are interrelated. Some reasons could explain this fact. First, human and financial resources supported by the food planning projects national financial programme may have made the diverse instruments possible. Sibbing et al. (2019) argued that the lack of expertise (civil servants are not trained with agri-food skills) on food systems made policy goals lacked concrete instruments, which was not the case in French food planning projects (this will be discussed in 3.1). With the support from the national annual financial programme (the "Call for Projects"), territories were more or less facilitated with funding to food planning project managers. Second, food planning projects as a system plan provides a broader platform for communication and innovation. Different sectors, private and public actors, were engaged in the formulation of food planning projects. They not only could propose instruments but also were actors that could implement the projects (this will be discussed in 3.3). Therefore, more diverse policy instruments were elaborated compared to local food strategies embedded in single-sector frames (which were the case in most case studies by Sibbing et al., 2019 and Doernberg et al., 2019). Third, the Covid-19 pandemic may have affected local stakeholders' awareness of RAA. Local initiatives during the pandemic proved the importance of RAA, and local authorities were more convinced by the importance of RAA in shaping a resilient local food system; therefore, they might be less hesitant in adopting instruments to facilitate RAA.

Food planning as a new and integrated policy for agriculture and food issues is, on the one hand, opening innovative avenues for public policies and, on the other hand, bringing new challenges and barriers. Integration with existing planning policies is of great significance to be explored.

CONCLUSION: LINKING THE COMPLEMENTARY PLANNING FIELDS

In this chapter 1, I have analysed planning documents to reveal the place of RAA (represented by policy goals) and policy instruments mobilised in land-use and food planning. RAA had a leading place in food planning and was an issue that emerged to be addressed in land-use planning. A general overview of diversified policy instruments mobilised by these two planning policies has been presented. It represents the local design of innovative instruments under a flexible framework (i.e., food planning) and the strategic use of instruments within well-established legal rules (i.e., land-use planning), respectively. When comparing policy instruments presented in documents, I found that direct links between land-use and food planning were still weak, though potentials are high. The use of policy instruments was unbalanced, with much more focus on farmland access and local supply chain structuring than the transition of farming practices. The reasons behind that require evidence from in-depth investigations with local stakeholders (chapter 2).

Regarding policy goals, different methods of analysis were applied considering the distinct nature of the planning policies. Land-use planning is comprehensive territorial planning which contains numerous issues, of which agriculture is only one, if not tiny, component. Therefore, the analysis of policy goals was to understand the valued function of agriculture and identify the involved RAA activities. The place of RAA was identified through the emphasised topics and the involved activities. By contrast, food planning is dedicated to agriculture and food issues. So, the analysis of policy goals was to understand the place of RAA among all goals. Despite the different methods applied, the analysis still enabled a comparison between the two planning policies at a general level.

When comparing the RAA-associated goals, two points appear to be worth attention. First, RAA has a leading place in food planning and is an issue emerged to be addressed in land-use planning. This leading place should not be taken for granted. When looking at international literature, food planning practices may largely focus on food consumption, but not food production or provision (Dehaene & Tornaghi, 2021); and land-use planning focuses on RAA, mainly from farmland preservation and urban agriculture perspectives. My results on French RAA in planning are a good base for a better understanding of integrated policies in territorial development.

Second, although certain themes have been addressed with disparity, the most emphasised functions of RAA are similar in land-use and food planning. In land-use plans, agriculture's provision service (i.e., the function of food production, local economy and employment) was the most emphasised. In food planning, improving food production and local supply chains were highly addressed goals. They both serve local economic development. So, there were no fundamental

contradictions. There were some disparities when looking into addressed RAA activities. While land-use plans addressed agri-tourism activities the most, the corresponding issue in food planning goals (i.e., enhancing the value of agri-food culture and heritage) was not as prioritised.

As to policy instruments, three major features can be identified. First, land-use and food planning policy instruments could complement each other. The study presents that land-use planning included diverse regulatory instruments to support RAA, whereas food planning mobilised mainly informational and economic instruments. The different types of instruments are complementary. An exemplary complementary part can be identified from the issue of land management. While land-use planning applies regulatory instruments, it could not directly intervene in the land market. By contrast, food planning indeed leverages diverse policy instruments associated with the land market, e.g., dedicating publicly-owned land for local farming and applying local strategies to reclaim farmland. They complement each other by the different power relations shaped. In general, regulatory instruments imply the obligation the local authorities impose on farmers; economic ones facilitate and incite them by providing material resources. And finally, informational instruments are rather soft and persuasive but provide places for communication and negotiation (Vedung, 1998; also see Figure I. 4, which shows the different utilities of policy instrument types).

It is worth noting that the two planning policies follow different logic to develop instruments. For land-use planning, local territories interpret the legal rules defined by the Planning Code, using the room for manoeuvre to achieve their objectives. So, they are rather in similar forms but nuanced applications. As to food planning, local territories develop diversified instruments within a rather flexible and soft framework and at an explorative stage (for this new policy). Hence, the instruments are highly diversified, reach different territorial competences and present innovative uses. Such a difference also contributes to the complementarity: food planning is flexible in identifying and intervening in issues in which land-use planning is hindered by its legally defined competence.

Second, despite the fact that land-use and food planning instruments are potentially complementary to each other, their links were not apparent in the planning documents. In studied food planning projects, land-use planning was only cited in the action field of farmland preservation and access to land. In the other two action fields (transition of farming practices and structuring local supply chains), land-use planning was not referred to at all. In this regard, food planning was not enough “integrated” when considering the perspective of land use. A rough deduction can be made by referring to the facilitators and inhibitors for policy integration by Stead and Meijers (2009): there might be a lack of identification of shared interests, a lack of inter-sectoral dialogue or the

mismatch of procedures in timing. Nevertheless, extensive comprehension requires in-depth investigation (chapter 2).

Third, in both land-use and food planning, many more instruments were mobilised for access to land and structuring local supply chains rather than for the transition of farming practices, in terms of both the number of instruments and the number of territories that used the instruments. This unbalanced use of instruments indicates that at the operational stage, RAA was more emphasised for the issue of local and short supply chains rather than the ecological and environmental transition. Although such emphasis is in line with the objective of reterritorialisation, it is with still limited ambitions in agroecological transition. When linking this to the policy goals, it is not surprising to find that it fits the most emphasised issue in both land-use and food planning: the economic performance of RAA. This can be explained from the intention to find shared interests that can gather the different stakeholders with interests. It might also be a compromise made between local stakeholders which may hold conflictual interests.

To understand the links and missing links between land-use and food planning and what drives them, we need in-depth investigation with local stakeholders. This will be presented in chapter 2.

Chapter 2. UNDERSTANDING LINKS AND MISSING LINKS: EXAMINING THREE ACTION FIELDS OF LOCAL AGRICULTURE

INTRODUCTION

This chapter 2 aims to reveal the links and missing links between land-use and food planning by action fields. The first chapter (chapter 1) has provided an overview of the various RAA-associated policy instruments mobilised in land-use and food planning. This chapter will reinforce the understanding of the social use of such instruments, the (potential) intersections between land-use and food planning policies, and the reasons driving the choices. This chapter is based on semi-structured interviews with key stakeholders and integrates document analysis results of chapter 1 to clarify the issues. It should be noted that *the interviews concerned a larger sample of territories than document analysis*. Territories with their land-use planning in progress and without available documents were also investigated.

The chapter begins with a review of the international literature. The review helps identify critical issues and facilitates situating the French situation in a larger context. It will then go on empirical studies divided into three action fields: farmland preservation and access to land, the transition of farming practices and structuring local supply chains. I conclude by bringing all three action fields together and discussing the links and missing links between planning policies.

International literature review

In international literature, scholars call for synergies and coherence between food and land-use planning by demonstrating the consequences of incoherent plans. Food planning may apply farmland preservation strategies that are in conflict with the land-use planning goals of sustainable urban development for housing, landscape and economic activities (Kassis et al., 2021). Food planning projects can be hindered by the lack of land-use planning instruments and institutional procedures for multi-functional land use (Crivits et al., 2016). Conversely, a study by Diehl et al. (2020) showed how integrated planning bolsters RAA. Through integrating food planning, the Singapore land-use plan emphasised the importance of farming for food security, stressed the higher productivity due to land scarcity and established more flexible land-use rules for the creation of new types of farms. The literature highlights the following intersecting topics between food and land-use planning: land access, collective infrastructure and farming practices.

1) Access to Land

The literature on land-use and food planning points out the challenges associated with land access due to the specific needs of RAA. The first particularity is that farmers involved in local markets usually seek a location close to consumers and cities. They encounter the difficulties linked to peri-urban agriculture in terms of finding affordable and available land: the competition with more lucrative land use and the consequent high land prices, the risk of rezoning prime farmland plots and land hoarding (e.g., Olsson et al., 2016; Abrantes et al., 2016; Horst & Gwin, 2018; Skog, 2018; Jahrl et al., 2021; López Cifuentes et al., 2021). In one case, Perrin et al. (2018) showed that the local authorities enacted overly strict regulations to prohibit agricultural building rights with the aim to avoid their illegal transformation into non-agricultural functions, which hindered RAA.

The second particularity of RAA relates to the small parcels and on-site construction rights desired by small-scale farmers involved in diversification activities, which, as shown by a few studies, can be hindered by land-use planning despite contributing to RAA. A study of direct-selling farmers in Oregon, USA, shows that agricultural zoning may require minimum lot sizes and farming income thresholds to build on-farm houses (Horst & Gwin, 2018). Similarly, research in England demonstrates that planners favoured large farm holdings when permitting dwellings (Nichol, 2003). Through this English case study, Nichol (2003) also found that construction permit applications for farm shops or buildings for innovative farm systems are met with high rates of rejection.

The third particularity relates to the urban farmers' difficulties in gaining just and secured land access, especially for those who do not own property or have to rent under unstable legal conditions (Smith et al., 2013; Horst et al., 2017). Urban development pressure can risk sudden changes in the function replacement and lease holdings of urban farms (Diehl, 2020). Urban agriculture may even be viewed as temporary land use, with farmers being discouraged from investing in and maintaining the land (Meenar et al., 2017; Panagopoulos et al., 2018). Moreover, planning to improve economic development may lead to gentrification and thus exclude low-income populations and displace urban agriculture (Burga & Stoscheck, 2017; Cretella & Buenger, 2016; Horst et al., 2017; Siegner et al., 2018).

The particularity of RAA broadens the usual issue of producers' access to land, as it requires combined planning instruments. Land-use planning has been shown to develop appropriate strategies that correspond to the needs of farmers engaged in RAA (White & Natelson, 2011; Horst & Gwin, 2018). The integration of RAA implies a profound structural shift in land-use planning

thinking. According to Wascher and Jeurissen (2017), developing local food systems requires increasing the local food supply with an internal restructuring of open spaces; in other words, it entails rethinking the balance between agricultural and natural spaces and the land allocated to different agri-food products. Researchers suggest that land-use planning integrates agriculture into urban green spaces as a multi-functional part of green infrastructure (Andre et al., 2015; Gren & Andersson, 2018; Panagopoulos et al., 2018; Salvador, 2019; Resler & Hagolani-Albov, 2021; Dymek et al., 2021). The Continuous Productive Urban Landscape working method proposed by Viljoen & Bohn (2009), which integrates agriculture into the urban green infrastructure, has been proposed as a planning method (Viljoen & Bohn, 2009; Morgan, 2015). Some scholars have drawn on empirical studies to identify innovative land-use planning strategies, such as planning to group together new agricultural buildings to avoid dispersion while not hindering farming activities (Perrin et al., 2018). Camaioni et al. (2016) provided an example of integrating food planning strategies to facilitate land-use planning decisions. In an empirical study conducted in Italy, by following the food strategy recommendations, land-use planning formulated agriculture-adapted rules based on a detailed assessment of quality agriculture such as determining urbanisation based on preserving the most adapted farmland for traditional agriculture.

Numerous land management instruments other than land-use regulations can be used to facilitate access to land for RAA. These instruments may be part of food planning projects. Much of the literature includes the allocation of publicly owned land to RAA as an instrument to facilitate land access and support certain types of agricultural activities (e.g., Thibert, 2012; Buchan et al., 2015; Halvey et al., 2020; Jahrl et al., 2021; Corkery et al., 2021). Studies show that public land can be allocated to young farmers and alternative activities (Perrin et al., 2018) or to small farms that practise agroecology (Perrin & Baysse-Lainé, 2020; Resler & Hagolani-Albov, 2021). Some studies show from a social justice perspective that land can be allocated to disadvantaged producers such as social housing for young farmers (Poli, 2017), community gardens (Horst, 2017) and farming training sites for immigrant communities (Olsson, 2018).

Several scholars suggest using collective models of ownership, including community land trusts and land banks, to provide tenure for (peri-) urban farmers (e.g., Brinkley, 2012; Andre et al., 2015; Horst et al., 2017; Cohen & Ilieva, 2020). For example, a French study showed how a farmland trust can purchase collective land and allocate it to support organic farms through specific tenancy contracts (Léger-Bosch et al., 2020). Several studies from the USA show that land banks, through acquiring private properties and redistributing them for agricultural land use, can help mobilise vacant and derelict land and deal with the issue of farmland scarcity (LaCroix, 2010; Crivits et al., 2016; Horst et al., 2017; Stanko & Naylor, 2018; Prové et al., 2019). Instruments based on the negotiation

of property rights (e.g., trade or purchase of development rights) have been proposed as solutions to preserve farmland (Daniels, 2000; Perrin et al., 2020). Researchers also suggest modifying lease rules to improve urban tenancy through long-term and flexible leases, for example (Meenar et al., 2017; Diehl et al., 2020).

2) Farming Practices

The embedded goals of food planning to increase the level of local food self-sufficiency and environmental performance require the transition of farming practices. This transition includes expanding different types of alternative farms by moving from conventional to agro-ecological or organic farming to increase environmental performance (Michel & Soulard, 2019; Candel, 2020; Zerbian & De Luis Romero, 2021) and developing alternative urban farming practices to improve local food production potentials (e.g., Lovell, 2010; Mason & Knowd, 2010; Haberman et al., 2014). This transition process also involves diversifying local products. While simulations of regional food self-sufficiency show that regional land generally has a high degree of potential self-sufficiency, a transition into diversified local production is still necessary. This means departing from the agri-food industrialised system, which is characterized by the oversupply of livestock and a shortage of market gardening in the studied cases (Wascher & Jeurissen, 2017; Tedesco et al., 2017; Zasada et al., 2019; Vicente-Vicente et al., 2021). The transition into more diversified products requires the restructuring of land-use plans to take into account the needs of diversified farming types.

This transition of farming practices gives rise to land-use planning issues that require land-use changes. Research from rural, peri-urban and urban land structures asserts that the closer the farming land is located to the city, the more value-added products are needed to counter the expensive land prices (Blay-Palmer, 2009; Brinkley, 2012; James & O'Neill, 2016; Sanz Sanz et al., 2018; Zasada et al., 2019). Several researchers (Sanz Sanz et al., 2018; Boussougou Boussougou et al., 2021) proposed a methodology to identify land appropriate for RAA by integrating factors such as the socio-economic features of farms, their landscape functions and demography; they suggest applying prioritised land-use and food planning interventions to the identified land. Studies also show that (peri-) urban agriculture has diverse forms and different land-use requirements, which need to be integrated into land-suitability investigations and land-use regulation decisions (Mason & Knowd, 2010; Haberman et al., 2014). Other empirical studies have proven this assertion. For example, different kinds of urban livestock have different characteristics with regard to farm size requirements, conflicts with habitats and consumption destinations, and as a result, they should not be regulated by a single land-use regulation (McClintock et al., 2014). A study on peri-urban land use shows that diverse and hybrid

activities in peri-urban areas should have tailored regulations; activities in the same large category may have different land-use requirements, generate different landscape impacts, and have owners with different financial capacities (e.g., small-scale obsolete greenhouses and new high-tech greenhouses) (Korthals Altes & Van Rij, 2013).

A few studies show that land-use planning may apply building and land regulations that affect farming practices. For example, in one particular case in France, market gardening was constrained by the regulation that “only farmers who have to supervise animals or food processing activities can build housing” (Perrin & Nougaredes, 2020, p. 4). In a study on land-use planning for urban agriculture in Detroit, USA, Paddeu (2017) criticised the fact that land-use regulations did not regulate farm sizes, hence supporting large farms over small-scale producers. The above studies demonstrate how the poor integration of the requirements of farming practices hinders their development.

3) Collective Food Infrastructure

Collective food infrastructure (e.g., farmers’ markets, food hubs, mobile food distribution facilities) attracts consistent attention in the food planning literature. Land-use planning literature also addresses the role played by land-use interventions from the perspective of spatial organisation and regulations (Sonnino, 2016; Tedesco et al., 2017; Siegner et al., 2018). Land-use planning has been emphasised for its role in the optimum spatial organisation of food infrastructure networks by considering issues of accessibility and compatibility with neighbouring land uses (Nichol, 2003; Marat-Mendes, Isidoro, et al., 2021) as well as food access by consumers (walking distance and public transportation) (Nichol, 2003; Gerster-Bentaya, 2013; Salvador, 2019). Researchers also highlight food infrastructure as being linked to local regeneration schemes when creating new public spaces (Nichol, 2003; Hamilton, 2011; White & Natelson, 2011; Salvador, 2019). By describing the planning process, Luoni (2021) presented the food hub design as a complex for food (aggregation, processing and distribution), tourism and an activity centre.

Land-use planning can provide a legal framework for food infrastructure by removing regulatory barriers. Several studies show that zoning regulations often neglect and even impede food infrastructure (Desjardins et al., 2011; Hodgson et al., 2011, p. 59; Brinkley, 2013; Clark et al., 2020). For example, a study on incorporating food markets into municipal laws in Michigan, USA, showed that few cities explicitly allowed farmers’ markets in zoning ordinances; the insufficient adaptation of food policy recommendations to land-use planning resulted in the illegal status of the markets (Edmonds & Carsjens, 2021). Scholars have nevertheless given other examples of authorisation of farmers’ markets in zoning plans and regulations (Raja et al., 2008; Hamilton,

2011; Thompson & Kent, 2016; Faison & Leverette, 2018). Some researchers also emphasised designing regulations according to the food infrastructure characteristics: for example, dealing with the issue of nuisance to inhabitants when permitting urban livestock slaughter (McClintock et al., 2014) and considering traffic when zoning for vending facilities (Faison & Leverette, 2018).

These studies collectively outline that RAA brings into particular land use and spatial organisation issues, thus requiring innovative and integrated local strategies. Studies also demonstrate the consequence of incoherent planning policies, which may hinder the implementation of RAA in different action fields. Some literature provides potential synergies that different planning schemes could create integratively (e.g., food hubs integrated with the issue of territorial revitalisation). However, there is yet no focus on the links between land-use and food planning concerning the instruments applied. Furthermore, the drivers behind such (missing) links have not been revealed. Therefore, in this chapter, I present the field investigation results to provide an in-depth understanding of the choice of RAA-associated planning instruments.

In each action field, I start by stating key challenges in the investigated contexts brought by RAA. Then I present and discuss the motivation of local stakeholders' use (or not) of policy instruments in land-use and food planning, respectively. I conclude by comparing the two policies to reveal the links and missing links and explain why. When comparing the two planning policies, I referred to the gradient integration levels from conflict, complementarity to synergy proposed by Howlett and Del Rio (2015). As Howlett and Del Rio proposed, degrees of policy instruments integration can be categorised from conflict (i.e., one instrument reduce another's effects), complementarity (i.e., one instrument compensates for the other's deficiency) and synergy (i.e., two instruments together will create more values)(see also I.3 in general introduction).

2.1 FARMLAND PRESERVATION AND ACCESS TO LAND

The first sub-chapter focuses on the action field of farmland preservation and access to land. Producers' access to suitable land is an indispensable condition for RAA. However, the literature shows that while farmland preservation is a long-standing issue, it has diverse objectives (e.g., landscape, natural preservation, land) and does not necessarily address farming activities (see, for example, a literature review made by Perrin et al., 2020). In addition, RAA brings particular requests on the land access, such as required size and location (Nichol, 2003; Horst & Gwin, 2018).

Therefore, in this sub-chapter, I aim firstly to identify the actual challenges of land access brought by RAA and then to understand the design of land-use and food planning strategies for RAA. Based on the results of chapter 1 which provide an overview of policy instruments, I try to understand through semi-structured interviews why specific instruments were used or not by the local territories. Finally, I compare the two planning policies to determine if there are links or missing links in terms of the mobilised policy instruments as well as the process, e.g., does food planning affect the farmland preservation goal and methods of land-use planning?

I first present the drivers and challenges RAA brings to the issue of farmland preservation and access to land. I then present land-use and food planning instruments with an understanding of social uses. Finally, I compare the two to identify intersections, the driving forces, and the missing connections.

2.1.1 Local producers' access to land: old question, new challenges

Although farmers' access to land is an old question, it encounters new challenges with special requirements of RAA. From the interviews, I identified the following four major challenges for the access to land associated with RAA: the loss of available farmland, land hoarding and land market opacity, land enlargement or fragmentation that reduces suitable land and new farmers' profiles that propose new challenges to the land use. There are either general challenges faced by almost all the territories or contextual-based difficulties.

1) Farmland in competition: loss of available land for RAA

Farmland is always thought to be threatened as it is less competitive with other lucrative activities such as urban development or leisure countryside activities (e.g., Olsson et al., 2016; Abrantes et al., 2016; Horst & Gwin, 2018). The first challenge for RAA farmers' land access identified was the lack of available and affordable farmland due to competition between farming and other land uses: urbanisation, natural land preservation and non-food production activities that occupy farmland.

In general, urbanisation threatens the loss of farmland with high agronomic potential because land suitable for urban development (i.e., housing and economic activities) is also usually appropriate for farming and developing short supply chain activities (i.e., flat land with good access to services). When urban development is necessary, farmland is easier to be converted because natural land preservation is prioritised. Farmers' land might be fragmented, and farmers become less profitable. Interviewees shared similar remarks, especially through observation in urban and peri-urban territories, for example:

We are in an area of urban sprawl, notably linked to economic development. We have a fairly good economic development dynamic of the set up of companies, which is linked to our location, a bit of a crossroads, both in the south-east of Paris and Le Havre, and then in the south, it is an equally important axis, roughly, Rouen-Chartre-l'Orléan. So, there are obviously positions for development. And then we benefited from the limited supply of land in the Rouen metropolis. So companies moved to us [...] The natural areas are generally the subject of fairly strong protection, notably NATURA 2000 but not only, whereas agricultural areas are less protected. [civil servant, inter-municipal body Seine Eure, Normandy, 2021/06/09]

Territories face different pressures from urbanisation activities. For urban and peri-urban areas, interviewees reported similar issues as presented from the literature, claiming that the pressure is rather from the economic development with the settlement of enterprises and the accompanying necessity for residence. However, urbanisation pressures occur also in rural areas. In the countryside, farmland preservation is mainly threatened by low-density residential settlements (Cerema, 2020). The Covid-19 pandemic and the consequent change of lifestyle tend to have aggravated this threat. The urban population, during the pandemic, tends to rethink a place with fresh air and more touch with nature, and working-from-home measures made it possible (Gallent, 2020). With their observation in rural territories, some interviewees also reported a return of rurality triggered by the pandemic, followed by increasing demand for individual housing. Such a phenomenon may lead to two results. First, the increasing land take for housing reduces future possibilities for farming. Second, the rising demand led to housing prices going up, which made farmers who wanted to set up more challenging to get access to land. Here is one testimonial:

Within the framework of food planning, we realise that there are two major issues in terms of conserving agricultural land in the area. The first is the spread of individual houses, even more so since the lock-down of Covid-19 because people of Toulouse come to buy individual houses; they even come to build individual houses on the territory. [...] The problem is that, in addition, the individual houses are generally built on land that is not, or not too, steep; land that can often be very suitable for market gardening and all forms of farming.

[civil servant, rural cluster Pyrénées Comminges, Occitania, 2021/09/20]

The loss of available farmland is not only induced by urbanisation but also by farmland abandonment and the growth of forests consecutive to agricultural decline. According to interviewees, based on their observation in mountainous areas, the spreading forest can threaten farmland in such areas. Due to the population's exode, forests spread and occupy the land when farmland is not maintained. Once the forest is developed, the land will be preserved for nature and no longer for agriculture. Though such a reforestation process is identified as a positive effect of farmland abandonment (Leal Filho et al., 2017), it reduces farmland availability. Interviewees reported this, such as:

We are a mountainous region with small villages and many forests. The forest, in 50-60 years, has closed the landscape around the villages. Before, the areas around the villages were cultivated, so there were quite a few terraces and food gardens for the inhabitants. All that, the inhabitants left when the rural exodus took place. So, all this land was returned to the forest. So there is also this issue of being able to reopen the landscape a little bit and ventilate the villages. This is a specific problem in mountain areas with small villages. [civil servant, regional park Ariège, Occitania, 2021/06/29]

Finally, available farmland for food production can compete with other uses in farmland which are usually more lucrative than food production. A general issue reported is the occupation of farmland by photovoltaic panneaux, especially from interviewees' observations in Occitania, the south of France. In some territories, the competition is from equestrian activities. As an interviewee reported:

We have a big problem on the territory which is the competition that we can have within the agricultural sector with the equine sector, which is a sector with a big investment capacity and a big financial capacity to acquire land and buildings, and there is a big competition between "traditional and food", agriculture and equine agriculture. This topic came up much more in the discussions on food planning than the consumption of agricultural land by urbanisation. [civil servant, inter-municipal body Lisieux Normandie, Normandy, 2021/04/12]

Overall, available farmland for RAA is challenged by major threats with urbanisation, the reforestation of abandoned farmland, and non-food in farmland such as equestrian and solar electricity projects. Such threats are in urban and peri-urban areas (e.g., urban extension due to proximity and attractivity of city services) and rather rural territories (e.g., second residence and a return of rurality accompanied by the pandemic). Local strategies in preserving available farmland for RAA in the face of these threats from more lucrative activities.

2) Land hoarding and market opacity hinder new farmers' access to land

The second challenge of access to land identified is the limited available land in the market because of land hoarding and a delay in farm property transfer. Land is a working tool for farmers and a future asset after their retirement. As described by one interviewee, there is a "schizophrenia of the agricultural world." It means, on the one hand, farmers want to preserve farmland to be able to work; on the other hand, they want their land to be buildable, therefore, more valuable. In this way, farmers contribute to speculative behaviours (storing land for a future sale), which causes a decrease in land availability and pressure on farmland prices in the local market. So, farmers hoard land even though they no longer farm. They wish the land becomes buildable one day so they can sell it at a good price.

Land as a future asset is especially a driver for peri-urban farmers to hoard their land. When farmers observe that neighbouring land becomes buildable, they tend to wait for the land to be re-zoned. This process retards the farm holdings' transfer. And owners may retain their land without renting it to farmers not to hinder the possibility of being buildable. Further, the land might be left uncultivated as it is a required argument to ask for a change in urban zoning (Geniaux & Napoléone, 2005). So agricultural abandonment, not only land hoarding, is a necessary strategy towards planning authorities. An interviewee reported this phenomenon of hoarding and leaving land uncultivated as a strategy for awaiting zoning change:

... landowners who were sometimes farmers in the past, when there is no taker on their farm, they prefer to keep the land without making it available to other farmers in the form of a commodat or a lease, to be able to leave themselves some latitude in case the land becomes buildable. [staff, Chamber of Agriculture Haute Garonne, Occitania, 2021/06/23]

In rural areas where land prices are less high, land might be kept in the family. Some interviewees claimed that an extra cultural factor of "an emotional attachment to land" hinders land from being put on the market. An interviewee, for example, reported the long-term observation through the rural territory in which the availability of farmland did not increase with the reduction of farmers. The successors of the land, though not practising farming anymore, tend not to sell the land. Hoarding land may cause fallow land, as after generations, the land is maintained by nobody and becomes ownerless property. An interviewee reported this cultural attachment with land, which hindered the land transfer:

There is this cultural attachment that even if a person does not get any income from a piece of land, he will be very very reluctant to sell it because there is this attachment.[...] people feel rich from a piece of land even if it does not bring them any income whatsoever. There is a disconnect between what the land brings in and the attachment to the land. It is really cultural. [civil servant,

inter-municipal body Quercy Rouergue et des Gorges de l'Aveyron, Occitania, 2021/06/28]

Further, there is a general problem that land market is not really open because the trade was usually done between neighbours before publicating in the market. The opaque market results in difficulties for new farmers to access to land: *"...the day it is released, one or two days later, it is already sold; or it is even sold before being put up for sale because it is an agreement between the farmers. The problem we have is that often those who buy are not people who are looking to set up; they are people who are already established and looking to expand. So we end up with very large farms with only one or two owners"* [civil servant, rural cluster Pyrénées Comminges, Occitania, 2021/09/20]. Besides, interviewees generally claimed that farmers are often not enough on time in preparation for their retirement, whereas a new farmer needs several years to prepare to set up.

When farm transfer occurs fluently within the family, this is an extra problem for new farmers. Moreover, some interviewees claimed that the Rural Land Agency (SAFER, *Société d'Aménagement Foncier et d'Établissement Rural*³⁴) might prioritise preserving existing farms rather than facilitate new farmers.

Overall, existing farmers' land hoarding strategy and agreements of sale between neighbouring farmers hinder new farmers from getting access to land. Land hoarding derives from multiple reasons, such as awaiting land to be buildable and cultural attachment. Farm holdings' trade between neighbours or succession within the family, though achieves farm transfer, does not facilitate new farmers' access to land.

3) Land enlargement and land fragmentation: lack of appropriate land for farmers

The third challenge of access to land is the lack of appropriate land for farmers, which is identified as an issue associated with land enlargement and fragmentation. This issue of farmland property structure is important because it affects planning strategies. According to some interviewees, land fragmentation is problematic for existing farmers because it leads to lower efficiency and profitability. In peri-urban areas, urban sprawl leads to land fragmentation. Therefore, farmers may have to find land from other places that are far from the basis of the farms, which makes their work complicated. An interviewee reported this phenomenon:

A problem is the land fragmentation since the development of urbanisation

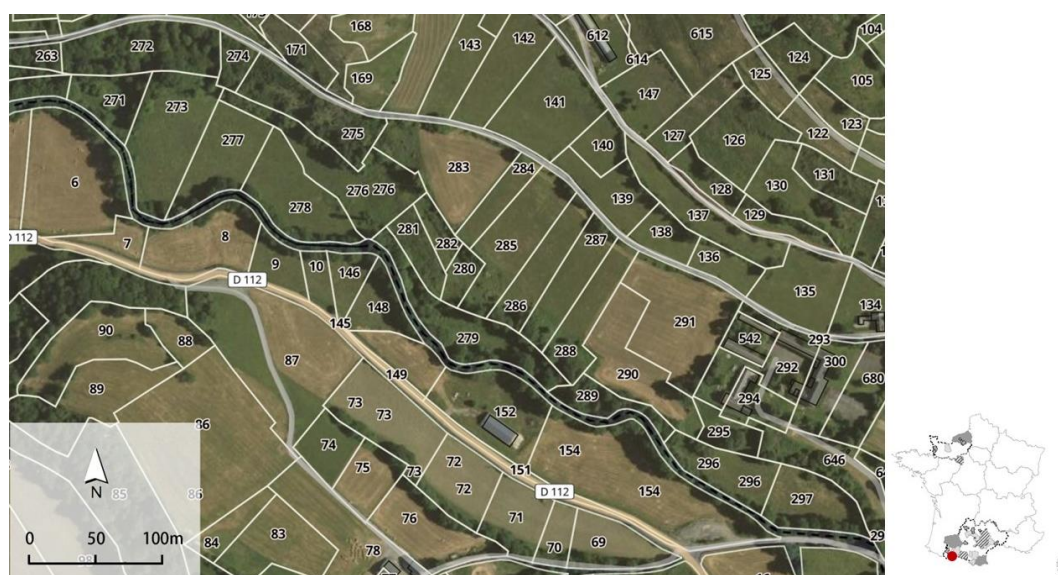
³⁴ Rural Land Agency (SAFER, *Société d'Aménagement Foncier et d'Établissement Rural*) is a public limited company, not-for-profit (without profit distribution), with missions of general interest. It has two major missions: rural land management and providing expertise. For the land management, Rural Land Agency has the right to purchase and dispose pre-emption rights of rural properties.

caused that the farms' parcel structure has been very much impacted and often fragmented. Farmers, when they lose land that becomes urbanised, look for land elsewhere to maintain their activity. So they sometimes have to recover areas that are far from their farms. This also disrupts their operations, with consequences. [staff, Chamber of Agriculture Haute Garonne, Occitania, 2021/06/23]

Rural areas encounter similar problems of land fragmentation, not induced by urban pressure but, by contrast, by agricultural decline, which explains the lack of land consolidation. For example, in the municipality of Aure Louron, the intermediate areas between the valley and the top of the mountains have not experienced the consolidation process as conducted in other areas in the wake of agricultural modernisation time after the second world war. Therefore, the land is largely fragmented (Figure 2. 1). Land fragmentation adds to farmers' difficulty in their daily work. Gradually, farmers leave it as fallow land because it is no longer profitable to work as such. The interviewee reported the issue:

There are intermediate agricultural plots. Intermediate means between the bottom of the valley where there are the villages and the estives (in the top of the mountain), the grasslands where the animals are brought from. So, it is where there are slopes and where there is often forest, moorland or somewhat wild vegetation. [...] And then, if I put the land register on top, there are many small plots all over the place. [...] A farmer with 150 cows will not go and make hay on the two plots; that will take him much time for nothing. So, in general, they do not do it. [...] (So) It becomes fallow land. [civil servant, inter-municipal body Aure Louron, Occitania, 2021/09/27]

Figure 2. 1. Farmland fragmentation, Jézeau (65), Occitania.



Not. From Land registry site of France (<https://cadastre.data.gouv.fr>).

While land fragmentation is problematic for existing farmers, farm enlargement is a problem for new farmers' access to land. New farmers without a family background usually cannot afford large farms. Moreover, the interviewees

working in rural territories claimed it was problematic because it reduces rural employment and population and causes rural decline. A challenge associated with farm enlargement, as a shared claim from interviewees, is that the European CAP policy aggravates the farm enlargement, given that subsidies are related to farm size. Therefore, there forms a vicious circle, as interviewees reported:

Today we have a lot of farm consolidation because of the CAP. As a result, farms are getting bigger. As a result, as they get bigger, they will earn more money with CAP aid, but they will abandon land that is less good, less productive. But as a consequence, there are fewer people on the farms, the rate is reduced. [...] we are rather fighting against the growth of farms, because it is: the bigger it becomes, the more intensive it will be, the fewer people there are on the territory, the fewer families will settle, and then there is a vicious circle. [civil servants, regional park Grands Causses, Occitania, 2021/06/16]

Overall, access to land is challenged by the lack of appropriate land, which may be caused by either land enlargement or fragmentation. Land fragmentation might be caused by urbanisation and a lack of a process of consolidation. It may lead to a lack of efficiency in farming. Land enlargement, in another way, adds to the difficulty for new farmers to access land because of the unaffordability due to the large size of farms. Although it is not the local planning policies' capacity to conduct the reform of land property structure, planning strategies are indeed affected and can affect such a structure and impact RAA.

4) New farmers' profiles and requirements

New farmers' requirement is the fourth challenge of access to land. Interviewees from different territories described a shared tendency of the new farmers' profiles and their requirements for land use. These profiles bring both opportunities (i.e., innovative profiles) and barriers (i.e., lack of financial resources and land assets). According to interviewees, the new entrants usually have a higher education background, are more aware of environmental impacts, are often more willing to engage in market gardening, have an interest in engaging in short supply chains and seek a transition of lifestyle (e.g., having on-farm housing). As an interviewee reported the observation in the territory:

About 50% of people want to set up in market gardening [...] Often, these are people who change careers, who have other professional experience, who are neo-rural, who are often managers [...] who are in the intellectual professions but want to get back to the land, often in organic farming. They do not necessarily have much money, so they want small areas. That is where it is not compatible with the offer because the businesses to be sold are large surfaces. [civil servant, inter-municipal body Grand Cahors, Occitania, 2021/10/05]

New farmers also tend to search for a transition of lifestyle. As reported by local interviewees, the new generation of farmers prefers not to continue the work

of the last generation, which requires a lot of labour and investment. Such a preference corresponds to the choice for engaging in market gardening rather than livestock farming because taking care of animals requires year-round work. It also leads to a double challenge: for livestock farming, there is a challenge of the take-up of farms after farmers' retirement as farmers might be less interested in that; for new farmers to set up, the challenge refers to the mismatch between available land and the wished land (i.e., small-scale so that affordable, suitable for market gardening). Interviewees in territories dominated by livestock farming especially claimed that the difficulty for farm transfer was the unmatched profiles of farm sellers and buyers, as farm sellers were breeders, whereas buyers tended to practice market gardening. For example:

... we are much more interested in setting up market gardening than in setting up livestock farming. But that is also linked to the transfer of farm holdings, where setting up if you're not in a family setting, setting up in livestock farming, is very complicated today. [...] And the difficulty we encounter is that we have a lot of sellers who are in livestock farming, and a lot of project holders who are in market gardening; except that the two are not compatible, both in terms of production and acquisition. [civil servant, regional park Haut-Languedoc, Occitania, 2021/06/16]

And, it is difficult for new farmers to access land because land investment is too ambitious. An interviewee, who himself is also a market gardener, claimed that it usually takes several years to have a parcel of land, and it discourages the farmers:

We are now in a situation where the farms are so large that the bankers are no longer prepared to support potential buyers, because it is becoming so expensive. [...] On average, someone who wants to set up, just talking about market gardening, takes three to five years to find land, that is all. This is not normal, because it's also the time to get discouraged. So we lose a lot in this battle for land. [civil servants, inter-municipal body Pays de Mirepoix, Occitania, 2021/10/01]

Corresponding to that is the challenge of identifying and making appropriate land for new entrants. As presented before in the text, the dominating policy (CAP) does not yet facilitate that. Hence, local strategies are of great importance.



Images. Ferme de ménardière, La Menardière, 50150 Sourdeval, Normandy. Top: market gardening area; Down left: hut (previously used for camping); Down right: house and home truck. Photograph by the author, 2020.

This is a newly set up organic farm owned by a young Belgium couple (29- and 31-year-old in the investigation year). The farm was bought in March 2020, before which it was used as a camping site. The farm is in total 10 ha, with one ha open-air market gardening, three greenhouses, 2 cows raised in an extensive way to produce natural fertilisers, two draught horses, an on-farm house, several huts and a barn. In the investigated period, the farmers expressed their wish to build an energy self-sufficient farm. They planned to restore the hedge. They planned to sell via farmers' markets, small local shops and on-farm direct sales.

Information from personal talks during the author's Woofing stay in December 2020.

In synthesis, the empirical investigation based on studied French cases reveals the diverse and complex challenges RAA farmers are faced to get access to land. Available farmland for RAA is challenged by major threats from more lucrative activities with urbanisation, the reforestation of abandoned farmland and non-food activities in farmland. Existing farmers' land hoarding strategy and lack of market transparency due to agreements of sale between neighbouring farmers

hinder new farmers from getting access to land. Land enlargement and fragmentation both aggravate the lack of suitable land for farmers. In addition, the new generation farmers' profiles that tend to set up with small-scale, small investment, extensive and market gardening practices is an extra challenge.

The findings of challenges generally resonate with what has been identified in the literature on farmland preservation (Olsson et al., 2016; Perrin et al., 2020) and access to land by RAA farmers (Horst & Gwin, 2018). Other than the shared pressure of land use for development in urban and peri-urban areas which the literature has strongly emphasised (e.g., Perrin, 2013; Daniel et al., 2020), farmland preservation pressures were also identified in rural territories in which farmland may be taken for dispersed residence and lucrative uses. For example, rural farmland is threatened by the second residence, a return of rurality accompanied by the pandemic and non-food activities such as solar panels installation. In addition, new-generation farmers' profiles identified in the empirical investigation particularly demonstrate the extra difficulties of setting up RAA farmers in terms of the farms' types, sizes and locations.

Interviewees frequently address that the existing principal international policy CAP does not facilitate RAA farmers. Local strategies are, therefore, of great necessity. In the following sections, I present how local strategies were taken to address the challenges faced by RAA farmers' access to land and farmland preservation in land-use and food planning.

2.1.2 Land-use planning: regulating farmland in a context of urbanisation pressure

Farmland preservation is an issue embedded in French land-use planning and has been reinforced by a sequence of laws. In 2000, the Urban Renewal law (*loi SRU, Solidarité et Renouvellement Urbain*) clearly intended to limit the loss of farmland and promote more compact urban patterns. It discourages the conversion of agricultural zones to urban uses and authorises only buildings that are "necessary" for farming activities in agricultural zones. In 2010 the Environment Law (*loi Grenelle II, Engagement National pour l'Environnement*) defined that land-use plans and master plans have to contribute to preserving farmland, reducing space consumption and fighting against suburbanisation. Today in the course of this thesis writing, the French government is now applying the commitment to the EU goal of "no net land take" by 2050. In 2021, the Climate Law (*loi Climat et Résilience*) defined the goal of "no net land take" (*Zéro Artificialisation Nette, ZAN*). Land-use planning basically regulates farmland use by limiting farmland conversion by applying restrictive agricultural zoning boundaries and building rights. Difficulty in planning is how to balance the various interests.

This section presents land-use planning's use of instruments for farmland preservation and access to land through four topics: determining agricultural zoning, reducing land take, regulating building rights and authorising urban agriculture.

1) *Preserving farmland from urbanisation through agricultural zoning*

French land-use planning preserves farmland through exclusive zoning. According to the Planning Code (*Code de l'urbanisme*), land-use planning has to control the conversion from natural and agricultural land to urban land. In terms of zoning classification³⁵, this process is represented by restricting the conversion from "agricultural" and "natural" zones to "development" zones. According to the land-use planning documents and the interviewees, the determination of land for development was usually defined by combining existing land use, continuity of urban fabric and local elected officials' local estimation. **RAA was neither a legal criterion for agricultural zoning nor mentioned as an empirical criterion of farmland preservation in the design of zoning.** As an interviewee claimed:

... the issues of the protection of agricultural areas had already been integrated, as wished, but without the logic necessarily of short supply chains. [civil servant, inter-municipal body Seine Eure, Normandy, 2021/06/09]

Soil quality is a criterion to determine agricultural zoning and intimately links to RAA in terms of food productivity. It is a shared topic raised by several interviewees when referring to farmland preservation, meaning that high agronomic quality land can be prioritised for preservation. Most land-use planning projects only assessed land based on the practical idea of "agricultural potential" (e.g., possible irrigation or mecanisation). Some territories locally wished to conduct a scientific soil quality assessment, but only a few of them succeeded. In the other cases in which soil quality assessment had been raised but not achieved, interviewees reported two major reasons that prohibited the scientific classification of soil quality. First, from a technical and scientific perspective, it might be difficult to evaluate soil quality because different agricultural products need different soil. As an interviewee reported:

I understand that the agronomic classification of land is very complicated because it depends on the cultivated products. Good soil for cereals is bad for market gardening, and vice versa. So it will be a classification in relation to the products in place at the time when we conduct the work. But it also condemns changes in cultivated products somewhere. [civil servant, inter-municipal body

³⁵ French land-use zoning consists four principal categories: urbanised zone (*zone urbaine*), development zones (*zone à urbaniser*), agricultural zone (*zone agricole*) and natural zone (*zone naturelle*).

The second reason that soil quality assessment was not adopted in land-use planning relates to political debates between stakeholders. Some interviewees reported that Chambers of Agriculture³⁶ were often against soil quality classification, as such a classification may generate inequity between farmers. Particularly, farmers with "bad" farmland would have more possibility to have land to be converted into buildable land. Therefore, although local authorities might be willing to have a soil quality classification, it could be refused by the Chamber of Agriculture as a compromise, as an interviewee reported:

It is a debate that we had quite a lot with the Chamber of Agriculture and on which we never succeeded in prioritising the agricultural land: the prioritisation of that which must be preserved and on which we can perhaps envisage land conversion and other projects. The Chamber of Agriculture always refused to do this. (Why?) Because I think that if it prioritises, everything at the bottom of the classification is destined to disappear, to be converted into buildable land. [...] I understand their point of view and refusal. But it is a pity because we could have had a more advanced, more detailed, more interesting, more intelligent approach to planning, based on a good level of knowledge. [civil servant, inter-municipal body Seine Eure, Normandy, 2021/06/09]

Some territories indeed applied the soil quality assessment in agricultural diagnosis; however, it might make land-use planning zoning decision even more difficult. An interviewee from a rural territory claimed that such an assessment might not be functional. In this case, this interviewee reported that the buildable land is in scarcity due to natural constraints. So, even if soil quality classification was made, it would be complicated to implement:

Indeed the Rural Land Agency (SAFER) consultancy has carried out a study on the agronomic quality of the soils [...] I think it was well done, that is not a problem, but land-use planning is becoming so complicated. It becomes "this plus this plus this." [...] The other day, I talked to the mayor of a small town, who is a retired farmer. He insisted that he should have a small constructible sector in such a sector. I said: "Well, Mr Mayor, you have seen that in soil quality, we are in ++ here." He said: "yes, I know, but we have no other possibilities." It is true that, between the wetlands (available land is difficult to find). [civil servant, inter-municipal body Baie du Cotentin, Normandy, 2021/05/28]

Therefore, the soil quality assessment was claimed to be necessary to integrate other criteria. An interviewee claimed that the logic of soil quality and spatial optimisation of urban development should be combined:

³⁶ Chamber of Agriculture (Chambre d'Agriculture) is a farmers' support organisation in France. Detailed analysis on its role is presented in chapter 3.

In the agricultural diagnosis, there was a study on soil quality conducted by the Rural Land Agency (SAFER). [...] At some point, in any case, if there is a town established in relation to a river, to the topography, to the relief, we will not necessarily build only to the west because the land is bad; we will have no spatial logic. So there is the theory and the practice of spatial planning. There are points which ideally should be taken into account. But from a spatial planning or development logic point of view, if we take this point strictly into account, notably the soil quality, we will create something illogical. [civil servant, inter-municipal body Mortagne au Perche, Normandy, 2021/06/10]

In the investigated cases, the metropolis Montpellier conducted a master plan (SCoT) that integrated soil quality assessment as one of the multicriteria analysed to determine farmland preservation. Other criteria, such as flood risk and urban structure, were included in this case. However, this type of analysis requires a high level of human and technical resources and might be challenging in implementation.

Overall, agricultural zoning as a principal instrument to preserve farmland did not yet integrate RAA directly as a criterion in its determination logic. Standard soil quality assessment could provide an appropriate criterion with integrating issues of prioritising suitable land for food production. However, the use of such an assessment was largely limited due to both technical difficulties (i.e., no one criterion of "good soil" for different products) and political trade-offs (i.e., Chambers of Agriculture oppose differentiating farmers). In addition, the application might be complicated when there is high land tension or other hindrance to development. A multicriteria analysis in integrating different, including conflictual, elements together can be a solution but has high requirements on technical investment as well as political commitment.

2) Reducing buildable land in land-use plans: towards no net land take?

Although it is difficult to estimate if one territory applies or not strict farmland preservation regulations due to diverse contexts, interviewees generally claimed an increasing vigilance from the state³⁷ (the state's local services) to control the farmland conversion. When asked about the state's opinions on land-use planning, many interviewees indicated that this was usually about reducing farmland conversion. Moreover, some land-use planning documents were cancelled by courts after the prefect (local state services) filed a claim on the grounds of dissatisfaction regarding the objectives in land take quantity (e.g., one of the infra-land-use planning of inter-municipal body Mont Saint Michel). As claimed by some interviewees, such vigilance came from an increasing

³⁷ The term "state" used here refers to the national government (France is a unitary republic, not a federal one), whether it be its central or local services.

awareness of environmental protection and was enhanced by a new regime of preparing the goal of no net land take (*zéro artificialisation nette*, ZAN):

Now the view from the state has become much harsher in recent years on this question of urban sprawl, of land take. There were environmental problems, there were a certain number of things, but there was no law that really quantifies land consumption, which is in preparation with the no net land take (ZAN), which is directly linked to what we are talking about today. So it will come. But even in the absence of a new law, the local state's service has become tougher, which says "be strict and be intransigent on these questions because we are prefiguring the no net land take." [civil servant, inter-municipal body Seine Eure, Normandy, 2021/06/09]

The Climate and Resilience law (*loi Climat et Résilience*, 2021) defined the goal of no land take as follows: "In order to achieve the national objective of no net land take in 2050, the rate of land take in the ten years following the enactment of the present law must be such that, over this period, the total consumption of space observed on a national scale is less than half that observed over the ten years preceding this date" (Article 191). This law was enacted in the middle of the interviews. And the decree was not issued to set out how the law would be implemented at the time of this manuscript writing. **Many interviewees claimed that achieving the goal of no net land take (ZAN) would bring enormous challenges in land-use planning, especially in rural territories. Such challenges are mainly from four perspectives.**

First, there is a major challenge from the conflictual goal of limiting land take and territorial development. Rural territories have to maintain and attract habitants and families in order to maintain their functions (e.g., schools). In the meantime, they are less equipped for expertise in urban planning (Le Bivic & Melot, 2020). Buildable land is important to accommodate new inhabitants and maintain employment, meaning land take is necessary for housing and economic development. Interviewees claimed that the goal of reducing half of the land take compared to the last ten years' quantity would raise difficulties in rural territories, as land take was already limited in the past and would be even less in future. As an interviewee claimed:

On the one hand, we are preserving agricultural spaces. But on the other hand, we will perhaps prevent people from coming to settle in the territory because we will not be able to build anymore. [...] The Hautes-Pyrénées in particular, we have a very weak, even negative growth. So we need to accommodate new populations, to accommodate new companies. But to accommodate new companies, we need to be able to house the people who work there, to offer them quality housing. And if we are prevented from building, we will not be able to do it. [civil servant, inter-municipal body Tarbes-Lourdes-Pyrénées, Occitania, 2021/10/04]

Second, rural territories may not be well equipped or not be suitable to take

strategies proposed to achieve no net land take. There are indeed strategies proposed for no net land take without preventing development, such as densification and reuse of vacant buildings. However, their application seems complicated for rural areas. Although densification seems a solution to develop without extra land take, it can be complicated to implement in rural areas. Interviewees usually claimed that rural territories attract new inhabitants with their landscape and large spaces that can provide a lifestyle different from cities. The idea of reducing the surface of residence and constructing multi-storey buildings instead of individual housing is not understandable for rural local stakeholders. Also, restoring vacant buildings and putting them into the market was considered unsuitable for rural territories. Rural territories usually lack resources to restore buildings. Moreover, even if buildings within the village centres are renovated, they are frequently not attractive for young households due to the tiny spaces in old rural buildings and the proximity of traffic disturbance.



Image. Landscape of the ancient town centre of Saint-Antonin-Noble-Val (82155), Occitania. Photograph by the author, 2021/06/28.

Third, there is an incomprehensibility and a difficulty of change the mentality for rural elected officials. For those who have lived through the period of rapid economic development with prioritising urbanisation, it is even hard to change the mind to control land take, which to certain extents means limiting economic development. As an interviewee reported:

People (the elected officials) were in a context in the 70s and 80s where we wanted to do economic development, where we developed the mountain for tourism with a logic of growth and development. [...] And today, it is the same elected officials, not all of them, but there are some who are still there, [...] now it is “we preserve as much as possible, we reduce as much as possible and we develop differently, especially in relation to urban planning, by trying not to create any more artificial areas.” And it is a real change of paradigm; it is complicated in terms of mentalities. [elected official, inter-municipal body Aure Louron, Occitania, 2021/09/27]

Fourth, there is a worry about the competition between rural and urban territories when it comes to the distribution of quota for land take at a larger scale. It should be noted that it is a national scale objective to reduce 50% of the consumed land in the last ten years. The scale of implementation to achieve the goal was still to be determined. In such a situation, in rural territories, there was a preoccupation with the aggravated urban-rural gap that might be caused by the way to implement no net land take (ZAN). For example, the region of Occitania aims to achieve the goal in 2040 in its regional plan³⁸. The territorial distribution of quota might be applied. Interviewees criticised that there might be a risk of giving priority to the metropolis, which is politically more powerful and has more argument in asking for more land take quota:

*In the Occitanie region, there is a conference of master plans (SCoT) which will be organised in February 2022. [...] At this conference, they must agree on how to distribute, according to the regions, the spaces that can be built. In other words, we need to reduce by 50%, but perhaps the metropolises will say, “we need to build a lot, so we will take 70%, and you, the rural territories, will only have 30%.” That is to say that we will have to make a territorialisation according to the sectors and the scale of Occitania to see where we can build more in certain places than others. **However, the metropolises here have a lot of power and we are very afraid that they will say that they are metropolises, that they need to grow, that they have economic projects, that they will try to get as much as possible and that they will leave us nothing.** [civil servant, inter-municipal body Tarbes-Lourdes-Pyrénées, Occitania, 2021/10/04]*

Consequently, the issue of achieving no net land take (ZAN) caused opposition from elected officials in rural territories and retarded the process of the ongoing master plan (SCoT) processes. An interviewee reported the problem as “*there is a difficulty in moving forward together on the objectives; particularly, what is stuck is the objective on land consumption and on housing. So for the timetable, I can tell you today that it is unpredictable*” [civil servant, rural cluster Midi Quercy, Occitania, 2021/06/29].

In terms of the implementation to achieve the goal of no net land take,

³⁸ The regional plan was ongoing. Information from official site: <https://www.laregion.fr/Comprendre-Occitanie-2040>. Accessed by October 2022.

the methods were still ongoing and raised complexity. Land take measuring methods are still ambiguous. The Climate and Resilience law (*loi Climat et Résilience*, article 192³⁹) sets a criterion of land take as “making the land sealed” but without explicit explanation. While the decree was still in progress, territories seemed to interpret it in their way. When asked if buildings for farms are considered as “land take”, some answers were no (e.g., regional park Grands Causses: *in today’s calculations, all farms are not included as land take, because it is a tool that allows the maintenance of natural and agricultural spaces*) whereas some were yes (e.g., inter-municipal body Quercy Rouergue et des Gorges de l’Aveyron: *agricultural buildings are land take since by definition a roof is impermeable*). Other debates include, for example, infrastructure and backyards of houses. The concept will affect decisions in land-use planning because land take and zoning are not totally overlapping (e.g., roads outside urban areas are zoned as non-urbanised but actually they are land take). Furthermore, on the legal level, zoning and spaces are two distinct concepts. The idea of zoning is to identify a “dominant use” (“*vocation dominante*”) (Melot & Bransieq, 2016). So, farmland parcels may be classified as urban zones and built-up areas may be classified as agricultural and natural zones if they do not change the dominant use.

A fierce debate among the definition of “land take”, which is closely related to RAA, is the use of photovoltaic panels on the floor. The debate is that photovoltaic panels are neither sealed (“*imperméabilisé*” as the judging criterion of land take) nor for natural or agricultural usage. From a positive perspective, photovoltaic panels contribute to renewable energy production, bring stable income for farmers (e.g., compared to uncertain revenue of farming due to the climate and weather change) and facilitate local economic development. However, from a negative perspective, such panels risk occupying spaces that are dedicated to food production, threaten biodiversity and may generate the problem with landscape maintenance. There also might be “fake farming projects” motivated solely by the income induced by energy production.

Local authorities took different strategies for photovoltaic panels. Some territories found the consensus of keeping such installations only on the rooftops or abandoned mine shafts, for example, as the farmers’ support organisation and local officials all agreed to preserve farmland for food

³⁹ The article 192 of Climate and Resilience law defines: “within planning documents, when the law or regulation provides for objectives to reduce the land take or its rate, these objectives are set and evaluated by considering as: “a) artificialised: a surface whose soils are either sealed due to buildings or pavement, or stabilised and compacted or made of composite materials; b) Non-artificialised: a surface that is either natural, bare or covered with water, or vegetated, constituting a natural habitat or used for cultivation.

production and landscape value. In some other territories where rooftops and abandoned mine shafts were unavailable, and stakeholders held different opinions, the strategies were different (Table 2. 1).

Table 2. 1. Stakeholders' opinions towards photovoltaic panels.

Note. From interviews in territories where photovoltaic panels strategies were not clear.

For	Against
Farmers: stable and complementary income	The state: risk of land take
Local authorities: economic projects, ecological transition policy	Local authorities: landscape value.
Chambers of Agriculture (when the project is led by farmers): support local farmers' economic activity	Chambers of Agriculture (when the project is led by non-farmer enterprises): Preserving agricultural tools for the future
Enterprises of photovoltaic panels installation: economic development and irreversible land.	Regional park and French National Architects (<i>Architectes des bâtiments de France, ABF</i>): landscape value

Innovative strategies were taken in the territories mentioned above in which local stakeholders have more interest in developing on-floor photovoltaic panels. The first strategy was developing "agrivoltaïsme" which means the co-existence of photovoltaic panels and food production. According to interviewees, this strategy was still doubted by local farmers and authorities. A second strategy was to require project leaders to compensate for the loss of land for food production by developing food-associated projects elsewhere. In one studied case, the compensation project was a farm incubator to facilitate the set-up of new farmers.

Other than the ambiguous definition, another complexity is the method of allocation of quantitative goals of land take, which will eventually affect the farmland preservation strategies in land-use planning. Before the establishment of the goal of no net land take, some territories had already practised the goal of quantitatively reducing land take at a larger territorial scale; they presented certain levels of methods in allocating quantitative goals for (inter-) municipal bodies. Among the studied cases, regional park Boucles de la Seine and Haut-Languedoc disposed of quantitative goals. Although disposing of different methods, both cases showed the difficulties in distributing the quota to inter-municipalities and the data update.

For the regional park Boucles de la Seine⁴⁰, there was an incentive goal of

⁴⁰ "The partners of the charter are committed to limiting the land take within the regional park's perimeter (excluding the territorial development directive) to between 2 and 4% over the 12 years of the charter. This objective represents a significant change in current trends. In order to respond to this desire to control the consumption of land, the partners are committed to limiting the amount of land take to 3.75% in the framework of the master plans (SCoTs). For

limiting land take at 3.75% over 12 years (settled in the charter, from 2013 to 2025). The goal had been set between local actors. This was set due to the particularity of the territory with its location between two metropolises (Le Havre and Rouen) (while most regional parks are highly rural). As the charter was to extend, this quantitative issue was retaken as a question. For this, a central question was the allocation by inter-municipal bodies to guide their land-use planning. Interviewees reported two major hindrances: first, there were different calculation methods disposed of by local authorities; second, the allocation of the global goal was complicated. While the regional park was aware that the distribution should not be equal between territories, the unequal distribution tended to generate tensions. Interviewees reported as such:

A1: How does it work? Does it mean that the first one to draw up a document gets the fortune and then the others split the rest? This is a difficulty. How do we manage this? Already the calculation methods (on land take) are not the same depending on municipalities. The tools they use are not the same. We have this difficulty with them. How do we calculate? How do we share together? [...]
A2: With the elected officials, on the regional park territory, when we told them, "you have the objective of limiting the land take more than what happens for the other municipalities, it will perhaps be stricter for you." All of a sudden, it started to be a little tense. [...] but in fact this is one of the subjects for the park charters. Should we just be an incentive on these subjects? or should we be more of a bearer of a real strategy of land saving? [civil servants, regional park Boucles de la Seine, Normandy, 2021/05/28]

Regional park of Haut-Languedoc designed slightly different quantitative goals. Their goal only concerned a part without being covered by the master plan (SCoT⁴¹). The regional park defined the goal to reduce new housing (reducing 50% of the surface areas in the precedent ten years, or growth of 13% of the urbanised areas if no more than one building permit was given over the last ten years⁴²). In this case, the regional park set the same goal for each municipality

areas not covered by a master plan, and in order to ensure that the effort to limit land consumption is fairly distributed, the villages have committed to a target of 2% of the land area to be developed, the urban centres to a target of 3 to 4% and the secondary urban centres to a target of 2 to 3%." (Boucles de la Seine, Charter 2013-2025, 2014 p35) <https://www.pnr-seine-normande.com/upload/medias/chartejanvier14.pdf>

⁴¹ For reminding, master plan (SCoT) has the legal mission to define quantitative goals of land consumption.

⁴² "To limit the consumption of space by new housing to 50% of the surface area actually consumed between 1999 and 2009. [...] This ambitious restriction corresponds to a maximum effective growth of only 13% of the urbanised areas of each municipality, through new housing, by 2023. Note: the proposed growth rate of urbanised areas (13%) will make it possible to respond to the specific case of the ten or so of municipalities in the East-West median corridor which have issued less than one building permit over the last 10 years." (regional park Haut Languedoc, charter, 2011, p68.) <https://www.parc-haut-languedoc.fr/images/comprendre-le-parc/rapport-charte-2011-2023.pdf>

because the global distribution was not feasible considering the complexity of negotiation between municipalities. In such a case, the regional park staff worked in detail with each municipality on their urban development issues.

The presented two cases have clearly illustrate the complexity of addressing no net land take issues in quota allocation between territories. They have also showed distinct local situations with different local strategies. It is also worth noting that the regional parks do not have this quantitative goal of land take at their disposal. Such an application, as presented in the two cases, was based on local partners' commitment. It represents how local actors applied innovative strategies not being strictly limited in a formalised framework. Nowadays, no net land take is going to provide a formalised and standardised framework. However, local conditions should be taken into account.

Apparently, the no net land take goal brings opportunities and challenges to the local territories. The opportunities refer to farmland preservation, which would gain more priority in competition with urban development issues. The revealed challenges are mainly associated with the contradictory and complex situations the rural territories face: the reduced building possibility versus the necessity to accommodate new inhabitants for rural revitalisation, the complexity in implementing densification or reuse of vacant buildings, the difficulty in the change of mentality for local elected officials and the preoccupation on the aggravated rural-urban gap. The implementation of the goal of no net land take was also challenged by the methods, both on the ambiguous definition of land take and the method to allocate the quantitative goals to (inter-) municipal bodies.

3) Regulating building rights in agricultural zones: preserving rural space versus farmers' development rights

Land-use planning aims to guarantee farming activities and avoid legal (and even illegal) conversion of farming buildings by making regulations for building rights. In the meantime, there is a risk of constraining farmers' activities. Several planning instruments are referred to. Here I discuss the application of reciprocal distance and the preserved agricultural zones. The discussion of "necessity of on-farm presence" and "change of uses" will be discussed in the sections on the transition of farming practices (2.2) and structuring local supply chains (2.3).

The first regulation to control building rights is setting specific agricultural zones to apply more strict preservation (usually in the form of agricultural zones with "preservation" indicators: *zone Ap*). Document analysis in chapter 1 (1.1.3) has shown that 86.7%⁴³ of the studied land-use planning documents

⁴³ For reminding, this number is based on the document analysis of 45 land-use planning

created specific zones for protection with more elaborated rules than regular agricultural zones. They were created for landscape, environmental and ecological, and on some occasions, to protect land in proximity to the city. Building rights in such areas are usually more strict, sometimes without permitting any new construction. The set of these specific zones were either locally defined or based on supra-local requirements, for example, in perimeters defined by Flood Risk Prevention Plans (PPRI), in municipalities classified by Coastal law (*loi littoral*⁴⁴) and in the perimeter classified by outstanding heritage sites (*site patrimonial remarquable, SPR*). These documents can apply requirements to land-use planning.

The set-up of unbuildable zones in agricultural areas (even with restriction to agricultural buildings) engages issues of avoiding the resale of farm buildings to non-farmers. Interviewees from a territory with strong problem of the farm buildings' resale reported the problem. As the interviewees claimed, there was a "cabanisation" phenomenon, meaning that on-farm buildings may be built for agricultural uses but later be transformed and resold into non-farmers' uses (e.g., touristic accommodation, secondary residences). Such a transformation leads to the sprawl in farming areas and may harm agricultural activities. Hence, unbuildable zones may be set to prevent the problem. Interviewees reported as such, by emphasising that this was particular the issue in the territory where land is in scarcity:

A1: ... what is observed is notably in the coastal sectors, because they are very attractive, and therefore where the land is both very expensive and, above all, the possibilities for building are very limited. So, there is a development of uses that are not related to agriculture (in agricultural areas). For example, recreational land on which a small hut has been set up, and then the hut will be transformed into a house, in places where there should not be any housing. This is outstanding in areas where land is very scarce. [...] A2: Yes, this type of phenomenon has been developing for a long time. So, the implementation of regulatory instruments is trying to counter this. [civil servants, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07]

However, the unbuildable zones and regulations may lead to the contradiction: farmland is preserved but farming activities may be hindered. The regulation that restricts the farmland building rights may hinder farmers' development and put the agricultural development in tension, as farmers may need building rights for housing and for farm buildings. An interviewee explained this

projects. The semi-structured interviews cover larger samples, including the ongoing planning projects.

⁴⁴ Loi n° 86-2 du 3 janvier 1986 relative à l'aménagement, la protection et la mise en valeur du littoral.

contradiction:

Today one of the challenges is to set up farms, which often says “new farms”, and it is a credo of the agricultural professions: buildings. But given the deviances observed, the elected officials are very, very, very timid about this, because they say: “we, behind, we are asked to build farm buildings and in fact it is houses and we cannot control them.” So, there is a real tension beyond the fact that, given the situation, i.e. the coastline, biodiversity, risks, etc., there are many areas of the territory that are theoretically unbuildable or with really very restricted conditions of constructibility, even for the agricultural uses. [civil servant, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07]

So, the Chambers of Agriculture that represent farmers may against the rule and require more rooms for building possibility. Local authorities, depending on the cases, may removing some barriers and give more possibility for farmers' development. However, the too much building possibility for farmers also risks a negative environmental impact. For that reason, the too excessive buildable zones for farmers that meets expectation from Chambers of Agriculture may arise discontent from the public, as an interviewee reported:

... they (the Chamber of Agriculture) wanted to have the largest possible buildable zones around the existing buildings so as not to restrict the farmers. That was their main request. And we followed it. We were blamed for this (by the investigating commissioners). [...] they blamed us for the fact that (building rights in) the agricultural zones were a bit too excessive. [civil servant, inter-municipal body Muse et Rases du Tarn, Occitania, 2021/10/08]

Above cases showed the central conflictual issue between preserving rural spaces and leaving rooms for farmers' development. **Other than the zoning, there are two types of distances usually applied to control building rights associated with farming activities.** The first is the minimum distance between non-agricultural housing and farms that will generate disturbance to habitants (e.g., livestock farms with more than a certain number of animals) for sanitary reasons⁴⁵ (Rural Code, L. 111-3). In some situations, this distance helped avoid urban sprawl because no new construction would be allowed when farm buildings are surrounding the built urban area. But in the meantime, it hindered possibilities of development and even possibilities of changing the uses, as an

⁴⁵ Two types of minimum reciprocal distances are applied between farm buildings that generate disturbance and. First, the regulations governing installations classified for environmental protection (réglementation des installations classées pour la protection de l'environnement, ICPE) require that certain classified farm buildings (that generate disturbance to residential uses) be at least 100 metres away from dwellings and premises usually occupied by third parties. The principle of reciprocity set out in Article L. 111-3 of the Rural Code implies the same rule with regard to existing farm buildings. Second, each department disposes a departmental sanitary regulation (règlement sanitaire départemental). This usually refers to a smaller distance for buildings not concerned by the national regulation.

interviewee reported:

...there is the issue of protection zones around farms. People cannot build within 50 metres of a farm. [...] We have small towns where we have several farms that are often a bit each at an entrance to the village. When we apply the 50-metre perimeter around the village, we cover the whole of the village, so we cannot extend at all because of, or, thanks to this rule. It depends on how you interpret it, but in any case these perimeter systems are also a tool that avoids sprawl in certain towns. [civil servant, regional park Aubrac, Occitania, 2021/09/30]

In the above stated case, although the reciprocal distance prevented urban sprawl, it also became be a barrier to rural development. Similar to what I have presented for the issue of no net land take, this was also the difficulty for rural villages and towns that were hindered by the reciprocal distances. As the interviewee reported:

We have a village where, for example, there is a school with 22 children. The mayor would like to see at least one or two families settle down to ensure the continuity of the school. And he thinks: "I have four farms at the entrance of my village, I cannot build anything, so I have only one solution, which is to rehabilitate my village, the existing buildings." But it is expensive and difficult to convince the owners to do the work. So it poses difficulties. [civil servant, regional park Aubrac, Occitania, 2021/09/30]

The second distance is the maximum distance between existing farm buildings and new constructions in order to avoid "sprawl" in agricultural zones and the future transformation from farming buildings to non-agricultural buildings. This is restricted either by supra-level rules or locally defined regulations. As to supra-level rules, Coastal law (*loi Littoral*) and Mountain law (*loi Montagne*⁴⁶) both require the continuity of urbanisation in areas regulated by the laws. This continuity is to avoid sprawl in mountainous and coastal areas.

Regarding locally defined regulations, the maximum distances were usually between farmers' housing and farm buildings to avoid disordered sprawl. An implicated logic is that by regulating farmers' housing in proximity to farm buildings, the disturbance generated by farm buildings (especially breeding buildings) may prevent the resale of farmers' housing to a non-farmer. So, the agricultural disturbance is used to deter sprawl in this situation. This is at the cost of farmers, especially breeders' life quality because they have to tolerate disturbances from their own livestock. But this rule was usually applied by land-use plans and supported by the Chamber of Agriculture. An interviewee reported the issue:

⁴⁶ Loi n° 85-30 du 9 janvier 1985 relative au développement et à la protection de la montagne.

This (the maximum distance) is a constraint because, very often, the farmers would like to put their houses a little distance from the livestock buildings. There are disturbances in the livestock buildings; there are flies and smells. [...] The disadvantage of this is that if you put a house 300 metres from the farms, in the future, this house will change the owner; it will belong to someone else who is not attached to the farm. And later, there are problems with spreading pesticides, spreading fertilisers and having other disturbances. The Chamber of Agriculture's position is that the buildings should not be too far from the farms. [civil servant, inter-municipal body Muse et Rospes du Tarn, Occitania, 2021/10/08]

When the minimum and maximum distances come together, the extra constraint might come with the co-existence of conflicting norms. When the minimum distance between non-farmers' housing and farm buildings is applied for sanitary consideration and the maximum distance between farmers' housing and farm buildings is also applied to avoid on-farm building resale, the development of farms and residences will be both constrained. As an interviewee reported:

***The problem is that if you have to build your livestock building at least 100 metres from the hamlet, if you apply the coastal law (loi littoral) which says there is no discontinuity, somewhere it does not work.** On the other hand, reciprocity applies to non-agricultural buildings too. That is to say, if there is a livestock building, they too must keep 50 or even 100 metres away from this livestock building. But the problem is that if the radius has been defined as a hamlet that exists, basically you cannot do anything inside or on the outskirts. [civil servant, inter-municipal body Haut Allier, Occitania, 2021/10/04]*

Overall, the set of unbuildable areas raises the issue of the conflicts between protecting rural spaces and developing farming activities. The application of instruments and the requirements is always a trade-off between the conflicts, and there is a cautious issue to be dealt with based on local stakeholders' interplay. The co-existence of norms may block the building possibility, which complicates local development.

4) Authorising agriculture in urban areas

More than farming activities located in agricultural areas, land-use planning can also regulate agriculture by applying rules in urban areas. Here urban agriculture means food production activities within and on the fringe of an urban area, including both professional and non-professional activities (Lovell, 2010). It also indicates a direct provision to the city population. Document analysis in chapter 1 has shown that most territories applied certain types of regulations to sometimes facilitate land access for producers by authorising urban agriculture. I present respectively the local choices of the instruments: the creation of food cultivated by specific zones or easement, authorisation of agricultural activities in urban zones and the use of design guidelines (OAP), an

issue raised by the interviewees.

The frequently applied regulations were creating special zones or easements to permit food production activities with small-scale constructions in built environments (62.2% of the analysed documents).

The application was only in urban territories where but also in rural territories. Interviewees reported the different rationales based on local situations. Some interviewees explained that rural areas do not need urban agriculture, for example, because *"we are very close to the real farms, so we do not need urban farms. If there is land left in the urban areas, people use it to build houses."* [civil servant, inter-municipal body Granville Terre et Mer, Normandy, 2021/01/26]. By contrast, many rural areas still applied regulations to preserve cultivated areas within the built areas. An interviewee explained that it was related to new politicians' commitment: *"... we are considering two urban agriculture projects, it is because of the new elected officials, before it was never the case... in land-use planning we will regulate it if the projects are decided"* [civil servant, inter-municipal body Saint-Lô, Normandy, 2021/01/26].

It is worth noting that the classification of such zones may also be a strategy not simply linked to the purpose of protecting urban cultivation. For example, an interviewee claimed that the creation of such zones was rather a local strategy to meet the quantitative goal of land consumption in land-use planning:

In the land-use planning, yes, they have tackled this question of allotments. But you see, it is also a question of the quantity of figures. They counted the allotment gardens into the reduction of space consumption, in order to reach the expected objectives. [...] So this is what I wanted to tell you that the land-use planning is a calculation game, a presentation game, and that afterwards, it will be designer's exercise to meet the requirements of the land-use planning. [civil servant, rural cluster Haut Languedoc et Vignoble, Occitania, 2021/09/23]

Some territories explicitly authorised agriculture in urbanised and/or development zones (n=6, 13.3%). There were also a few territories (n=2, 4.4%), including written regulations that encourage diverse forms of agriculture in urban areas (e.g., roof farms, beehives). Two territories were exemplary, showing that the territories foresaw the future agricultural development requirements and were prepared to avoid constraints as well as to incentivise the activities through legal regulations. In one case, urban agriculture has been explicitly authorised in urban areas. Though no project was proposed, the land-use plan adopted this regulation to avoid constraints:

I admit that it (agriculture) was not the priority of the urban zones. But when we evoked this possibility, all the elected officials were rather favourable to integrate urban agriculture with the condition that it should not generate disturbance. So the part that we chose was the classified installations for the

*protection of the environment*⁴⁷, we said if it is a classified installation, we do not want it to be integrated into the urban zones. We also left the possibility of having greenhouses that are higher than the average, because we thought, even if it has an educational purpose, that we could do it. [civil servant, inter-municipal body Metropolis Rouen, Normandy, 2021/04/23]

Another case was a regulation that required new constructions with flat roofs devoted to specific functions; one of the desired functions is "urban agriculture (food garden, beehive...)" (inter-municipal body Yvetot Normandie). As the interviewee claimed, the idea of this regulation was to start by encouraging urban rood gardening, then gradually to be an obligatory choice:

We start by inciting. So, when we talk about the functionalisation of flat roofs, water recovery, etc., we are talking about a recommendation. We add in the regulations saying that it would be good if when you manage, you either spread the rainwater or you recover it, anyway, we try to encourage like that. For the moment, we recommend, we try to make things change. Afterwards, I think that the next revision of the land-use planning will be obligatory. [civil servant, inter-municipal body Yvetôt Normandie, Normandy, 2021/05/27]

In addition to zoning and written regulations, a few interviewees reported the use of design guidelines (OAP⁴⁸) for agriculture in the built environment. They were either defined spatially or not. In an ongoing land-use planning project, a sector for design guidelines (OAP) for urban agriculture was being established to require private developers to integrate setting up urban food gardens into development projects:

Within the framework of the land-use planning, they are going to make a design guideline (OAP) by saying "there, we are going to develop a little more habitat. The service road will pass afterwards like that and here, there will be a space to preserve for allotment gardens, vegetable gardens." So, that means that the project owner, a private person, when he carries out his project, will be obliged to make an allotment garden, because if he does not respect the planning

⁴⁷ See footnote 43: the regulations governing installations classified for environmental protection (*réglementation des installations classées pour la protection de l'environnement*, ICPE). This is a legal concept in the French environmental Code, which may be applied either to farming or industrial activities that may induce environmental hazard (Melot & Pham, 2012).

⁴⁸ "Orientations d'aménagement et de programmation" (OAP) means directly "development and programming guidelines", simplified as "design guidelines." They aim to define qualitative development intentions and guidelines which can: 1) relate to a given sector of the territory ("sectors" or "neighbourhoods" design guidelines), defining in particular the conditions of development guaranteeing the taking into account of the architectural, urban and landscape qualities of the spaces in the continuity of which the zone is registered; or 2) have a more global approach to a specific issue ("thematic" design guidelines). In the first case, the design guidelines are associated to certain spatial areas, whereas in the second case, they do not have to target a defined area.

guideline, he cannot get the building permit. [civil servant, inter-municipal body Tarbes-Lourdes-Pyrénées, Occitania, 2021/10/04]

While the above case was spatialised with identified areas, design guidelines (OAP) can also be applied as qualitative guidelines for the whole territory. In one of the studied cases, design guidelines were set to preserve existing tree lines with the feature of tree embankment and fenced hoves (*clos-masures*) in development zones. Such areas usually contain orchards with biodiversity and heritage values but were threatened to be destroyed facing the new construction. Rather than simply preserving tree lines and requiring setback distances, the local authority developed the design guidelines for preserving such a fenced hove system in integrating issues of urban development. Preservation guidelines were set for the different elements composing the fenced hove system, including, for example, different categories of setbacks and orchard preservation and plantation suggestions (inter-municipal body Yvetot Normandie, design guidelines, 2020, pp. 5-13). This case demonstrated using thematic design guidelines to future urban development in integrating urban food cultivation issues.

Though urban agriculture brings benefits, potential conflicts exist between the goal of densification and urban agriculture. Urban agriculture through using hollow spaces (*dents creuses*) in the built areas can be problematic when facing the question of urban densification, as interviewees reported:

Sometimes there are quite dense neighbourhoods where there are already a lot of houses. Is it really interesting to make five more houses here or rather to create a shared garden that will come and create a social link or something different? Is it good? The state is pushing hard to build on the empty spaces. But sometimes, when you are in a rural area, do you really want to live crowded together? [civil servant, inter-municipal body Pays d'Olmes, Occitania, 2021/10/01]

The interviewee also claimed that the land owners might refuse the use of hollow spaces for agriculture due to the potential value they would get from the buildable land:

We have a lot of hollow spaces on the territory, which are sometimes quite large, sometimes almost a hectare in size. [...] We wonder whether this land would be good for market gardening, whether it should be blocked for market gardening in the future. At the same time, the owners do not necessarily agree, because they lose the possibility of building and the value of the land becomes different. [civil servant, inter-municipal body Pays d'Olmes, Occitania, 2021/10/01]

Moreover, the existence of hollow spaces and keeping it as unbuilt may generate problems regarding the possibility of urban development. With the goal of reducing land take, interviewees reported that the state tended to

prioritise the use of hollow spaces for development before permitting urban extension when such spaces existed in the built environment. In such a situation, it may be more difficult for municipalities to justify the existing non built-up areas in urban zone. It shows the existence of conflicting norms between encouraging urban vegetation including agriculture and promoting densification to reach the goal of no net land take. As reported to an interviewee:

The hollow spaces are really parcels which penalise us for all the projects because as soon as there is a hollow space, the state's service looks at all the hollow spaces [...] And this is priority land for urbanisation compared to other land that we will ask for, which is perhaps more relevant, for example, for the mayors who find that it is more relevant in a certain place than in the hollow space there. And for them (the mayors), these large hollow spaces are penalising, because they can no longer request land, because they have these hollow spaces. [civil servant, inter-municipal body Pays d'Olmes, Occitania, 2021/10/01]

Overall, planning regulations were applied to urban agriculture by creating specific zones or easements to preserve food gardens or authorising agriculture in urban areas. Design guidelines (OAP) also emerged as an instrument being mobilised to either require the integration of food gardens in urban development projects or assign design requirements for the development. The strategically used instruments demonstrated the raised interest by local authorities in urban agriculture and the diverse ways they intervene in the issue. A central issue to be figured out, however, will be the conflicting norms between densification and urban agriculture when using hollow spaces.



Image. An urban food garden in the boundary of the city. Rue du Four, 14200 Hérouville-Saint-Clair (Urban Cluster of Caen). Photograph by the author, 2021/04/01.

In synthesis, this section has shown the RAA-associated instruments that land-use planning mobilised to facilitate farmland preservation and access to land. Land-use planning regulates farmland from urbanisation by exclusive zoning. However, the study shows that the criteria for defining farmland preservation and conversion did not necessarily include RAA (i.e., the logic of short supply chain, the criterion of soil quality). The state, as a watcher of land take, has been increasingly strict recently in replying to the future goal of no net land take (ZAN). However, no net land take is a challenge, especially for rural areas in which accommodating new inhabitants, maintaining the landscape and reducing land take are conflictual.

Land-use planning also regulates building rights of farm settings by applying reciprocal distance and setting subzones for strict protection. Such regulations help prevent urban sprawl but, at the same time, may hinder farm activities. Finally, land-use planning can intervene in land access for farmers by defining rules for urban agriculture. Some territories applied innovative strategies such as allowing agriculture in the built environment, requiring roof greening, including urban agriculture and design guidelines (OAP) for urban food cultivation.

The mobilised instruments and the investigations revealed the complexity of land-use planning instruments to preserve farmland, allowing farmers' development while allowing territorial development. Investigations showed several conflicting issues that may ultimately prohibit RAA, such as urban agriculture versus densification. While many studies have been made on land-use planning regulations for urban agriculture (see, for example, Lovell, 2010; Huang et al., 2015; Paddeu, 2015; Meenar et al., 2017), it should be warned that the conflicts between urban agriculture and urban densification cannot be ignored.

However, the above regulations can only guarantee farmland availability but cannot ensure farming activities happen. Combination use of instruments with other policies would be necessary (Perrin et al., 2020). In the next section, I will present food planning strategies for farmland preservation and access to land for farmers.

2.1.3 Food planning: facilitating farmland preservation and setting up new farmers

French food planning as strategic planning leverages diverse instruments to facilitate farmland preservation and set up new farmers. In this section, I present the local use of food planning strategies: leveraging land-use planning associated instruments, seeking land for farmers, facilitating new farmers' set-up and developing urban agriculture.

1) Leveraging land-use planning-associated instruments to preserve farmland

As shown in chapter 1 (1.2), **seven food planning projects (24.1%, among 29 studied documents) in their written documents included preserving farmland through land-use planning** (also master plans) as a strategy. Among them, two projects clarified the integration of farmland assessment into land-use planning zoning decisions. In one project (metropolis Montpellier), there was a collaboration between the master plan (SCoT) and food planning. The master plan integrated food planning-associated elements and developed a multicriteria framework of land assessment, thus affecting the development orientations. And the integration with land-use planning was ongoing.

Two projects also mentioned the possibility of using other land-use planning-associated instruments to preserve farmland for local food production, i.e., ZAP (*zone agricole protégée*, hereafter referred to “protected agricultural area”), PAEN (*périmètres de protection des espaces naturels et agricoles périurbains*, hereafter referred to under the simplified term “peri-urban pre-emption perimeters”). They are two instruments that facilitate long-term farmland preservation and are associated with land-use planning. The protected agricultural areas assign easements in land-use planning documents, and the peri-urban pre-emption perimeters have to be coherent with land-use planning zoning. Some ongoing food planning projects identified the problem of farmland preservation for non-food production (e.g., for equestrian activities). The setting up of protected agricultural areas was proposed as a possible solution to preserving land for food production. For example, the inter-municipal body Lisieux identified it as a problem and wished to protect the “agricultural food zone.” Peri-urban pre-emption perimeters (PAEN) is about preserving peri-urban land and using the pre-emption right⁴⁹ to dedicate the preserved land for RAA. For example, an interviewee reported that the local authority was thinking about linking this instrument to developing farm incubators:

We are very interested in being able to propose farm incubators in the upstream of the peri-urban pre-emption perimeters (PAEN) as well, plans to be able to manage and develop an area collectively. The farm incubator, a producers' shop, that are what I am talking about, to really see collective approaches like that. [civil servant, inter-municipal body Cotentin, Normandy, 2021/04/02]

It is worth noting that the peri-urban pre-emption perimeters (PAEN) are not initially designed to integrate farm incubators. Such a proposal presented a kind

⁴⁹ Generally, department councils are entitled to this peri-urban land pre-emption right, but the implementation may be operated by intercommunal bodies or the Rural Land Agency (SAFER) (Struillou & Joye, 2015).

of “legal opportunism” that the local authorities use existing legal rules to achieve their goals on RAA.

Although it seems natural that food planning leverages land-use planning to preserve farmland, the two planning procedures were not necessarily interacted. Even in a food planning project that clearly articulated the leverage of land-use planning and master plan (SCoT), interviewees claimed that *“it is not specific to food planning to talk about land development because we are more concerned with food, while it (land preservation) is more of an agricultural problem [...] The fight against land consumption has been included, but it is not the most important tool”* [civil servant, urban cluster Caen, Normandy, 2021/04/01]. For other planning-associated instruments, existing cases were only at the proposal stage and far from implementation. This point will be elaborated in links and missing links between land-use and food planning (2.1.4).

2) Seeking land for farmers

Food planning adopted various instruments to seek available land for farmers. Such instruments were mainly about facilitating the transfer of farm holdings, dedicating publicly-owned land to RAA and developing land strategies to increase available land supply.

A frequently applied policy instrument in food planning was to facilitate the transfer of farm holdings through informational and communicative channels (17 of 29 projects, including set up, which is discussed later). The strategy usually includes networking between potential buyers and sellers and technically help the transfer. In most cases, it was the integration of the Chambers of Agriculture’s original responsibility, which may explain the prevalence of this instrument: it does not require establishing new competences. Public authorities in this field do not dispose of legal instruments and may develop communicative strategies, for example, providing communication. Here is an example:

The elected officials are able to tell: “this one, there is a buyer; that one does not yet have a buyer”, to try to prioritise the farms that should be contacted, because they are over 55 years old and there is no buyer identified. The Chamber of Agriculture contacted them and proposed to them an accompaniment on the farm transfer to be able to formulate an offer of farm transfer to be registered afterwards on their inventory. So there are about 50 farmers who have been contacted. Out of the 50 farmers who were contacted, only eight expressed the wish to transfer their farm to someone outside the family and therefore formulate an offer of transfer. The Chamber contacted them and they were put online. The inter-municipal bodies made two short videos for some who wished to communicate and try to find young person(s) who wished to set up. [civil servant, rural cluster Albigeois Bastides, Occitania, 2021/07/02]

Such farm transfer strategies can target RAA-associated activities that the territories aim to promote. For example, a strategy adopted by some territories was raising awareness of existing farmers to sell their land by separating to affordable sizes for new entrants. This was mainly in consideration of supplying available and affordable land. As an interviewee reported:

There will be an enormous amount of work to be done to raise the awareness of the professionals, those who are about to leave, by telling them “you have 70 hectares, you have 40 hectares, but please start to consider launching as soon as 1 or 2 or 3.” That is not in their culture today, not in their mentality. So, there is a real problem of adequacy between the two: between supply and demand. And people do not arrive, so we call it “set up farmers without family background”, they do not have land, they have little money, they have no experience, no networks, and they are looking for small areas. [civil servant, inter-municipal body Grand Cahors, Occitania, 2021/10/05]

Such a land division strategy, though meeting the objective of facilitating new farmers' set-up, implies a break in regards to current practices of the major agriculture-associated organisations: the Rural Land Agency (SAFER) and the Chamber of Agriculture. As they are used to insisting on the necessity to preserve the consistency of the farm assets and to avoid cutting them in pieces, such strategies to meet new small-scale farmers' needs imply changes in attitudes among them.

Some territories undertook financial strategies to facilitate farm transfer that were adapted for their territorial contexts (n=2). In one of the cases, rural cluster Pyrénées Cathares, the local authorities disposed of innovative financial aid “cheques for advice” to incite farmers to do the transfer. The idea was to provide farmers cheques to seek partners to find “tailor-made” solutions for farm transfer. According to the interviewee, this strategy was adopted because the local authorities wanted to facilitate farm transfer but wished to avoid intervening directly in farmers' private businesses. In this case, the local authority focused on supporting farmers that distinct the responsibility from the Chamber of Agriculture. It represents how local authorities carefully intervene in agricultural issues without bothering others' responsibilities. As reported by the interviewee:

The aim is that with the farmers more than 50 years old and who need support, we give them advice vouchers, about 2500 euros per person. They can seek advice from partners. Chamber of Agriculture, Rural Land Agency (SAFER), we have about ten of them. And it is from there that farmers choose who they want to go to because we do not push them. It depends on the desire of each person. [...] The Chamber of Agriculture already supported young farmers to set up, helping them financially, helping them with their set up. [...] So we will help the older farmers to find out how they pass on the farm. [civil servant, inter-municipal body Pays d'Olmes, Occitania, 2021/10/01]

Beyond facilitating farm transfer, a largely proposed strategy in food planning was dedicating publicly-owned land to RAA (n=12 among 29).

Project leaders can define RAA-associated requirements for farmers who use such land. For example, among the analysed documents they were mainly for public food production farms (n=2) and social inclusion farms in integrating professional activities for marginalised people (n=5); other uses also included sustainable farming transition experiments, farm incubators, et cetera. Some local authorities were considering using the land of urban economic areas (ZAC, *zone d'activité concertée*⁵⁰) for local farming. In economic zones, local authorities may have purchased or pre-empted land for future economic activities. Different levels of local authorities (i.e., municipalities, inter-municipal bodies and departments) can dispose of their land. These two cases showed the disposal of publicly-owned land by different authorities, by the departmental council:

... the department council owns land and we are just beginning to try to make a link between the department's land and food planning. We are starting to try to develop an experimental farm or showcase farm project with the agricultural partners [...] we try to develop a project that corresponds to the food planning issues on land that belongs to the department or that the department controls. [civil servant, department council Gers, Occitania, 2021/06/17]

And, by (inter-) municipal bodies:

...we start from the observation that there is quite a lot of agricultural land in the metropolis which is public, in particular, property of the metropolis and the municipalities and that it would be good to re-mobilise it and set up farmers on this land. So we had an intern work on the inventory of public agricultural land, notably municipal and metropolis. So we will have to work on a strategy on how to set up farmers and the intermediate stages, with all the support from technical services. [civil servant, inter-municipal body Metropolis Rouen, Normandy, 2021/04/23]

Local authorities do not always hold available publicly-owned land. They do not own land or do not want to dedicate land to RAA. Under such situations, some interviewees mentioned temporarily using publicly-owned land (e.g., land to be developed in five to ten years). With time, the land would be used for testing business models or new farm practices through the lease of particular short-term contracts. For example, civil servants in Rouen Metropolis were thinking about using such land for testing ecological transition farming: *“What I would like is to be able to use the land plots that will change uses in the next five to ten years*

⁵⁰ Urban economic area (ZAC) is a planning tool initiated by a public authority (state or local body), with regulations imposed on developers (who have to implement road infrastructures, for example). This planning tool has to be linked to the local land-use plan, if there is any.

because there are development, housing or economic projects, to support farmers who wish to make a transition in their farming system, convert to organic farming, for example, and to make the land plots that will still be available before the developments available, so that they can try out new forms of production [civil servant, inter-municipal body Metropolis Rouen, Normandy, 2021/04/23].

A difficulty of using publicly-owned land, as reported, was that such land might not be suitable for RAA. It might be too dispersed, not accessible or sometimes polluted. For example, for the department council, publicly-owned land is often derived from road fallow land and, therefore, is not necessarily suitable for RAA. Interviewees emphasised the necessity of a detailed diagnosis of the land potential, as reported: *"The department council's land often comes from road fallow land. So, it is not necessarily land that is suitable for this activity (farm incubator). That is why it is necessary to analyse the land according to its quality and its defects to see if it can be made available as a farm incubator"* [civil servant, departmental council Seine-Maritime, Normandy, 2021/05/11]. Similar questions were also raised in inter-municipal bodies, for example:

We have a little bit (of publicly-owned land), but it is too small or it is not well situated; it is not situated in the valley. The inter-municipal body has land occasionally here or there. But first of all, it is small areas; then, very often the land that was reserved for agriculture and not frozen or blocked by the administration. Or, the only ones that have, I have found a few, are football fields or campsites. And people do not do market gardening on football fields. [civil servant, inter-municipal body Grand Cahors, Occitania, 2021/10/05]

In particular, interviewees also claimed that local authorities were hindered from disposing of publicly-owned land because they did not even have information on the land. This lack of information especially was a problem confronted in rural territories of the lack of institutional, technical and human resources. Such a problem resonates with the former issue of the knowledge of the land. Some interviewees reported this problem, for instance:

The stake is firstly the knowledge of the land. Since we are a young authority, the challenge is to have an up-to-date land observatory. We currently have a small land service of two people at the level of the inter-municipal body. So it is more in the day-to-day business than in forecasting. But we can see, for example, that there are certain municipalities, notably Cherbourg, which have launched a land strategy study with the Normandy Public Land Establishment (EPF) for urban renewal but not only to build, also to find sectors in the municipality of Cherbourg-en-Cotentin, for breathing space or for the development of urban agriculture etc. [civil servant, inter-municipal body Cotentin, Normandy, 2021/04/02]

When local authorities lacked the possibility of disposing of publicly-owned land, some of them looked into the land acquisition to set land reserves for RAA. Although local authorities usually do not have the pre-emption right of

land in agricultural zones⁵¹, they may develop a partnership with other stakeholders to achieve land purchase, especially with the Rural Land Agency (SAFER⁵²). For example, the inter-municipal body Pays de Mirepoix built a partnership with the Rural Land Agency. The latter pre-empted the land so that the inter-municipal body bought it later and disposed of the land for RAA. This kind of strategy demonstrated how local authorities collaborated with partners to intervene in the land market for RAA.

Another type of strategy refers to the strategic use of legal rules in pre-emption by local authorities. The municipality of Albi set a unique example of establishing a pre-emption development area (ZAD, *zone d'aménagement différée*) to facilitate the set-up of RAA farmers (Figure 2. 2). The zone had been established to "*set up land reserves in order to combat insalubrity, to set up flood expansion zones, to safeguard this natural area and to restore the market gardening function to this sector*" (inter-municipal body Albegeois, 2022⁵³). The municipality obtained the pre-emption rights and had been gradually pre-empting land to set up farmers. The agricultural high school (*Lycée Agricole*) and the Chamber of Agriculture helped the municipality to identify suitable farmers to set up in the area. The municipality also worked with a professional social integration association to facilitate social integration through professional working in agriculture. Particularly, they designed rules of contracts to facilitate the set-up of farmers by starting with free loans for use and then transferring to lease contracts. Such a design would release financial burdens for new farmers in starting period and could be a strong incentive for farmers. The interviewee reported as such:

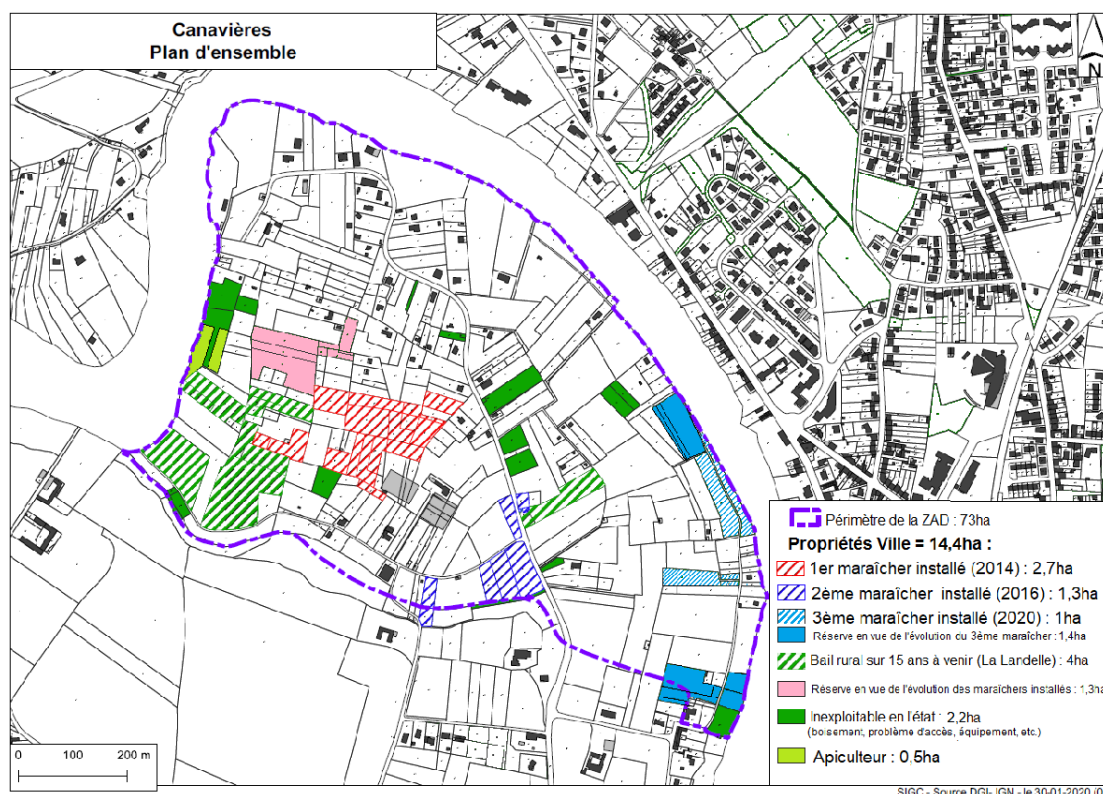
We buy almost all the land put up for sale [...] this allows us to have land to offer to people who want to set up in agriculture. [...] Afterwards, it is above all to find the right formula with the right contracts if we want to set up someone who is destined to stay for a long time. So, in general, we set up the person for the first few years with a "commodat", which means that it is a contract but free of charge. Namely, we do not rent the land to the person; we make it available to them free of charge for the first few years, until they are able to develop a farm that allows them to earn an income and live off their work. Only then do we move on to an agricultural lease. [civil servant, municipality Albi, Occitania, 2021/09/27]

⁵¹ Except for the preservation of water quality, according to the Planning Code, Article L. 218-1.

⁵² The Rural Land Agency (SAFER) is entitled to own the land they purchased (on the basis of voluntary sales or through pre-emption) only temporarily. They have to resale the land after several years.

⁵³ 2022.02.10 N° DEL2022_027 : Renouvellement de la ZAD de Canavières. Inter-municipal body Albegeois.

Figure 2. 2. Albi publicly-owned land map in the pre-emption development zone (ZAD).



“The perimeter of the pre-emption development area (ZAD) covers land plots affected by the Albigeois flood risk prevention plan (PPRIA), located in agricultural (A) or natural (Ns-Nl) zones of the inter-municipal land-use planning. Apart from the pre-emption development area (ZAD), these areas are excluded from the scope of application of the urban right of pre-emption.

Since 2010, through amicable acquisitions or pre-emptions, it has acquired approximately 19% of the surface area of the pre-emption development area (ZAD). It has managed to build up, through its acquisitions, landholdings of a certain size, with the aim of promoting and perpetuating the agricultural vocation of this sector by reintroducing market gardening.” (Inter-municipal body Albigeois, 2022)

Note. From PUCA and Grand-Albigeois official websites⁵⁴.

It should be emphasised that the set of pre-emption development areas (ZAD) in Albi is a particular and unique case among the investigated cases. The pre-emption area has been preeminently used for urban objectives. This case in Albi did not implement for future housing developments but for urban containment due to environmental hazards (i.e., flood risk) and market gardening. It demonstrates how the local authority diverted the legal rules to achieve their goals for RAA.

⁵⁴ Figure: Forum des solutions #2. Ressources locales, projets durables. 2021.02.18 (http://www.urbanisme-puca.gouv.fr/IMG/pdf/sequence_2_-_albi.pdf) Access 2022.07.26
 Texts: same as the previous footnote.



Image. Landscape of market gardening areas in the city fringe in the Z.A.D. of Canavières, Albi (81000), Occitania. Photograph by the author, 2021/09/27.

In addition to the use of publicly-owned land or purchase land, food planning included the instruments around developing local farmland strategy, monitoring and management ($n=13$). Some food planning projects established (or aimed to establish) land observatories to find available land for farmers. Such observatories were to identify farm transfer information in order to facilitate farmers' setting up or to identify potentially available publicly-owned land, fallow land, and ownerless land. The idea was to share timely information with local stakeholders:

... it is a land management project in conjunction with the Chamber of Agriculture and the Rural Land Agency (SAFER). We identified land that was ready to be put up for sale and that was available either this year or next year, to try to pre-empt it, and to ensure that it is reserved for farmers who want to set up in the area, but not farmers who are already established. [civil servant, rural cluster Pyrénées Comminges, Occitania, 2021/09/20]

Land observatories are common and rather old in local authorities, but usually on urban development issues. The establishment of land observatories for RAA represented the use of established expertise in this new field of RAA.

More often, food planning project leaders in some other territories worked (or aimed to work) with partners to make privately-owned land available for RAA by mobilising private owners (e.g., the Grand Cahors). Land for farming may also

be found in the non-agricultural field. In a mountainous territory, the use of part of Holiday Centres' properties was being proposed as the possibility to set up farmers, though not yet integrated into food planning. Those properties are private or public and were usually not used for a whole year. This reflects the local context-based strategies and a turn of treating agricultural activities as economic activities, even an element to revitalise the territory.

... there are a lot (holiday centres) [...] They occupy a lot of space and there is a large part of the land only used during school holidays, because all the rest of the time it is empty. So, it could be interesting to look into this question. [...] an EDF holiday centre has begun with the Gab 65 (an organic farm organisation) to work on this issue, by making part of their land available for farming and encouraging agricultural set-up. [...] no doubt we will have to carry out a more detailed survey of all the places that could allow this kind of initiative because in our region, where there is a lot of land pressure, this offers a large field of interesting action. [civil servant, rural cluster Pays des Nestes, Occitania, 2021/06/22]

One of the land monitoring strategies is about fallow land reclaim. Some food plans also included economic instruments of reclaiming fallow land, namely, disposing of material or financial investment to the reclaim ($n=3$ among 29). More interviewees reported that they were reflecting on doing so. The idea is to identify fallow land and make it available again through negotiation with owners and to identify and purchase fallow land without owners' information. This is particularly important but challenging for rural areas because land information is hard to get, and technical resources are not sufficient. An interviewee reported the local initiative:

Elected officials work hard with citizens to identify property without owners, but also farmland that is available, not used, that was once there and that could be recovered to make it available. [...] They (the inter-municipal body) act as an intermediary for the negotiation. They do not buy. It is negotiation to make land available to existing producers who are looking for land for market gardening, or perhaps to set up a business. [civil servant, rural cluster Haut Languedoc et Vignoble, Occitania, 2021/09/22]

Some food plans adopted instrument of training local elected officials and professionals on land preservation tools ($n=9$). This is especially the instrument taken by rural clusters and regional parks, as they do not dispose of publicly-owned land. Instead, they are "territories of projects", implying their task of facilitating inferior local authorities. They could facilitate them by providing technical consultancy and raising awareness of elected officials.

This awareness-raising of elected officials is an essential and challenging task, as it refers to a change of mentality to be engaged in local agriculture and food issues. As an interviewee observed in rural territories, elected officials might take farm holdings' transfer within the family for granted and not be aware of

their role in facilitating agricultural activities. However, as the situation evolved, local authorities had a role to play. This interviewee reported that the major issue was to raise awareness, and food planning project leaders tried different ways by relating farming issues to local authorities' responsibilities (e.g., fire risk management, local employment):

There is a challenge to make them (elected officials) aware of the fact that there are fewer and fewer farmers in the territories, the farms are getting bigger, the environments are closing in, there are risks of fire. That is what they are talking about. The fallow land is a greater risk of fire, these are things that speak to them as managers of a municipality. So these are arguments that we use. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

Overall, investigated food planning projects leveraged a broad range of policy instruments to seek available land for RAA farmers. They were about facilitating the transfer of farm holdings, dedicating publicly-owned land, and developing local land strategies (e.g., observatory, fallow land reclaim). Some food planning project leaders also developed, or envisaged to develop, innovative and contextual-based instruments, such as using "advice cheques" to facilitate farm transfer, reclaiming fallow land and using holiday centres' non-utilised land. A general issue in finding available land is to identify available land: publicly-owned, to be transferred due to retirement, fallow land, et cetera. Particularly, rural territories are challenged by the lack of available human and technical resources. As a further step, food planning can adopt instruments to facilitate farmers' set-up.

1) Facilitating farmers' set-up

After identifying available land, food planning may take a further step to facilitate farmers' set-up. **A number of food planning projects used the instrument of developing farm incubators (*espaces tests agricoles*) to facilitate farmers' set-up (n=12 among 29 documents).** Such incubators are "a reversible system of access to land for individuals who wish to test their agricultural project" and are a lever to facilitate the setting up of farmers without a farming background (Le Bel & Pizette, 2020). During the incubating period, farming testers can test their financing plan, outlets, legal status, tax system, etc. Farm incubators can be operated in different forms. For instance, some were for the short-term and then in the future sold to incubator farmers. Some others were designed for the long-term, meaning that after certain years tests, farmers will leave, and new incubator testers will be in.

By disposing of publicly-owned land or developing a partnership with private land owners, the project leaders of the farm incubator can define criteria for testers. Defining such criteria can respond to the goals of food planning (e.g.,

organic farming, market gardening, short supply chain outlet business model). For example, the farm incubator planned in the framework of food planning Pays Cathares defined that the four hectares areas accommodate three “testers” in organic market gardening. Farm incubators may be established based on publicly-owned land, the acquisition of land (working with the Rural Land Agency (*SAFER*), for example), mobilising private owners to dedicate their land, etc. The establishment of farm incubators is usually based on the partnership between different stakeholders (Box 1).

Box 1. *Cases of farm incubators.*

A farm incubator in the inter-municipal body of Coeur du Perche (before the food planning, but it is an exemplary case).

A private owner: offering land. Two-hectare land owned by a private owner was rent freely to a market gardener to test the farming activities. After three-year tests, the gardener bought the land.

The local authority (inter-municipal body): purchasing the materials (e.g., tractors) and renting to incubator farmers. After testing period, the authority could the materials to farmers. The local authority was able to obtain subsidies, both from Europe and from the region (in one case, 75 000 euros in total and 25 000 euros by subsidies).

The regional park Perche (project leader of the food planning): identifying at a global scale the local production to be supported, what outlets channels to develop (e.g., connecting collective catering).

The cooperative Rhizome (a cooperative specialised in farm incubators): helping the project holders with administrative and accounting issues and connecting them with established farmers in the area as a sort of tutor.

In this case, during these three years, farm testers also have experimented with different modes of employment, i.e., on the basis of people working only during the season or part-time over the year. Now they are self-employed farmers.

Farm incubator in the inter-municipal body Grand Cahors (in the framework of food planning)

The local authority (inter-municipal body): project owner, investment (e.g., material and irrigation).

Professional associations (peasant farmer support organisation ADEAR, Chambre d’agriculture, CFPPA (training provision), Bio46 (organic farmers’ organisation): facilitating farmers to create enterprises, technical aid and training.

Rural Land Agency (*SAFER*) and Terre de Liens: facilitating the local authority to search for land and to raise the awareness of future farm sellers; land acquisition and management (portage foncier).

Existing farmers: Two incubator sites were land owned by existing market gardeners (one and two hectares, respectively). They were currently in business but did not use all their land.

Note. From food planning documents: regional park Perche and inter-municipal body Grand Cahors. Interviews: inter-municipal bodies Coeur du Perche and Grand Cahors.

Other than establishing farm incubators, some territories adopted innovative instruments to help set up farmers. Collective management of land is a strategy proposed in some territories. Strategies of facilitating new farmers' group purchase of the land (e.g., rural cluster Midi Quercy) and developing shared-ownership of farmland (e.g., metropolis Montpellier) have been proposed, as *"A farm that is too expensive for one person, or that is too big for one person, perhaps it is of interest to several people"* [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28].

Overall, the study shows that food planning facilitated farmers' set-up by creating farm incubators and organising alternative land purchasing plans. Such instruments were usually tailor-made for RAA, for example, for local sales and small-scale practices. Food planning project leaders usually achieve them with diverse land and farming profession-associated partners. The development of farm incubators especially shows the experimentation of shared governance combining farmers' organisations, associations, public authorities, etc. However, the legal tool seemed unstable, and the collective work was still in progress.

2) *Developing urban agriculture with a social lens*

Urban agriculture was an issue included by most food planning, though usually not emphasised as a major topic, as *"we integrate collective food gardens into the funding framework, a component that is already taken into account within the department council, which is NOT the topic of an identified and priority action within the food planning, although the question is raised and we are beginning to work on the opportunity of these collective food gardens"* [civil servant, departmental council Seine Maritime, Normandy, 2021/05/11]. **Instruments included creating collective food gardens (n=11 of 29), analysis, information and organisation to facilitate food gardens (n=9), and in a few cases, planting edible trees in public space (n=3) and setting agro-park projects as demonstrative projects (n=2).**

In most cases, urban agriculture was about raising awareness of citizens (more than production) and about social justice (i.e., combining auto-sufficiency in low-income neighbourhoods). For example, in the inter-municipal body Rodez, an action was establishing market gardens at the bottom of buildings, especially on social housing estates. As revealed by interviewees, urban agriculture-associated actions largely depended on what the NGO (non-governmental organisation) partners came up with, for example, as reported by an interviewee: *"yes (there are actions on urban agriculture), because actors from the associations were very present in the workshops"* [civil servant, urban cluster Caen, Normandy, 2021/04/01].

In some urban territories, urban agriculture was about using publicly-owned land for farming and demonstrating exemplary practices (n=2, as shown in document analysis, but more envisaged cases informed in interviews). Here is

an example of Toulouse Metropolis:

We accompagnie the farm of the city of Toulouse, the agricultural management (régie) of the municipality of Toulouse, the Domaine de Candie. [...] It is an old wine estate which still exploits vines, but there are also field crops in organic agriculture. They have just planted fruit trees. So there is a whole approach to agricultural production in this territory for short supply chains. So, we accompany the municipality of Toulouse to develop this agricultural estate, which is a bit of an example of urban agriculture and diversification. [civil servant, urban cluster Caen, Normandy, 2021/04/01]

The above cases presented the multifunctionality of urban agriculture that food planning addressed, for its production but a more demonstrative function to show how agriculture and diversification activities can occur and a social function to provide a communicative space for inhabitants.

In synthesis, French food planning projects included diverse instruments to facilitate farmland preservation and farmers' access to land. I have identified a series of innovative instruments that facilitate RAA, which were not the case in previous studies (e.g., Sibbing et al., 2019; Candel, 2020). This is likely linked to the fact that French food planning projects were in highly diverse territories that are urban, peri-urban, rural and even remote rural areas. Territories, therefore, have adopted contextual-based instruments (e.g., reclaiming fallow land in mountainous areas).

Some food planning showed diverted uses of old and established instruments. A rather frequently used instrument is dedicating publicly-owned land to local farming. While publicly-owned land intervention has been an instrument rather used for urban development, it emerged to be used for RAA. These land uses were often limited in their surfaces (e.g., for the farm incubators). A recent study in Belgium also shows that the publicly-owned land use for RAA was only anecdote actions but not representative at all compared to public land use for urban development (Vandermaelen et al., 2022). Nevertheless, these small-scale farming interventions also have the function of "demonstrators", which experiment and encourage innovations, giving RAA a certain level of political legitimacy.

Another exemplary case of the diverted use is the use of pre-emption development zones (ZAD). Such zones have been initially designed in the 1950s to facilitate the production of housing operations, with pre-emption rights for public bodies in order to buy land on the farmland price. This land value capture mechanism to produce low-price housing gained a bad reputation among farmers. The use of urban pre-emption zones for RAA, though only a unique case among studies, shows, however, an "agricultural" turn in the use of these established and urban development-oriented instruments.

Van Dijk and Van der Vlist (2015, p. 1900) argue that local governments have a double role in active land policy by intervening in land markets as “referees” via land-use planning regulations and as “players” via active control as public landowners. This research shows that in RAA-associated cases, food planning project leaders, not only local governments but also organisations, also play a role as “facilitators.” They may have limited publicly-owned land or are not willing to intervene directly in the agricultural world, which may raise conflicts. Instead, food planning project leaders, together with their partners, could facilitate private actors to develop RAA.

2.1.4 Links and missing links between land-use and food planning in the question of farmland preservation and land access

When comparing land-use and food planning policy instruments on farmland preservation and access to land, it can be identified that there is a shared goal of “farmland preservation.” This shared goal set the scene for the connection between the two planning policies. I discuss the links and missing links in three steps: land preservation, farmland management instruments and understanding the missing links.

1) Farmland preservation or farming activities? Complementarity between planning instruments

The shared goal of farmland preservation builds a natural relationship between land-use and food planning on the issue. This issue was reinforced by the recently set goals of no net land take (*zéro Artificialisation Nette, ZAN*), setting an even more enabling environment to facilitate the dialogue between the two planning policies to achieve this shared goal. The above sections (2.1.2 and 2.1.3) have shown certain complementarity between land-use and food planning in farmland issues. They are from two perspectives: the share of agricultural diagnosis and the collaboration on defined projects.

The first complementarity is identified in the sharing of agricultural diagnosis. An exemplary case was the mutual work made between the master plan (SCoT) and the food plan of the metropolis Montpellier. The goals of food planning have been interpreted into criteria of master plan land assessment. These food planning-associated criteria (agricultural sensibility and ecological sensibility), together with other criteria (flooding risk sensibility, forest fire sensibility, integration into the urban framework, landscape integration, and network service), formed as bases in zoning decision (master plan of Montpellier metropolis-Environmental Evaluation, 2019, pp. 86-87). In other words, the criteria to define development areas in the master plan included food planning-associated elements. Moreover, this master plan was spatialised, which was a unique case, as an interviewee reported:

The master plan (SCoT) of Montpellier has a particularity, which is that it has a spatialisation of urban development areas. This is not the case everywhere. [...] as we had this agro-ecological and food policy (food planning) which is based on a whole bunch of partnership agreements with the actors of the territory, first and foremost the Chamber of Agriculture, there was a lot of back and forth and negotiation with the Chamber of Agriculture to work on the quantity of land that would be dedicated to urbanisation and the location; that is to say, to reduce the consumption of land and to carry out a multi-criteria analysis to see what the impacts are on the agricultural economy from urban expansion. [civil servant, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07]

Although not as detailed as the case of Montpellier Metropolis, many other interviewees claimed that agricultural assessment of land-use planning projects also served food planning as data. This is likely derived from the fact that land-use planning projects as obligatory projects have more financial capacity than food planning. Information on land-use planning's agricultural assessment can contribute to the understanding of food planning. For example, farmers' future projects, new farmers' set-up and transfer of farm holdings are essential components for food planning. The information on land-use planning agricultural diagnosis could provide territorial knowledge to food planning decision-makers. An interviewee reported that land-use planning assessment has raised elected officials' awareness of farm holdings' transition and influenced food planning's orientation:

In the framework of this land-use planning, there was an agricultural diagnosis which had been ordered from the Chamber of Agriculture. The Chamber of Agriculture gave the number of farmers who were over 55 years old and therefore potentially the number of future sellers. So, the elected officials were a bit concerned by this figure. And so, we wanted to try to work on this question of the farm holdings' transfer. [civil servant, rural cluster Albigeois Bastides, Occitania, 2021/07/02]

The above-stated shared agricultural diagnosis showed the complementarity between the two planning policies. Food planning can integrate RAA-associated knowledge in land-use planning; land-use planning can provide territorial information to affect food planning.

The second complementarity identified is the collaboration on facilitating agricultural projects. Concretely, it means land-use planning could preserve areas for local farming projects defined by food planning. For example, an interviewee reported that food planning aimed to identify suitable land for RAA activities (e.g., for a farm incubator). Based on food planning, there might be a process of land-use planning to down-zone certain development zones for local farming. As an interviewee reported:

We will have to find new productive areas. So we will take a closer look,

especially at all the urban fringes, the abandoned spaces, and be able to study what is possible or not. So in this context we will study the possibility of changing the regulations of the land-use planning. Because we have a lot of these plots that are in development zones (zone à urbaniser), if we want to perpetuate them, it would be better if they are in agricultural zone [...] we are in contact with municipalities that wish to restore agricultural activity with the creation of a farm incubator. But if today these plots are in development zones, then we will have to make a revision, for example, make a request for a revision for next year. [civil servant, inter-municipal body Metropolis Rouen, Normandy, 2021/04/23]

Integrating food planning identified projects into land-use zoning has multiple benefits. For food planning, land preservation by regulations guarantees long-term land availability and certainty. For land-use planning, this upstream procedure guarantees future farming activities in preserved farmland. This process can facilitate farmland preservation for farming activities instead of merely meeting a quantitative goal (Perrin et al., 2020).

Moreover, project-based land-use zoning regulations may facilitate raising awareness of elected officials to improve farmland preservation. Food planning as a public policy adopted by the territory may help raise awareness of elected officials in farmland preservation. Already, there was testimony from a regional land service: “... when we intervene in the development of land strategies for local authorities, they tell us about food planning, they tell us that we are indeed in phase with the problems of preserving agricultural areas. [civil servant, Public Land Agency (EPF) of Normandy, 2021/07/01]. As other interviewees claimed, food planning could justify and reinforce the necessity of farmland preservation by showing the land’s future vision in zoning decisions, as an interviewee reported:

...all the work of identifying agricultural land and expertise to know and what to do with it, etc., will be able to nourish the land-use planning. It can also help the elected officials to anticipate, by saying “Here, this zone, today, it is a fallow land, it is completely cleared, in five years, we have the objective, with the tools that existed, we remobilised the land. As a result, it will make it possible to set up a market gardener, a farmer who makes laying hens.” It depends on the surface area, the orientation and other issues. But the approach is that. [civil servant, regional park Ariège, Occitania, 2021/06/29]

The complementarity can also be found in urban areas regarding urban agriculture. Urban agriculture has been emphasised from different perspectives in land-use planning (e.g., life quality, biodiversity, vegetation heritage) and food planning (e.g., auto-sufficiency, social justice, raising awareness of citizens). It means that although drivers differ, the orientation is the same. Direct links between land-use and food planning were not obvious in studied cases. However, innovative urban agriculture-associated policy instruments in studied cases gave insights into structuring links between them.

Existing land-use planning documents showed that land-use planning could preserve existing collective gardens mainly through spatially creating specific zones or easements. In addition, the pioneering territories exposed their practices in integrating urban agriculture in land-use planning by actively authorising agriculture in the built environment, encouraging on-roof agriculture through written regulations, and adopting design guidelines (*OAP*). These land-use planning instruments indicate that multifunctional land use is increasingly taken into consideration. With these instruments, land-use planning can facilitate food planning-targeted urban agriculture projects.

Overall, land-use and food planning can share and co-construct the agricultural diagnosis, which can facilitate land-use decisions and enrich resources for food planning. They can also collaborate in facilitating local farming projects in both urban and rural areas. Land-use regulations help preserve land for such projects and can use them as justification to elected officials, raising awareness of farmland preservation. The enabling regulatory environment provided by land-use planning and the diverse activities implemented in the food planning framework can complement each other.

2) Applying land-associated instruments for RAA: potentials and limitations

Other potential links between land-use planning and food planning could be through instruments that are both associated with these two planning policies. As identified from empirical studies, such instruments included legally defined peri-urban pre-emption perimeters (*PAEN*), sensitive natural spaces (*ENS*) and protected agricultural areas (*ZAP*). These instruments link to both planning policies as they may guarantee long-term farmland use and imply compatibility to land-use planning (e.g., protected agricultural areas impose easements on land-use plans). In addition, the fallow land observation and reclaim has been raised as an issue, though the working methods are to be developed. Here I mainly discuss the peri-urban pre-emption perimeters and the fallow land reclaim as exemplary cases to expose the potential links between land-use and food planning and practical barriers.

The peri-urban pre-emption perimeters (*PAEN*) and a land preservation instrument have been raised as a possible solution for preserving farmland for food. They were only formally proposed in the food planning document of the metropolis Toulouse: *"...mobilise protection instruments (ZAP, PAEN) appropriately."* Some other territories were also exploring the use of this instrument. An exemplary case showed how the peri-urban pre-emption perimeters were mobilised with food issues. Rural cluster Coeur d'Hérault integrated the management of the peri-urban pre-emption perimeters (*PAEN*) with food planning in terms of the issue of fallow land reclaim and agroecology. It should be noted that the perimeters were not created for food planning, but

the juxtaposed projects and competences made this integration possible. As the interviewee reported:

A2: The themes of action of this PAEN will really be to work on the land and water management in this area, notably fallow land. So finally, it intersects quite a lot with the land axis of our food planning.

A1: As a master plan (SCoT) carrier structure, we can lead a PAEN. It is through this that we can animate it. [...] Frankly, I do not think so (that the delimitation of PAEN relates to food planning), because the PAEN, in addition, covers sectors which are 95% winegrowing. So there is also a diversification issue on certain plots and there is also an environmental issue on the PAEN, because there is Natura 2000 on certain sectors and then there is a watercourse whose risk must be apprehended in fact.

A2: I think that the fact that there is food planning in the rural cluster allow us to integrate the food issue into this PAEN. [civil servant, rural cluster Cœur d'Hérault, Occitania, 2021/09/17]

This case shows how the juxtaposed competences could be integrated, guiding the innovative uses of instruments for RAA. In this case, these juxtaposed issues are master plan (SCoT), food planning and peri-urban pre-emption perimeters (PAEN). The leadership of a master plan give legal competences to rural cluster to intervene in land management with the co-management of the peri-urban pre-emption perimeters. Food planning as an opportunity helped integrate food (e.g., fallow land reclaim for agroecology) into the management of the perimeters. And the peri-urban perimeters, though not designed for food, were strategically mobilised as a legal opportunity to promote RAA. The integration of the territorial projects facilitated the creative use of land instruments for food planning.

Integrating food and peri-urban pre-emption perimeters was not yet widespread among studied cases. Other interviewees mainly exposed the complexity of mobilising these land management instruments for RAA. Usually, the response was: "this is a useful instrument, but we did not use it yet." Some interviewees claimed that these land instruments required caution not to hinder too much farmers' activities and required much work on management. As the perimeters require operational work (especially the land purchase), it requires not only a strong political commitment to dedicate to the work but also technical and human resources investment. Such complexity may explain why such instruments were not (yet) largely leveraged by food planning in studied cases.

Besides the legal tools, fallow farmland has been frequently raised as an issue favouring RAA and linking land-use and food planning. Some interviewees from urban territories reported that integrating fallow land with

these planning policies could make land available for local farming and, in the meantime, reduce land hoarding by using land-use regulations. As an interviewee reported:

It seems to me that this aspect of speculation is a factor in the management of fallow land in peri-urban areas, and that the development of the master plan (SCoT) and land-use planning will perhaps allow land that was awaiting urbanisation to be remobilised. [...] people who owned agricultural land and who thought “my land is going to be built on, so it is going to be worth a lot of money, so I'm keeping it in the meantime, until I can sell it as buildable.” And the master plan has this mission to say “well no, stop dreaming, it is just land on which we can grow crops for food.” (Montpellier)

Another issue raised was the knowledge sharing on fallow land inventory between the two planning policies. Some interviewees, especially from rural territories, proposed the possibility of integrating fallow land census in land-use planning agricultural diagnosis, so that food planning could mobilise the data to help access land. As an interviewee proposed in a collective meeting among technical stakeholders (i.e., project managers of planning issues):

... concerning the diagnosis and the inventory of fallow land [...] I think that the land-use planning exercise can be the opportunity, with a good knowledge of the territories by the local elected representatives, in connection with the farmers who are on site, to have a precise knowledge of existing fallow land. [civil servant of the state's service, collective meeting of rural cluster Ariège, Occitania, 2021/10/01]

Nevertheless, the practice might be complicated. Another interviewee in charge of master plan (SCoT) argued that practically the census of fallow land in land-use planning was difficult to achieve. She claimed that politically it was achievable, but the census work and the mapping work on a large size territory may cost a lot:

I agree on the opportunity of agricultural diagnosis of land-use planning. Then we have to come back to the pragmatic reality of financial capacities. The more detailed and precise the agricultural diagnosis, and in particular the mapping of fallow land, the more expensive the bill becomes for the inter-municipal bodies. [...] It is above all the limits, not necessarily of political ambition, but of financial realities. [...] geographical information system mapping is very, very expensive. It is already very time-consuming to carry out surveys and to use the data, but above all to transcribe it, to mobilise a research firm on our perimeters. (civil servant of a master plan project, Meeting PETR Ariège)

Beyond the practical financial barrier, interviewees generally claimed the complexity of identifying fallow farmland. Unlike urban fallow land, which has been an issue with a more explicit definition, rural fallow farmland has more complexity. Altogether, technically and financially, the potential of using such an instrument for RAA needs to be supported by more developed methods.

3) Understanding missing links: experimenting competences in the field of RAA

Land links the two planning policies naturally because the RAA activities targeted by food planning are based on farmland preservation, which is a fundamental mission of land-use planning. However, this link is not created when food planning does not include land as a goal. According to the document analysis, four food planning projects (among 29 documents) did not have a land-associated goal. Their rationales help us understand the missing link between land and food planning. I concluded with three major issues: the lack of political will, the lack of competency and the different understanding of the food planning mission.

The first issue deals with the lack of political will to address land issues in order not to engender conflicts with farmers. In two territories, interviewees claimed that land was not raised as a topic of the lack of political will. Public authorities, as food planning project leaders, may be hesitant to address land issues because land triggers private property issues, which can raise farmers' discontent. As agriculture has long been an issue of farmers themselves, local authorities have to be cautious to intervene. Notably, when the local farmer's associations are conventional-oriented, the agricultural world may be more challenging to be intervened in, as an interviewee reported

The rural agricultural history is very, very strong. And the agricultural lobbies are quite powerful [...] today, we do not have this (land) dynamic in the local authority on agricultural projects. Why? Because it is really the domain of the Chamber of Agriculture, the farmers' unions, etc. We will work differently with them on other issues but much less on the field of production, on the field of the problems of farm transfer, etc. [...] I find that the local authority is not really involved in these projects. [...] I find that our food planning lacks a little ambition, precisely on these issues. [civil servant, inter-municipal body Coutances Mer et Bocage, Normandy, 2021/06/02]

Land is an issue that is difficult to reach a consensus on because it touches many stakeholders' interests. An interviewee in another territory claimed, *"the themes we work on in the food planning are fairly consensual. Land is much more difficult because for a local authority, land is private and therefore it is a major issue for farmers, and this makes some farmers a bit nervous about this issue. So that is why it is difficult to work with this topic for a local authority, whereas there are other topics that are easier and clearer"* [civil servant, rural cluster Albigeois Bastides, Occitania, 2021/07/02].

The interviewee in Pays des Nestes also claimed that elected officials were reluctant to link land-use planning policies and food planning. So, land was not elaborated as a topic, though land access and farmland preservation were identified as important in achieving other goals of food planning (e.g., collective catering provision):

*(the food planning) Rather targeted at food, and not really on the land part of agriculture. So, this will also answer your questions: **there is not really a link today between land-use and food planning, even though it is a question that often comes up during meetings.** [...] From the start of this work, the elected officials did not want to make any particular link with the planning documents Why? Perhaps it is because they themselves started this work via their inter-municipal bodies and did not want to go any further in the framework of food planning. [civil servant, rural cluster Pays des Nestes, Occitania, 2021/06/22]*

The second issue is about the lack of competency. Land is a more complicated issue when the food planning project leader does not have their own competency related to land. This was the case of the food planning of Pyrénées Catalanes, which was led by an association specialising in health. The association did not have its own land-associated competency; therefore, it was excluded from the land-associated topic when other stakeholders did not involve them in the discussion:

... it is (on production) in which we were the least involved and where the work with the Chamber of Agriculture was a bit blocking us from having access to this work at the territorial level. That is to say, we were not involved in the issues of the land-use planning. [...] there is a small business park being built on high-quality agricultural land, and this is one of the things that has been included in the land-use planning. But as a result, we did not take part in the work at all, because the Chamber of Agriculture, which is competent in these matters, did not really want us on this land. Politically, strategically, it was complicated. [staff, association Chemin Faison, rural cluster Pyrénées Catalanes, Occitania, 2021/09/21]

The third issue addresses how food planning, as a new type of local policy, is understood and operated. In one particular case (food planning of Pyrénées-Orientales at the departmental scale) where the Chamber of Agriculture monitored the food planning, land was not a goal because the project manager wanted to keep the food planning focused on food distribution issues and did not want to include other topics that the Chambre is in charge of.

I did not want to set up a food plan that includes all the actions of the Chamber of Agriculture. I did not think that was right. I wanted to leave room for the other partners and, in fact, this one, the action on land, we do not need the food planning to exist and be conducted. So in fact I really took the food axes, sales, marketing and food [...] But I did not want to include all our actions, all our Chamber's action programme. It seemed a bit too broad. [staff, Chamber of Agriculture Pyrénées-Orientales, Occitania, 2021/09/24]

Overall, the study shows that food planning is a new local mission being explored. Competences, methods and knowledge in intervening in land issues are not defined. Hence, according to their local understanding, food planning experiments with it by cautiously touching the land issue or avoiding the

conflictual topic. The sub-chapter has demonstrated that land-use and food planning integration can facilitate farmland preservation and land access, but such integration requires political commitment as well as supported methods. According to an interviewee's observations at the regional scale, the implementation of land-associated goals (e.g., acquisition of land to facilitate farmers' set-up, facilitating the transfer of farm holdings) is complicated and takes a long time. Therefore, a long-term land-use strategy that combines land-use and food planning instruments is necessary to promote RAA.

2.2 TRANSITION OF FARMING PRACTICES

This sub-chapter turns to the action field of farming practices. This action field is closely linked to RAA because the re-territorialisation of agriculture may facilitate the ecological transition of farming practices by bringing changes in local social relations. Local consumers' demand for healthy food and a food environment with less environmental negative impacts may incite local farmers to adapt their way of practising farming towards more environmentally-friendly outputs (Enthoven & Van den Broeck, 2021). Here I refer to the definition of environmentally sustainable farming practices as *"farming practices whose main expected benefit – relative to conventional practices – is the provision of positive externalities on biodiversity, water, soil, landscapes and climate change"* (Dessart et al., 2019, p. 419). By using the term "farming practices", I include both practices of farming types (e.g., market gardening, livestock, crop) and practices associated with environmental performance (e.g., farming based on limited pesticide input, organic farming, agroecological farming).

This sub-chapter is composed as such: first, I present the drivers and challenges the territories face in terms of the issue of farming practices, then I present food and land-use planning interventions and drivers, and finally, I compare the two to identify intersections and the reasons.

2.2.1 Drivers and challenges of the local planning for the transition of farming practices

Three major issues concerning farming practices were raised by interviewees when developing RAA. They are about product diversification, the agricultural system that maintains the ecosystem and the conversion towards ecological farming practices.

1) *Improving product diversification: a question of autosufficiency, diet balance and biodiversity*

The first issue is a shared wish for farming product diversification. An export-oriented agricultural system tends to specialised monocultures, leading to a reduced food crops' diversity (Khouri et al., 2014). With a vision of promoting RAA, many interviewees presented the territorial wish to improve product diversification. Such a wish is based on multiple considerations. First, RAA refers to the challenge of feeding the population as much as possible with local products, and diversifying local production types is necessary to provide different types of necessary food. Then, from a food consumption perspective, a balanced diet for local inhabitants requires diversification of food production. Further, product diversification also has an interest in the environment and is a part of the agroecological transition in that the diversification system uses less chemical intrants and recycles animal manure (Magrini et al., 2016; Beillouin et

al., 2021). Most of the investigated territories are dominated by crops, livestock farming or vineyards (see General Introduction Figure I. 10).

Under this situation, most interviewees shared the observation of the need to improve the production of fresh products (vegetables and fruits). As an interviewee reported:

We know that it makes sense to develop it (market gardening) because we know that, for example, the director of the central kitchen, when he wants to buy X kilos of vegetables, carrots, etc., we can see that he has difficulties in getting them (locally). And the Chamber of Agriculture confirms that indeed, in terms of market garden and fruit production in the department, we know that there is a certain shortage. So, it (market gardening) is a production for which we are pretty sure that we are not making a mistake, by encouraging the development of this type of production. [civil servant, municipality Albi, Occitania, 2021/09/27]

Although increasing vegetable and fruit production seems to be a shared wish among many territories, interviewees revealed that challenges are the mismatch between existing specialised farming systems and the objective of more diversified productions. From the land system perspective, a mismatch is in the offer-demand balance between the available farm holdings to be transferred and the affordability of farmers that develop diversified products. The exemplary case is the inability for market gardeners to purchase large-scale livestock or winegrowing farms (this has been discussed in 2.1.1). From the perspective of farming land systems, the mismatch is between available land and the requirement of wished farming practices. Suitable land may have been occupied by existing large-scale and mechanised farming, thus not leaving of diversified products. And the land left available might not be agronomically suitable.

An interviewee demonstrated such challenges through the observation on accommodating new market gardeners in a territory dominated by vineyards:

... to develop market gardening and fruit production, we need water and suitable land. And this is often the land that is on the plains, not far from waterways. Except that historically, these lands were not occupied by winegrowing, but for the last fifty years or so, the vines that were on the hillsides have been moved down to the plains, the hillsides have been abandoned; so there are fallow lands on the hillsides. [...] The problem is that supply and demand, in terms of production, are not adapted. Most people (producers) who come to meet us want to do diversified market gardening. They want to do arboriculture, small-scale chicken farming, or livestock farming. And the farms that are to be transferred are wine farms, or other farms, which, in addition, for the most part are oversized and very expensive compared to the projects. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

Such a statement showed that there are lock-ins of product diversification, an important component of RAA. Diversification may be driven by new farm holdings but also by internal changes in farming systems from existing farm holdings. So, the lock-ins may be on access to land or, more generally, on changes in the farming systems.

Despite the challenges in diversifying products, some interviewees observed that there is also potential to change. As presented by an interviewee, farmers make transitions when facing challenges: *“If we talk about the Caen plain, we see mainly large-scale farming. But things can change very quickly. For example, the Cagnes sugar factory has closed [...] Today there is no longer the proximity of the processing facilities. The cereal growers very quickly realised that they could, thanks to this proximity market, switch to vegetable growers, field vegetables. And most of the beet growers today consider legumes, field vegetables, potatoes, onions etc.”* [civil servant, urban cluster Caen, Normandy, 2021/04/01]. Such an observation indicates the potential for the transition as well as the necessity of planning interventions to facilitate and consolidate the transition.

2) Preserving a livestock farming system that maintains territorial ecosystem

The second issue related to farming practices is the promotion of sustainable livestock farming systems that maintain the ecosystem, e.g., preventing flock risk and soil preservation, provision of non-chemical intrants for plant production and create cycle closure). The degradation of these systems threatens local production, landscape and ecological corridor maintenance. Many interviewees in Normandy underlined that there was a tendency in certain territories towards the reversal of grasslands (*retournement des prairies*). Usually, industrialised large-scale crop farms replaced livestock farming when farms were taken over or the existing farms change. Since the maintenance of grassland is related to the preservation of water quality, the reversal of grasslands risks increasing rainwater run-off and flooding in the valley. An interviewee reported this essential issue of preserving grasslands and the threats from the replacement by crop farms:

I discussed this with my colleague on the water management (GEMAPI, aquatic environment management and flood prevention). He said that there was a problem that there were fewer and fewer (livestock) farms. When there was land for sale, it was bought by people who are growing crops and not breeding. This caused problems because much more land was being cultivated, and this was reflected in the water. So there were issues of preserving the quality of the water, by preserving the grasslands. [civil servant, inter-municipal body Granville Terre et Mer, Normandy, 2021/01/26]

An attached issue with livestock farming in grasslands is the hedge system. Hedges help to control flooding, and grasslands absorb rainwater. Together with livestock farming, they formed a system of water and land maintenance.

When crop farms replace grasslands, usually accompanied is the uprooting of hedges to facilitate crop mechanisation. Such exercise harms flood risk management and disturbs the continuity of ecological corridors, as an interviewee claimed:

We notice that all the livestock farms are sold to eliminate livestock and make only crops, cereal and potato crops. This is a problem that worries elected officials. As a result, everything that is a field today that accommodates animals, especially cows, is called pastureland with hedges all around it. Hedges help to control flooding, and pastures absorb rainwater better. In Normandy, it rains a lot. Thus, it avoids flooding, and today all these pastures which are used for cows are no longer used. They are turned over and end up being cultivated to put in wheat and potatoes. They rip out the hedges, and we end up with even more flooding. [civil servant, inter-municipal body Villes Soeurs, Normandy, 2021/05/26]

Regarding the issue of preserving livestock farms by combining ecosystem maintenance, the challenge in planning is land use and management. In the sub-chapter 2.1, I have discussed that there is a challenge for the transfer and set-up of livestock farms due to the large size, the investment in labour and time and the capital needed. Hence, there are issues of land preservation and appropriate maintenance of the activity practised.

3) Transition to ecological practices

The third issue related to farming practices is the transition towards agroecological practices. As I stated before (introduction of 2.2), this is an issue embedded with the reterritorialisation of agriculture. Ecological practices are about better environmental performance but are also associated with public subsidies (agro-environmental measures, payments for environmental services) or value-added products (organic farming), thus potentially linking to farmers' increased revenues.

With the wish to encourage the transition towards agroecological farming practices in the framework of facilitating RAA, a challenge is the lack of motivation for such a transition (Bjørnåvold et al., 2022). Especially in territories where the agricultural economy is doing well, interviewees observed that farmers were less motivated to make changes towards ecological practices, as an interviewee claimed:

We have an agriculture which is going rather well, which is very export-oriented, the farmers do not have any difficulty in selling their products most of the time. So I think that there are a certain number of farmers today who do not think about the question, at least about organic farming, because today it is a sector which works. [civil servant, inter-municipal body Metropolis Rouen, Normandy, 2021/04/23]

An extra challenge is that conversion into organic farming, as a farming practice alternative to existing one, may be complicated due to the opposition from mainstream farmers and the major farmers' unions. In territories dominant with conventional farming, farmers' unions may defend conventional farmers. In one case, the interviewee claimed that this opposition even hindered the process of the organic farmers' set up, because conventional farmers were reluctant to sell the farm to organic farmers:

There is a problem with a farmer who was supposed to leave his land. In particular, he had made an arrangement with the Rural Land Agency (SAFER), this farmer has been in turnaround for years and is now in liquidation. But he did not want organic farmers to take over. So he is complicating the matter enormously [...] the major farmers' union (FDSEA) and the young farmers' union (DJA), who defend local farmers, are very much in favour of this and see the arrival of other modes of production with a very, very bad eye. [civil servant, inter-municipal body Saint-Lô, Normandy, 2021/01/26]



Images. Landscape along the river of Vire, Normandy. The hedge system with grassland and extensive farming maintains the biodiversity and landscape. Photograph by the author, 2021/01/26.

In synthesis, RAA brings particular issues related to the transition of farming practices. These identified issues are improving product diversity, maintaining extensive livestock farming and transitioning to ecological practices. These issues are correlated. For example, product diversification may improve environmental performance by introducing more species into the territory and increasing biodiversity (Beillouin et al., 2021; Enthoven & Van den Broeck, 2021). These identified issues echo the literature: the need to diversify local products to increase auto-sufficiency and the agroecological transition of practices. Also, the issues reveal actual challenges the territories face when wishing to undertake the transition. Planning policies for RAA may foster transition but also depend on favourable dynamics within the local agri-food system. Both food planning support from the farming system organisation and land-use management matter.

The major challenge is transitioning from the established system (i.e., from mainstream products to diversified ones, from conventional practices to ecological ones). Therefore, the transition is not only about technical changes but also about social changes that refer to many stakeholders' interests. Moreover, the challenges are related to multiple issues. They are about food production with environmental considerations, good food supply to consumers, as well as water and flood management, and ecological corridor continuity. Therefore, the transition of farming practices is related to both land-use and food planning and requires strategic planning interventions. The following two sections present the local choices of food and land-use planning strategies.

2.2.2 Food planning: a lever for agroecological transition?

This section discusses food planning strategies for the transition of farming practices. Other than the above-presented embedded relation of RAA and sustainable practices, in the studied cases, two significant drivers incite food planning to facilitate the transition of farming practices. **The first driver derives from requirements and incentives from laws and the national financial programme.** The Agricultural law (loi LAAAF, 2014, Article L. 111-2-2) defined the mission of food planning of "*developing short supply chains, in particular from organic production.*" The national financial programme through "Call for Projects" has integrated the French Agency for Ecological Transition (Ademe) as a financer since 2016, meaning a target with the dimension of environment. The goal of Food law (loi EGalim, 2018) in achieving "*the objective of a 50% supply rate of sustainable and quality products, including 20% of products from organic farming*" reinforced this incentive.

The second driver is environment-associated local projects and competency related to RAA. It refers to issues of biodiversity, climate change mitigation and water management, which are frequently addressed issues in

integrated environmental policies (Milhorance et al., 2022). The theme of the environment is a mission for some food planning project leaders in different forms related to the different competencies. For regional parks, environmental issues are an embedded mission; as an interviewee claimed, *"the (regional) park does have an environmental ambition, through its basic missions [...] As a regional park project manager, I just see an interest in facilitating this"* [civil servant, regional park Haut-Languedoc, Occitania, 2021/06/15]. Some rural clusters and regional parks integrated their management on CAP Agro-Environmental Measures⁵⁵, which aimed at improving biodiversity, water quality, humid areas and the issue of soil erosion. For example, the goal entitled "biodiversity and environment" in the food planning of Pays Cathares derived from the Agro-Environmental Measures.

For some inter-municipal bodies and territorial clusters, the food planning projects are connected with environmental goals based on climate plans (plans on the Climate-Air-Energy Nexus, *Plan Climat Air-Énergie Territorial, PCAET*⁵⁶). For example, the food planning of the inter-municipal body Rodez was established to achieve the goal of "territorial resilience to climate change" set by the climate plan. In some investigated cases, climate plan and food plan were in the same sector of the local authorities or were managed by the same civil servant (this issue is further discussed in chapter 3.1). Most territories in the two studied regions were covered by climate plans. Hence, food planning is highly potential to be linked with climate plan goals.

For inter-municipal bodies, another environment-associated local competency is water management⁵⁷. Some interviewees reported the inter-municipal bodies' regain of water management competency had reinforced or might reinforce the food planning's adoption of policy instruments in sustainable transition and natural resources maintenance.

Due to the above drivers from the national working framework and the associated local environment-associated competences, food planning naturally has a link associated with the transition of farming practices towards better environmental performance. This section addresses two large categories of policy instruments by themes: facilitating the transition of agroecological

⁵⁵ A measure to finance agro-environmental practices by the Common Agricultural Policy (second pillar), MAEC in French abbreviation.

⁵⁶ Climate plan (Plan Climat Air-Énergie Territorial, English direct translation as Plan on the Climate-Air-Energy Nexus) is a competency of inter-municipal bodies. But inter-municipal bodies can decide to convey this competency to territorial clusters.

⁵⁷ Management of Aquatic Environment and Flood Prevention, French abbreviation in GEMAPI, a competency conveyed to inter-municipal bodies as identified by the law in 2014. Regional parks and rural/urban clusters may facilitate inter-municipal bodies for this mission.

practices and favouring product diversification.

1) *Facilitating transition towards agroecological farming practices*

The first category of policy instruments focus on issues of facilitating transition towards agroecological farming practices. The agroecological transition here means *"the transition from productivist or efficiency/substitution-based to biodiversity-based agriculture"* (Duru et al., 2015, p. 1240). These instruments were about providing information and advice to facilitate ecological farmers, financial support, mobilising financial programmes and applying environmental leases (*baux ruraux environnementaux*) for publicly-owned lands (see Table 1. 5 about instruments mobilised in food planning). Other than that, the transition of agroecological practices was sometimes integrated into land instruments associated with access to land (2.1).

The most frequently leveraged instrument was informational, to facilitate farmers transit toward sustainable farming through studies, providing technical support and information, organising communications between producers, organising training and events, and related activities (n= 12 among 29 projects). For example, *"creation of a platform of practices' sharing and regular meetings"* (rural cluster Midi Quercy) and *"raising awareness and thinking about a financial support system for farmers wishing to change their farming practices towards soil conservation"* (rural cluster Pyrénées Comminges). This instrument was usually facilitated by associations specialised in sustainable farming (e.g., CIVAM, BIO Normandy) and sometimes with Water Management Agency (e.g., in the case of Metropolis Montpellier).

Two food planning proposed financial support to the transition, such as "financial support for changes in farmers' practices" (inter-municipal body Granville Terre et Mer). Some projects mobilised the financial programmes to biodiversity or environmental farming, through subsidies or compensation programmes (n=3). For instance, *"the territory wishes to undertake new biodiversity diagnosis in the Cathar Pyrenees with the aim of proposing a new Agro-Environmental and Climate Project (PAEC)"* (rural cluster Pays Cathares). However, other interviewees pointed out that such financial programmes alone did not guarantee long-term practices. When financial incentives stop, farmers might change the practice rapidly. This case revealed the fragility of economic instruments:

A1: There is the other big tool that we use, the MAE (agro-environmental measures). It works very well, except that [...] it is an incentive, we saw it with problems [...] there was a small extension for the transition, so we reformed the contracts. And there were some communication problems. As a result, some farmers thought they would no longer have funding. Within ten days, the grassland was turned over [...] You can see it with the naked eye, when you walk through the park you see the fields evolve; it is dramatic. But the day we no longer have this tool, we are doomed. [...] (A2: And we do not have this tool on

the plateau [...] The MAE, it is really strictly limited to wet grassland).[...] we have to find funding to be able to generalise that. But it is a very annoying job. (It is) hyper time-consuming work that nobody wants to pay for. [civil servants, regional park Boucles de la Seine, Normandy, 2021/05/28]

Another leveraged instrument was integrating the transition to agroecological practices into land strategies, facilitating the transition in a more concrete way. This instrument is linked to strategies facilitating new farmers' access to land (2.1.3). By developing public farm incubators (using publicly-owned land or partners' land), food planning project leaders can define targeted farming practices the land will be used for. For example, some farm incubators only host organic farming projects (e.g., in the case of inter-municipal bodies of Grand Cahors and Rodez). With a strong focus on agroecological transition, Montpellier Metropolis planned to apply environmental leases on publicly-owned land to facilitate sustainable farming. The metropolis also planned to develop a demonstrative agroecological project by using publicly-owned properties. Rural cluster Coeur d'Hérault planned to link fallow land reclaim with testing agroecological transition. The idea was to make use of fallow land with low agronomic value with agroecological practice and to improve biodiversity:

On the level of axis 2, we are on agroecology, agroecological practices and water management. We work especially on fallow lands, not on those with a high agronomic and irrigable potential directly, but more on fallow lands with a lower potential, which can be valorised through agroecological practices or perhaps other types of cultivation, or breeding, or simply to cultivate biodiversity on these fallow lands. We are more interested in a biodiversity approach and in developing fallow lands even if they do not have strong agricultural potential. [civil servant, rural cluster Cœur d'Hérault, Occitania, 2021/09/17]

Despite the instruments presented above, in general, the use of policy instruments to facilitate ecological practices was not widespread. In total, only 13 food planning projects adopted at least one instrument that facilitates the agroecological transition, which is less than half of the analysed documents. Moreover, the most frequently used one was an informational instrument, in contrast to the seldomly applied economic means and the absence of regulatory means. This indicates that food planning engaged rather soft, persuasive and communicative ways to orient the transition. As an interviewee reported (though the food plan formulation was ongoing):

Organic farming appears to us rather as a support for the farmers' desire to change their practices, not necessarily because we are a driving force for these changes. In the exchanges that took place in the framework of the consultation, what emerges in the desire for food planning is rather a change in consumption practices and not necessarily a change in production practices, which emerges in the priorities. [civil servant, inter-municipal body Lisieux Normandie, Normandy, 2021/04/12]

Such a result was different from what I expected because the organic food supply is an issue emphasised in the laws that defined and affected food planning, i.e., Agriculture Law (*loi LAAAF*, 2014) and Food Law (*loi EGalim*, 2018), with the quantified objective of 50% supply of sustainable food with 20% in organic in school canteen catering. Plus, environmental practices are a criterion engaged in "Call for Project" (see General Introduction I.4). Some interviewees explained why adopted policy instruments were rather persuasive but not directive. One reason was to avoid disturbing the agricultural world through orienting certain types of farming by coercive rules or material investments, as an interviewee reported:

We do not want to create an opposition between conventional and organic agriculture. At the time when this farm incubator project was launched, in 2015, there were certain elected officials who were farmers in their professional lives, they said "why are we going to help these farmers more than others?" Thanks to the success of Jardin de la Rue (a farm incubator based on partnership with private land owners), we know that now it is something concrete. We could easily mobilise the elected officials for a new project. But nevertheless, we do not want to come and upset the agricultural world either, either through acquisition or rental. [civil servant, regional park Perche, Normandy, 2021/05/27]

Interviewees generally reported that it was a choice made not to put much emphasis on agroecological transition nor to apply coercive instruments on that, although a wish was usually there, at least in the national framework and among investigated food planning project managers. Such a choice departed from the willingness to engage as much as possible local agriculture-associated stakeholders within the co-existence of agricultural and food models (Gasselin et al., 2020). Such models indicate not simply opposing the different models (e.g., conventional versus alternative, industrial versus peasant) but considering the co-existence and the interaction. Therefore, different types of farmers are involved. Food planning, as defined by the Agricultural Law (*loi LAAAF*, 2014), aims to engage *all the stakeholders*. As an interviewee claimed, that is also why "food" but not "agriculture" is the centre of the debate: *"the particularity of food, we noted that, is that everyone can talk to each other. If we had talked about **agriculture** in a workshop, they would have fought over it. We were talking about **food**, so people were able to listen to each other and talk"* [civil servant, urban cluster Caen, Normandy, 2021/04/01].

Therefore, territories usually do not point directly to the support of a certain type of farming practices to avoid resistance from local conventional farmers and to avoid conflicts between territorial stakeholders. As claimed by interviewees, the transition towards agroecological practices is treated as a threat to established farmers who farm in a conventional way. Hence, food planning takes its position with cautions to include local farming system stakeholders and avoid radical voices to claim the transition, as an interviewee

reported:

If we say “we want to change the agricultural model now”, the project would be buried. We are still very cautious. Here, agriculture represents almost 74.4% of the territory in terms of agricultural surface. It is a very rural area, very agricultural, with a real dominance of monoculture. It is oil and protein cereals, a lot of irrigated corn and the vine, that is the territory. It is a land of vines. Questioning and challenging this agricultural model is not the point. [...] We have modes of production that are globally rather polluting, which rely heavily on [...] chemical inputs. But we cannot impose. It is a bit like nudge, we have to gently encourage a change in practices. [civil servant, rural cluster Pays d'Armagnac, Occitania, 2021/06/17]

Notably, the transition into organic farming was a sensitive and avoided issue because it risks raising opposition between different organic and non-organic farmers. Therefore, the discourse has to be carefully addressed because it may block the progress of food planning, as an interviewee reported:

We try not to put our finger too precisely on that, because we know that our territory is not only organic, it is also everything that is more conventional and more traditional agriculture as well [...] So (organic) is part of the food system, but it is not an axis on which we focused particularly because, politically, it does not work because it would exclude too many enterprises and a large part of the system that fixes our territory. [civil servant, inter-municipal body Cotentin, Normandy, 2021/04/02]

Two groups of stakeholders were reported as important during the process of defining the orientation: local authority elected officials and the Chamber of Agriculture. First, there are usually both elected officials who are ecology-oriented and in favour of ecological transition and those who are farmers practising conventional farming. They have different interests towards the topic of organic farming and may not be able to find a consensus. Interviewees claimed that elected officials were usually reluctant to put too much emphasis on favouring organic farming to avoid political conflicts. Second, Chambers of Agriculture are usually partners in food planning. They may not be willing to generate confrontation between organic and non-organic farmers. In territories where organic farming practices were not well developed, the degree of acceptance of the topic of organic farming may be even lower for conventional farmers, and Chambers may be more supportive of defending conventional farming. Interviewees claimed as such:

... it is rather the elected officials “ecologists” who are in this approach. Afterwards, the other elected officials are interested. But there are also elected officials who are linked to agriculture, they're more into conventional farming, and when we start talking about that, sometimes they feel almost attacked, whereas in fact that is not the aim, it is the opposite. We do not say "What are they doing?", but I feel that they think that way. [civil servant, rural cluster Dieppe Pays Normand, Normandy, 2021/05/28]

Some territories sought strategies to mitigate the confrontation between stakeholders in different practices. Two types of strategies were identified. First, some territories looked into discourses for the agroecological transition that are lighter, more inclusive and consensual than “organic farming.” Such discourses blur boundaries between farming practices, thus mitigating the conflicts. For example, some food planning engaged the issue of ecological transition by using the term “agroecology”, which corresponds to larger scope than organic farming and with less strictly defined criteria: “*we talk about agroecology, and this term is perhaps more consensual than talking about organic farming*” [civil servant, rural cluster Albigeois Bastides, Occitania, 2021/07/02], or by using the term “integrated farming”:

*We have the same problem, except that we do not respond in the same way. We claim that **organic is the conventional of tomorrow**. We can say that today because we really formulated these ambitions and objectives together with the Chamber of Agriculture. One day, they said “But in fact, organic is tomorrow's conventional.” On the other hand, we have equally 50% conversion objectives for **integrated farming**: it is all the new practices that are more ecological, more ambitious. [civil servant, regional park Boucles de la Seine, Normandy, 2021/05/28]*

The second strategy was to transfer the ecological question into value-added economic issues to draw more consensus. Some territories integrated the issue of ecological transition into quality food production, meaning products with labels. Such integration indicates a deviation from ecological to economic issues; the latter is more consensual among agriculture-associated stakeholders. The exemplary cases were demonstrated by regional parks because there is a national action of developing the quality label of “Valeurs Parc Naturel Régional” (this will be discussed in 2.3). This quality label corresponds to added value and has some aspects of environmental value (Cayla & Peyrache-Gadeau, 2017). Interviewees claimed that such a label could facilitate more farmers because it has lighter requirements and is cheaper than obtaining an organic farming label. So, the label as an entrance with the economic value might mitigate conflicts generated by the opposition between organic and non-organic farming. In the meantime, it facilitates the ecological transition. As revealed by interviewees, this would also engage more farmers, for example:

With local products, there are a certain number of people who do not have the organic label simply because it is too expensive. [...] Some have gone for this label because there are outlets behind it that make it profitable. But most of them have no interest in being on an organic label [...] So the question I asked the the state's service of agricultural and food (DRAAF) was whether, for example, all these people could have the park brand? Because the specifications are lighter and the cost is lower than a label. This allows us to have a coherent sign on their territory, a sign that allows the consumer, whoever he may be, the buyer, to say “this is a quality product” and that is identified on a territory. [staff, association Chemin Faison, rural cluster Pyrénées Catalanes, Occitania,

In contrast to the above-stated situations, a few territories indeed developed food planning with a clear focus on agroecological transition.

Two exemplary cases are the Montpellier Metropolis (with an established food planning entitled “agroecological and food policy”) and its neighbouring rural cluster of Coeur d’Hérault (with an axis of “agroecological innovation and water management”). In the first case, a strong political commitment had been established surrounding the issue of agroecological transition (Michel & Soulard, 2019). In the second case, a key issue of the territory was water management, which explains the agroecological transition necessity.

These territories are dominated by vineyards, an agricultural sector which might be ignored within the frequently emphasised food system surrounding nutritious and healthy food (Perrin, 2013). Hence, the focus on agroecology was also a strategy in the framework of food planning to engage winegrowers, who are mainstream in the territory. Such integration with “non-mainstream food” into food planning is another sign of the co-existence models.

As an interviewee reported, the wine sector was involved in food planning via the lens of agroecology:

We said “to shape an agroecological territory for food and wine”, because our territory is essentially wine-growing. [...] When we look at the raw water master plan, for example, the requests for irrigation services today are also driven by a demand from winegrowers. And the wine profession is very influential politically. So we cannot think about agriculture without integrating the winegrowing dimension. So today there is a desire to have a territory which is perhaps more nourishing and therefore to accompany the diversification of activities, but also to work with the wine profession to accompany it towards agroecological practices. [civil servant, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07]

Overall, food planning facilitated farmers’ sustainable transition through policy instruments that 1) provide informational and technical aids, 2) apply financial support, including direct subsidies from the food planning financial programmes and indirect subsidies from other sourcing such as CAP agro-environmental measures and 3) integrate agroecological practices into land strategies (e.g., integrating requirement of organic farming in farm incubators, experimenting agroecological farming in reclaimed fallow land). These policy instruments are more informational than economic and regulatory, showing that food planning adopted rather persuasive means to facilitate farmers’ transition towards agroecological practices than forcing the transition.

Such a choice was made with the political will to engage a wide range of local agriculture-associated stakeholders and to avoid confrontation between

stakeholders who exercise differently, especially between organic and non-organic farmers. It presents the trade-offs made in most food planning projects between engaging broader actors and explicitly steering the transition. Nevertheless, engaging these broader actors from different production models is a significant step to favour the transition, though it might take a long process. The results show that food planning could be a neutral arena for discussion and an opportunity to foster "small steps" towards agroecological transition, promoting it in a "silent" way (Lucas, 2021).

Some territories tried to mitigate the conflicts surrounding ecological practices and to facilitate the transition. Some chose to use more inclusive discourse to blur the boundary between farmers (e.g., using agroecology and integrated farming to replace "organic"). Some discovered and used the economically added value associated with ecological practices as a driver to facilitate farmers. Concretely, they used local food labelling to drive farmers' involvement for the better economic income it could bring about. While the labelling system engages environmental performance issues, it emphasises the added value for farmers' production. Doing so mitigates conflicts generated by the opposition between different farming practices. Such attempts represent local experimentation in applying strategies. Another issue addressed in food planning, farm product diversification, also implies the agroecological transition.

2) *Favouring territorial product diversification*

The second category of policy instruments focuses on issues of favouring product diversification in the territory. Nine food plans among the 29 studied documents planned to facilitate shaping new types of supply chains to diversify local production through informational and technical support (e.g., studies of feasibility, facilitating existing farms' diversification, facilitating the set-up of new types of production, creating networks between producers involved in the supported supply chain, raising awareness of farmers). The diversification aimed at market gardening, arboriculture, legume and others (e.g., aromatic and medicinal plants, crop for human food, polyculture). They were defined as engaging issues of climate and geographical constraints (e.g., targeting medicinal plants in mountainous areas where market gardening is not adapted). A concrete process to achieve the study, as explained by an interviewee, is to convey an organisation to study the potential of diversification and provide tools for implementation:

...(an agroecological farmers' support organisation) are going to bring this method into this diagnosis on our territory to analyse the potential of reterritorialisation and diversification for arboriculture and market gardening. That is really what we aim at. Then there will be working groups with the actors and the farmers to see what tools can be put in place to go towards this revitalisation of the arboriculture and market gardening sectors in the territory.

[civil servant, rural cluster Cœur d'Hérault, Occitania, 2021/09/17]

Diversification was not only on food production. Instead, developing the supply chain was usually associated (i.e., processing, logistics and outlets). Here is an example, "*development of the production and consumption of legumes: organisation and adaptation of the vegetable supply chain: diversification/set-up of market gardeners, sharing, marketing, or even processing*" (regional park Perche). Some food planning projects aimed to increase market gardening production and, in the meantime, link such production to vegetable centre projects and collective catering (this will be further discussed in 2.3). The possibility of enlarging market gardening will be largely dependent on structured supply chains, among which collective catering was an important component, as an interviewee reported:

We are currently carrying out a study on the structuring and development of the open field vegetable supply chain. So the objective is to be able to meet the needs of collective catering in particular, because today it is quite easy to go and see these players, since they are member municipalities of the metropolis, to identify their needs, because they buy processed/unprocessed vegetables today, and the volumes in particular to meet the objectives of the Food law (loi EGalim, 2018), also in the organic field. [civil servant, inter-municipal body Metropolis Rouen, Normandy, 2021/04/23]

Another type of leveraged instrument was integrating product diversification into land strategies (see also 2.1.3). In the most frequent cases, by disposing of publicly-owned or partners' land, the project leaders can designate (future) farmers to undertake RAA activities that conform to the food planning. For example, in one food planning, diversifying products was integrated into both issues of farm incubators (to target market gardening and arboriculture) and the scheme of fallow land reclaim:

In food planning, we are orienting it much more towards market gardening, with the idea of bringing back market gardeners [...] we intervene in this issue in different aspects of food planning. There's a first axis, which is the land axis, where we work on the re-development of fallow land. And the other action of axis 1 which is the agricultural test areas. We are going to encourage the set-up of arboriculture or market gardening to diversify agriculture. [civil servant, rural cluster Cœur d'Hérault, Occitania, 2021/09/17]

Some territories developed innovative land-associated instruments to facilitate market gardeners' set-up. They identified the major barriers for market gardeners and developed strategies: lack of appropriate land concerning size, on-farm residence, and unstable outlet channels. For example, the regional park of Haut-Languedoc adopted an action to provide a "kit" of necessary tools (i.e., land, residence not far from the farm, irrigation, the outlet avenues) to market gardeners. Such an instrument is not an established legal instrument but is locally developed to meet the new farmers' needs. As the interviewee reported:

This (the enlargement of farms in mountainous areas) is an element that we try to prevent. We do not have any legal tools for that, but we are trying to raise the awareness of the elected officials. And our colleague in agriculture is also working on the development of a KIT, particularly for setting up market gardeners. So potentially on livestock land, but including the land and the house and the outlets channels [...] it is identifying land for market gardening, to develop this production on this territory and beyond just having land. [civil servant, regional park Haut-Languedoc, Occitania, 2021/06/16]

The applied instruments, however, presented a limited scale of intervention, especially in the land-associated strategies. There are significant constraints on available resources. First, although publicly-owned land is a useful resource to be mobilised for diversified activities, such land is not always available and does not always fit the need for targeted activities (e.g., market gardening or arboriculture). Therefore, strategies might have to be the purchase of land that is suitable for such activities, as an interviewee claimed:

There are breeders on publicly-owned land, regularly. There are plenty of them, but it does not meet the needs (of market gardening and arboriculture). And the local authorities have very little land in their possession that would be potentially suitable for market gardening or arboriculture. On the other hand, we try to see to what extent some of them might be able to buy certain agricultural plots in order to make them available. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

Second, the public economic support for product diversification may be limited at a small scale in terms of farm size and financial investment. Some interviewees doubted the effect of scaling up RAA led by food planning. They claimed that the economic support (e.g., in the forms of material investment) for establishing certain farms was restricted on a small scale. When it comes to large-scale issues requiring large investments, then the public bodies might have limited capacity, at least in terms of finance. This fact also indicates that local public authorities have a weak capacity to invest in farming practices' transition. Also, the prevalence of supporting market gardening (e.g., through farm incubators) rather than other products might be a choice because of the limited capacity. As an interviewee reported:

With the farm incubator, we touched on the question of a possible public investment, but these are productions on small surfaces, ownership by the municipalities. What the Perche needs is to save its polyculture and livestock farming. So, that raises other questions in terms of land, of capital to be mobilised because immediately, we are on amounts which are no longer inferior to 100,000 euros, because there on ... not counting the land, but on the carrying of the farm incubators of the inter-municipal bodies, they intervene between 20,000 and 80,000 euros or 90,000 euros of carrying [...] But if we go beyond livestock farming, it will be in millions. We are no longer playing the same game. [civil servant, regional park Perche, Normandy, 2021/05/27]

These constraints present the challenges for product diversification: gaining its place in a context that favours territorial specialisation (i.e., centralising on developing a few major products in the territory). There is a fundamental challenge coming from the confrontation between the established dominant sectors and diversification-oriented sectors, as diversifying products may threaten existing mainstream products. Again, this confrontation refers to the issue of the co-existence of farming models (Gasselin et al., 2020). Interviewees reported that one hindrance was the reluctance of mainstream sectors to change, such as “because we are dealing with strong economic issues” [civil servant, rural cluster Haut Languedoc et Vignoble, Occitania, 2021/09/22]. Interviewees especially referred to the problem related to large cooperatives. Taking vineyards as an example, the operational mode makes large cooperatives not wish to lose land for vineyard production. Therefore, diversification, meaning transforming vineyard to other products, is challenging. As an interviewee reported:

In the plains the wine growers are not at all in favour of diversification because they do not want to lose hectares and therefore the volume. In addition, most winegrowers are very happy with the system where they bring their grapes. They have a salary that falls every month, because it is the cooperative winery that pays their salary; they have an activity that is more or less economically viable; so why should they bother to make vegetables, fruit, and ... So there's a real complex problem where on the one hand we cannot set up and on the other hand we cannot diversify. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

As interviewees often reported from the observation from mountainous areas, an extra constraint is the lack of drivers for farmers to diversify as CAP subsidises livestock farming. An interviewee pointed out that since CAP regulations allocate farmers to mountainous areas⁵⁸, the maintenance of livestock is a necessity for farmers to receive subsidies and, therefore, farmers might not be motivated to diversify on-farm production. Such a fact reveals the rooted conflicts between CAP and food planning, with the former usually much more powerful both in terms of influence and funding volume. As reported by an interviewee:

... in mountain areas, there is the CAP, and the CAP does not favour diversification at all. In any case, farmers get money just by having animals on the land. So it is not in their interest to diversify their activity, especially into vegetable production, as they already receive subsidies. So there is a real difficulty in encouraging diversification, because economically, there are no arguments. [staff, cooperative Maison Paysanne, food planning of Pays Haute

⁵⁸ CAP compensatory allowances for permanent natural handicaps.

It should be noted that subsidies from CAP are much higher than that dedicated to food planning. This gap reveals the challenges RAA transitionface. **Besides, there is a debate between territorial speciality and diversification of food products.** Therefore, some territories did not adopt strategies to diversify products. Instead, they chose to seek a balanced products supply at larger scale, namely through the complementary with neighbouring territories. For example *“we are moving towards reciprocity between territories. For example, next in the Tarn-et-Garonne, which produces fruit and vegetables in abundance because they have the appropriate land for it. We are talking more about exchanges, for example, on a broader scale. We supply them meat; they supply us fruit and vegetables”* [civil servant, inter-municipal body Ouest Aveyron, Occitania, 2021/06/15]. The cross-territorial reciprocal food supply indicates a need of collaboration between territories, which is discussed in chapter 3.2, within exemplary experiments concerning the mutual supply of products.

Overall, food planning promoted territorial product diversification through policy instruments that provide informational and technical aids or integrate targeted products into land strategies (e.g., market gardening). The instruments, however, were usually limited in scale, both in terms of investment and size. The fundamental reason, similar to the agroecological transition, is related to the co-existence of agricultural and food models. Territories are facing the dual issues of specialisation and diversification and have to reconcile between them, which is challenged by the co-existence of confronted interests as well as the gap between the large volume of subsidies for mainstream products and the relatively modest investment in food planning schemes.

In synthesis, food planning promoted the transition of farming practices by applying policy instruments to facilitate the transition towards agroecological practices and favour territorial product diversification. Policy instruments applied were mainly informational, representing that food planning adopted rather persuasive means to facilitate such a transition. Land-associated instruments were also mobilised to facilitate the transition. For example, some farm incubators can target farmers in agroecological practices and market gardening. Nevertheless, these initiatives were usually limited in small-scale size and investment.

The way how instruments were used represents the local strategy and political willingness. Local territories tend to engage a broader range of local agriculture-associated stakeholders and avoid confrontation between stakeholders in co-existing agricultural and food models. This is the case for both agroecological farming practices transition and product diversification. The study shows that food planning may play a neutral role in integrating stakeholders with conflictual interests. The advantage is that it includes a large

range of actors, whereas the disadvantage is that this is at the cost of explicitly steering the transition. How food planning organises this “neutral arena” to include larger groups of stakeholders and promote the transition is challenging. Solutions need to be integrated with the co-existing agriculture and food models. Food planning targets the transition of farming practices, which rely on an enabling land-use system (Gasselin et al., 2020). So, land-use planning is significant.

2.2.3 Land-use planning: indirect intervention in managing farming practices

Unlike food planning, which intervenes directly in farming practices, land-use planning is rather indirect. Although the Planning Code regulates that “*planning regulations govern the use of the land, except for agricultural production*” (Planning Code, L. 101-3⁵⁹), land-use regulations can indirectly affect farming practices by regulating land-use and building rights. Three types of interventions were identified from studied land-use planning: on-farm construction permit requirements associated with farming types, creating specific zones to targeted types of agriculture and reserving grassland in engaging issues of ecological corridors.

1) On-farm construction permit requirements associated with farming types: challenges for market gardening

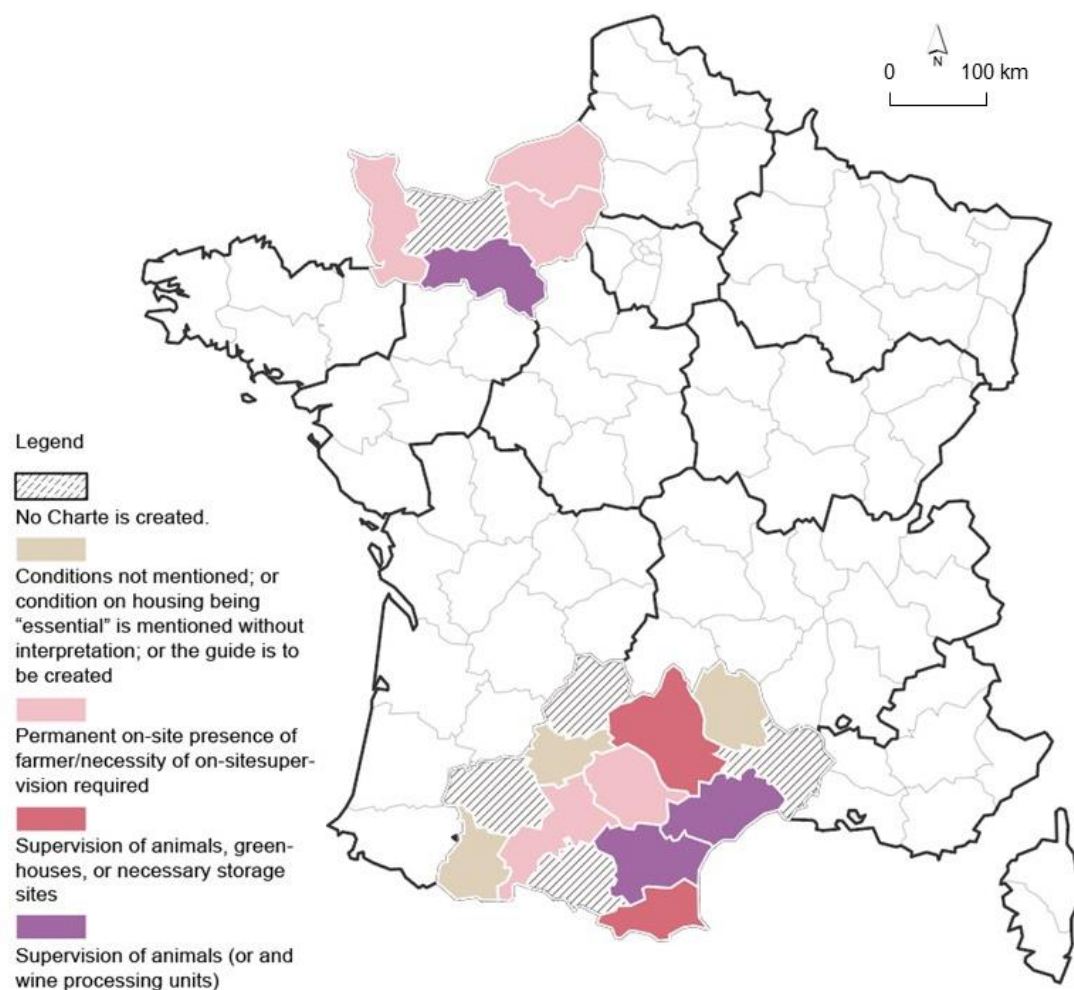
Two types of construction affected by land-use planning were identified as influential for market gardening activities: housing and greenhouses. **Building permits for on-site farmers’ housing is an important factor that land-use planning can affect farming types.** The Urban Renewal law (*loi SRU*, 2000) defines the requirement of only authorising “necessary” buildings in agricultural zones to regulate the use of farmland and avoid non-agricultural intrants into the field. However, the meaning of “necessary” remains vague and leaves room for manoeuvre for local interpretation. Some Agriculture and Planning Charters (*Chartes Agriculture et Urbanisme*) at the departmental scale were formulated after the negotiation between state representatives, farmers’ unions and mayors (Perrin & Nougaredes, 2020).

Figure 2. 3 shows that Charters in different departments interpreted the meaning of “necessary for farming” differently. Some only authorise on-site livestock farms’ residences because only animals require supervision; some also authorise on-site residences when there are greenhouses; some only generally

⁵⁹ Planning Code, L. 101-3: planning regulations govern the use of the land, except for agricultural production, in particular the location, serviceability, layout and architecture of buildings.

describe the necessity of on-site supervision without indicating farming types; others do not give detailed requirements. In the departments where the Charters do not clarify detailed requirements, in practice, some interviewees claimed that the "necessity of on-site presence" was interpreted as livestock farming. A study has shown that the interpretation is linked to the participators in the Charters' negotiations and argued that it generates inequity between territories (Perrin & Nougaredes, 2020).

Figure 2. 3. *Negotiated Charters' interpretation of farmers' housing building permits requirements.*



Note. From Agriculture and Urbanism Charters (Aveyron, Manche, Hautes-Pyrénées 2013)⁶⁰, Table 3, interpretation of the Urban Renewal law (loi SRU, 2000) concerning building permits for houses in agricultural zones, as stated in the charters negotiated in 38 departments (2011) by Perrin and Nougaredes (2020).

⁶⁰ Charte départementale d'urbanisme en Aveyron, 2012. Charte pour une gestion économe et partagés de l'espace rural, 2017. Charte Agriculture Urbanisme Territoires des Hautes-Pyrénées, 2013.

Due to the usually restrictive interpretation of "necessary" farming buildings, a number of interviewees claimed that new market gardeners encountered difficulties in having the rights to build on-farm residences, as they cannot justify the necessity of supervision. They may be able to find a residence in the village, but this may not correspond to their expectation. As the interviewee claimed, new market gardeners set up not only for economic farming projects but also for pursuing a lifestyle. And quite often, on-site housing is a component of such a lifestyle that new farmers aim to have when exercising market gardening:

Yes (new market gardeners find housing) in the village. And that is not necessarily a bad thing, but it is true that project owners who come to see us are more interested in living on the site. [...] Very often, the agricultural project also represents a life project. It is not just an agricultural or economic project. It is because behind it are people who have a vision of how they want to live. Often, they are ready to sacrifice a certain standard of living by saying to themselves: "I may have less income but I will have freedom, I will be outside, I will be my own boss, I will live in an environment that is pleasant for me." So often the issue is being able to build where he works; where he works is where he lives, it is very linked. And that, unfortunately, we often cannot provide a solution. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

In most cases, the extension of existing on-farm buildings is authorised. However, this does not meet the requirement of the collective set-up of market gardeners. Interviewees in another community (at the department of Aveyron) claimed that this regulation is particularly constraining for innovative initiatives such as the collective set-up of market gardeners. An existing building can be a solution for an individual, whereas, for group gardeners, it is problematic. As an interviewee explained:

There are refusals, many, of housing (permits). From certain farmers who would like to have a house near their farm, there are criteria for monitoring livestock etc. [...] there are requests from certain new farmers who are going to set up outside the family backgrounds, with more collective projects, where the question of housing arises. On the agricultural zone, if there is a house on the site, people can make an extension. But today if it is going to set up three persons, we cannot build two other houses for each person. [civil servant, inter-municipal body Ouest Aveyron, Occitania, 2021/06/15]

Apart from effects on farming types through housing building permits, greenhouses, as an important construction for market gardening in most areas, may be hindered by building permit authorisation procedures associated with planning regulations. A constraint comes from landscape consideration. According to the Planning Code, greenhouses not exceeding 1.8 metres can usually be exempted from building permits (Planning Code, R. *421-

2⁶¹). However, this is not the case "when they are located within the perimeter of a remarkable heritage site (*site patrimonial remarquable, SPR*), in the surroundings of historic monuments or in a classified site or in the process of being classified" (Planning Code, R. 421-11⁶²). In such cases, the request has to go through the French National Architects to obtain a pre-statement (*ABF, Architectes des Bâtiments de France*, civil servants that are in charge of providing advice on building practices within heritage bodies and their settings with the aim of heritage conservation). An interviewee claimed that it was a hindrance for market gardening, as greenhouses might easily be refused by the French National Architects in consideration of landscape value (i.e., in the view corridor from the view point from heritage buildings). This interviewee also emphasised that in some areas, greenhouses are indispensable due to the climate restriction for market gardening activities:

The only problem (for greenhouses) is when there are viewpoints of castles. And there are quite a few of them. Here in the region there is a lot of heritage, many castles. And the ABF can be an obstacle [...] for the moment, they were not necessarily willing to allow greenhouses in the landscape space, the visible space, from castles or classified villages with a strong heritage interest. The point of view of the ABF, which can be understood, is that it is true that a greenhouse is not very beautiful. But first of all, it can be removed quite quickly, it can be assembled and dismantled quite easily, so it is not fixed [...] In addition, it is an indispensable activity for market gardening. We cannot do market gardening without greenhouses, it is not possible, in any case, not professionally. Not in the Lot. [civil servant, inter-municipal body Grand Cahors, Occitania, 2021/10/05]

Another constraint to greenhouses is flood zone regulations. Land-use planning may apply strict rules for constructions in such zones that prohibit greenhouses. For example, the interviewee from the Chamber of Agriculture claimed that it was problematic for market gardeners:

We have a market garden area in the north of Toulouse [...] it is a sector of a little more than five hectares that is classified as a flood zone. And the municipal land-use planning did not allow greenhouses to be built. The inter-municipal

⁶¹ Planning Code, R. *421-2: Are exempted from any formality under the present code, because of their nature or their very small size, except when they are located within the perimeter of an outstanding heritage site (*site patrimonial remarquable, SPR*), in the surrounding of historical monuments or in a classified site (*site classé*) or a site in the process of being classified: [...] e) Frames and greenhouses whose height above the ground is less than or equal to one metre eighty.

⁶² Planning Code, R. 421-11: In the perimeter of remarkable heritage sites, in the surroundings of historical monuments, in a classified site or in the process of being classified, in nature reserves [...] the following new constructions must be preceded by a prior declaration: [...] e) Frames and greenhouses whose height above the ground is less than four metres and whose surface area does not exceed two thousand square metres on the same land unit.

land-use planning, because we were in a flood zone, while the flood risk prevention plan (PPRI) did not necessarily forbid it, the inter-municipal land-use planning improved things by allowing the construction of greenhouses, by regulating it etc. Today, with the cancellation (of inter-municipal land-use planning), if a market gardener sets up who needs to build a greenhouse in a short time, it will be problematic for him. [staff, Chamber of Agriculture Haute Garonne, Occitania, 2021/06/23]

Several interviewees also claimed that greenhouses might be hindered by regulations in Flood Risk Prevention Plan (PPRI), which impose an easement on land-use planning. This thesis did not contain a comprehensive analysis of regulations from the Prevention Plan, but other territories showed that regulations might be flexible, for example, by regulating that greenhouses have to be parallel to the flow and in certain forms that do not generate ice jams.

Regarding this, I, especially all the plots where I needed greenhouses or where we envisaged greenhouse sites, with the state services, they said that they had no worries. [...] It had to be parallel to the water flow, we had to be able to lift the tarpaulins (of the the greenhouses) [...] as a result, , they really did not give us any trouble on that. [civil servant, inter-municipal body Grand Cahors, Occitania, 2021/10/05]

(in red zone is permitted:) the creation of greenhouses provided that they are oriented in the direction of the water flow and that they are not likely to generate ice jams. Only “market gardening tunnel” type greenhouses are authorised, i.e. with the envelope solidly anchored in the ground. Greenhouses of the “Nantes tunnel” or “chapel” type, which are likely to generate ice jams, are prohibited. (PPRI Albigeois-regulation⁶³)

The following are subject to special conditions: - Construction and installations necessary for agricultural activity with supporting elements on the impossibility of carrying them out elsewhere with regard to the type of production and the structure of the farms concerned and subject to the condition:

- they do not hinder the flow of the flood;*
- they do not present any risk of pollution in the event of flooding. (PPRI Bassin de Cahors-regulation⁶⁴)*

Overall, land-use planning can affect farming production types by defining requirements for on-site housing building rights and greenhouses. Such effects

⁶³ Plan de prevention des risques naturels prévisibles risque inondation Albigeois, règlement, Direction départementale de l'équipement du Tarn, 2003, revision in progress.

⁶⁴ Plan de prevention des risques naturels risque inondation bassin de Cahors, commune de Cahors, règlement, Direction départementale des territoires du Lot, 2018.

are not directly imposed by, but associated with, land-use planning documents through locally negotiated guidelines (Agriculture and Urbanism Charters), professional assessment of landscape impacts (*French National Architects*) and flood risk prevention plans (*PPRI*). In practice, they may hinder market gardeners' activities by overly restrictive building rights of on-farm housing and/or greenhouses. It represents how compromise was made between supporting the market gardening sector and multiple territorial values (i.e., avoid farmland conversion, landscape and heritage, flood risk management). Interviewees' responses presented an awareness of the hindrance for market gardeners. However, local strategies were limited. Only in a few cases, technical strategies were taken to give more possibility for construction (i.e., in the case of building greenhouses in flood risk zones).

2) *Creating specific zones for targeted types of agriculture: legitimacy versus local responses*

Although the previous section showed that associated land-use planning rules hindered market gardening, some territories also favoured them by applying innovative regulations. Document analysis in chapter 1 showed that **seven land-use planning projects created specific "agricultural zones for market gardening"** (1.1.3). For reminding, they were created to preserve suitable land for market gardening. Such zones were related to issues of valley bottom landscape preservation, short supply chain activities and flood risk area management. Regulations for building rights were differently applied. Some designated that the construction should be dedicated to market gardening, while others did not refer to it. The delimitation of such specific zones, as reported by interviewees, was usually according to the existing market gardens. As an interviewee reported:

Often, this market gardening indicator is the market gardening areas that already exist [...] We can often target these areas, which are areas of high agronomic value, which are in the alluvial plains. This is a way of protecting these lands for market gardening. There are some, but not many. [civil servant, regional park Grands Causses, Occitania, 2021/06/16]

The creation of specific zones for market gardening was not widely used, not only in terms of the territories (only seven among 45 examined cases) but also in the number of parcels concerned when the zones were created. In one of the territories where such specific zones were created, an interviewee reported that the concerned zones were only a few due to the lack of commitment among local stakeholders. Farmers were unwilling to designate the areas where market gardening could be practised to avoid potential competition between farmers. Moreover, the market gardening zone regulation on building rights did not exclude non-market gardening activities. It authorised: "*construction necessary to agricultural activities, excluding for a new*

dwelling" (inter-municipal body Rodez). This interviewee reported the process of how the trade-off was made between the willingness to protect market gardens and the reluctance of farmers involvement:

There were workshops with the farmers, especially the market gardeners, as part of the creation of the strategic project (PADD). We wanted to identify and preserve the market gardening areas, in the zones where it is practised, by creating a specific zone "Am" to prohibit construction and to make sure that market gardening develops as much as possible in the farmland suitable for it. This caused quite a few problems. Not everyone necessarily agrees with pointing out the areas where market gardening can be practised (because) it creates competition between market gardeners on a territory. So we took some of them. [...] But we did not have many (zones) on the land-use planning zoning [...] I think we could have gone further if everyone had gotten involved. [civil servant, inter-municipal body Rodez, Occitania, 2021/06/16]

In more territories, specific zones for market gardening was not applied.

The first reason is the ambiguous legitimacy of land-use planning to intervene in the type of products defined by the Planning Code (Planning Code, L. 101-3⁶⁵). When referring to designate specific zones for market gardening, most interviewees engaged in planning formulation claimed that this was not the mission nor the capacity of land-use planning documents. From that, it is understandable that such an instrument might not be listed among alternatives for the land-use planning design. An interviewee claimed:

*On the diversification of production, however, there is one problem: regulations do not allow us to designate an agricultural zoning for a particular production. So we are on what we call uses, sub-uses, on an agricultural zone. We can therefore foresee an agricultural production sub-use, or a forestry production sub-use, where we cannot go beyond these two sub-uses. This implies that in the land-use planning that was cited (during the share of experiences), where it is indicated that they had an "M" (market gardening) indication: it is a display that is allowed by regulation. On the other hand, **this indication cannot be used to oppose a project other than market gardening**. [civil servant in the state's planning service of department Ariège, collective meeting of rural cluster Ariège, Occitania, 2021/10/01]*

The second reason relates to the opposition from the local stakeholders, represented by the Chambers of Agriculture. In some territories, although sometimes the wish of designating zones for market gardening was there, the instrument was proposed but was refused. In one territory where a master plan (SCoT) was developed, the proposal of prescribing specific zones for market gardening to formulate a greenbelt was not adopted due to the refusal by the

⁶⁵ For reminding, the article defines that urban planning regulations govern the use of land, apart from agricultural production.

Chamber of agriculture:

We tried; in 2008 we had written prescriptions concerning food (in the master plan). And we had several consultation meetings with the Chamber of Agriculture. But the elected officials of the Chamber refused these prescriptions, telling us that it was not the role of the urban planning document. (Q : Of what nature?) Prescriptions, we went further on the concept of green belt, by obliging to define land for market gardening or allotment gardens. We can just mention this, but we do not have the right to prescribe. [civil servant, urban cluster Caen, Normandy, 2021/04/01]

It is noteworthy that local stakeholders may have different understandings and interpretations of the legal rules. This is iconic when referring to regulations on building rights. According to some interviewees, the specific market gardening zones, although created, could not exclude non-market gardening activities because land-use planning regulations cannot designate a building for the type of production. As an interviewee asserted:

Regarding land-use planning instruments, we cannot specify agricultural use for the zones. We can indeed set up specific regulations with specific zones. But specific regulations on the dimensions of the building on the possibility of creating greenhouses and only greenhouses... Unfortunately, these measures quickly come up against the reality that a market gardener, to produce, to carry out his activity, does not only need greenhouses. He needs other buildings. And in fact, if a regulation prohibits other buildings or allows a building, it allows it for a market gardener but also for all other types of agricultural activities. The land-use planning cannot be used to guide the types of production. [staff in the Chamber of Agriculture of department Ariège, collective meeting of rural cluster Ariège, Occitania, 2021/10/01]

However, there were indeed other territories which imposed regulations defining that construction should be necessary for market gardening in specific zones. For instance, specific market gardening zones in the inter-municipal body Muse et Raspes du Tarn regulate that buildings in such zones have to be "necessary for market gardening activities." Besides, the Agriculture and Urbanism Charters (section 2.2.2, 1) indeed distinguished buildings for different farming practices (e.g., buildings only possible for breeders justified by the necessity of on-site presence). This actually indicates the possible application of rules that differentiate between buildings according to the type of production.

The effectiveness of the concrete implementation of the specific zones, namely whether the preservation for market gardening is successful, remains to be seen. When asked about the implementation, an interviewee reported that "they (market gardening zones) are quite small patches. It really concerns a very small part of the territory. And for livestock, it is too small that we cannot necessarily enlarge the scale and develop (livestock farming)..." (inter-municipal body Rodez). This means that the creation of the specific zones did not

necessarily facilitate the implementation because these areas are, by nature, difficult to be replaced. It indicates that the creation of such zones might be more symbolic than pragmatically functional. Anyhow, this legally fragile instrument may function to express political legitimacy. It delivers a political willingness to have a relevant competence on agriculture, which is a debated issue.

Other than zoning creation in land-use planning, **protected agriculture areas (ZAP) were an associated instrument that emerged to be applied to protect market gardening areas.** This instrument enables the long-term protection of agricultural use of farmland from urbanisation. It has to go through the approval of the state's service and imposes as public easements in land-use planning after the approval. Once settled, municipalities do not have any more lever on these zones. Hence, protected agricultural areas are rare in practice as they imply that the municipalities partially give up their planning power. Although protected agricultural areas (ZAP) are mainly used for labelling food products with the issue of landscape and terroir, they have emerged to be applied for market gardening areas preservation in the studied cases. In one territory, the market gardening zone was created based on a protected agricultural area (ZAP⁶⁶) (inter-municipal body Millau Grands Causses, overview report, p. 290). More recently, in the peri-urban areas of Toulouse, an area of around 135 hectares was classified as protected agricultural area to protect long-term market gardening practices⁶⁷.

Although a particular focus is placed on the parcels of land within the "Côtes de Millau" controlled designation of origin area, the study area has been extended to the territory of the 17 communes. This extended study perimeter makes it possible to integrate all the orchards in the valley, truffle plantations, market gardening areas, and also vines planted outside the AOC perimeter. (agreed document of protected agricultural areas, regional park Grands Causses, 2021, p. 11⁶⁸)

Overall, the studied cases present that land-use planning can support certain types of production by creating specific zones. In the studied cases, they were for market gardening. However, this is an instrument adopted by very few

⁶⁶ Protected agriculture area (Zone Agricole Protégée) is a land instrument to preserve long-term agricultural land uses through imposing public utility easement (servitude). It should be delimited and validated by the state service at the departmental scale (préfecture). After the approval of the Protected Agriculture Area, it becomes an appendix of land-use plans as easements. The English term "area" is used instead of "zone" to distinguish it from land-use planning zoning classification.

⁶⁷ <https://www.mairie-blagnac.fr/plaine-maraichere-des-quinze-sols.html-0>

⁶⁸ Zone Agricole protégée de la vallée du Tarn et des Cotes de Millau, Parc naturel régional des Grands Causses, 2021.

territories with various imposed planning regulations: some specific zones entitled “market gardening” did not even have a particular regulation for market gardening. So, creating such specific zones is perhaps more of a local political expression of the importance attached to the activity than an operational action. Besides, the delimitation of such specific zones was limited by the number and by size. Interviewees reported two reasons behind the little prevalence of the application. First, the Planning Code limits the legitimacy of land-use planning to impose rules associated with targeted farming types. Second, the Chambers of Agriculture tended to be reluctant to adopt the regulation in order not to generate competition between farmers and not to freeze the use of land. Nevertheless, the use of such an instrument in some, through a few, territories shows how certain local authorities played with the room for manoeuvre of legal rules to achieve goals to support market gardening.

Protected agricultural areas (ZAP) are an associated instrument potentially useful to preserve targeted products. Although it is usually used for protecting labelled food products, some territories started to apply them for market gardening. This is an instrument requiring a long process of validation and high political commitment (Serrano & Vianey, 2007; Baret, 2015). So, the emergence of using such an instrument for market gardening represents increasing political awareness of the issue.

3) Preserving grassland, extensive farming and biodiversity maintenance: interweaving issues of ecology management and farming activities

Land-use planning, though indirectly, affects farming practices through integrating issues of ecology maintenance. This is usually reflected in the plan for ecological corridor (*trames vertes et bleues*) in interweaving issues of grasslands preservation and ecological maintenance. The grasslands preservation is intended for soil and water management by the system of livestock farming and the associated hedge. As interviewees claimed, **land-use planning does not have special instrument to designate livestock farming, and a way to facilitate that is to integrate grassland into ecological corridor plans.** And this is usually a work also done at a larger scale by the regional parks. As an interviewee reported:

In the land-use planning documents, the difficulty is the protection of the grasslands. We do not have any tool. Farmland is all classified in agricultural zones; there is no differentiation between grassland and arable land [...] There is an obligation to work on the ecological corridor (trame verte et bleue) today. And we know that grasslands really support ecological corridors. So through this, we can still work on the grasslands. I think it is an interesting way of maintaining the grasslands, the ecological corridor, even if we realise that it is difficult to prevent the reversal of grasslands (into crops). [civil servant, regional park Boucles de la Seine, Normandy, 2021/05/28]

In the land-use regulations, these ecological corridors are classified as natural zones or specific agricultural zones for preservation. **Some land-use plans achieved so by classifying grasslands into natural zones.** For example, *"construction and installations linked to livestock and pastoral activities provided that the external appearance of the buildings is integrated into the surrounding agricultural, natural and built landscapes"* is permitted in natural zones in the land-use plan of inter-municipal body Quercy Rouergue et des Gorges de l'Aveyron. An interviewee explained that such a zoning decision was based on a wish to combine agricultural activities, biodiversity and the global development of the territory:

In our land-use planning, construction possibilities (in natural zones) are subject to the pastoral activity. This is specific to our territory, since the natural zones are areas with a higher biological value and are often less easily cultivated land. So, they have been reserved for extensive livestock farming. And given the higher level of vegetation, given the higher rate of natural grasslands, biodiversity is a bit more important than elsewhere. that is why we classified it as a natural zone in the land-use plan. And the possibility of construction is reserved for livestock activities in order to maintain these agricultural livestock areas. [civil servant, inter-municipal body Quercy Rouergue et des Gorges de l'Aveyron, Occitania, 2021/06/28]

Some other territories applied different strategies. Instead of classifying them as natural zones, they classified such areas (i.e., with biodiversity and landscape values) as specific agricultural zones for preservation by imposing rules that limit construction (also discussed in chapter 1.1). This was usually a choice to meet the expectation of farmers. An interviewee gave a concrete example of how the grassland in an inscription site (with landscape values, *site inscrit*) was classified in agricultural zones instead of natural zones. This was due to the opposition of the Chamber of Agriculture representatives, who asserted that the natural zoning of such areas might harm agricultural activities. Therefore, the final decision was an "agricultural zone" with a specific target for landscape preservation, with rules requiring new construction close to existing farm buildings. The interviewee reported as such:

We have a lot of grasslands at the bottom of the valley. [...] These spaces are still used by agriculture but for grassland. [...] It was the Chamber of Agriculture that negotiated with us, so that this zone at the bottom of the valley would be in an agricultural zone for landscape. [...] At the beginning, I had put everything in the natural zone, thinking that it would not necessarily have an impact. Then when we discussed it with the Chamber of Agriculture, they told us "in fact, yes, there is a big impact if you put it in a natural zone." We said "well, OK, agricultural zone." [civil servant, inter-municipal body Yvetôt Normandie, Normandy, 2021/05/27]

A similar strategy was taken in another territory. The interviewee even clarified

that using “specific zones for preservation”⁶⁹ was mainly for giving a political sign to meet the requirements with farmers. In fact, “preserved agricultural zones” and “natural zone” have similar rules (Box 2):

We put (areas with ecological stake) in “specific zone for preservation”, although we would have put in a natural zone; it would be the same. But in terms of political display and signal, it was more clever to say “it is an specific agricultural zone for preservation” because if we put everything in a natural zone, the farmers would protested. [...] So, if you look at the natural zone rules, if people have a plot of land in the natural zone and want to build a shelter for horses, they will not be bothered. So in the end, it is almost the same, except that for the farmers, it is still agriculture, it is not hard, because as soon as we see “natural”, it necessarily also makes the farmers nervous, as they see it as a constraint. [civil servant, inter-municipal body Aure Louron, Occitania, 2021/09/27]

Box 2. Example of similar regulations for specific agricultural zones for preservation and for natural zones.

The following are only permitted in the **specific agricultural zones for preservation** with strong ecological interest:

Constructions and installations necessary for the farm (excluding housing) [conditions omitted]. Only light constructions (without foundations) are allowed, to allow the reception of animals (or foodstuffs intended for their feeding) or production greenhouses. Extensions of existing farm buildings in hard construction (with foundations) are allowed.

The following are authorised in the **natural zones**:

Developments necessary for agricultural and forestry farms, as well as buildings for forestry purposes. Extension [conditions omitted], annexes to existing dwellings (excluding barns) are authorised.

Note. From the inter-municipal body Aure Louron, land-use plan, regulation, 2021

Overall, land-use planning, in an indirect way, may engage issues of extensive livestock farming with ecological corridor plans. This is due to the function of the grassland system that integrates extensive farming, water and soil management and biodiversity maintenance. In regulations, such lands were classified into natural zones or specific agricultural zones for preservation, with stronger restrictions on building rights. Therefore, farmers are incited to operate extensive livestock farming. However, it should be noted that such zoning

⁶⁹ The “specific zone for preservation (zone agricole paysagère/protégé)” is different from “protected agricultural areas (zone agricole protégée, ZAP).” “Specific zone for preservation” is a sub-zoning defined by land-use plans. “Protected agricultural areas” is a decision of the prefect (the state’s local service), which impose easements on land-use plans.

regulations can neither protect the grasslands from reversal to crops nor restrict the practices to certain directions (e.g., less pesticide input).

The study shows that local territories might use “specific agricultural zones for preservation” instead of “natural zones” to classify these lands with both agricultural and ecological stakes. They were usually a response to the requests from the Chamber of Agriculture and to show a political signal that favours agriculture. On the other hand, such zoning remains a strict regulation that is often contested by farmers as it considerably reduces farm buildings (see 2.1.2).



Image. Grassland next to Mont Saint-Michel (Normandy). Natural extensive farming in natural zone facilitates land maintenance. Photograph by the author, 2021/05/18.

In synthesis, the study shows that land-use planning indirectly intervened in farming practices, mainly through regulations on building rights, i.e., defining building rights for certain targeted products and restricting building rights to incite a protected space for ecological performance.

For the targeted products, the analysis shows that land-use regulations affected market gardening projects both in constraining and preservative ways. Supra-local documents associated with land-use planning mainly bring constraints to market gardening activities by limited on-farm housing and greenhouse building rights. They include voluntary negotiated guidelines (Agriculture and Urbanism Charters, *Chartes Agriculture et Urbanisme*), professional assessment of landscape impacts (legal opinions of French National Architects, *Architectes des bâtiments de France, ABF*) and compelling state rules, such as the flood risk prevention plan (*Plan de prévention des risques d'inondation, PPRI*). By contrast, though not frequent, some land-use planning projects supported market gardening by creating specific zones and imposing associated regulations. The

use of these instruments was very much limited, mainly due to 1) the lack of legitimacy of land-use planning to impose rules associated with targeted farming types and 2) the opposition from Chambers of Agriculture in order not to generate competition between farmers.

Local stakeholders' use of land-use planning regulations for market gardening reveals actually a paradox, representing the contractual logic of the use of instruments. Local stakeholders, especially the Chamber of Agriculture, tend to refuse the application of market gardening zones by underlining that land-use planning is not entitled to regulate agricultural production. However, they indeed differentiate it through local Agriculture and Urbanism Charters. In other words, local stakeholders may, on the one hand, define a local charter collectively to give priority to certain types of products justified by the need for on-farm presence; but on the other hand, they oppose the privilege given to market gardening. Ultimately, such a contradictory logic of legal rules mobilisation presents the inequity engendered by the unbalanced political voices and the inequity between producers in the territory (Perrin & Nougaredes, 2020).

Another strategy being applied in land-use planning is restricting building rights to incite a protected space for ecological performance. This is mainly (indirectly) linked to extensive farming. The classification of such areas as "agricultural specific zone for preservation" instead of "natural zone" presents local authorities' strategies to adapt legal rules as a sign to meet the requirement of farmers.

Nevertheless, land-use regulations are highly limited in their legal capacity to intervene in farming practices. Combined use of other instruments is necessary to achieve the transition of farming practices that the territory targets (Perrin et al., 2020). There are actually associated ways of intervention (e.g., CAP subsidies for mountainous breeders to maintain the activity, CAP agro-environmental measures). A more integrated use of instruments remains to be explored.

2.2.4 Understanding the planning policies linkage in the transition of farming practices

1) (Potential) conflictual, complementary and synergistic policy instruments

When comparing land-use and food planning policy instruments on farming practices, it is obvious that food planning did not directly integrate land-use planning as a lever, at least not in any written documents. Land-use planning intervenes in farming practices in an indirect rather than direct way. Nevertheless, instruments are juxtaposed and have potential interactions. I explain them in terms of conflict, complementarity and synergy (Howlett & Del Rio, 2015).

First, potential conflicts may exist as food planning largely favoured market gardening, whereas land-use planning regulations created barriers to it. Such barriers refer to building rights that were given largely in priority to livestock and vineyard activities and greenhouses construction rights that may be refused by landscape and flood risk reasons. Existing practices in some territories showed that modification of strict rules could be made to remove regulatory barriers if proper negotiation is in place.

Conflicts between land-use regulations and food planning objectives might be mitigated through a raised awareness at the political level. Though not directly an initiative in the framework of land-use and food planning, a case gave insights into how bottom-up initiatives by multi-stakeholders changed the land-use restrictions for market gardening practices in sensitive natural spaces (ENS):

There was a somewhat emblematic area, the last market garden farm [...] it is five hectares that have been pre-empted by the departmental council as sensitive natural spaces (ENS) for the protection of the water resource. So, the current owners were obliged to leave their farm, which was to be used for grassland; this is part of the specifications of the ENS. So, there was a mobilisation which was highlighted by a person [...] who showed that this farm was in danger. So, there was a mobilisation of the city of Caen, the Chamber of Agriculture, the planning agency of Caen, the university, to meet with the departmental council at a high level, and to change this regulation which is very strict, and to allow the farmers to continue and even, who is one of the buyers in the call for projects. [staff, planning agency of Caen, Normandy, 2021/04/22]

The above case also shows that land preservation instruments (in this case, sensitive natural space, ENS), when not integrated into the issues of RAA, could be a conflictual element. However, if it is properly leveraged, it can be a promoting instrument that facilitates RAA. The above interviewee further commented that with the development of RAA, special zones could be introduced in land-use planning:

... we can imagine that in certain municipalities we have natural agricultural areas of the AN (natural), sustainable agricultural areas, AD (durable). There may be very specific zoning, and this will necessarily be discussed, since these are areas that are already dedicated to agriculture, to local food. [staff, planning agency of Caen, Normandy, 2021/04/22]

Second, case studies show the potential complementarity when land-use planning applied regulatory instruments to facilitate production diversification while food planning incited it through economic investment and informational instruments. Interviewees claimed that such instruments were complementary, for example:

No, it is (land-use planning) not enough. It perpetuates the agricultural use of

the land. But basically, that is where it stops. In no case can we designate in a land-use planning document what type of farm it should be, whether it should be organic or not, this kind of thing, we cannot do it in a zoning plan. We were able to do it around the water catchments because we bought the land. It is because we were owners that we could then sign an agreement with the farmers saying to them, “see the specifications, if you are in case you sign it, you have the land, if you're not OK, thank you bye, go and look for land.” [...] the land belongs to us, so, we can host the type of farmers as we want. [civil servant, inter-municipal body Seine Eure, Normandy, 2021/06/09]

Existing cases of land-use planning interventions were limited in the creation of special zones for market gardening. Other potential instruments could be applied. An interviewee claimed land-use planning could intervene in RAA through design guidelines (OAP). It implies an evolution of land-use planning's intervention on RAA from solely passive preservation to an active role involving projects. As she claimed:

Land-use planning cannot intervene in changes in production methods. But on the other hand, it can facilitate these changes [...] With the design guidelines (OAPs), we are more on the project. So, we have both sectoral design guidelines where we may create a link with the ecological corridor, etc. But above all, we have thematic design guidelines which can enable us to go further in the strategy and in the implementation of a political strategic project (PADD) of the land-use planning. [civil servant, inter-municipal body Coutances Mer et Bocage, Normandy, 2021/06/02]

Moreover, RAA-associated land-use, for its multifunctionality (in terms of multi-usage as well as of its public/private attributes), has an ambiguous definition and creates room for interpretation. An interviewee proposed a potential to integrate farm incubators into land-use planning as a type of public facility:

And to come back to the question of market gardening or other issues, it is true that perhaps we could very well integrate specific zoning into the planning documents for farm incubators or things like that. That, at the limit, like spaces for public equipment or general interest, in fact, spaces for diversification or creation that are a bit special [...] I think that punctually, yes. Afterwards, in a general way, to say “this space is more for market gardening” and so on, I think that it is not the place of the urban planning document. But on the other hand, in certain places, to say, “Well, here we are in classified agricultural testing areas”, things like that, I think that is possible. [civil servant, inter-municipal body Mortagne au Perche, Normandy, 2021/06/10]

Complementarity exists beyond the instruments mobilised. In a few processes, land-use planning provided a land diagnosis which can be a base for understanding the detailed production composition of the territory. For example, in this case, market gardening as the central topic of food planning was derived from the result of land-use planning diagnosis:

There was an agricultural section which served as a basis for the food planning.

Because in the sense of an agricultural diagnosis, it appeared that we had little market gardening, even VERY little. [...] The zoning was done in the agricultural diagnosis of the land-use planning [...] the search for land (for market gardening), which is based on the agricultural diagnosis of the land-use planning. [civil servant, inter-municipal body Grand Cahors, Occitania, 2021/10/05]

Third, synergies are potentially possible when it comes to managing land with constraints, in which multiple issues can be addressed. For example, land at flood risk, in water catchment areas or classified as natural sites integrates issues of environmental preservation, biodiversity maintenance, water management, and farming activities. In such areas, land-use planning has a role to play in defining building rights restrictions and indirectly incite farming practices, e.g., excluding or reducing the practice of intensive farming. Food planning, through incentive and marketing strategies, could support the agroecological transition of farming practices. In the meantime, it can combine a greater value to agricultural products in these preserved areas (e.g., agroecological production, which brings higher income). Interviewees also mentioned the possibility of public land purchase in water catchment areas as an opportunity to develop ecological farming. This is also the potential to be integrated into other planning instruments so as to create synergies.

Collectively, the conflict may exist when food planning-supported practices are hindered by land-use regulations (the exemplary case of market gardening). Complementarity could happen when planning policies have the same goal of the transition of practices and support them properly. Land-use planning can remove regulatory barriers or even actively apply innovative strategies to promote the transition (e.g., using design guidelines or defining specific zones). And food planning can incite the practices through economic investment and informational instruments. Synergies are high potential in areas with environmental and biodiversity issues. The land-use regulation for preservation, land purchase, high-quality food production linking to agroecological transition, water management, biodiversity maintenance and other broader issues can be integrated to achieve multiple goals for the environment, local food production and farmers' increased income.

Land-use and food planning policies should work towards reducing conflict and creating complementarity and synergy. The empirical case of a modification of sensitive natural spaces' specification, which saved the market gardening practices, gives insights. Introducing multi-stakeholders involvement in the process may facilitate more deliberative and transition-enabling planning. More innovative complementarities and synergies need to be identified through integrated planning policy design. Above potential links being stated, the fact was that links between land-use and food planning were not clearly there. In the following, I explain why the links were missing.

2) Understanding the missing links: legitimacy and political commitment

I identified two major hindrances that lead to the missing links between land-use and food planning in intervening in farming practices. **The first hindrance relates to the legal capacity of land-use planning defined by the Planning Code.** Land-use planning preserves farmland but could not reach further in facilitating the transition of farming practices. Therefore, when dealing with issues of the transition of farming practices, land-use planning is not naturally interrogated. For many project managers, land-use planning has not much to say about the issue of farming practices except mention it as an orientation. As an interviewee reported:

(Land-use planning) can define in this sector that it is an agricultural zone, it will be agricultural, but cannot designate that it should be market gardening. So apart from in the strategic plan, to say “well yes, we should give priority to local food” (we can do little). Ultimately, the common set between land-use and food planning is quite weak. Similarly with the climate plan (PCAET), if we say in the food planning that we want to favour organic farming, the common set is not extremely important, it is a minor part of each of the programmes. [civil servant, urban cluster Caen, Normandy, 2021/04/01]

The second hindrance refers to the trade-offs made for the different stakeholders’ interests in the co-existing agriculture and food models.

Such trade-offs mean avoiding steering the agroecological transition in order to involve a wider range of agricultural actors. This is to avoid confrontation from mainstream actors. This second hindrance is also related to the previous one (the lack of legitimacy). When innovative proposals are raised for land-use planning, it is easy to be opposed by the mainstream actors, who defend their rights and use legal rules to oppose the innovative instruments.

One result of the trade-offs facing the co-existing agrifood models is the local reluctance to impose coercive and regulatory instruments on farmers. This further illustrates why land-use planning, as a regulatory lever, was not mobilised by land-use planning. As a result, RAA-associated instruments are more the result of maintaining a mainstream model, to which new considerations, often minority ones, are added around food strategies. For the above reasons, local stakeholders doubted the effect of generalising the transition through food planning. As an interviewee claimed:

We thought that the state is schizophrenic. That is to say, the state pushes us to carry out territorial reflections on agriculture and food, which leads to the food planning. But afterwards, when we face the decisions of the state’s services [...] or all the bodies which deliberate on the orientation of agricultural land [...] in fact, they support enlargements and not (new farmers’) set-up. [...] Will the label that the state will give us on food planning be strong enough for us to come and say to them: “listen, now, you are taking us into account. You stop making your little arrangements between friends and following the major farmers

union's (FNSEA) agricultural mainstream. Are you able to listen to what the inhabitants of the territory and the actors of the territory want from us?" We are a bit dubious [...] (food planning) It is good for the short supply chain and small sectors, but on the main long chain productions, it has no impact. [civil servant, regional park Perche, Normandy, 2021/05/27]

The results of the study and the local observations both suggest a need to reorient public policy framework at a higher level to steer and accelerate a real transition. A higher-level reflection is necessary, such as on the role of the major agricultural policy (CAP) on RAA and on the land-use planning's legitimacy in regulating farming practices.

2.3 STRUCTURING LOCAL SUPPLY CHAINS

This sub-chapter discusses the action field of structuring local supply chains, which refers to connecting local products to local consumers. It is worth noting that local supply chain does not equal short supply chain. Short supply chain (*circuit court*), in the French context, means sale with at most one intermediate (French Ministry of Economy, 2022). While a short supply chain can be achieved over a long distance (i.e., an “extended short food supply chain”), local supply chain can be linked to conventional and long supply chains to reach local consumers; for example, local producers supply to supermarkets (Renting et al., 2003; Bloom & Hinrichs, 2011; Enthoven & Van den Broeck, 2021). In practice, they are interrelated, as local and short supply chains could be achieved simultaneously on many occasions. For example, direct on-farm sales, farmers’ markets and local collective catering from producers are all cases that are both through local and short chains. French Agricultural Law, when defining food planning, emphasised both the “local” food system and the “short” supply. In this sub-chapter, I questioned what local actors apply strategies to improve RAA via local and/or short supply chains, without strictly interrogating the distinguished definition of “short” or “local.”

This sub-chapter first presents the drivers and challenges faced by the territories in terms of the issue of structuring local supply chains in the investigated cases. Then it discusses land-use and food planning interventions. Finally, it presents the comparison between the two to identify intersections and the reasons.

2.3.1 Challenges and drivers to support local supply chains

1) *A wish for increasing farmers’ revenue and mitigating negative environmental impacts*

Local supply chain activities refer to farmers’ diversification activities from sole production. As reported by interviewees, **the major drivers for developing diversification activities were the increased economic income and the mitigation of environmental impacts.** For economic income, diversification could reduce costs to intermediates and increase the net income of farmers. This is especially the case for farmers with restrictive income from producing food solely. For example, interviewees claimed that in urban areas, farmers with small-scale land and expensive land expenses were highly motivated to develop added-value activities. Short supply chain activities are also about reducing transport costs. For example, an interviewee reported that farmers without on-farm processing facilities “*had to travel several dozen kilometres, sometimes 30 or 40 kilometres, to process their products and return to their farm. This is a considerable cost*”[civil servant, inter-municipal body Tarbes-Lourdes-Pyrénées, Occitania, 2021/10/04]. Such cost is not only economic but also about the environmental performance of the territory. By reducing transport between production,

processing and distribution, local and short supply chains have the potential to reduce greenhouse gas emissions.

One barrier to engaging farmers in short supply chains is the lack of motivation for economic income. Farmers with stable income and outlet channels tend to be less motivated to extend their production activities into more diversified activities (i.e., processing, sales, agritourism). As an interviewee reported, farmers that used to have stable exportation channels for their products sought less for added-value activities:

Another point which interested me very much was that agriculture has always been very successful in the Caen plain. It has always been an exporter, very much so. The port of Caen Ouistreham is a cereal port which is quite well known. So people does not really think about this question and there is no culture of know-how together, and there is not a culture of processing agricultural products. People always export raw cereal products, without trying to increase their value. [civil servant, urban cluster Caen, Normandy, 2021/04/01]

If farmers may lack the motivation to diversify their activities in the areas where the agricultural economy is robust, the barrier in the mountainous areas is the considerable subsidies. Interviewees reported that in mountainous territories where farmers have stable subsidies from CAP (common agricultural policy), farmers were less motivated to diversify. As an interviewee observed:

...the Aure and Louron Valley has little dynamism on this (diversification of agricultural activities). Because tourism is very important, and also now with the CAP subsidies... It is true that the farmers do not really need to enhance the added value of the products themselves because the way things are going at the moment in terms of their income is satisfactory. [civil servant, inter-municipal body Aure Louron, Occitania, 2021/09/27]

To sum up, engaging in short supply chains is a willingness for territories to increase farmers' income and facilitate reducing environmental impacts. A major constraint is the lack of economic motivation for farmers who run well their business and have stable incomes. More than that, other constraints are also challenging.

2) A challenge for connecting producers and consumers and developing multi-professions for farmers

A general problem for local food supply observed by many interviewees was the missing link between local products and local consumers nowadays in the territory. Farmers might be interested in local sales, and consumers might be willing to purchase from local producers. However, there was a lack of information and channel to connect them. As an interviewee claimed:

The products do exist in the territory. It is just... what seems to appear in the diagnosis is that we have products, we are willing to consume, but it is difficult to meet, because for logistical reasons, a producer who could have certain volumes is not going to distribute them. Here in Les Pieux, Cherbourg, Valognes, Val-de-Saire, Carentan, the producers on their own cannot organise them. [civil servant, inter-municipal body Cotentin, Normandy, 2021/04/02]

A further constraint is that engaging in diverse stages of food supply chain activities is challenging for farmers, as revealed by interviewees. These activities require different professional skills from the activity of producing food. The following excerpt demonstrate that for farmers, developing processing or agritourism activities on-farm requires skills and time. Hence, farmers are not necessarily capable of handling them:

A1: For farmer, diversification is also a job. It is difficult to do both that is very demanding plus selling at the farm, doing bed and breakfast and all that ... After a while, it is more difficult. A3: I have an example from the Haute Ariège. They had tried to propose actions of visits to the farm, discovery, etc. And basically, what the farmers criticised was that they said “we can share our profession, our passion, it is reliable, but if we have to manage the registrations, host people, guide them, all that...” They do not have the time for that, they do not like that. [civil servants, inter-municipal body Pays de Mirepoix, Occitania, 2021/10/01]

Some interviewees also reported that in their territories, the diversification activity, referring to on-farm tourism, for example, was not a culture for traditional rural farmers. However, such an image could change over time and with local support.

3) A tendency among the new generation of farmers

Several interviewees in rural territories shared their observation that while traditional farmers were less interested in diversification activities, **young, new farmers were more engaged in such activities**. An interviewee reported this observation by giving an example in which young farmers inherited their parents' farm but turned to be diversified activities. He claimed that it was also a pursuit of lifestyle:

I have an example in mind of a farm that was run in the traditional way by the parents. Now the children have arrived and they have developed a whole other cho... They continue the traditional part, but they also sell on-farm, they have created a cheese factory, they also sell meat products. On the farm, they hold markets and so on. And this is on several farms in the area. It works well. You can feel that people want to do this, because it is also extra work. You have to take the step of going off the rails to do other things. So that is an approach that requires energy. But when there are young people who have this energy, we feel that... I think it is more rewarding for them and they take the plunge. And at the moment, it is quite favourable, we can feel it. [civil servant, inter-municipal body Muse et Raspes du Tarn, Occitania, 2021/10/08]

It was also observed that diversification activities were related to relatively extensive farming, similar to what the literature reveals (Enthoven & Van den Broeck, 2021). It reflects a transition in farmers' lifestyle (see also chapter 2.1.1). As an interviewee reported:

... there are some who will go towards that, but it is often either young people, or neo-rurals (who do) hosting on the farm. And often, it is people who will keep the less intensive model, who are not necessarily organic, but with models that are perhaps more extensive. [civil servant, inter-municipal body Saint-Lô, Normandy, 2021/01/26]



Image. A farm with on-farm sales. The family farm was inherited by siblings from their parents. Originally it was a livestock farm which supplied Roquefort. When young farmers inherited the farm, they operated the farm with diversified products, including livestock and market gardening. They also operated an on-farm sales place.

Note. From author's local visit and talk with the farmer. Photograph by the author, 2021/06/17.

Developing local supply chains, meaning extending production to other supply chain activities, is an opportunity for local territories to consolidate the local economy and have better environmental performance. There are both challenges of connecting producers and consumers and opportunities with the tendency of farmers to engage in such issues. Planning strategies are therefore important to formulate local supply chains and facilitate farmers by removing barriers and providing better conditions. The following sections present and discuss the local choices of land-use and food planning interventions.

2.3.2 Land-use planning: seeking a balance between facilitating diversification activities and controlling land take

Land-use planning instruments mainly affect local supply chains by regulating the building rights of the activities. For reminding, land-use planning can permit

construction that is “necessary” to farming activities in agricultural zones. Activities that constitute local supply chains other than production (i.e., processing, packaging, logistics and storage, distribution and outlets, agritourism) have their ambiguous status in terms of whether there are “necessary” for farming or not. Such an ambiguous status provides room for manoeuvre for local authorities to adopt and design their instruments. In this section, three major types of land-use planning interventions are discussed: permitting processing and distribution activities, agritourism activities and the change of use to diversification activities.

1) Authorising processing and distribution activities

Farmers’ involvement in short supply chains means extending activities from production to processing and/or distribution activities. Document analysis in chapter 1.1 has shown that land-use planning supported such activities mainly by permitting them in agricultural zones if they constitute the extension of producing activities of the farm. A few territories also set specific zones for these activities. And some permitted them in urban zones.

The regulation to permit processing and distribution construction in agricultural areas was the most frequently adopted among studied land-use plans (79.6%, see chapter 1.1 document analysis). For reminding, the Housing law (*loi ELAN*, 2018) in first time explicitly defines that land-use planning could permit on-farm processing, packaging and distribution activities if they are as an extension of the production activities. Though widely adopted, this regulation permitted by national rules was still not adopted by some territories. The major issue surrounding this regulation is the trade-off between supporting farmers’ on-farm development and controlling land conversion from farmland to buildings. For the latter, the worry comes from the potential change of agricultural buildings to non-agricultural ones (e.g., non-farmers’ residences and tourism facilities), thus leading to sprawl. Two urban territories’ distinct choices represent the different rationales for making the trade-off.

The urban territory metropolis Rouen (Normandy) permitted on-farm processing and distribution construction in order to support local farmers as much as possible. As an interviewee claimed, elected officials were supportive of giving enough possibility for farmers to develop on-farm diversification activities because they were highly aware that farmers were facing difficulties and that the number of farms was reducing. So, the priority was to authorising the development of farming activities; even there could be a risk of sprawl caused by the on-farm construction:

We did not really think about urban sprawl on this theme of local sale in agricultural zones [...] even if the agricultural diagnosis did not show, there was a real pedagogy and the agricultural service said “here we are losing

rapidly our farmers. We have less and less farms.” So the message was to not constrain them too much; if they wanted to build things, they should do it. So the objective was not to constrain the farmers, the farms. So we put urban sprawl to one side, even if it could be significant. [civil servant, inter-municipal body Metropolis Rouen, Normandy, 2021/04/23]

By contrast, the territory metropolis Montpellier (Occitania) tends to make a different choice in its ongoing land-use planning. As interviewees reported, the land is under high pressure from both urban expansion and coastal areas' touristic development. The major concern of the territory, therefore, was to control the sprawl. The change and resale from farm buildings to non-agricultural buildings (see 2.1.2 on “cabanisation”) made local elected officials much more cautious about giving permissions to on-farm construction, including diversification activities. Farmers' activities will be threatened in such situations. As a result, the preferred choice was not to permit on-farm diversification construction.

Most land-use plans, in which on-farm diversification construction was permitted, detailed the condition for such construction to prevent the future change and resale to non-farmers' buildings. A frequently applied condition is requiring the diversification construction to be in proximity to the existing central homestead of farm holdings (*siège*). As interviewees claimed, the set of facilities next to farm holdings would prohibit the potential change into non-agricultural buildings in consideration of farm disturbances. However, such a regulation of proximity with farm holdings may still hinder on-farm sales' possibility. As an interviewee reported, farmers may wish to set up on-farm sales in a place more convenient for consumers' arrival, which is not always the farm holdings' locations. This fact reveals the difficulty of arranging two different, and sometimes incompatible, functions on one site:

... where there may be a difficulty. For example, a farmer who has his farm holdings in one place in a municipality and who wishes to have a sales place elsewhere than on his farm holdings on another of his land plots because it is more attractive, it is better served. In this case, we are faced with a problem, because there is a difficulty in linking the need for the farm, since the land is not in the farm holdings. This is a recurring problem. [civil servant, inter-municipal body Pays de Falaise, Normandy, 2021/05/26]

In agricultural areas, another instrument applied other than permitting on-farm diversification construction was setting exceptional zones (STECAL) for such construction (two cases in the document analysis). The set of such zones is to give exceptional regulations to facilitate defined projects. In one of the two cases, the interviewee explained that the exceptional zone was to support local farmers' cheese diversification projects. While the territory is dominated by industrialised cheese fabrication dedicated to long supply chains, the local authority supported a small-scale family cheese processing and sale

business run by local farmers. In land-use planning, the local authority supported that by dedicating specific zones with exceptional regulations for building rights (i.e., the processing facility is not next to existing farm holdings). It shows how land-use planning could facilitate RAA projects by removing land barriers for them with exceptional regulations. In other land-use planning projects, a common issue is investigating farmers' needs for diversification projects in agricultural diagnosis so that regulations might be prepared for their activities. The exceptional zones present room for negotiation in the contradiction between farmland preservation and agricultural activity development. Such zones also increase the multifunctionality of rural areas.

Land-use planning may also explicitly permit agricultural processing and distribution construction in urban zones. The document analysis in 1.1 has shown the application of this regulation in 12 (among 45) cases. They were usually required not to generate disturbances to inhabitants. It implies ambiguous attributes of agricultural processing and distribution buildings; such buildings have, on the one hand, functions associated with farms and, on the other hand, are industrial/commercial. Therefore, it refers to the multifunctionality in urban areas.

More than individual on-farm diversification activities, a few territories started to engage issues of collective facilities in their land-use planning processes. For example, collective food facilities (e.g., collective food processing centres, producers' shops) were an issue raised in the metropolis Montpellier. They were raised as a possible solution to at the same time support local farmers' diversification activities and reduce land use for construction by many individual facilities. It shows the emergence of the synthetic and innovative solutions facing the contradictory issue of land conversion and farmers' development. The interviewee reported as such:

The reflection we have is, given the number of direct on-farm sales, is it really relevant to have on-farm sales everywhere? Or, do we not have to think about this, as we do for food shops, perhaps favouring the grouping of buildings (for sales places). At some point, there are individual strategies. And then the global economy of the land that we must have. So in fact that is why we try to build this balance. The same goes for processing. Is it relevant to build a lot of buildings on each farm to do processing? Or, would it more interesting to think about pooling and sharing, in order to save space and meet the expectations of the regulations, because that is the subject too to avoid the land take. [civil servant, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07]

Collective food facilities were also started to be integrated into the planning design stage (*phase d'élaboration*). Among the investigated cases, this emerged in one master plan (SCoT) case. The issue of the collective slaughterhouse was raised in planning discussions among groups of territories, with the idea of arranging such food infrastructure at a large scale, considering the balance and

feasibility. This process significates the integration of food infrastructure projects into the planning process, as the interviewee reported:

There is a slaughterhouse in Auch that is specific to one species. And we asked the question: do we need more? Others? Yes ? No ? Why not? Which ones? So, the elected officials came to the conclusion that “yes, we need another one, the one in Condom, which is in the process of being set up again, which is multi-species, so it will be complementary to the one in Auch, with the addition of a training section.” [...] If the slaughterhouse in the area is with bird flu, then they have to close, so we cannot slaughter the other ducks. How do we organise this to try to ensure that we can still slaughter on our territory even if some are closed? [civil servant, project master plan of Gascogne, Occitania, 2021/10/21]

Nevertheless, at the regulatory stage, land-use planning seems to still have limited capacity to intervene in local collective facilities. This especially means that land-use planning cannot impose regulations to differentiate local food facilities from other non-locally embedded facilities. For example, the collective slaughterhouse will be treated as an enterprise (Ténarèze). An interviewee claimed that in land-use planning, local producers' shops were treated as “whatever commerce” when deciding the building permits (Saint-lô). An interviewee confirmed the complexity of land-use planning to regulate local food facilities:

In urban areas or in any other areas, in fact, what we can regulate is the size, the surface areas of the shops. We are not going to target a particular business. That is what is complex in land-use planning: sometimes we make the land-use planning play a role which is not its own. It means, yes, we all want more local products. We then limit the size, the height of the building, how it is going to be designed with the limits between two plots, etc. But what is going to be inside, finally, the Planning Code does not allow (to define) it. [civil servant, inter-municipal body Metropolis Rouen, Normandy, 2021/04/23]

By referring to similar cases (non-agricultural), another interviewee criticised that land-use planning documents had limited capacity to require that certain activities have to be based on certain origins. Although it could be written in the document, in practice, it would be non-applicable: “*The kind of things that authorises sales activity in such an activity zone, on condition that the majority of sales are products from the artisanal zone [...] it is not implementable in land-use planning! We enjoyed ourselves with things like that*” [civil servant, inter-municipal body Baie du Cotentin, Normandy, 2021/05/28].

Overall, RAA brings up the issue of land-use multifunctionality. Land-use planning can regulate food processing and distribution activities by authorising them in agricultural zones, combining projects by giving exception regulations and authorising the set-up in urban zones. Authorising processing and distribution activities in agricultural zones was the most frequently used as a

given rule from the Planning Code. As it raises the question of the trade-off between farmers' development and farmland conversion, local territories take different strategies by not applying or restricting the conditions. Exceptional zones (*STECAL*) are an instrument that could integrate locally supported farmers' projects and give exceptional permits to targeted activities. Collective food infrastructure is an issue emerging to be integrated into the land-use planning process, for both considerations of an optimised site-choosing (though, in the case, it was a master plan) and as an integrated solution to replace scattered individual facilities. A hindering factor is that land-use planning has a limited capacity to regulate the "local" attributes of the facility.

2) *Permitting agritourism activities*

Agritourism is a particular form of diversification of agricultural activities and is regulated differently from processing and distribution. The Housing law (*loi ELAN*, 2018), which defined the permission for processing and distribution in agricultural zones, did not include agritourism. During the parliamentary discussion of the law, the on-farm touristic reception activities (especially catering and accommodation) were proposed but were finally removed from the activities that could be permitted (Inserguet, 2018). Therefore, agritourism as an activity associated with farming was not explicitly authorised or prohibited by the law. It is exactly where the room for manoeuvre is given to local authorities.

In practice, although most land-use planning documents simply followed the statement of the law and did not mention agritourism, others had their own interpretation and applied the special regulations to permit certain types of agritourism activities in agricultural areas (e.g., educational farm, on-farm camping) (see 1.1.3). Other than that, **most land-use planning chose to create specialised zones (*STECAL*) for agritourism**. This was a compromise made to facilitate farmers' development but without giving too much flexibility to avoid irregular land consumption, as an interviewee explained:

It (on-farm camping) is possible, (but) we should know the projects in advance, we should identify them specifically. We will not be able to say to them "go ahead, farmers, you can diversify your activities", that will not be possible. But on the other hand, we will be very rather favourable to this (agritourism). [civil servant, inter-municipal body Saint-Lô, Normandy, 2021/01/26]

Most interviewees reported that local authorities were supportive the agritourism but with caution. **The challenge is to prevent agritourism buildings' future conversion into non-agricultural**, e.g., non-farmers' residences and tourism not associated with farming. As an interviewee reported: *"if farmers can make a housing for cottages, there is nothing to stop them if they want to resell it to a non-farmer"* [civil servant, inter-municipal body Mont Saint-Michel,

Normandy, 2021/05/17]. New construction especially has a high potential to be transformed into non-farmer residences and harm farming activities. So, the complex issue is to find a balance between being vigilant and leaving possibilities for agritourism, as an interviewee reported:

It is really difficult, when drafting a regulation, to find the right cursor so as not to open the door too much but still allow projects in the future. As for diversification such as farm accommodation, cottages, tourism, etc., we are really talking about changing the use of the old building, because a new construction is too subject to a direct change of use from a cottage to a non-farmer's housing. Therefore, we would endanger the future development of the farm. [staff, Chamber of Agriculture Centre Manche, Normandy, 2021/01/27]

Moreover, the willingness to support farmers' development in agritourism did not always fit the reality. As observed in certain territories, people operating agritourism were not always farmers. They found that farmers were busy with production activities, and agritourism added extra work. On the contrary, many non-farmers worked on rural tourism: *"there is a real difference between this image in which we think that farmers are going to run cottages, and when we ask them concretely, 'why do you not do it when you are given the regulatory tools to do it?' They explain that it is not their job and they do not have the time to do it"* [civil servant, inter-municipal body Mont Saint-Michel, Normandy, 2021/05/17]. Therefore, the regulations for agritourism do not necessarily contribute to farmers' development.

Extra barriers to developing on-farm diversification may be encountered by neo-rural inhabitants, who may work in multi-activity, including producing food, but without the status of a professional farmer (i.e., not meeting the requirement of minimum farm size, working hours or revenue). The on-farm building permits fitting professional farmers do not apply to their situation. An interviewee reported the observation of such a barrier in a territory where there is a high proportion of neo-rural inhabitants:

(There are) many requests from neo-rurals. For them, it is gardening, on permaculture, on 300, 400 square metres, they have some animals. And then they want to develop their income from different activities. So, very often, the requests we receive are "I want to create an educational farm, so I can host people, make revenue by gilding them to come and see how the farm and the animals work, and at the same time I want to make a herb garden, I will sell the herbs at the markets, I want to make flowers, I will sell them there." As a result, this requires construction is sometimes a bit specific. I had cases with, for example, dryers for aromatic herbs. As the person is not a (professional) farmer, he does not have the right to build his dryer. It is a very small building but is refused, because it is not considered to be an agricultural activity as such. [civil servant, inter-municipal body Quercy Rouergue et des Gorges de l'Aveyron, Occitania, 2021/06/28]

Overall, agritourism, like processing and distribution activity, raised local debate

and different applications of the instruments because of the potential land take for non-agricultural uses it might cause. Agritourism facilities are easier to be adapted to non-farming uses; therefore, it is treated with more serious caution. Another instrument, the change of uses of existing buildings, could work as an efficient instrument.

3) Change of the use of existing buildings: facilitating diversification, revitalise the countryside and preventing sprawl

The change of uses of ancient buildings was an important and frequently applied instrument in studied land-use planning projects. Land-use planning identifies existing buildings with possibilities to change the uses in agricultural and natural zones and define the targeted uses. While most territories defined the targeted uses as a general residence or tourism, some territories included diversification of agricultural activities as the targeted uses (40%, see document analysis in chapter 1.1.3).

In most cases, change of uses of existing buildings was a preferred instrument for local authorities to facilitate diversification activities for multiple reasons. First, using existing buildings instead of creating new construction prevents the new farmland conversion. Second, some existing buildings have heritage or architectural values. They could provide tourists with an authentic site to discover the history and culture of the territory through the heritage buildings. Third, the change of uses of buildings encourages the reuse of vacant buildings, which may facilitate the revitalisation of the countryside.

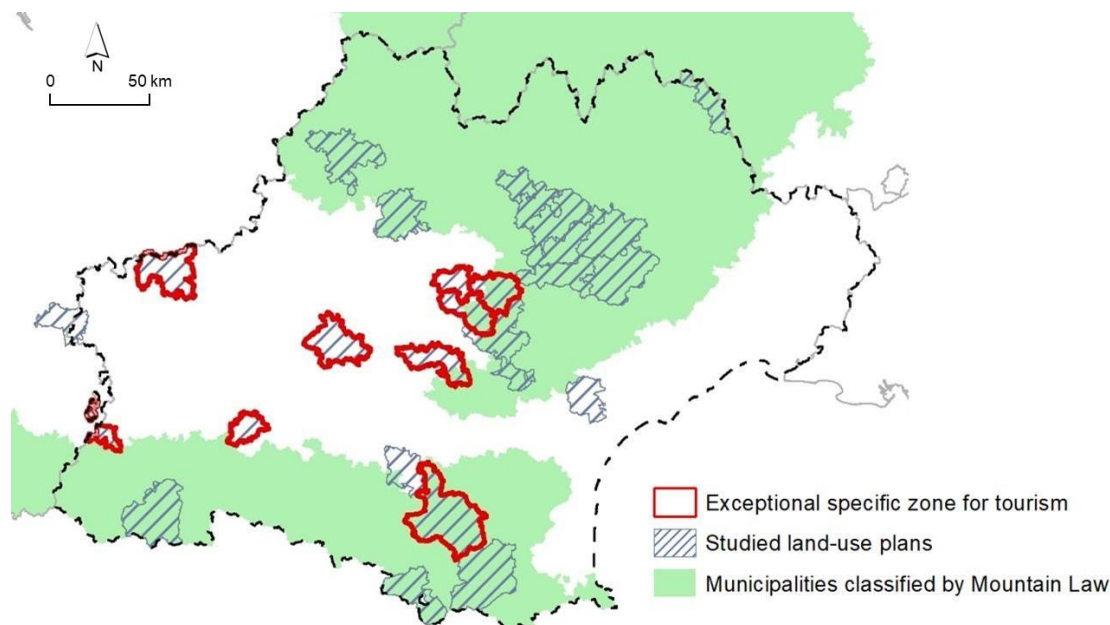
The instrument of change of uses is especially important for permitting exceptional construction in municipalities classified as mountainous areas, in which the exceptional zones (*STECAL*) are generally not allowed to be set. According to the Mountain law (*loi Montagne*), the construction has to be continuous to existing towns, villages or small settlements⁷⁰. Figure 2. 4 shows that only one inter-municipal body fully covered by mountain areas created exceptional specific zones (for more information on exceptional zones, see chapter 1.1). In this particular case, all these zones created were in proximity to the existing buildings (inter-municipal body Pyrénées Audoises, 2019, overview report, pp. 108-110).

The application of change of uses consists of major steps of verification: buildings permitted to change the uses have to be graphically identified in land-use planning documents; land-use planning can specify the permitted targeted

⁷⁰ Article L. 122-5 of the Planning Code: Urbanisation in mountainous areas must be carried out in continuity with existing towns, villages, hamlets and groups of traditional buildings or dwellings.

uses of the change; all the change of uses has to obtain the validation from the departmental agricultural commission (*commission de préservation des espaces naturels, agricoles et forestiers, CDPENAF*) in order to get a permit.

Figure 2. 4. Areas classified by Mountain law (*loi Montagne*) and the use of exceptional zones (STECAL) in Occitania.



Note. Normandy is not concerned by Mountain law.

Although the change of uses of existing buildings was a preferred instrument by the local authorities, this instrument was still used with caution as it might bring inconvenience to agricultural practices. The major concern is the change of use towards housing, especially for non-farmers. Such changed uses that serve human activities might prohibit the future development of agricultural activities. As discussed before (chapter 2.1.2), there are usually necessary distances between agricultural and non-agricultural buildings to avoid nuisance and allow farm development, especially for livestock farming areas. Therefore, if a farm building is transformed into non-agricultural use, there might establish a buffer area in which farm buildings' construction is limited. In such a situation, farming activities will be harmed. More than that, there are other associated rules that define distances between production and housing when referring to certain farming practices. For example, one interviewee reported the Chambre of Agriculture's concern on the distance between residence and plant protection products treatment⁷¹:

⁷¹ Safety distances are applied for plant protection products treatments near houses. Such distances are 20, 10 or 5 metres depending on the type of products used. (Décret n° 2019-1500 du 27 décembre 2019 relatif aux mesures de protection des personnes lors de l'utilisation de produits phytopharmaceutiques à proximité des zones d'habitation)

What they (the Chamber of Agriculture) do not like is that as people change the uses in an agricultural zone, farmers are forced to be offset for the (plant protection products) treatments. So they are not keen on changing the uses to housing, because they have to move... [civil servant, inter-municipal body Yvetôt Normandie, Normandy, 2021/05/27]

When the targeted uses are agricultural diversification activities, local authorities were generally supportive but cautioned of the potential inconvenience to farming activities. First, there was a concern about the potential change of uses towards agricultural diversification activities in the beginning but afterwards changed to non-agricultural uses (e.g., residence for non-farmers, tourism without relation to the farm). In other words, the change into diversification activities might be an excuse for obtaining the building permits, and the ultimate use would be non-agricultural. This instrument could be exploited as such, and is the central difficulty for the design of the rules of change of uses, as an interviewee claimed:

...except that what we can also see sometimes is that it is “disguised.” People have a building that is built but which in fact changes its use and is no longer necessarily just a sales area. So in fact we must always be very vigilant about the nature and the interest, and the long-term stakes of the approach, to avoid forms of opportunism, which would fall back into the purely housing dimension. [...] It is difficult to check whether the farmer is really in his place or it is a roundabout way. [civil servant, rural cluster Pyrénées Comminges, Occitania, 2021/09/20]

The second potential threat is the reduction of farming tools because the buildings are transformed into other uses. A related concern is that farmers may dedicate more and more to operating agritourism instead of running farm production. One interviewee reported that agritourism was usually based on the transformation from farm buildings for breeding into cottages; therefore, farming activities might be disturbed:

... as we are by the sea, there are many farmers who wish to rehabilitate old farm buildings into cottages. And we will try to develop it in land-use planning. Afterwards, we have to be careful because very often the farm buildings that are transformed into cottages were former livestock buildings, and this basically eliminates the livestock activity in order to create a tourist activity. It is not what we are looking for, because livestock farming does need it. [civil servant, inter-municipal body Villes Soeurs, Normandy, 2021/05/26]

Because of the potential threats brought by the change of uses, local stakeholders hold different opinions and interests towards the use of this instrument. Some inter-municipal bodies were more supportive, while others were more cautious, not giving too much flexibility to the change of uses in order not to disturb farming activities. In the latter cases, some territories in their land-use planning applied stricter and clarified requirements of the change

of uses towards residence or touristic uses to prevent the potential negative effects on farming activities. For example, a land-use plan defined more conditions for uses that are not farming-associated, from requiring minimum distance to farming buildings and requiring the least change of farmland into recreation:

Conditions for the creation of a dwelling or hotel accommodation not linked to a farm: 1° absence of a permanent farm within a radius of 150 m of the project or presence of at least one dwelling not linked to the farm between the farm and the project. 2° minimise the impact on agricultural land by limiting its change of use to recreational land. (inter-municipal body Pays de Mortagne au Perche, Regulations, p. 149)

Others may hold opposed opinions of the too strict control of the change of uses. An interviewee claimed that it was not necessary in land-use planning documents because the implementation of change of uses would be examined by the departmental agricultural commission (CDPENAF):

The associated public bodies (PPA), and in particular the Chamber of Agriculture, blamed us, on one hand asking us to permit agricultural diversification but at the same time found that we permitted too much because it would open the door to non-farmers who could harm the agricultural activity; which is false, because when a change of uses is permitted, it does not exempt from going through the departmental agricultural commission (CDPENAF) afterwards. So if there is a danger for the agricultural activity around it, the project is refused. [civil servants, inter-municipal body Pays de Mirepoix, Occitania, 2021/10/01]

Most interviewees reported that the Chamber of Agriculture and the state's planning service were particularly vigilant about the change of uses and were reluctant to leave too much room for that. Regional parks, where relevant, also had their opinion, especially towards the heritage and architectural values of buildings. As claimed by an interviewee, the final decision was balancing the interests of different stakeholders:

The aim in the land-use planning is to be able to make a compromise with all that, because sometimes even between different stakeholders they contradict each other. The regional park would be more in favour of changes of uses precisely to preserve the architectural aspect, and the Chamber of Agriculture does not agree with... Among them, they also contradict each other inevitably. So the aim is to take all this and to do things which respond as well as possible to the local actors. [civil servant, inter-municipal body Yvetôt Normandie, Normandy, 2021/05/27]

One important step for the change of uses is to identify the buildings that can be allowed to change the uses and map them in the graphical

documents⁷². The criteria for the identification are not precisely defined by the Planning Code, except for a principal description requiring that the change of uses *"does not harm the agricultural activity or the landscape quality of the site"* (Planning Code, L. 151-11⁷³). Such a flexible rule was difficult for local authorities (elected officials and civil servants) to interpret and apply.

Though this room for manoeuvre provided by the Planning Code generates confusion for local authorities to apply the rules, it can also be the opportunity for territories to design locally adapted regulations. Some local authorities took measures to juggle the rules. In the case of Ténarèze, a rural territory in which many ancient farm buildings exist, the local authority was very much supportive of the change of uses of these buildings. In the first version of the land-use planning, almost all the buildings in agricultural and natural zones were remarked in the zoning plan and, in total, around 7000 buildings could change their uses (Figure 2. 5, left). This plan was then opposed by the state's planning service, claiming that it put too much building possibility in agricultural zones.

The local authority reworked the change of uses by changing a method but without reducing the possibility of the change of uses for most buildings. They identified only farm buildings built before 1950 (thus with historical value) with marks in the zoning plan; these buildings could change their uses (Figure 2. 5, right). No change of uses was possible for other buildings with existing agricultural values. However, buildings that lost original agricultural uses were identified as residences (even though they had been a barn and were not used for residence). As such, these buildings could also be used as residences without the process of "change of uses." As the interviewee claimed, such a solution met the requirements of both the local authority (the objective of leaving as much as possible rooms for unused buildings to develop) and the state (technically, the graphic regulations are not abusive). Such a process shows how local authority juggle the rules to achieve local goals.

⁷² The graphical identification of buildings with the possibility to change their uses became compulsory, according to article R151-35 of the Planning Code, as imposed by the decree (Décret n°2015-1783 du 28 décembre 2015).

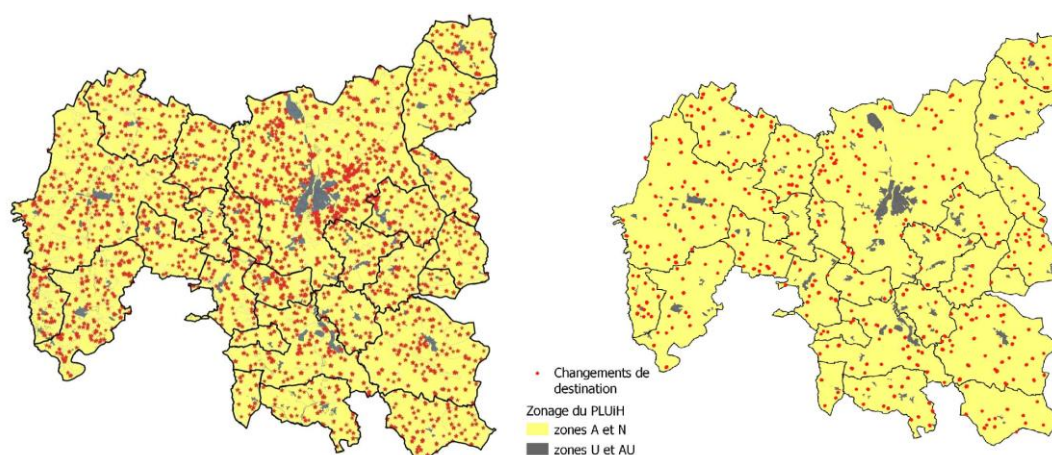
⁷³ In terms of the eligible buildings to change the uses, the Planning Code used to require that they had to be agricultural buildings (since 2004), but this criterion was removed in 2014 (Law for access to housing and renovated urbanism, ALUR). The Planning Code used to require that they had to be with architectural or heritage values (2003), but it was removed in 2014 (Agriculture Law, loi LAAAF). So, the only requirement at the time of this manuscript writing (2022) is "not to harm agricultural activity or the landscape quality of the site."

Box 3. Example of strategy to authorise change of uses.

In the agricultural diagnosis, for each farm, all buildings were classified according to one of the following categories (which may differ from the categories in the town planning code): Livestock, Viticultural, Agricultural, Residential and Non-agricultural.

▪ *Extraction of agricultural buildings corresponding to the categories 1-livestock, 2-viticultural and 3-agricultural. The dwellings identified in the agricultural diagnosis were excluded. All buildings not falling into these categories may be considered as residential (except in very special cases) and will not require authorisation for a change of use if they are to be converted into be developed for residential use. (overview report, 2021, p. 128)*

Figure 2. 5. The local strategy of authorising change of uses of buildings.



Left: map before the modification; right: map after the modification.

Not. From the inter-municipal body Ténarèze, overview report: explanation and choices' justification. Left: 2019, p126; right: 2021, p129.

It should be noted that although change of uses of existing buildings is a possibility to achieve multiple goals of the territory, land-use planning only provides a legal room but without a way of implementation. As claimed by an interviewee: *“this is always the problem with a land-use planning; it opens up a possibility but does not necessarily lead to the action being carried out. A land-use plan identifies all the buildings that could potentially change their uses, but afterwards, it does not provide the final aids to do so [civil servant, regional park Boucles de la Seine, Normandy, 2021/05/28].*

Overall, the study has shown that local authorities applied the instrument of change of uses to achieve their goals. They did so by defining the targeted uses and criteria for buildings with change possibilities. The challenge is to achieve the wish of supporting farmers' activities and rural revitalisation while preventing the risk that change of uses takes to farming activities. Different territories applied the instrument strategically, sometimes juggling with the

rules given the large room for manoeuvre of the legal rules. This research focuses on the change of uses towards agricultural diversification activities. However, it is worth noting that although the change of uses towards residences and touristic accommodation has (even higher) potential risks for farming activities, they were still targeted uses by most land-use planning.

In synthesis, land-use planning applied zoning regulations, exceptional zones and change of uses to manage diversification activities, which are significant for RAA. Such showed how territories manage the issue of multifunctionality of land use (i.e., farming and diversified activities). The central issue is to find a balance between leaving the possibility for farmers' development and controlling disordered sprawl in rural areas. Such an issue is established on the fact that diversification activities involve human activities, which indicates the high potential to be transformed into non-agricultural uses. Local territories have used the rules differently, representing the various response to finding the balance.

Nichol (2003) has identified in the context of England that on-farm diversification was hindered by the planning regulations. This finding does not fit the general situation in this study in French contexts concerning local food processing and distribution activities. One reason is the recently established Housing law (*loi ELAN*, 2018) which clearly introduced the on-farm possibility of giving permission for diversification (processing and distribution) activities. This study showed that local authorities were generally supportive of on-farm diversification and actively applied the rules that positively permit diversification-associated construction. But according to local contexts, some territories had different strategies, being more cautious to prevent farm buildings' resale.

An emerging proposition of processing and distribution activities was to develop collective food infrastructure. Such a proposition integrates issues of facilitating farmers' short supply chain activities, reducing farmland take and, in some occasions, as the case in Metropolis Montpellier, the reuse of heritage buildings. The development of collective food infrastructure might need to be integrated with other projects to be determined, as I will present in the next section (2.3.3) on food planning.

Agritourism as a type of diversification activity was usually supported by local authorities but with more vigilance. The different levels of possibility that local authorities gave for on-farm agritourism activities demonstrated how they used the room given by the national rules. As an interviewee claimed, the difficulty

of land-use planning is identifying if the building is “necessary⁷⁴” for agriculture and if the activity is the “extension” of existing production activities. The Planning Code gives some room for local actors to decide. Such room puts local actors in complex situations to make the decision but also leaves large possibilities for them to design rules according to local contexts.

Change of uses of existing buildings is widely accepted, as it does not generate new construction, allows diversification activities and facilitates abandoned buildings’ reuse. There were different local interests in the application of this instrument, which led to the different local applications of the instruments, for example, applying detailed rules for change of uses. Local authorities may play with rules to reach their goals of facilitating farmers. This instrument has a high potential to be linked to rural revitalisation schemes.

The above instruments that land-use planning could be applied to regulate diversification farming activities; however, they cannot guarantee projects’ implementation. So, food planning may play a complementary role.

2.3.3 Food planning: structuring the supply chain and connecting rural-urban stakeholders

Unlike land-use planning that imposes regulations on diversification facilities to affect the development of local supply chains, food planning is dedicated to the achievement of projects. I present the use of instruments as the following themes: increasing local sourcing in collective catering, building food facilities and connecting supply chain stakeholders.

1) *Increasing local sourcing in collective catering: an essential lever to structure local supply chains*

An essential lever in food planning was increasing local sourcing in collective catering. For reminding, the Food law (*loi EGalim*, 2018) defined the objective of a 50% supply rate of sustainable and quality products, including 20% of products from organic farming in collective catering in 2022 (see General Introduction I.4). Food planning projects included a series of instruments to facilitate that. Collective canteens were organised in different forms (e.g., directly managed by the local authority or managed by a third party), and the way to improve local sourcing could be diverse. Chapter 1.2 shows that **almost all the food planning applied analysis, advice and communication to facilitate collective catering to increasing local and quality food** ($n=26$ among 29 documents). For example, “*training voluntary (collective catering)*

⁷⁴ As a reminder, before Urban Renewal law (*loi SRU*, 2000), there was only the requirement of “compatibility” with agricultural uses in the land allocation plan (POS).

kitchen staff to introduce quality and local products in their menus” (inter-municipal body Coutance Mer et Bocage) and “enabling all those involved in collective catering to easily obtain information on quality signs, labels, requirements of the food law (loi EGlism, 2018), etc.” (regional park Haut-Languedoc). Some territories worked on developing publicly-managed central kitchens to supply collective catering to guarantee local sourcing, including production and processing, for example: “feasibility study on the establishment of a central kitchen in an inter-municipal body” (rural cluster Pyrénées Comminges).

Fewer territories (n=6 among 29) referred to adapting contractual specifications of collective catering to local and/or sustainable food sourcing. For instance, *“Specific accompaniment on public procurement contracts according to the typology of the canteen” (inter-municipal body Metropolis Toulouse).* It is also worth noting that although not regulated in food planning documents, according to the interviews, some territories did include the adaptation of procurement contract specifications in their local actions. Food planning project leaders usually dedicated technical services to facilitate small-scale and rural territories, as an interviewee claimed: *“these are small villages that have to deal with this issue, which are not necessarily equipped in the capacity to know what they can do in terms of specifications with service providers, etc. So it is what we have to accompany, which we can perhaps do later to better guide the elected representatives to formalise specifications” [civil servant, rural cluster Pays des Nestes, Occitania, 2021/06/22].* The above instruments for collective catering are considerable to facilitate RAA as behind that is the large public financial power mobilised for local food.

A debate between the “local” and “quality” food occurred frequently during the food planning implementation to facilitate achieving collective catering goals in sustainable sourcing. The origin of the debate is that food planning has both missions of developing “local agriculture and quality food”, defined by Agriculture Law (*loi LAAAF*, 2014) and “sustainable and quality food” in collective catering, defined by Food Law (*loi EGalim*, 2018), which became a criterion for food planning projects’ national labelling and funding obtaining. A difficulty for the food planning to deal with both missions is that local does not equal sustainable and quality food (Kiss et al., 2019), as an interviewee claimed:

It means favouring local products, but also quality products, because local... not to say too much either. In particular, with the Food law (loi EGalim), in terms of collective catering, which encourages this. [...] then, the notion of local does not mean quality either. We have an egg producer just in Saint-Pons, and we know that, even if it is now free-range, we know that it is not... So in fact, I think that there is the notion of local, but it is not the only one. There is also the notion of sustainability and quality. And it is more or less all the issues that are being worked on today at national level, with the Food law or more widely. [civil servant, regional park Haut-Languedoc, Occitania, 2021/06/15]

And, “sustainable and quality” food, according to the interpretation by the national “Call for Projects” as quality labels⁷⁵, does not always contribute to the environment because it may come from long supply chains, therefore generating more greenhouse gas emissions during the long-distance transport (Palacios-Argüello et al., 2018). An interviewee claimed this problem:

That is the subtlety. That is to say that on the supply side, it is the two criteria: proximity and quality. And quality is defined by labels. So that is why we are also going to buy organic produce from Europe and the world. [staff, association Chemin Faison, rural cluster Pyrénées Catalanes, Occitania, 2021/09/21]

There may even be conflicts between “local” and “quality” food, especially in territories where labelling food (which means quality food, some linking to healthy with ecological practices, others linking to geographical indications with a territorial dimension of quality) was not well developed. With the experience in an experimental school canteen’s collective catering project, an interviewee claimed that achieving the Food Law’s goal of 50% quality food provision might be at the expense of local food because local food might not have a label. Locally, this department set goals for collective catering to improve both local and quality food provision. As the interviewee reported:

From the work that was carried out with the central kitchen of Saint-Étienne-du-Rouvray, we realised that they indeed sometimes used local products, but local products do not fall within the framework of the Food law (loi EGalim). [...] The disadvantage of the Food law is that it says to promote products with labelling, notably organic. Organic food does not necessarily come from Normandy. We all know that. So, the concern is that by promoting organic products, it may be at the expense of local products which are not currently labelled. [civil servant, departmental council Seine Maritime, Normandy, 2021/05/11]

In territories where labelling food is well developed and even dominating, the potential contradiction might occur between the quality food and local short supply chain activities. An exemplary case was identified in the territory of Grands Causses where the famous labelling cheese Roquefort dominates. The strict rules of the Roquefort processing determined that farmers were relying on the industrialised models and the following long supply chain activities.

⁷⁵ This is a regularly used interpretation of the national “Call for Projects” programme. According to the “Call for Projects”, sustainable and quality products include: organic, other quality food labels (SIQO), level 2 environmental certification and High Environmental Value food (Haute Valeur Environnementale) and fair trade (2021 Call for Projects, p8). According to the Rural Code (L230-5-1), this 50% provision of “sustainable and quality” food includes a wider range of criteria other than the labelling food. For example, food obtained by taking into account the life cycle external environmental costs¹ is a general criterion.

Farmers were hindered from operating their own diversification activities. In such a situation, some territories targeted in the food planning to increase local farmers' quality food production, for example:

We know that the large industrial companies could supply themselves and the collective catering units with products, labelling food (SIQO), organic, which come from outside the territory, even from abroad, quite easily. So, the idea is to be able to help producers to produce organically, for example, with an official quality labelling others in the region, and to be able to bring them to the collective catering. [civil servant, regional park Grands Causses, Occitania, 2021/06/16]

Other territories may take different strategies and interpret rules to meet local expectations. Regarding this debate between "local" and "quality" food, the complex issue encountered in food planning is to figure out the criteria for the supported food. When it comes to "local", the extra complexity is the lack of legitimacy to integrate such a geographical preference into procurement contracts. In one territory where local elected officials were very much more supportive of local food, the interviewee claimed that the Food law (*loi EGalim*, 2018) does not facilitate because "local" could not be integrated into the rules that respect free market competition⁷⁶. As the interviewee reported:

For the elected officials, the priority is "local." Organic food is really a secondary priority, if not a priority at all, but there is the Food law (loi EGalim) which obliges. It is very strange, because the Food law encourages and obliges the purchase of products with a quality labelling, including organic products, but on the other hand the Food law does not include the local character, as local is forbidden in the Public Procurement Code. When we write a contract, we are not allowed to include localisation criteria. [civil servant, rural cluster Pays d'Armagnac, Occitania, 2021/06/17]

Some other territories held similar reflections but tended to find solutions through the local interpretation of "sustainable and quality food." Local context could not meet the requirements of offering labelling food, but the definition of "sustainable food" has some room for manoeuvre. The Public Procurement Code prohibits directly giving geographical proximity priority in public procurement requirements in consideration of fair trade. However, this Code allows the requirement to integrate environmental considerations (Article R. 2352-5). Therefore, geographical proximity could be linked to better performance in terms of product freshness, delivery responsiveness, reduction of greenhouse gas emissions or respect for seasonality (Le Velly, 2012).

⁷⁶ The Public Procurement Code (Article R. 2352-5) defines that the criteria of public purchase should be non-discriminatory, including quality, price, technical merit, functional or environmental characteristics, cost of use, life cycle costs [...]. Among these criteria, geographical proximity is not included.

Complemented by Climate and Resilience law (*loi Climat et Résilience*, 2021), the 50% supply of "sustainable and quality food" can also be "*products with acquisition based mainly on performance in terms of environmental protection and the development of direct supplies of agricultural products, in compliance with the rules of the public procurement code*" (Rural Code, Article L. 230-5-1). According to this rule, food without labels but sourcing from local short supply chains might also fit the "sustainable" standard to a certain extent. Due to the complexity but also the room of interpretation given by legal rules, local territories do have a work to do in defining "sustainable food", as an interviewee argued:

Now, local production cannot meet the needs of collective catering with these specific quality food criteria derived from the Food law (loi EGalim). However, the Food law states "or equivalent." We are interested in this "equivalence", because we have mainly extensive production. But it still requires us to think about which modes of production are really "sustainable" so that we can justify it in terms of equivalence because not all modes of production in the territory, even extensive, are sustainable. We have productions where soya meal is brought in from deforestation in Brazil. I do not think that is very sustainable. [...] but we also have production methods where the producers feed their animals only fodder from their own land, etc., but they do not have a label. [...] So we need to work on defining sustainability in terms of our territory. [civil servant, inter-municipal body Haut Allier, Occitania, 2021/10/04]

Overall, collective catering is an essential issue in food planning. It is a strong public procurement power to support local food and is promoted by national laws. Food planning largely applied the instrument to provide studies, technical aid and information to collective catering stakeholders to facilitate local and/or quality food sourcing. Fewer cases applied regulations; food planning was to adapt procurement contracts specifications. A tricky issue for food planning was to deal with "local" and "quality" food, two targeted criteria that were either wished by the local territories or required by the law. Quality and local food could even be conflictual, especially in territories where local production does not meet the requirements of quality food provision. In such a situation, some territories focused on increasing local food production with qualification; some territories might adopt local interpretation to define "sustainable and quality" food to meet the double goal of both local and quality food provision. Such choices presented how, in this new policy framework, things were developed and evolved locally. Collective catering is not only a directly targeted issue for which instruments were mobilised to achieve more local and quality sourcing. Also, it is a driver of local actions in supporting local production and the establishment of local food facilities.

2) Linking the "missing middle": establishing local processing, logistics and distribution facilities

Local collective food facilities (i.e., local processing, logistics and distribution)

were an emphasised issue in studied food planning projects. Various types of instruments were applied, with diverse forms of facilities proposed and different ways of implementation. This section first presents the instruments, rationale, diverse forms and implementation challenges.

Chapter 1.2 has shown that around half of food planning included the instruments of creating local processing facilities ($n=13$ among 29 projects), creating local food hubs/logistics/storage facilities ($n=13$) and/or analysis and strategies for local food infrastructure ($n=16$). Food planning could also facilitate local sales by developing local producers' distribution space (farmers' markets, drive-through, producers' shops, third place, etc.) ($n=16$). Among them, only one case included individual on-farm processing facilities: "*study on-farm slaughtering*" (regional park Grands Causses). Others focused on developing collective food facilities.

Interviewees reported the principal rationales for developing collective food facilities. For processing activities, a reason to develop collective facilities is that individual farmers could not develop each one an on-farm processing facility. Interviewees reported that individual diversification activities require too much investment in time and energy, so the collective food facilities also reduce farmers' burdens. As an interviewee reported:

Now we are also more and more interested in larger-scale processing facilities to find another form of profitability, also because with the exchanges with them, we realise that they cannot do everything; they cannot be in the field producing, processing, selling on the markets or delivering them to specialised shops etc. So, we will try to work on the structuring aspect of the supply chains themselves with processing and logistics facilities which will also be designed to lighten the burden of the farmers. [civil servant, inter-municipal body Metropolis Rouen, Normandy, 2021/04/23]

The wish to establish collective facilities also has an environmental consideration, as individual transport for every farmer may cumulate long transport distances. Interviewees also observed that the logistics cost was an aspect ignored by farmers, as farmers were usually unaware of such costs. So, collective facilities aimed to organise the system better to have better environmental performance while reducing farmers' costs.

Moreover, collective logistics services were to better connect producers and consumers (including individual family consumers, restaurants and collective canteens) by matching the supply and demand. As an interviewee reported, collective or private catering services would like to purchase local food, but purchasing small quantities on each farm with much transport was not economically viable for them. A collective solution could better organise the supply from farmers and distribute them to consumers.

Different types of collective food facilities were proposed in food planning, mainly in the forms of vegetable centres, slaughterhouses, food hubs, collective sales facilities and collective logistics. Vegetable centres (légumeries, usually including processing, storage and/or packaging) were a type of facilities frequently proposed in the food planning. In many cases, they were driven by the need for collective catering. For example, the vegetable centre of the inter-municipal body Grand Cahors was a major project and mainly served the collective catering. Vegetable centres were also associated with the farm incubators, meaning providing transformation and conservation facilities to market gardeners. In the ideal situation, an incubator centre (for market gardening), vegetable centre, and collective catering build an entire supply chain. So, market gardeners will be encouraged to set up in the territory, and diversification of local products will be reinforced (see chapter 2.2 about food product diversification). For example:

And on the spot (of a site of farm incubator) also a processing unit would be created which would allow a vegetable centre to operate peeling, cutting of vegetables, freezing and storage. Typically, this means that in the summer, during the school holidays, there are fewer purchases in the central kitchens because the students are on holiday. [civil servant, inter-municipal body Rodez, Occitania, 2021/06/16]

Numerous territories planned to develop slaughterhouses, especially in engaging issues of local short supply chains, organic food provision and multifunctionality. For example, a slaughterhouse project was to integrate a training centre and involve criterion of animal welfare (e.g., the case of Ténarèze, in the food planning project of rural cluster Pays d'Armagnac and department Gers). Some territories also planned to develop mobile processing facilities, represented by mobile slaughterhouses. They were proposed to meet demand of the small-scale products or for rural areas where farms are dispersed. When farms are scattered or when the products' quantity in certain areas are limited, such mobile facilities might be suitable.

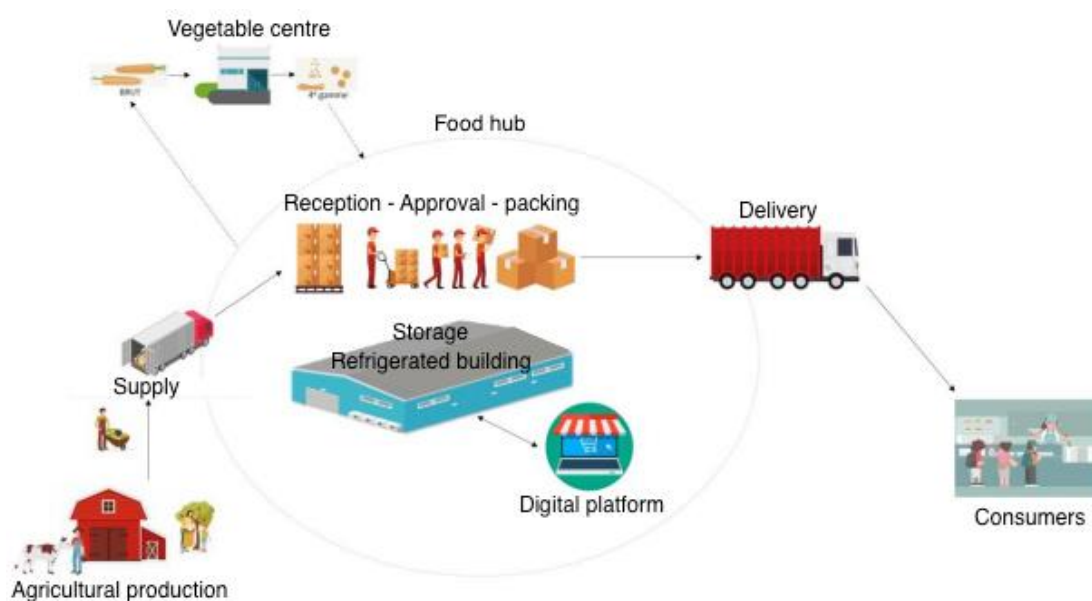
Food hubs that aggregate and distribute local food were another type of facility proposed. Some territories planned to develop large-scale food hubs (*plateformes*). For example, in the food planning of department Pyrénées-Orientales, a leading project was establishing a food hub to supply the collective canteens with local food (Figure 2. 6). The idea was that the food hub aggregates local producers' products and supply canteens. The food hub includes a building for storage, a digital platform and a working area for the preparation of food delivery.

Instead of setting up new local food hubs, strategies were also taken to integrate local food into established food hubs. Metropolis Montpellier, for example, mobilises its existing national interest market (*MIN, marché d'intérêt*

national) to work as a local food hub by integrating local producers' sections and undertaking functions of collective catering supply. In addition, the development of such food hubs was often linked with other local projects. For example, supplying collective catering was an important driver. And the development of the food hubs is also linked to the upstream of the supply chain, food production. As an interviewee claimed, the issue of creating food hubs was cross-cutting, linking production, diversification and collective catering:

...we have another instrument under study, which is a logistics distribution platform (food hub) for the agricultural production, to link it with buyers, notably collective catering. So, the same thing is also linked to this issue of diversification, which is why the diagnosis that will be carried out on the arboriculture and market gardening sectors, which will also serve as a study of the opportunity to create a facility, to link production and potential buyers. That is all there is to it. So it is somewhat cross-cutting to the whole of the food planning. [civil servant, rural cluster Cœur d'Hérault, Occitania, 2021/09/17]

Figure 2. 6. Function of a food hub.



Note. The food hub includes a building for storage, a digital platform and the working area for the preparation of food delivery. Translated from food plan Pyrénées-Orientales. Association Mangeons Local 66 (2021).

Some food planning projects proposed small-scale food hubs according to local contexts. For example, in the rural Pays d'Armagnac, a small-scale food hub with storage places in the village centre was proposed as a solution. As the interviewee claimed, the long distance to farms and the small quantity and limited types of food that one could purchase on the farm hindered the local purchase. So, the establishment of such a food hub would enable local consumers, both individual families and small-scale canteens, to purchase all the necessary food one time from a centralised place. This strategy is suitable especially for rural areas in which farms are scattered and for areas in which

each collective catering centre only provides a small quantity of food., and may facilitate village revitalisation by introducing economic activities. The interviewee explained as such:

Regarding these very small canteens which cannot access fresh products, because nobody wants to deliver them, the quantities are too small, we have a structuring. [...] These small canteens have no other solution: they take their car and go shopping at the supermarket. So, we have the possibility of creating a small warehouse with a cold room and also a neutral zone, and thus to pool the orders, i.e. a producer, instead of bringing two kilos of carrots, where it is not profitable, can bring several things, but he will not go to the small canteen. He goes to a place, he has the key and he puts... [...] it will aggregate the orders, it will make a delivery with several small packages. And this place is right next to the supermarket. So anyway, the canteens are used to going there. [civil servant, rural cluster Pays d'Armagnac, Occitania, 2021/06/17]



Images. A producers' shop, Pyrenees Catalanes. Photograph by the author, 2021/09/21.

Other forms of food hubs were proposed to facilitate farmers outlets. They were collective sale facilities with similar principles of consolidating existing initiatives and grouping scattered suppliers and consumers. These facilities were in the

forms of farmers' markets, drive-throughs, producers' shops, third place (*tiers-lieux*), etc. The objective is to aggregate farmers' sales points and increase the convenience of purchasing. For example, an interviewee introduced that the local authority facilitated farmers' drive-through initiatives during the Covid-19 pandemic by making a publicly-owned warehouse available.

Territories also explored solutions to facilitate collective transport and logistics, for example, purchasing trucks to facilitate the transport of processed food to collective catering provision (e.g., inter-municipal body Haut Allier). In the inter-municipal body Ouest Aveyron, the local authority launched a publicly-owned logistics enterprise to better organise the supply of local food from consumers to collective canteens. The local authority's action shows the efforts it made for local supply chain structuring. However, it is worth noting the borderline nature behind the fact. Such public facilities might harm the free market competition rules as public institutions are only authorised to operate such businesses when there is a lack of provision from the private market.

The above collective facilities were proposed in food planning but also were envisaged in implementation. When the project comes with a physical place and with a building (especially for processing and distribution facilities), an related issue is the use of land and building. In most cases, interviewees reported that there were no barriers for land or building. As to land, such projects were usually treated as enterprises and planned to be located in urban economic areas (*zone d'activité*), by using existing available buildings or having a new construction. Such areas are planned for gathering economic activities, in which the local authorities can establish of pre-emption right. They are usually categorised as development zones (*zones à urbaniser*) in land-use planning. In such cases, collective food facilities would not generate the problem of land take.

While in most cases, the use of urban economic areas (*zone d'activité*) for collective food facilities was in rural territories, it also emerged as a solution in urban territories. For example, an interviewee in Metropolis Montpellier claimed that agri-food facilities were only recently raised as an issue in urban development areas. The interviewee reported that the development of economic zones used to accommodate more lucrative activities but not agri-food facilities. But recently, the local authorities started to think about integrating agri-food facilities in these areas. The food planning team, therefore, had to give proposals for such facilities because they were not competitive with other enterprises. Such a change indicates a raised position of RAA in the local political agenda: the food facilities were treated as a cross-sectoral issue and were started to be integrated into economic activities. The interviewee reported as such:

... the metropolitan offices that manage these urban economic areas (zone d'activité) are now considering the possibility of integrating agricultural or agricultural processing activities into these urban economic areas. So we are also in the process of organising ourselves to be able to propose answers because this is something that is emerging. We feel that in this type of zone, if we do not pay particular attention to the agri-food aspects, there are other more lucrative activities which will be established, especially as Montpellier is completely saturated with economic property, it is relatively easy to find companies. But we are starting to feel a little bit universally that there is still a need to reserve spaces for agricultural activities and food processing. [civil servant, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07]

In some cases, the local authorities provided publicly-owned buildings to operate collective food facilities. An exemplary case shows that the public-private relationship facilitated RAA. In this case, the local authority would be in charge of the construction of a building to meet the requirements of a local producers group' concerning the development of a local processing centre. The building would be in a lease contract for the first years with the final goal to be sold to this producers' group. Such a process is an effective financial support for developing small-scale RAA businesses. As the interviewee told:

The inter-municipal body was committed to the construction of a dairy processing facility (for a group of four local farmers) [...] the inter-municipal body will be responsible for the construction of the building, which will also apply to potential financiers for subsidies. Once the building is built, the enterprise Pur Perche will set up its machines; they will manage themselves and invest in the production equipment. And they will rent the building. So there we will be in the form of a lease where the principle is: for five or ten years, the enterprise will pay a rent, and at the end of ten years, they become the owner of the building. [civil servant, inter-municipal body Cœur du Perche, Normandy, 2021/06/10]

Another solution is the reuse of vacant buildings, which also integrates the issue of revitalisation. Several territories planned to use vacant warehouses as the storage place for a newly established food hub or to renovate an abandoned building as a processing centre. It will not generate new land take and can make use of abandoned buildings. Such initiatives are also engaged in issues of rural revitalisation. As this project demonstrated, the reuse of a town centre vacant building for local food hubs could be a project for integrated local development:

The mayor of Eauze wished to have a place to promote local products [...] (there is) a building that is specially dedicated to the poultry and foie gras market. But this building is old, degraded and underused. [...] So the town hall made a project by saying "it is right next to the market. What we are going to do is renovate and make an area where we will have only local products and only local producers." [...] as the building is quite large, they also decided to create a sort of showroom with a kitchen [...] So there are logistics, promotion of local products and place to raise public awareness. We integrate different dimensions

into the same project. [civil servant, rural cluster Pays d'Armagnac, Occitania, 2021/06/17]



Image. An un-used hall in the town centre. The local authority planned to transform it to be a local producers' market, Eauze (32800). Photograph by the author, 2021/06/17.

Reuse of heritage farm buildings in agricultural areas was also raised as a solution for collective food facilities. Though only in a unique case, it represents how collective food facility, rural revitalisation, heritage building reuse and reducing land take could be integrated. As the interviewee claimed, with the enlargement of farms, the potential risk is the transformation to a non-agricultural function of the heritage farm building, which may, later on, engender the surrounding farming activities. Using it as collective food infrastructure would enable the farm buildings to keep the agriculture-associated function. Using existing buildings also avoids land conversion for new construction for the facility. So, this reuse of heritage farm buildings integrates multiple issues of facilitating farmers' development, reducing land conversion, protecting heritage buildings and revitalising the rural area. As the interviewee reported:

Today, one of the major issues identified by the vice-president is that there are large agricultural estates for sale with very heritage buildings such as large stone farms, magnificent buildings. So, the risk today is that the farmland will be taken over by someone who wants to live there or run beds and breakfast or tourist facilities. This will result in the loss of associated agricultural activities. So there is a reflection on the strategy to try to maintain these buildings in agricultural activity, whether for production or for processing. [civil servant, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07]

Besides land and building, the operation and management models are challenging in implementing collective food facilities. This is about the issues of the operational model that is economically viable, the

appropriate public-private relationship and the appropriate scale. As to the economic performance, local food processing and logistics facilities constitute an economic activity and rely on appropriate budget management, operation and commitment of adhered stakeholders. Some interviewees reported historically failed food facility projects in the territory, revealing the economic fragility of developing such projects. For example, the failure of a local logistics project to supply collective catering because of the lack of producers' commitment (reported by interviewees from the regional park Haut-Languedoc). For a food planning project, creating collective processing facilities was planned in the first version of food planning but removed in the second version because it was found difficult to identify the legal form and the management models for such facilities. Local collective processing facilities were a new type of facilities and required innovation, as well as the risk of experimentation, as the interviewee claimed:

On the processing facilities, we realise that the farmers do not have the means to do it. It is not their job. And that means that you need an intermediate level, which is either a cooperative or a producers' association, and that is complicated to implement for the management. So everything that is a processing tool is complicated. [...] (the difficulty is) the legal form, the operating mode. This is the innovation. We have to invent something, because creating and organising a farmers' collective, there are group of employees (GE, groupement d'employeur) and cooperative for the use of agricultural equipment (CUMA, coopérative d'utilisation de matériel agricole), but these are not solutions that optimise the use of a processing facility. It is difficult to manage. There are responsibilities. And today, there are many obstacles. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

Similarly, in the region of Normandy, while the creation of local vegetable centres was raised frequently as a food planning action, the following problem was their economic viability. Local stakeholders realised that local vegetable centres were not economically competitive and viable. Hence, it needed to be cautious before the creation with appropriate defining the purpose of the facility, as an interviewee reported:

There is a kind of vigilance on the fact that small vegetable centres, if they have an economic purpose, it is difficult to make them last as long as you want as the large vegetable centres. So we have to be careful about what we call a vegetable centre. Is it just a different service from collective catering? And if so, does it imply training for staff who are more used to preparing food? Working hours may be a little longer? It is a cultural transform of the entire chain. [civil servant, inter-municipal body Baie du Cotentin, Normandy, 2021/05/28]

It is also for the relatively weak economic viability of local food facilities that public intervention and private-public partnership are significant. In practice, only in a few cases, it was the local authorities that developed and managed the

facilities as well as their operation (*régie*, e.g., the vegetable centre of Grand Cahors and the logistics service of Ouest Aveyron). By contrast, most cases were based on private-public cooperation. Hence, there is an issue with the role of public institutions. Public institutions may not be willing to be in charge of the implementation of the food facility projects. As reported by interviewees, there was the issue of legitimacy for public institutions to intervene in the market, which may generate unfair market competition and also the issue of local culture to directly carry out such projects. It was also the issue of guaranteeing the long-term commitment of private agricultural stakeholders. As interviewees claimed, if the local authority conducted the local food facility as a publicly-owned project, the local farmers would be less engaged in the project and would hold less responsibility:

A1: To do it (local processing facility), we will rely on breeders. We cannot give them a public service delegation to manage it, because they will always be part of the project. If we build a facility and give it to others, the only guarantee we can have that it will be well managed is on condition that people who use it are also the managers. A2: To make them aware of their responsibilities, so that they do not say “we are safe, it is the inter-municipal body (that is in charge)...[civil servant, inter-municipal body Ténarèze, Occitania, 2021/06/25]

Different roles of public institutions as project leaders can be found in food planning. A frequent role was to do the study of feasibility. In several cases, the public authorities would work on feasibility analysis of food facilities but are not necessarily in charge of project implementation. As reported by many interviewees, the public authorities' objective was to facilitate privately-owned food facility projects to be more locally embedded. It means that the facility would be dedicated to local producers so that values and employment remained in the territory and to be more economically viable.

In some territories, public institutions and private actors collaborated in the development of food facilities. The cooperative for collective interests (SCIC Société coopérative d'intérêt collectif, direct translation as cooperative enterprise of collective interest) was often proposed as a form that involves these different stakeholders (Triboulet et al., 2022). The advantage of such cooperatives is that local producers could be associated with the facility and become members while public institutions are mobilised and involved, as the example given by an interviewee for a collective processing facility:

The building is public, and the management is entrusted to the cooperative for collective interests (SCIC). The idea is that the inter-municipal body should necessarily be part of this SCIC and that we should invite other inter-municipal bodies and the department council to join in. The public establishments only represent 25% of the members. The idea is really that this equipment should be taken in hand by all the players in the sector, the butchers, the slaughterers, the families could be part of the SCIC. We have a lot of small non-professional

producers who make a living from their animals, or who are family farmers in the Cotentin region, and so these people can (join in) if they want to. [civil servant, inter-municipal body Baie du Cotentin, Normandy, 2021/05/28]

The above-described actions were rather based on the creation of new facilities, whereas some territories chose to re-organise existing facilities. It includes better organising the management to meet the local producers' needs and adapting functions to local demand instead of creating new ones. This indicates territorial resource management. As an interviewee introduced:

A big project is the structuring of the slaughterhouses. Today we have 2 slaughterhouses left in the region [...] And the idea is to structure them, to pool them under the same legal structure so that they can respond together to all the needs of the region in terms of slaughter and so that they do not end up in large groups. [...] It is to modernise those that exist but not new buildings. There will be the integration of what we call a cutting room, at the same time. [civil servant, rural cluster Pyrénées Comminges, Occitania, 2021/09/20]

Finally, the scale of the collective food facilities was increasingly being taken into consideration, namely developing food facilities at which territorial scale. As a frequently raised issue, territories wishing to develop vegetable centres were usually faced with the problem of defining the appropriate scale that could make the facility economically viable. This is not simply about identifying the appropriate scale but also about reaching a consensus between different scales of local authorities to avoid competition. During the interview period, I found that solutions were mainly through conducting territorial studies to analyse the feasibility of certain food facilities. A guide that recommends which scale might be suitable for which types of food facilities were neither in place nor being raised as a question. This scale issue actually indicates that food planning should be based on cross-territorial governance. This will be discussed in 3.2.

Overall, studied food planning projects included many food facilities to consolidate individual activities, making them more economically viable and more convenient for local purchases, both for individual consumers and for collective buyers. Diverse forms of facilities were proposed, and different management models appeared. The issue of economic viability, from the organisation and scale perspectives, has been cautiously examined by the local public bodies.

3) Connecting supply chain actors

More than physical facilities to connect local consumers and producers, food planning leveraged a series of non-physical instruments to bring together local stakeholders at the different stages of supply chains. A frequently mobilised instrument was to make maps and brochures to increase local initiatives' visibility to consumers, including individual consumers and

collective catering buyers ($n=13$ among 29 analysed documents). This initiative is also in relation to tourism because it also promotes local products to tourists.

Some territories included networking professionals in short supply chains ($n=12$ among 29 projects). For example, *"putting producers and processors in touch with cooks, canteen managers and buyers of collective catering"* (regional park Haut-Languedoc). Some also took into account the conventional long supply chain stakeholders (e.g., large supermarkets) to facilitate their transition to engage local products, for example, facilitating dialogue between actors. As an interviewee reported, such a dialogue was important but not yet developed, and the local authority had an essential role in facilitating the dialogue. In this case, they wished to facilitate the dialogue surrounding the issue of local food brands:

Leclerc [...] It is the leading supermarket in the region, well, their relations with local producers are not good. And the intermediary organisations, I would say, did not facilitate this dialogue. But today, within the framework of this new food planning project, one of the objectives that the inter-municipal body set is to ensure that there is a better dialogue, particularly around the territorial brand, which is called "HaPy Saveurs." [civil servant, inter-municipal body Tarbes-Lourdes-Pyrénées, Occitania, 2021/10/04]

Some territories aimed to develop umbrella brands for local food ($n=5$). This was both a strategy to develop local identity, to add value to the local food and to play with the requirement of "sustainable" food (use the umbrella food as a type of labelling food, discussed in 2.2.2). This strategy also fits the regional parks' development of "Valeurs parc." Many territories provided training, information, advice and strategies to facilitate farmers in local sales ($n=16$). These were mainly about facilitating farmers to develop producers' groups, providing technical help to farmers to respond to new types of specifications such as collective catering requirements, etc. It also referred to introducing local food into existing commercial places, for example: *"supporting the development of local products in existing shops"* (food planning document rural cluster Midi Quercy). As a rarely applied instrument, one territory planned to modify local acts to increase the visibility of local products.

Another frequently mobilised instrument was undertaking activities to connect consumers and the agriculture profession (farm visits, events, agritourism, etc.) ($n=16$). Farm visit (often associated with school education programmes) was the most frequent form in relation to school courses. By contrast, agritourism seems to be a strand not well integrated into food planning. In some territories, although agritourism was well developed, it was not an emphasised issue in food planning. According to interviewees, actions associated with agritourism were mainly about education or providing local food boxes for visitors. An interviewee explained that *"we did not work on that (agritourism) too much. As it is*

already well developed, there is no need to do much more” [civil servant, inter-municipal body Ouest Aveyron, Occitania, 2021/06/15]

Overall, food planning integrated a series of informational instruments to connect supply chain actors between producers, processors, professional buyers or inhabitants. The connection would facilitate a better understanding, visibility and exchange of knowledge. They facilitate shaping local supply chains together with the structuring of physical food facilities.

In synthesis, food planning emphasised the issue of local supply chains with various instruments. Among them, collective catering has been addressed by local bodies as a strategic issue, which has driven many other initiatives, especially the development of collective food facilities (processing, logistics and distribution facilities). Sonnino et al. (2019) have emphasised that the invisible infrastructure (i.e., public procurement power charged by the public authority) and physical infrastructure (i.e., processing and distribution facilities that link producers and markets) were essential but “missing middle.” Examined cases proved that this was however a key issue emphasised in French food planning. This result shows how the legislation affects local strategies. The Food law’s (*loi EGalim*, 2018) requirements concerning sustainable food catering with quantified indicators have largely incited the collective catering and, consequently, the local infrastructure structuration. The numerous projects and the prevalence of the local collective food infrastructure are highly likely to be associated with the recovery plan’s (*plan de relance*) incentive in implementing food planning, including the investment in developing local facilities.

The study also showed that territories started to be cautious in the implementation of the creation of food facilities. The creation of vegetable centres as a point of special interest in food planning, for example, was more and more questioned before the implementation due to the issue of economic viability. The particularity of local collective food facilities is that they have to, on the one hand, take into account the economic performance and, on the other hand, bring social benefits. The food planning project leaders, as public institutions in most cases, were exploring their roles in such facilities. Innovative private-public relationships are necessary to be tested.

Food planning also mobilised a series of other informational instruments to connect consumers and producers, such as organised events, providing training and making maps. This can be explained from two perspectives. First, it refers to relatively low investment. Second, it does not refer to local authority’s legal responsibilities. These strategies, together with the “physical” food infrastructure structuration and the public purchase power driven by collective catering, could facilitate the structuring of local supply chain.

2.3.4 Linking the disconnected fields: favouring the diversification of agricultural activities

1) *From disconnection to integration: a favourable environment to facilitate diversification activities*

When comparing land-use and food planning policy instruments in structuring local food supply chains, I identified that the two planning policies were, in general, focusing on different issues. So, there were no obvious conflicts between instruments. But there was no complementarity either because of the disconnected focus. I present them from three major perspectives: on-farm facilities, agritourism and collective food facilities.

As to **on-farm activities**, land-use planning, with the evolution of Housing law (*loi ELAN*, 2018), was in most cases supportive of on-farm processing and distribution activities by regulations. However, the missing link was that food planning largely worked on collective food facilities instead of developing on-farm initiatives. Moreover, an obvious tendency is the development of collective facilities to compensate for the deficiency of individual ones.

Regarding **agritourism**, it seems to be a missing link between food and land-use planning. The study in this section showed that agritourism was an important issue in land-use planning, represented by the various regulatory instruments mobilised. By contrast, food planning projects put much less emphasis on it. Agritourism as a para-agricultural activity contributes to territorial development and farmers' income and has the potential to create synergies to agricultural activities, e.g., increasing on-farm local food sales. It is also a point that creates links between food and land-use planning as well as building social links between farmers and the local population, as an interviewee reports:

But the relaxation of the Housing law (loi ELAN, 2018) is very important for us, for the food planning, because the possibility of having activities connected to production, ancillary activities that are not directly agricultural, is very important. We have a strong development axis in the food project, which is the promotion of the gastronomic heritage. [...] For us, this is a great strength. The gastronomy of the Pays d'Armagnac is one of the main attractions, along with the landscapes, that attract tourists. And we need to be able to have all these small activities and to continue to develop them. So, it is important and it can even constitute a stake in the survival of the farm for some. [civil servant, rural cluster Pays d'Armagnac, Occitania, 2021/06/17]

As to **collective food facilities**, they were an issue largely addressed by food planning. Food planning mobilised a series of policy instruments to study and create such facilities. Land-use planning, though not directly referred to, potentially has various approaches to facilitate that. One of the approaches is

the right of land-use planning to create exceptional zones (STECAL) in agricultural areas. This is normally a local decision based on the actual project. And actions defined in food planning fit the profile of a “project.” In this regard, the exceptional zone creates a potential connection between land-use and food planning. Land-use planning can authorise such facilities through the identification of change of uses.

Integrating and removing regulatory barriers of food planning-identified RAA projects in land-use planning implies a need for coherent collaboration. Such collaboration requires upstream collaboration in the identification of projects and the co-design of specific regulations to meet the requirements. Interviewees pointed out that through land-use planning agricultural diagnosis, future projects could be identified and integrated into regulations to avoid future hindrances to diversification activities:

... diversification for example of the farmers who want to diversify their activities, it is true that in the land-use planning, we need to identify it with the change of uses. That is why the questionnaires are very important because in fact if they have a project today and the inter-municipal body is not aware of it, tomorrow it will be blocked by land-use planning. [civil servant, inter-municipal body Pays d'Olmes, Occitania, 2021/10/01]

A challenge for collective food facilities refers to the definition of its land use as a new type of facility. In some land-use planning documents, on-farm food processing facilities were categorised as “industry” (e.g., land-use plan of inter-municipal body Saint-Affricain, Roquefort, 7 Vallons, regulations, p. 136). Some interviewees claimed that collective food infrastructure could be categorised as a “collective facility” for their collective uses (an interview with inter-municipal body Morgane au Perche). These land uses have different priorities in land-use planning; for example, collective facilities can be permitted in agricultural zones (see also Figure 1. 5, introducing the construction that is possible to be permitted in agricultural zones). So, the classification of land use of food facilities corresponds to different flexibility when authorising them in land-use plans.

Another strand of collective food facilities in both land-use and food planning refers to the optimisation of spatial organisation. Studying food planning projects increasingly presented the necessity of organising collective facilities at an appropriate scale, in terms of reasonable economic scales and reducing competition. In the meantime, land-use planning projects (with the local regulatory land-use plans and master plans) have the mission to spatially organise territorial resources, including the arrangement of important facilities as well as the organisation of transport and mobility. The site choice of facilities, such as accessibility of infrastructure and connection to producers and consumers, can be an issue integrated with land-use planning. Among studied

cases, only in one master plan process such an issue was raised in the debate. It, in any case, shows the emergency of collaboration in terms of spatial organisation.

Overall, complementarity is to be found based on more connected topics and a more interwoven working process. The complementary planning instruments design needs to be based on good knowledge between each other, shared or co-defined orientations and strategies. Some cases did present the potential of creating synergies between land-use and food planning, which can give insights into a more integrated instrument design.

2) Creating synergies: collective food facilities and territorial revitalisation

In this action field of developing local food supply chains, collective food facilities are identified as an issue that can create synergies between land-use and food planning, as well as connect diverse issues of territorial development. The exemplary case from the metropolis Montpellier demonstrates the integrated issues in both land-use and food planning: the local authority was thinking about **developing collective food facilities by changing the uses of existing heritage farms.**

From a supply chain perspective, collective food facilities, as also identified in many other food planning projects, are a lever to connect local farmers and consumers. They are connected to collective catering, helping to achieve. They help to keep the added value in the local territory, mitigate individual farmers' burden in developing on-farm facilities and contribute to better environmental performance.

In land-use planning, collective food facilities can be a lever to reduce land take in rural areas and reuse vacant farm buildings while not hindering farmers' development. In this exemplary case, they were considered as a solution to avoid farmland conversion brought by the numerous individual on-farm facilities. Behind that, an ignorable issue is the potential risk of further change from on-farm individual facilities into non-agricultural uses. Collective facilities were also integrated into the reuse of heritage farm buildings. Such reuse has multiple benefits; it avoids farm buildings' conversion into non-agricultural uses, makes use of heritage values and introduces economic activity to revitalise the territory.

Collective food facilities also have the potential to integrate social issues. A case shows how a collective food facility of glass jars recycling can be connected to food packaging, reduction of plastic waste, social integration and revitalisation of town centre as it reused a vacant building.

In relation to land-use planning, it is an old shopping centre which has been

bought by entrepreneurs. And they're creating a business making meals in glass jars, because glass is recyclable, so there's no plastic waste, and they're going to make ready-made meals from local products. [...] It is the meal in a jar actually... And then, the jars, there is a deposit and return system, they are cleaned and reused. So that is very good for the environment. And in addition, it is a social work integration company. There is a social side. [civil servant, rural cluster Pays d'Armagnac, Occitania, 2021/06/17]

Overall, the exemplary cases related to collective food facilities presented that synergies were being created between land-use and food planning. Other synergies are to be identified through a more integrated planning process.

CONCLUSION: DEALING WITH LOCAL AGRICULTURE IN AN ARENA WITH VARIOUS INTERESTS

This chapter aimed to improve the understanding of the social use of planning instruments, the intersections between land-use and food planning policies, and the driving forces of such social use. Through combining document analysis results and semi-structured interviews, this chapter has presented the way in which land-use and food planning policy instruments were strategically mobilised by local stakeholders in three RAA action fields (i.e., farmland preservation and land access, transition of farming practices, structuring local supply chains). By doing so, I identified links and missing links, as well as relevant facilitators and the hindrances to the links.

There are some commonalities and divergences among the links between these three action fields and their drivers. A shared similarity is that the policy instruments in food and land-use planning have the potential to be integrated, but yet the linkage is limited. There are barriers from both processual complexity and political tensions between local stakeholders, and each action field is concerned with different issues.

Regarding farmland preservation and access to land, this is the action field in which land-use and food planning build direct links the most, as “farmland preservation” is a shared goal. This goal has been further reinforced by the no net land take (*zéro artificialisation nette*, ZAN) objective. Some direct links were identified, for example, agricultural diagnosis can integrate food planning-defined criteria, and food planning can identify prioritised areas for land-use preservation. Indirect links were also evident. The binding land-use regulations and the various land intervention instruments for local farming that food planning mobilised together could contribute to farmland preservation.

Missing links seem to be caused by the tensions brought by land issues. There is tension between land preservation and local developments; trade-offs must be made. Also, the specific studied issue on soil quality assessment showed that farmers did not want to prioritise land to avoid hierarchy and conflicts. Another obstacle to the integration relates to the complexity of processes related to land-associated instruments. Land-use planning requires a long time for formulation, and other associated instruments also take long procedures, for example, peri-urban pre-emption perimeters (*PAEN*), sensitive natural spaces (*ENS*) and protected agricultural areas (*ZAP*). Mobilising land management instruments is a challenge for integrated planning.

Concerning the transition of farming practices, the major constraints for building the links are the confrontation between stakeholders in a context of co-existing agri-food models (Gasselin et al., 2020). The study shows that

there were conflicts between land-use and food planning regarding the issue of market gardening. While market gardening is usually an issue addressed by food planning, land-use regulations may prohibit it by limiting building possibilities. Territories seem reluctant to use regulatory instruments (including land-use planning) so that not to engender tensions between agricultural actors. There is also an issue concerning the lack of legitimacy. Local stakeholders usually referred to the Planning Code and claimed that land-use planning is not entitled to manage farming practices. Thus, land interventions in farming practices may easily be prohibited. In this sense, an evolved land policy seems necessary if local authorities want to facilitate the transition (Calo et al., 2021). Despite that, complementarity and synergy can still be identified. Synergies are potential in the issue combining water management, natural resource preservation, land purchase, extensive farming and biodiversity management. This raises a broader question of policy integration in terms of complex environmental issues.

As to structuring local supply chains, the missing link derives from disconnected topics. Land-use and food planning projects contain various policy instruments associated with local supply chains. However, topics were not brought together. For example, land-use planning focuses on on-farm individual building rights, whereas food planning mainly aims at developing collective food facilities. This also reflects a lack of collaboration between the two planning processes. Some pioneering territories gave insights into how synergies could be made. For example, the metropolis Montpellier provided the idea of re-using heritage farms for collective food facilities, which integrates the issue of reducing land take from the individual on-farm building and facilitating farmers' development.

The study shows that French food planning projects generally focus on "local" rather than "agroecological." The three action fields receive different degrees of focus. French food planning projects present the trade-off made between steering the agroecological transition and engaging diverse stakeholders (especially those associated with farming) to generalise the reterritorialisation. However, favouring ecological practices, especially organic farming, was intentionally avoided from the political debate. This is for several reasons attached to the fact that the transition triggers high confrontation between local stakeholders. It means that the priority is on the inclusiveness of stakeholders at the cost of steering a transition towards ecological practices.

Coherence and synergies between land-use and food planning do not occur naturally but must be facilitated by the governance context. The next chapter (chapter 3) is dedicated to understanding what governance mechanisms affect the integration of RAA planning.

Chapter 3. WHAT GOVERNANCE MECHANISMS AFFECT THE INTEGRATED PLANNING?

INTRODUCTION

This chapter aims to understand the governance mechanisms that affect the planning of RAA, particularly through the integration of land-use and food planning procedures. The previous chapters (chapter 1 & 2) have shown the relations between instruments, the social use and the major hindrance that causes the missing links. This chapter will consolidate the understanding of the governance mechanisms that facilitate or prohibit the. This chapter is mainly based on semi-structured interviews with key stakeholders, especially from the answers of questions associated with governance models.

The chapter begins with a review of the international literature. The review helps identify key issues and facilitates situating the French situation in a larger context. It will then go on empirical studies on three aspects of governance as defined by the policy integration theories (general introduction 1.3): cross-sectoral planning, planning at different scales and the interaction between bottom-up and top-down processes. I conclude by synthesising the facilitators and inhibitors of the integrated planning policies on RAA.

State-of-the-art

Much research stresses that local food requires new governance mechanisms that involve many sectors, public and private stakeholders, and different geographical scales. I identified three governance mechanisms that are influential in improving coherence and creating synergies between land-use and food planning policies.

1) Cross-Sector Governance

While planning departments typically manage land-use planning, they do not always engage in food planning. Food planning can be directed by an individual food policy office or by departments of health, environment, economic development or social development (e.g., Sonnino et al., 2019; Mattioni et al., 2022). Even though a planning department may undertake food planning (e.g., Bedore, 2014), its interdisciplinary nature means that it is ultimately a cross-sector issue.

Several types of collaborative work exist between the two planning-associated departments. The communication of resources based on staff involvement in the policy formulation process is one form of collaboration. In Waterloo, Canada,

for instance, the health department built a strategic partnership with the planning department and hired land-use planners to formulate food planning. This approach resulted in increased knowledge transfer and the inclusion of a unique food system section in the regional plan (Wegener et al., 2012). In Montpellier, France, Michel & Soulard (2019) found that food planning actions were successfully integrated into the upstream design of local land-use plans. In turn, food planning initiatives did benefit from information collected within the land-use planning process.

Leveraging the policy instruments of land-use planning to achieve food planning goals is a further step in the collaboration. Although food planning is often non-statutory, it can be integrated into other local statutory policies such as land-use planning (Ilieva, 2017; Parsons et al., 2021). In food planning projects conducted in Toronto and San Francisco, clearly defined actions with timelines were communicated to the responsible departments, including the planning department. Outputs included a land inventory project implemented by staff from multiple departments, zoning code changes to support RAA, and the integration of the RAA issue into the land-use plan (Mansfield & Mendes, 2013). Thanks to inter-agency collaboration in Singapore, the rules for land-use orientation evolved to facilitate local food production following the approval of food planning (Diehl et al., 2020).

Institutional reform is another step in the collaborative work between the two planning policies to reinforce the implementation of RAA. In Singapore, a flexible process was created involving the coordination between the food agency, building construction authority, land authority, and urban redevelopment authority to increase the approval of commercial farms on non-agriculture land (Diehl et al., 2020).

2) Multi-Level and Trans-Local Governance: RAA at a City-Region Scale

Scale of food planning is an issue that has drawn interest from researchers mainly from two perspectives: the appropriate scale for food planning and the scale match between governance and action scale.

The first perspective of literature deals with the ideal scale of food planning in shaping “local” food systems. Large amounts of food planning studies consistently emphasise the need to plan RAA at a city-region scale, departing from the consideration of undertaking effective actions. From the perspective of the local food supply, the surrounding rural areas are important as “foodsheds” to feed cities (Kloppenburger et al., 1996; Carey, 2013; Mansfield & Mendes, 2013; Valley & Wittman, 2019). From a socio-economic outlook, this city-region perspective links urban food insecurity with problems faced by small farmers and rural distress; according to this outlook, urban policies should work as “drivers” of regional development issues (Moragues-Faus & Marsden, 2017).

In terms of human-nature relationships, linking rural and urban areas together can improve living environments (Morgan, 2015).

The “local” or “city-region” concept presents a planning challenge in defining the spatial boundary of planning and has triggered discussions regarding the appropriate scale for planning for RAA. The literature has no standard definition for the spatial boundary of the “local” or “city-region” food system. In practice, it can vary and be distances of 30 miles, 50 miles, or 100 miles; it can be a county, a sub-region, “typically 80–100 km across”, 400 miles, or a whole country or state (USA) according to different contexts (Morgan & Sonnino, 2010; Carey, 2013; Sonnino, 2016; Battersby & Watson, 2019). Besides, Sonnino (2016) and Mendes (2007) found that most food planning projects do not delimit the local food system; “rather, they describe it through the multiple benefits that it is expected to deliver” (Sonnino, 2016, p. 5)(Sonnino, 2016: p5).

Researchers also examined self-sufficiency levels and defined the foodshed (i.e., spatial boundaries of local food systems) using a geographical food provision scale (Wascher & Jeurissen, 2017; Zasada et al., 2019). However, locality does not only refer to a geographical space but also to social, cultural, and governmental issues (Buchan et al., 2015; Sonnino, 2016). Researchers claim city-region food system boundaries should also include the issues of social coherence and regional identity, jurisdictional boundaries, resource flows and data availability (Dubbeling et al., 2017). According to some scholars, there are no fixed boundaries, and different geographical delimitations may be appropriate for the different aspects of food planning (Kloppenburger et al., 1996; Sanz Sanz et al., 2018). Some researchers recommended innovative models of spatial scale of food planning, such as collaboration between metropolitans that are in proximity with foodsheds that overlap with each other (Calori et al., 2017; Wascher & Jeurissen, 2017). They claim that such collaboration can help share experiences, build cross-local foodshed activities and avoid competition.

The second perspective is related to the coherence between the governance scale and the spatial/action scale. Zasada et al. (2019), through examining theoretical foodsheds of some European metropolitan regions, suggested that a challenge to overcome for food planning is the mismatch between administrative boundaries and the foodshed (the ideal action scale). Such mismatch may lead to inefficiency of planning. An effective form of territorial governance has been to match the action scale of planning because it influences the participation of stakeholders, funding and resources, and power (McPhearson et al., 2014; Prové et al., 2019). For example, one study showed that when the governance scale was limited to urban municipalities, planners had difficulty in addressing the regional farmland issues outside of the municipal boundaries (Hayhurst et al., 2013). Likewise, when city-region scale actors do not have intervention power in infra-territories (e.g., municipalities),

they also risk inefficient implementation. Born and Purcell (2006) warned that it should be cautious to avoid “local trap” as local does not inherently bring benefits to what we imagine from environmental, social and economic perspectives. Battersby and Watson (2019) further criticised that the “city-region” food planning scale has fallen into a “local trap” in terms of guaranteeing food security in certain contexts; for example, municipal actors are more able to intervene in some issues (e.g., local food distribution) in food security rather than city-region scale actors.

The literature also shows that the administrative boundary is not blocked but can be broken with appropriate governance mechanisms. Mendes (2007), through the research on Vancouver’s food planning initiation, shows that the original regional scale food policy was rescaled at the municipal scale because members realised that “working outside the municipal structure, as it had done for over a decade, had not yielded the desired results” (p. 106). Mendes’ research also shows that the municipality worked as a “brokering institution” that worked with actors in different scales and mediated different scales’ activities.

A series of case studies in Greater London not only highlight the mismatch between intervention scales but also show how this mismatch was corrected by multi-level governance (Reynolds, 2009; Morgan & Sonnino, 2010; Parsons et al., 2021). Although London food planning was managed by the Greater London Authority (metropolitan scale), it encountered many implementation barriers because much of the implementation power was vested at the borough level (inferior local unit) (Morgan & Sonnino, 2010). As a solution, borough-level food policies were coordinated with metropolitan-scale food planning to facilitate implementation (Parsons et al., 2021). The above studies indicate how food planning can break the administrative boundary and be effective with multi-level governance.

3) Bottom-Up and Top-Down Co-Governance

Several studies demonstrate that top-down authority, including local politicians and civil servants, helps encourage coordination between food and land-use planning. For example, the chief executive can decide to integrate food into statutory land-use planning (Parsons et al., 2021). In another study, an elected official directed planning staff to integrate food planning-associated recommendations into the general land-use planning revision. The official’s efforts were essential, because the planning staff had initially refused to include food in the land-use planning revision as it was not viewed as a priority (Mcclintock et al., 2012). Nevertheless, local officials may likewise lack food awareness and hinder the integration of food in land-use planning (Wekerle, 2004). Moreover, while empowering local officials may facilitate integrated RAA

planning, electoral changes may dramatically change the political willingness and lead to inefficient planning (Mansfield & Mendes, 2013; Ilieva, 2017; Cretella, 2019; Zerbian & De Luis Romero, 2021; Parsons et al., 2021).

Bottom-up initiatives can compensate for the inefficiency of top-down planning. The literature on land-use planning emphasises that top-down planning approaches should evolve to include the interests of local private stakeholders, although it mainly highlights the need for participatory planning (James, 2014; Skog, 2018). By contrast, studies on food planning move away from the participatory planning discourse and emphasise the new governance model of Food Planning Councils (FPCs). FPCs create a space for different actors from both the public and private sectors to exchange (e.g., Campbell, 2004; Prové et al., 2019; Bassarab et al., 2019). The literature shows that FPCs can contribute to cross-sector and multi-level governance by raising political awareness and providing technical support. Firstly, FPCs can persuade planning officials to make land-use planning modifications that integrate food planning (Mcclintock et al., 2012; Vara-Sánchez et al., 2021). Secondly, FPCs usually include a diversity of actors, including experts, who can help identify issues and share them with policymakers (e.g., making zoning modifications for food, creating guidelines for the inclusion of food into city and landscape design) (Mcclintock et al., 2012; Shey & Belis, 2013; Camaioni et al., 2016; Sloane et al., 2019). FPCs sometimes assist with policy writing to compensate for the lack of knowledge in the official policymaking team (Wekerle, 2004; Blay-Palmer, 2009; Hamilton, 2011; Hodgson et al., 2011). Finally, FPCs can impact political awareness by linking land-use and food issues via the mobilisation of citizens (Mcclintock et al., 2012). Bottom-up and top-down approaches are mutually dependent; while civil society needs local government support (e.g., granting access to public space, subsidies), local governments need external resources and skills to fulfil the actions for food planning (Moragues-Faus & Morgan, 2015; Sadler et al., 2015; Kumnig, 2017; Cuy Castellanos et al., 2017; Duvernoy, 2018).

Although farmers are essential actors in RAA, numerous empirical studies have highlighted their lack of involvement in land-use and food planning projects (Mansfield & Mendes, 2013; James, 2014; Hebinck & Page, 2017; Skog, 2018; Jablonski et al., 2019; Perrin et al., 2020). Some cases show that farmers were ignored or only formally participated in food planning without understanding the process or being interested in it (Cretella, 2019; Jablonski et al., 2019). In Sydney, Australia, the farmland preservation strategy failed, because farmers protested when their requirements were not recognised (James, 2014). Magoni & Colucci (2017) gave evidence about the importance for farmers to achieve RAA. Local farmers' strong commitment to agriculture instead of selling their land for short-term profit helped ensure the success of an agricultural park project. Planning for RAA therefore has to be inclusive.

Collectively, these international studies show that RAA as a cross-cutting issue brings together diverse stakeholders from different administrative sectors, different levels of government and both public and private. Hence, there require innovative and integrated governance mechanisms for local strategies. The literature provides a framework to help understand the cross-cutting issues from different perspectives, which is applied in this research on land-use and food planning integration. While the existing literature on governance issues is mainly based on single case comparisons or presentations, the numerous and diverse territories included in this research provide an excellent database to achieve a generalisation of understanding.

In the following, I discuss the three cross-cutting perspectives of planning: cross-sectoral, cross-scale and public-private. I tried to understand the key issue and the local strategies and barriers in connecting the cross-cutting fields. I mobilised the policy integration study by Stead and Meijers (2009), which proposes five main categories of factors to understand why policy integration is (not) well achieved (see General Introduction I.3). Among these factors, I focus particularly on three categories: institutional/organisational factors (e.g., existence of a central overview and coordination capacity to achieve integrated issues); process, management and instrumental factors (practical issues, e.g., dialogue between policy domains); and behavioural, cultural and personal factors (e.g., historical relations of dealing cross-cutting issues). These three factors present what local territories can make efforts to institutional design (on the contrary, the two other factors, political and economic/financial factors, are rather determined and hard to be designed through local strategies).

3.1 ADDRESSING LOCAL AGRICULTURE IN CROSS-SECTORAL POLICIES

This sub-chapter aims to understand the governance mechanisms that affect RAA planning in terms of cross-sectoral collaboration. First, I present that RAA is a cross-sectoral issue in the French context and the key issues. Then I present the factors that facilitate or challenge cross-sectoral policy integration.

3.1.1 Land-use and food planning as cross-sectoral local policies

Addressing RAA in land-use and food planning is cross-sectoral in two dimensions. First, food and land-use planning policies are cross-sectoral per se. Achieving RAA-associated goals in food or land-use planning requires mobilising other sectors' competences. Second, concerning the topic and the expertise, the two planning policies are related to different expertise; land-use planning is associated with land and spatial management of the territory, whereas food planning is about agriculture and food. And, concerning the internal organisation, they are usually managed by different administrative departments.

1) Food and land-use planning as cross-sectoral issues and the complementarity in different aspects

Regarding the first dimension, RAA, as a new issue brought into the political stage by food planning, is based on themes of food and agriculture, which are not core competences of local public authorities.

Agriculture itself has been treated as a national and international issue, represented by the Common Agricultural Policy (CAP), national policies and also regional policies, even though limited in budgetary terms (Trouvé et al., 2007), at least until the new CAP for 2023-2027. Food brings wider themes than agriculture, such as health and accessibility. Food planning, with its goal to achieve multi-dimension goals in the environment, economy and social benefits, further touches larger domains. Therefore, it is a new issue based on different competences of local public authorities. As an interviewee from an inter-municipal body reported:

This (food planning) is not a public policy that is anchored on a competence of metropolis Montpellier of its own, but rather it brings into competition several competences that are allocated to the metropolis. So, it is in this capacity that it intervenes in the various public policies to work on the question of agriculture. Of course, there is a need to work on the whole land dimension, and as such to work also, if we look behind the scene, to work on the whole urbanisation aspect. [civil servant, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07]

Territories could link to different local policies and competences to operate a food planning. The existing local policies and competences can

provide legitimacy for public authorities to manage food planning. An inter-municipal body, for example, demonstrated the food planning-associated competences and instruments that public authorities could leverage (Figure 3. 1). Among them, land-use planning and associated instruments were included. This figure shows that land-use planning was leveraged for its spatial resource management in both urban and rural areas but also was linked to associated instruments such as peri-urban pre-emption perimeters (PAEN). In chapter 2, I have also discussed other associated aspects in which land-use planning contributes to achieving the food planning objectives.

Figure 3. 1. Food planning-associated competences and instruments of associated administrative sectors.



Note. Translated from inter-municipal body Mont Saint-Michel: <https://www.msm-normandie.fr/fr/prospective-grands-projets/pat>, accessed 2022/10/04.

Land-use planning as a traditional local policy has its regulatory function but also a dimension of territorial development. It is cross-sectoral and addresses issues in other sectors (e.g., transport and mobility, water management, ecological corridor and residence). Agriculture, however, was usually a neglected strand (Scheromm et al., 2019; Perrin et al., 2020). Some facts could prove this neglect. For example, professional planners in charge of land-use planning technical studies traditionally have not been trained in agricultural issues and still mainly integrate into their report a territorial assessment written separately by the Chamber of agriculture. And agricultural diagnosis in land-use planning is often limited to demographic data about ageing farmers but not with concrete proposals for the set-up of new farms.

Local interviewees with different profiles reported the various complementary perspectives in which food planning could contribute to

land-use planning. An interviewee working in a Chamber of Agriculture claimed that land-use planning usually underestimated agricultural issues. In this sense, food planning may have the potential to enrich the agricultural strand of land-use planning by bringing into RAA issues, as the interviewee argued:

We often find that strategic projects (PADDs) are a bit empty in terms of the agricultural component, where we have very general principles with no basis that is properly linked to the territory or to a diagnosis or to the challenges or opportunities that could emerge in the territory. So very often, the agricultural component of the land-use planning is the poor relation. [...] What we have seen is the desire to develop short supply chains in proximity, to develop local supply chains, etc. But all that, if it is not fed by an analysis, a diagnosis and a political will, is a bit meaningless. It is just wishful thinking. So, the advantage of food planning is that it deals exclusively with the agricultural aspect, and the idea would be, as XX (another colleague) said, that it would be interesting for this food planning to feed the agricultural aspect of a land-use planning. It would be a way of providing food for thought on agricultural activity, its development and its future. This is something that is rarely found on the territory. [staff, Chamber of Agriculture Ariège, collective meeting of rural cluster Ariège, Occitania, 2021/10/01]

Food planning may also affect the territorial orientation and further affect the land-use planning regulation by raising awareness of local policy decision makers. An interviewee reported the observation at the regional scale on what food planning could bring into land-use planning. Land-use planning has its legally binding force, but it depends on the local political commitment. Food planning, though not legally binding, has the potential to raise the awareness of local stakeholders through gathering stakeholders and launching local projects, for example, in issues of farmers' set-up and farmland preservation. So, food planning may increase political commitment to certain issues and facilitate the consolidation of land-use planning that favours RAA. The interviewee reported as such:

Food planning is a way of getting people to accept the idea that it will be necessary to plan and to put in place rules that are restrictive. Because if I managed to convince, for example, all the local elected officials in my inter-municipal body that it was important to be able to set up farmers, that in order to be able to set them up, land was needed; that in order to have land, we had to stop urban sprawl; and that in order to stop urban sprawl, at some point we had to go through the regulations; and that therefore the regulations had to be changed. [...] So if all this is put together to convince people that it is in the collective interest of the territory, the inhabitants and the elected officials to make it easier to settle down or preserve land, etc., to act legally, in particular through land-use planning, this is an argument that can make progress.[civil servant, the state's service of agricultural and food (DRAAF) of Occitania, 2021/06/24]

Moreover, some interviewees argued that food planning could implement goals defined in land-use planning, with its flexibility of mobilising different instruments to adapt to the real needs, as one of them concluded: *“it is complementary between the land-use planning which will be able to act on regulatory issues and the food planning which is more in project mode and can go towards other types of more partnership and non-regulatory actions”* [civil servant, inter-municipal body Ouest Aveyron, Occitania, 2021/06/15]. Land-use planning (inter-municipal land-use plans as well as master plans), although it has regulatory side, does not guarantee that activities will happen. Land-use planning regulations and orientations may not be implemented without local bodies’ constant support. As interviewees emphasised, the goals targeted by land-use planning should be achieved with long-term implementation. Food planning is a type of project-led policy which could facilitate achieving land-use planning goals through organising territorial stakeholders. It shows that “soft” rules (i.e., through food planning) could bring “hard” consequences and be more efficient (Mattila & Heinilä, 2022).

A2: ...we should not expect land-use planning to do everything. And once we have done a land-use plan, it does not actually stop, the project is not finished. Afterwards, we have to be able to implement [...] we have to continue to bring things to the actors who will afterwards work on the territory.[...]

A1: Exactly, there is a relativity of the regulation’s effectiveness, if it is not managed. I see for example the master plan (SCoT). I was extremely disappointed with the lack of inclusion of food issues in the master plan, whereas we were mature for that. But, as much as the elected officials who carried questions and food facilitated it, the elected officials who carried out land-use plans did not facilitate. We have a disjunction also, temporal, and then comes the moment when the master plan is done, well, it is done. In reality, it is interesting that today all the discussions go further than what is in the master plan. So, that is why I am talking about relativity, it means that we can go further if we actually have a capacity to lead and organise the territory, the inhabitants and the elected officials who then bring the project to life much more through possibly other tools than strict planning. [staff, planning agency of Caen, Normandy, 2021/04/22]

By referring to the issue of multifunctional land uses, an interviewee from a planning agency argued that food planning as a policy framed by the soft law could be more efficient and functional than land-use planning. She claimed that land-use planning defined land use in a mono-functional way and did not fit the actual need. In contrast, food planning implements projects in a flexible way:

Voluntary planning, because that is what food planning is, is much more efficient than regulatory planning, because it is more flexible, because it is more co-constructed and because, in essence, it is more adapted to uses. It is not theoretical on land, very framed, with a kind of juxtaposition of functions, because today we can see that the city is dying from the juxtaposition of functions and not from the multiplication of functions in the same space. This

complicates the regulations, the multifunctionality. [...]. Today we can see that if we ring the bell of no net land take, it is because we have consumed too many spaces in monofunctional use. So it is simpler at the planning level. [...] The problem is that we do not make the city with that. The city is about multifunctionality, multi-use. [staff, planning agency of Caen, Normandy, 2021/04/22]

The study in this thesis manuscript showed that some land-use plans were starting to make a transition by integrating multifunctionality in both urban and agricultural areas. Food planning also has the potential function to accelerate such a transition by introducing different types of multifunctional land use needs.

Overall, land-use and food planning policies are both cross-sectoral by nature and could facilitate each other in implementation. They both need to leverage other sectors. Food planning is a new type of policy which needs to base on other local policies. Land-use planning is one of the local policies that could facilitate achieving food planning goals through land use and spatial organisation perspectives. Other than the complementarity in instruments, land-use planning as a legal competence owned by the local authorities can reinforce the political legitimacy of food planning.

Land-use planning needs to integrate diverse territorial issues, among which agriculture and food have been neglected. Food planning, in turn, has the potential to consolidate land-use planning. Local interviewees with different profiles reported the diverse advantages that food planning could bring into land-use planning implementation: the flexible use of the instruments that adapt to the real needs (e.g., to achieve multifunctionality in land use); the concrete implementation of projects in engaging and organising stakeholders and the enrichment of agricultural issues and expertise; the awareness-raising of elected officials to increase the political commitment in agriculture and food issues. The collaboration between the two planning policies, however, is highly dependent on the internal organisations between different administrative sectors.

2) Planning policies managed in different administrative sectors: a challenge to institutional organisation

Regarding the second dimension, land-use and food planning are usually managed by different administrative sectors. Land-use planning and other associated services are longstanding existing services in territories at different scales. They are usually managed by the administrative departments specialised in residence, spatial planning and building permit applications. Food planning is not a responsibility of any public authorities and is in itself a new and cross-sectoral issue for public authorities. When public authorities started to develop

food planning, they usually embedded it into one of the existing administrative departments. They either set for food planning a new post or combined it with existing missions. And food planning project managers usually belonged to one of the internal administrative departments.

The department that food planning relies on refers to not only the corresponding responsible elected official's field and responsibility but also the professional skills of the project manager. So, it could represent, to a certain extent, the entry point and the focus of food planning, as well as the potential link food planning, could create with other policies. For example, this food planning project manager was in the department of environment and was mobilised in the ecological corridor issues in land-use planning formulation:

... during the elaboration of the land-use planning, I participated in some workshops on the preservation of the ecological corridors... [civil servant, municipality Albi, Occitania, 2021/09/27]

According to the affiliation of food planning project managers, I identified the following features of the food planning-associated administrative departments:

- For the municipality and inter-municipal bodies, there are no agricultural or food departments. In the studied cases, most food planning projects were integrated into administrative departments of environment and ecological transition or economic development (Figure 3. 2, a). In some cases, project managers also held other missions other than agri-food issues, including climate plan (PCAET), economic development and ecologic transition. In the other two cases, one started with the mission of a local health contract but then was transferred to a project manager specialised in food planning. Another one developed a cross-sectoral food team. It will be discussed later in this section. For the cases in which food planning project managers were also in charge of other missions, the advantage is that these people could easily integrate food planning with their existing missions, whereas the inconvenience is that they devote limited time and energy to food planning due to their various tasks.
- For regional parks (Figure 3. 2, b), most food planning projects were based on territorial development centres (e.g., *pôle de valorisation des ressources*). Such centres integrate issues of economy, local resources and sustainable transition. Others were based on economic development centres.
- For territorial clusters, situations are more diversified (Figure 3. 2, c). Usually, there are not numerous civil servants working in territorial clusters (for example, only six persons in Albigeois Bastide, four in Dieppe).

In half of the cases, there were no divided administrative departments, and a civil servant was in charge of food planning or with additional other missions (in most cases, including climate plan, local economic development, contractual policies and organising development board). In other cases, food planning projects were in departments of sustainable development, territorial development or planning and environment. And food planning project managers usually held other missions, including economic development, climate plan and local development.

- For the two departmental councils, one was managed by a project manager for agriculture and food issues under the sustainable development department. Another was a post dedicated to food planning in the territorial development department (Figure 3. 2, d).

Figure 3. 2. Proportion of administrative departments that food planning relied on in four levels of public authorities.



Note.

* One case was the service of "sustainable development" was categorised in "environment/ecological transition." One case was not a person in charge of climate-energy-food, without declaring a superior department. It was categorised as "environment/ecological transition."

** For two food planning at the scale of two inter-municipal bodies but were co-managed by inter-municipal bodies, the main inter-municipal bodies were taken into account.

The features of food planning administrative departments showed the diversified institutional settings in integrating this new planning policy into public authorities. Among all the case studies, it is worth noting that *no* project manager of food planning was also in charge of land-use planning issues or the planning office. In a few territories, land-use planning and food planning were managed under the same departments (e.g., sustainable development). This reinforced the cross-sectoral attributes of RAA in land-use and food planning.

The diversified internal departments that food planning depended on represent the multi-dimension of food planning. Among the departments, most cases were either in economic development or ecological transition. This might represent the entry point and the focus of food planning. As observed by an interviewee at the regional scale:

We have municipalities that start food planning from different angles. The food supply chains, the agricultural sector, of course. Sometimes the food planning comes from the climate plan (PCAET) reflections, [...] There are other territories that come from the water resources sector, from the drinking water sector with the desire to develop practices and supply chains that will enhance the value of agroecological practices, which will be more protective of the resource. So, we have a certain number of food plans that come from the environment axis. [staff, Chamber of Agriculture of the region of Normandy, 2021/06/11]

It should be noticed that food planning may evolve over time and change in targeted goals and working topics. Accordingly, the internal organisation (e.g., responsible administrative department) may change, as well as the project managers' expertise. This was the case of the inter-municipal body Haut Allier. The entry point of food planning was based on health, and the food planning project manager was also the responsible person for the local health contract (*contrat local de santé*). Afterwards, when the local authority realised that food planning had to extend to agriculture and supply chain issues, they noticed that the responsible person in the health profession was not capable of addressing the issue. Therefore, the local authority recruited a new project manager with an agricultural education background to manage food planning. This case shows the importance of the match between project managers' expertise and the issues that food planning aims to address. The interviewee reported as such:

*... within the framework of these first actions, and the fact that it was carried out by the local health contract (CLS, *contrat local de santé*) in my working time, there were aspects that I could not go into, i.e. the whole economic part, the link with the farmers, the link with the sectors and the economy [...] So, we realised that if we wished to work on all the objectives, which were quality food for all, including the most vulnerable population, quality food in collective canteens, awareness-raising for the public and the issues of the supply chain... we really had to work on these supply chain issues to be able to strengthen the other aspects. [...] So, at the beginning of 2021, we applied for subsidies in the*

framework of the “Call For Project” in January for the emergence of food planning, which enabled us to recruit XX [the project manager at present] [...] She has the capacity to have this global vision of food planning, to work on all the components ... which, in the framework of the local health contract, I could not do. [civil servant, inter-municipal body Haut Allier, Occitania, 2021/10/04]

This case also showed that food planning as a new type of local policy brings new requirements of responsibility to the public authority. Overall, the studied cases show that the responsibility of food planning and cross-sectoral collaboration was still under experimentation. Although the planning policies were thought to be cross-sectoral and to reach different sectors, in practice, land-use and food planning projects were not always brought together. When asked about the link between land-use and food planning, some interviewees claimed that there was little connection as they were different types of policies by nature. Usually, they claimed land-use planning was a policy to regulate land use through administrative procedure, whereas food planning was a policy that brings together actors and implements projects. Here are two typical statements:

Food planning, to my knowledge of the land-use planning documents, we do not have any consideration in the land-use planning, because we are on two different things, namely that the food planning is above all a mobilisation of actors, whereas the land-use planning is more a document which really aims to manage the land use. So these are two projects of different natures. [civil servant, inter-municipal body Quercy Rouergue et des Gorges de l'Aveyron, Occitania, 2021/06/28]

On land-use planning, no, not yet (the exchange). Because they (land-use planning) are really about urban planning issues, they are about administrative matters. They are on building permits, very precise requests; they are not at all in this aspect (food), no. [civil servant, inter-municipal body Caux Austreberthe, Normandy, 2021/05/26]

In synthesis, land-use and food planning policies are cross-sectoral issues to be addressed. They can complement each other. Land-use planning as a legal competence owned by the local authorities can reinforce the political legitimacy of food planning. In turn, with its characteristics of flexible implementation and project-led orientation, food planning could bring life into land-use planning implementation. Pinson (2005) has identified “urban project” as a policy instrument to achieve urban planning policy goals. I refer to this idea to understand food planning as an instrument to implement land-use planning. The significance is that using food planning actions to achieve territorial planning goals represents a turn from goal-led to process-led planning. Food planning is about building a platform, gathering resources and creating dialogues between local actors, therefore moving towards the planning goals.

This cross-sectoral issue raises specific challenges in local institutional organisations and policymaking. The study shows that land-use and food planning projects were managed by different administrative sectors and related to different expertise. Land-use planning has the established expertise related to spatial territorial planning. By contrast, food planning as a new type of policy with cross-sectoral attributes is based on different offices depending on local preferences and decisions. This is also the case, as demonstrated in international studies (e.g., Sonnino et al., 2019; Mattioni et al., 2022).

Some project managers did not work together and even did not notice the connection between land-use and food planning. This is contradictory to the food planning's requirement of multi-sectoral work. Cross-sectoral collaboration is needed but challenging.

When referring to the theory of policy integration, there are facilitators and inhibitors that affect cross-sectoral collaboration (Stead & Meijers, 2009; see also general introduction I.3). At the processual level, there is a necessity to find working methods to connect different planning policies and expertise. At the organisational level, the connection between two planning policies has to be made by cross-sectoral collaboration between people. From the cultural perspective, there could be a path dependency in the cross-sectoral work, i.e., a historically cross-sectoral working relationship may facilitate the application in this new field of RAA. The following sections will discuss these perspectives with evidence from studied cases.

3.1.2 Integrating land-use and food planning at different stages: methods and hindrances

Studied cases show that land-use and food planning as cross-sectoral policies do have the potential to be integrated and create synergies. According to the working procedures of local planning, I identified that interaction could be achieved in the territorial diagnosis and orientation definition stages. However, there is a gap between these stages and the implementation with regulations. I then identified possible ways that may facilitate more operational RAA planning based on cross-sectoral collaboration.

1) Sharing territorial information resources and co-construction of territorial orientations

The most frequent intersection between food and land-use planning was sharing resources and information. Numerous interviewees reported that food planning mobilised agricultural diagnosis of land-use planning since the data was relatively new or vice versa. Interviewees reported that this was based on financial consideration and was also a necessary procedure to create the cross-sectoral relationship based on the collaboration in data, information and

expertise. As interviewees reported:

No (the food planning did not have an extra diagnosis), in fact as the two are almost in the same timing, we used the agricultural diagnosis of the land-use planning. We save a little bit the costs. [civil servant, inter-municipal body Granville Terre et Mer, Normandy, 2021/01/26]

The objective is also to make intelligent expenditure, i.e. not to ask a consultancy firm to redo the data or to redo the diagnosis in terms of food and to reuse what has already done in the framework of the food planning, and if necessary, complete it. So, transversality is necessary first of all in terms of the transmission of data, information and expertise. [civil servant, inter-municipal body Lisieux Normandie, Normandy, 2021/04/12]

In one rural cluster, although land-use and food planning were not at the same scale, it was also the goal to collect data from land-use planning agricultural diagnoses for food planning. This was a good resource for food planning to understand the large territory.

In several territories, the specifications (cahier des charges) of land-use planning agricultural diagnoses were not only on land-use planning-associated issues but also issues related to food planning, e.g., short supply chain activities. Such information would facilitate the food planning formulation as basic information. In one emblematic territory (inter-municipal body Coutance Mer et Bocage) where land-use and food planning projects were at similar timing, the land-use planning agricultural diagnosis also integrated other requirements for the other local policies, including food planning. As the interviewee reported, this was their wish to integrate different policies and leverage the role of land-use planning as a territorial integrator:

... when we launch contracts or studies, we also try to work across departments to know what we are going to ask for. Can it also be used for other departments or other projects or other current or future initiatives? [...] it is also to have coherence between all the plans, programmes and procedures that we manage to try to have the most coherent approach possible. So upstream, when we can do it, we define it in the specifications, it is to open up so that it can bring elements of response for the other projects, which was the case for the food planning, the Chamber (of Agriculture) supplied a little more, in a way that was also targeted specifically at the food planning. [...] Land-use planning is a kind of an integrator, so it will incorporate the major elements of the food planning and climate plan (PCAET) strategies. [civil servant, inter-municipal body Coutances Mer et Bocage, Normandy, 2021/06/02]

This agricultural diagnosis, therefore, was different from regular ones as it integrated territorial food production capacity and short supply chain activities investigation. According to most interviewees, in general, land-use planning agricultural diagnosis included issues of farms' land use, farm buildings inventory and farmers' basic information. By contrast, in the

agricultural diagnosis of Coutances Mer et Bocage, two major types of information were further investigated. First, the inventory of farm sites was made by integrating information on the production types and the size. This information was to understand the food capacity of the territory by production types so as to identify local self-sufficiency level: *"we made this first approach so that the inhabitants and the elected officials have the knowledge of the share of production in the territory and what it corresponds to in terms of feeding a given population"* [staff, Chamber of Agriculture Centre Manche, Normandy, 2021/01/27]. Second, an investigation with a specific focus on farmers' involvement in the short supply chain activities was made. Farmers' distribution canals, difficulties encountered, expectations and needs were identified. This information provides evidence for local authorities to decide if the public intervention has to be made to facilitate farmers' activities.

In another territory, an agricultural diagnosis was being reworked for the lack of cross-sectoral integration in the first version. Interviewees claimed that the first agricultural diagnosis was estimated as missing important information with a missing link with other local projects. Therefore, with the new diagnosis, land-use and food planning project managers worked together to design the questionnaire to be distributed to farmers. As interviewees reported this cross-sectoral work would facilitate land-use planning to take into consideration of other local projects, so that to facilitate them. In this diagnosis process, food planning project leaders can also enrich the resources and the expertise that land-use planning usually not focuses on:

A1: (we can have an agricultural diagnosis) More comprehensive to have elements which allow that on the agricultural part, we can go further in the projects, to really go in the depth of the problem, that it is environmental, even the agricultural fallow lands. But you on your side to establish the zones behind.

A2: It is true that land-use planning is an urban planning document that links all the projects on the territory. All the projects we know about today must be included in this document, because if they are not registered in one way or another, they will be legally blocked. So that is why this report between all the departments is very important, because otherwise it would be a pity. [...] So we try to link the two (food and land-use planning) in a single questionnaire so that we do not send too many questionnaires to the farmers. [civil servants, inter-municipal body Pays d'Olmes, Occitania, 2021/10/01]

A step further to connect land-use and food planning after the sharing of diagnoses is the integration at the stage of defining policy goals and orientations. Document analysis (see chapter 1.1) has shown some examples in which land-use planning strategic project (PADD) integrated food planning directly in the text. When asked about the links between land-use and food planning, most interviewees claimed that at least such links could be created by the co-construction of land-use planning strategic projects in integrating food

planning themes. As interviewees reported: *“I do not know how we can translate that (food planning in land-use planning), but at least, I think about the strategic project (PADD), that is for sure, at the political level”* [civil servant, inter-municipal body Yvetôt Normandie, Normandy, 2021/05/27].

The interaction between land-use and food planning at the strategic stage is an opportunity to reinforce the political legitimacy of each other. Food planning topics and actions may facilitate a change of mentality of local elected officials when defining local orientations and justifying territorial strategies. As an interviewee claimed:

As soon as the food planning is based on the identification of the needs for the territory, the idea is to have an argumentation which makes it possible to justify - that is really the meaning we should to give to the strategic project (PADD) - to justify the need of the territory and to justify the project of the authority. It is exactly this articulation that we must seek. [civil servant, the state's local planning service (DDT), collective meeting of rural cluster Ariège, Occitania, 2021/10/01]

Such justification is not only in one direction but is mutual and depends on the local political agenda. In a certain context, food planning may be used to justify land-use planning strategy; in another context, it could be the opposite (e.g., elements of land-use planning strategic projects being used to justify food planning actions). Consequently, they reinforce the political legitimacy of each other. As an exemplary case, in one studied case of a rural cluster, the master plan (SCoT) and food planning had a close interaction. The two project managers worked closely on the two projects (the process of this collaborative work is presented in 3.1.3). As a result, the strategic plan of the master plan had a rich part about agricultural issues in engaging diverse RAA issues such as sustainable agriculture and diversification activities. Although this was a project of the master plan (SCoT), it gives insights into the potential work on inter-municipal land-use planning in the co-construction of territorial orientation. As an interviewee emphasised, this strong land-use and food planning collaboration guaranteed policy coherence as well as allowed providing justification to elected officials in implementing coherent actions:

We tried to do this, it is really a question of the internal coherence of public policies at the heart of the master plan's (SCoT) missions. It is also an argument vis-à-vis the elected officials, because it also allows us to justify certain proposals. We can tell them “yes, but this proposal comes from, it is consistent with the territory's food plan that has been defined and that we have been carrying for several years, so it would be difficult to see how we could take a provision that is contrary to it.” So, in fact it also allows us to justify these elements; it reinforces the public policies in the same direction. [civil servant, rural cluster Midi Quercy, Occitania, 2021/06/29]

Overall, the collaboration between food and land-use planning could be started

by sharing territorial resources in RAA-associated diagnosis. It is about making use of local financial resources but also about the exchange of cross-sectoral expertise. Food planning-associated issues could complement and enrich the land-use planning diagnosis; in the meantime, the diagnosis can contribute to food planning as a resource. Based on the territorial diagnosis, another stage of land-use and food planning collaboration is the definition of orientation.

Beyond producing more robust and comprehensive policy outputs, the collaboration also implies reinforcing the political legitimacy of engaging in agriculture and food issues in the local territory. This is particularly important for food planning, a newly established and weak institution with no clearly defined legal competences. Addressing food planning into land-use planning is significant for local bodies to implement food planning with political legitimacy.

2) A gap between diagnosis, orientations and regulations of RAA in land-use planning

Some interviewees pointed out that **the collaborative work between food and land-use planning associated departments in agricultural diagnosis and territorial orientations could not guarantee implementation**. As an interviewee reported:

It all depends on the operational degree that we want to give to the mission. That means that if we just share data, i.e. diagnoses, it is done. We can give fairly classic orientations, in the master plan (SCoT), we have “we must protect agricultural areas”, in all the land-use plans and master plans in France, you will see it. Afterwards, in the actual concrete implementation in practice, there is there is a gap between what we have written in a rather vague sentence and what concretely in practice are. [civil servant, rural cluster Pyrénées Comminges, Occitania, 2021/09/20]

In fact, most interviewees claimed that the connection between food and land-use planning was only created in the strategic project (PADD) but not regulations. For example, some interviewees reported that land-use planning had limited capacity in interpreting RAA-associated goals to regulations:

In the strategic project (PADD), there are many objectives that are very positive. But it is complicated afterwards to regulate that, in pure regulation; it is not possible. [civil servant, inter-municipal body Rodez, Occitania, 2021/06/16]

Food planning in relation to the way the rural cluster has put it forward is based on actions, but actions that are not necessarily translatable into a land-use planning document. That is why we will just look at the axes. [civil servant, inter-municipal body Aure Louron, Occitania, 2021/09/27]

Such statements revealed the limited implementation power of land-use

planning in RAA. Several interviewees claimed that there was a gap between land-use planning diagnosis, orientations and the regulations when addressing issues of RAA. An interviewee focusing on land-use planning criticised that although agricultural diagnosis included comprehensive and rich information and strategic plan could integrate ambitious orientations, the regulations remained general and reflected little information drawn from the diagnosis and the orientation:

*... (the land-use planning) can be summed up very simply: a lot of ideas, a lot of expectations, and few results. [...] in 2016, there was a fairly thorough agricultural diagnosis which was carried out, with questionnaires sent to all the farmers, meetings, presentations and restitution of the work in the field. [...] At the level of the strategic project (PADD), it was always an extremely ambitious issue: to preserve the possibilities of agricultural activities. And at the time of the regulation, therefore, at the time of the political choices, once we have said the things, that we decline them and that we implement them, in my opinion, **the minimum**. No particular consideration, no reflection on the municipal scale, of preferential location, the extensions of urbanisation according to the presence or not of farms or links, is the land that remains linked to the neighbouring farm, does that imply distances... No work on is the land organic or not. No work on soil quality. [civil servant, inter-municipal body Mont Saint-Michel, Normandy, 2021/05/17]*

From a technical and legal perspective, there is limited capacity for land-use planning to regulate issues of RAA. As interviewees claimed, the Planning Code has created a barrier to connecting agriculture and planning regulation by defining that land-use planning does not regulate producing activities. Therefore, there is a limited place for land-use planning to manage RAA. As claimed by an interviewee:

There is a disconnection between farmland management and land-use regulation. The Planning Code does not deal with agricultural practices and uses, it is written in article 2. This is a fundamental barrier. So, the organisation of agricultural practices, the farms management, is the responsibility of the agricultural world itself, which is made up of different complaints; sometimes they agree, sometimes they do not. [...] Land-use planning does not make it possible to implement this objective (shaping local food system). It is a hope without the tools and means behind it, at least in a planning document. [civil servant, inter-municipal body Quercy Rouergue et des Gorges de l'Aveyron, Occitania, 2021/06/28]

So, if the planning technical group and local decision makers wished to integrate RAA in land-use planning, **there was usually no toolbox in place, and it risked local opposition from stakeholders.** For example, in several cases, the Chambers of agriculture prohibit planning intervention on agriculture-associated issues by claiming that the Planning Code does not assign land-use planning to deal with farming practices. As an interviewee

reported:

On the land-use planning aspect, the (majority) farmers' unions are ULTRA vigilant that ... because land-use planning does not have to talk about agricultural culture, does not have to make a statement... It is in one of the first articles, which explicitly states that the land-use planning governs the use of land, EXCEPT for agricultural production. On this point, they are very, very vigilant, they say: "be careful, be careful what you say." [civil servant, inter-municipal body Saint-Lô, Normandy, 2021/01/26]

However, chapter 2 showed that some local authorities indeed experimented with innovative ways outside of the framework, for example, creating specific market gardening zones (see 2.2.3). Such innovation means playing with the legal rules, which may touch the legal boundary. Hence, it requires strong political commitment and technical support to achieve.

Overall, studied cases present a gap between RAA-associated diagnosis, orientations and regulations in land-use planning. The legal definition of land-use planning's capacity by the Planning Code sets a technical barrier for it to integrate RAA-associated issues. Moreover, land-use planning's regulatory intervention in RAA could be easily opposed by professional organisations who wish to defend their interests. This is further evidence of the disconnection between land-use and food planning. If cross-sectoral interaction is to be made, innovation to link the different sectors is needed.

3) Towards operational policies? Renewed methods to RAA planning

Chapter 2 shows intersectional action fields in which land-use and food planning projects could create synergies through policy instruments. Other than the integration of policy instruments, **the collaboration between food and land-use planning to create synergies at the operational stage might be able to be achieved from methods with cross-sectoral planning making.** This also refers to a transition of planning policies to be operational.

Regarding land-use planning, interviewees revealed a common problem: its ambitions could not be implemented. Some interviewees in charge of ongoing land-use planning reported that the objective was to make the land-use planning implementable and operational. The method would be combining the projects with a guarantee to be achieved in the next several years instead of embedding all the territorial ambitions into the orientations.

We will try to prioritise the actions, perhaps the most priority actions that are almost certain to be carried out in the next five years, that will perhaps be really registered in the strategic project (PADD). And the rest we will keep maybe less, we will not include everything that will happen in the next 20 years. [...] There are really lots of ideas and lots of projects. So, prioritising is important and then we had to start from all that to make a more operational land-use planning.

[civil servant, inter-municipal body Pays d'Olmes, Occitania, 2021/10/01]

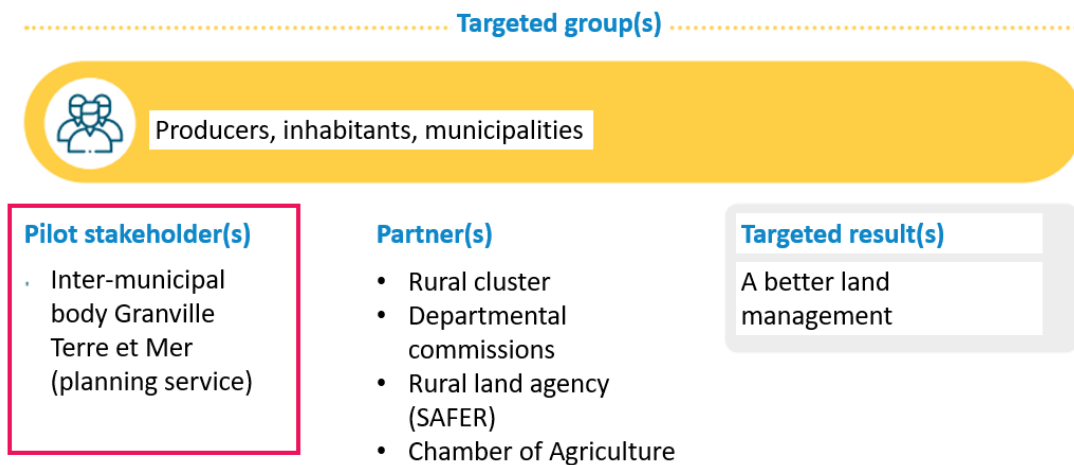
In such a sense, integrating food planning as the combination of local projects would bring new essence to land-use planning strategic projects (*PADD*). Food planning could justify the need for local projects and be integrated into land-use planning. In the meantime, food planning could follow the land-use planning orientations to implement local projects, thus reinforcing the operational aspect of land-use planning.

To achieve so, some interviewees referred to adapting urban-based land-use planning instruments for RAA-associated issues to integrate land-use and food planning. For example, a planning agency proposed that local authorities formulate an "agricultural plan" (*plan local d'agriculture*) to define agriculture-associated pre-condition for land-use planning. The interviewee referred to the Local Habitat Plan (*PLH, Programme Local de l'Habitat*) and land-use planning. Similar to the Local Habitat Plan as a pre-condition for land-use planning decision-making, RAA-associated issues could be planned and integrated into land-use planning. This kind of reflection presents not only the innovative thinking from local actors but also the possibility of reform of the planning instruments. The interviewee reported as such:

We see gradually , and I think that one day this food issue will become an obligation in the preparation of land-use planning, just as it becomes now obligatory to draw up a Local Habitat Programme (PLH) for certain territories. Perhaps a food plan or a local agricultural plan will also become compulsory in some areas. [...] I think that if we want to go further, we will have to invent or implement tools that we use today in the urban sector, in these more agricultural sectors. But for the moment this is not on the agenda at all. [staff, planning agency of Caen, Normandy, 2021/04/22]

The other way around, food planning could also integrate tasks that should be accomplished by land-use planning or in general planning offices. By establishing action lists with different sectors of the public authority, food planning could clearly define responsible departments (as well as external stakeholders) in action, which could reinforce operational efficiency. Such responsibility distribution could reinforce the political commitment to cross-sectoral policy implementation. Figure 3. 3 shows a food planning action list with distributed responsibilities to stakeholders. In terms of the actions: protecting agricultural and natural spaces by land-use planning and reducing land for non-agricultural projects, the planning office was attributed the responsibility of piloting the mission. Such a formal attribution of accountability can reinforce the future implementation of actions.

Figure 3. 3. Example of distributing responsible department(s) in implementing food planning actions.



Note. Translated from Granville Terre et Mer food planning document, 2022.

In synthesis, the study provides evidence that land-use and food planning could share territorial information resources and co-construct the territorial orientations through a collaborative process. This process is important for the share of expertise and resources. Food planning could benefit the land-use planning territorial resources and economise the cost, which is important for a non-compulsory local mission. By integrating food planning, land-use planning has the possibility to integrate better RAA, which has long been a neglected element in the mainstream planning field. Also, the integration with legally-binding planning (i.e., land-use planning) can reinforce the political legitimacy of food planning, a newly established local policy without stable institutions.

The study reveals a gap between agricultural diagnosis, orientations and the implementation of land-use planning because of the lack of legal instruments and political commitment. It shows that land-use planning as a “hard” law has its “soft” side. The orientations defined in the strategic projects (*PADD*), though they have legal status, can not guarantee to be implemented. In such a sense, food planning has the potential to be an implementation tool to achieve land-use planning goals. The collaboration can be achieved from different dimensions, such as co-defining projects and ambitions, as well as complementary instruments (as discussed in chapter 2). In this sense, food planning as a “soft” law could have “hard” consequences through implementing projects (Mattila & Heinilä, 2022). That is exactly the complementarity between land-use planning and food planning.

Many interviewees claimed that land-use planning has limited capacity to intervene in agriculture in the legal regulations (i.e., land-use planning is not entitled to deal with agricultural practices). This is further proof of the disconnection between agriculture and land-use planning. It is inspiring to

notice that innovative local actions were taking place. Some territories experimented with instruments (see chapter 2); some local stakeholders were starting to think about mobilising urban-based instruments to RAA-associated issues (e.g., designing a local food or agricultural plan as a pre-condition for land-use planning by referring to the Local Habitat Programme). It further raises a question in terms of the land-use and food planning connections: should the connections be developed further to agricultural diagnosis or, in a more ambitious way, expanded to a real shared territorial strategy? If yes, how? More than locally envisaged strategies and innovative instruments, it is worth being taken into consideration at the legislative level.

It is also worth noting that land-use planning is specialised in its spatial organisation of territorial resources, whereas there was no food planning with spatialised output among all the studied case. This point might be a barrier to coordinating the two planning policies at the regulation stage. First, it adds difficulty in interpreting food planning into land-use planning regulations, as extra work has to be done at the technical level. Second, the fact that land-use planning may implement food planning in a legally-binding way may make local stakeholders reluctant to do so.

Although possible interactions in terms of working methods between land-use and food planning are identified, such interaction can only be achieved based on well-organised internal cross-sectoral collaboration between administrative departments. This is discussed in the following section.

3.1.3 Cross-sectoral collaboration based on internal organisations: forms, drivers and features

Since food and land-use planning policies are cross-sectoral, there requires close cross-sectoral collaboration. Cross-sectoral collaboration was hindered because project managers were not connected or familiar with each other's issues. For example, many interviewees claimed that land-use planning project managers were neither engaged in food planning nor familiar with what happened in food planning, for example:

I find it difficult to see (the link between land-use and food planning), because I do not know enough about food planning yet. I am not aware of all the actions that can be taken. But land-use planning is still quite limited in scope: we regulate the use of land and property. We do not really go beyond that. [...] But again, maybe it is because I do not know the food planning and the actions that can be taken from it. [civil servant working on land-use planning, inter-municipal body Seine Eure, Normandy, 2021/06/09]

The collaboration is related to public authorities' internal organisation. Due to the timing issues, land-use and food planning interaction was still in progress. Among studied cases, some showed closer interaction between land-use

planning (including land-use plans and master plans) and food planning projects. Though the master plan (SCoT) is not equal to land-use planning, these cases give some insights into the internal organisation's impact on the interaction between land-use and food planning. **These exemplary territories can be identified from two categories: 1) territories with well-equipped authorities and 2) rural territories with small administrative teams.**

Among the first category in which authorities have well-equipped administrative teams, an emblematic case is the metropolis Montpellier, in which a close interaction between the master plan (SCoT) and food planning occurred. The elements of agroecology and food were analysed in the master plan (SCoT) as criteria for the decision of master plan (see 2.1). In this urban territory, an internal cross-sectoral food working team was organised. The food planning was managed by a cross-sectoral organisation instead of an individual team. A project manager was in charge of food planning coordination, while the responsibilities were distributed in other associated departments (e.g., economic development, environment, transport, planning) (Figure 3. 4). As the interviewee introduced:

It is a cross-sectoral public policy. This has resulted in an organisation based on several departments and several internal directorates. In terms of the organisation of the offices, we are not grouped together in the same office, but we do have people who deal with the economic centre, with coordination, and then with the economic aspects and the sectors which relate to agriculture and food; within the development department; with everything which relates to planning and regional development; but also within the water and sanitation department, everything which relates to the protection of resources and agroecological practices essentially. [civil servant, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07]

Land use was also an issue identified in this territory as essential to achieving food planning goals. In the planning department (*department of territorial sustainable development and planning*), an "energetic and ecological department" was created with a unit specialised in agroecology and food. The project manager of this unit was in charge of the topic of land and was responsible for bringing issues of agroecology and food into land-use planning and land development projects. It is worth noting that land use itself is also a cross-sectoral issue. So, the project manager of the agroecology and food unit worked with different departments (e.g., on the themes of water and irrigation) to integrate agroecological elements into planning:

I am in charge of the land component for the food planning. Land preservation is where we have to bring the expertise of agroecological and food practices to colleagues who are in charge of planning documents, and then do the same thing with colleagues who are in charge of development operations. [...] I provided the (planning) team with this insight and made the link with the people

who work in different departments on the food planning to ensure consistency between the two. So I exchanged a lot with the person who was before XX (the food planning manager), but also with the people who work in the water department. [civil servant, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07]

Figure 3. 4. Internal organisation of food planning in Metropolis Montpellier.



*Note.*Based on the interview with civil servants and the food planning document.

The case of the metropolis Montpellier's formalised internal organisation shows how an organised team facilitated cross-sectoral collaboration. Especially a person with expertise in issues of land and agroecology guaranteed the link between food planning and land-use planning. The metropolis was developing land-use planning, and the same procedure would be applied (integrating food into land-use planning). It is also worth noting that in this territory, there is a tradition of cross-sectoral collaborations between agriculture and planning divisions in the local state services (Jarrige et al., 2006). So, a logic of path dependency may have facilitated the well-established organisations on the cross-sectoral food team.

Similarly, in another territory, an interviewee stated that this internal cross-sectoral organisation for food planning was organised in the form of creating an individual post for a food planning project manager that does not attach to any sectoral department:

So, for example, the Seine-Maritime department council launched a food planning project this year, which is on a different scale, which has determined a person who is completely in charge, who has a cross-sectoral mission, who is directly attached to the director general and who must intervene in all the departments. The department's food planning is not linked to a particular service. So we have a cross-sectoral approach like that. [staff, Chamber of Agriculture of the region of Normandy, 2021/06/11]

The above cases were both based on authorities with well-equipped teams. The urban inter-municipal body and departmental council are rich in human resources, which enabled innovative institutional organisations and the set of posts for project managers with particular expertise. Other two investigated cases may confirm that. The metropolis Rouen had a civil servant in charge of agriculture in land-use planning, which was not the case in most other territories. The urban cluster of Caen relied on an urban planning agency, in which agents worked to bring innovation into the planning procedures. The planning agency not only provides expertise but also guarantees support to the local authorities for long-run collective learning. In this urban planning agency, an agent had been working on integrating agricultural issues into mainstream planning for a long time before food planning. The agency had proposed an “agricultural plan” as a pre-condition for land-use planning. Such innovative trail facilitated the cross-sectoral thinking of planning by the raised awareness of elected officials, as an interviewee reported:

In our roles as a planning agency, let's say of all planning agencies, we have a sort of discoverer of innovations. So, a few years ago, I produced a very simple benchmark document to give Caen la Mer a box of ideas on these agricultural and food issues. We say “So look, here's what's going on, particularly I took a good look at the communities associated with FRUGAL (research project), because we have more data on these communities. So with a quick benchmark, to say: “here you have plenty of things happening on agricultural and food issues in other cities that have made a local agriculture plan” [...] we have failed this attempt which would have been to make a local agriculture plan prior to the land-use planning, notably to put people around the table [...] (but) it is obvious that agricultural and food issues will be integrated into land-use planning [...] because we have a history on the issue. [staff, planning agency of Caen, Normandy, 2021/04/22]

The second category of exemplary cases is close cross-sectoral collaboration in rural territories with small technical groups. The rural cluster Midi Quercy showed an intimate collaboration between the master plan (SCoT) and food planning. In this emblematic territory, the food planning and master plan project managers worked together on the issue of agriculture when the master plan started working on this theme. The food planning project leader facilitated enriching the design of policies in the master plan, as reported by an interviewee:

In the strategic project (PADD) phase, work was done. There was a specific axis of objectives in support of sustainable agriculture. [...] so I worked with my colleague XX (food planning project manager), who, on the first version of the document, completed giving an opinion so that agriculture was integrated into its various objectives in coherence with the food planning. [...] The same work that was done in the strategic project phase and in the guidelines and objectives document (DOO): the working document sent by the planning enterprise that specifies the project, including the agricultural part, was also re-read by my

colleague (food planning project manager). And she made a lot of proposals to amend this agricultural part, and therefore written proposals. [civil servant, rural cluster Midi Quercy, Occitania, 2021/06/29]

Similarly, in another small and rural territory, the responsible civil servant for the economic development department reported that the communication between food planning and land-use planning was fluid as both projects were in the same department. Therefore, there was frequent communication, and as the department leader, she knew both local policy projects well. According to this civil servant, *“I imagine that if I did not have urbanism and habitat (in the department that I charge), it would be a bit different”* [civil servant, inter-municipal body Granville Terre et Mer, Normandy, 2021/01/26].

Some food planning projects were not at the same scale of land-use planning, i.e., food planning managed by a territorial cluster, regional park or departmental council. In such cases, inferior territories may have a correspondent person to coordinate the projects. According to interviewees, such a correspondent was in the economic development department in most cases. In some investigated cases, the land-use planning project managers were correspondent. This was often because, in some small territories where the technical team has a small number of civil servants, one person might be in charge of multi-missions. In one investigated case, the regional park managed a food planning project. The project manager of land-use planning at a rural inter-municipal territory was also the project manager of economic development and was the inter-municipal correspondent of the food planning. He participated in regional park food planning meetings. During the interview, the distinguished point was that this project manager had both information on food planning-associated projects and land-use planning. That being said, no concrete link between land-use planning at the inter-municipal scale and food planning at the regional park scale has been created for his position. However, it indicated a potential collaboration because at least there was a fluent informational connection.

The above description shows that in small territories (or large rural territories with small technical groups), cross-sectoral relations might be created naturally, as responsible persons knew each other well, even carrying multi-missions. Small can be “beautiful” and more adapted to integrated planning perspective with its flexibility and agility. The disadvantage is the lack of human resources. So, food planning might not be enough invested, and some expertise (e.g., agriculture and food) might be missing.

Other than direct connections between land-use and food planning projects, potential collaboration could be created between two offices based on their expertise and resources of the territory. In the rural cluster of Pays d’Armagnac, where a food planning project was developed, there had

no responsibility for any land-use planning projects but had an office in charge of examining building permit requests. Interviewees, one in charge of food planning and another one in charge of building permit examination, during the interview process, realised that regular communication between the responsible persons would facilitate gaining knowledge and facilitating RAA implementation. They raised the possibility of collaborating by establishing an informal working routine rather than formal collaboration procedures. As one interviewee stated:

There is a very practical side, but because we have not yet started to think about this and especially to collaborate, XX (planning service responsible person) sees a lot of agricultural files that could be linked to food planning. For example, there are projects that she deals with that I do not know about, and vice versa [...] She can alert me to certain points of regulation linked to projects that I am accompanying. And on the other hand, she could also redirect some of the projects to food planning because it is consistent with our strategy. If we do not know what is going on, we will finally know, but we can save a lot of time and we could help the project leaders and also put them in touch with others. [civil servant, rural cluster Pays d'Armagnac, Occitania, 2021/06/17]

Despite the various cross-sectoral collaborations that could occur and facilitate RAA through land-use and food planning, it has to be based on elected officials' commitments. Some project managers reported that efforts were being made to involve elected officials in charge of different themes. This process would guarantee a real cross-sectoral collaboration. For some territories, although civil servants were willing to integrate two planning policies, there lacked elected officials' willingness and motivation, which hindered the progress. For example, an interviewee revealed this barrier and claimed that an internal organisation and the process of raising awareness of elected officials were essential:

I think there are two frameworks. The first is the framework of internal organisation, the way in which we organise all this so that the elected officials can intellectually find their way around all the fields. Then there's also the educational aspect, to tell elected officials, 'wait, see, we saw this land-use planning; there's linear urbanisation ... etc., and there there is a farmer (who wants to set up) ... concretely, how can he do it? [master plan project manager, rural cluster Pyrénées Comminges, Occitania, 2021/09/20]

In synthesis, the studied cases show that the lack of cross-sectoral communication between land-use and food planning project managers hindered collaboration. Some territories were pioneers in creating synergies between the two planning policies through a well-established internal team. One type of territory was based on the urban context and had relatively rich human resources. They could be equipped with specialised members (civil servants or external experts) in charge of linking agriculture and food issues and land-use planning. In the exemplary case of Metropolis Montpellier, a

formalised internal cross-sectoral team working on food planning was settled, which facilitated the coordination between land-use and food planning, as well as other policies. Another type of territory that exercised internal collaboration was small-scale territories with relatively small technical groups. There, project managers were familiar with each other and co-worked on the RAA issue in land-use and food planning projects. Although they did not have a formalised institutional organisation of an internal working team, the informal, spontaneous routines they established to collaborate between colleagues facilitated the policy integration. Finally, elected officials' willingness is essential in creating cross-sectoral collaboration.

Other than the institutional organisations, studied cases demonstrate that cultural factors matter. When territories have historical collaboration between sectors, the adaptation to a cross-sectoral collaboration for RAA tends to occur more naturally. This illustrates a path dependency in integrated planning making.

The cross-sector collaboration is based on both collaborations between different project managers and a good knowledge of food and land-use planning connection (as identified in chapters 2 and 3.1.2). As some interviewees claimed, although they (land-use and food planning project managers) worked together, they could hardly find connections between two planning policies. A technical guide for territories regarding the collaborative work could be useful.

In most interviews, I invited both responsible civil servants for food and land-use planning. I identified that in some territories, it was during the interview that they realised potential links between land-use planning and food planning. A potential reason is that they did not realise that there were potential connections. The example of Pays d'Armagnac, in which interviewees realised during the interview that building permits and food planning offices could complement each other's information, shows that potential links could be discovered during internal civil servants' exchange and communication. This also gives insights into the role of regional scale stakeholders (e.g., food planning network), research groups and other stakeholders; there might be necessary to introduce knowledge to local territories.

3.1.4 The issue of timing as a barrier of land-use and food planning integration: towards a locally embedded policy?

Despite the cross-sectoral collaboration between internal technical teams or elected officials, interviewees usually claimed that a barrier between land-use planning and food planning interaction was the different timing. In the two territories where I identified close interaction between land-use and food

planning projects, they were both based on good timing. Both projects were launched/revised at a similar period. According to one interviewee, this facilitated the integrated work:

... a new executive arrived in 2014 with a vice-president in charge of agro-ecology and food. [...] In 2014, the metropolis had also begun the revision of the master plan (SCoT) [...] So, we began to work on these major planning documents at a time when this (food) public policy was affirmed as one of the priorities [...] Thanks to this double timetable, the agroecological food issue was very strongly taken into account in these approaches. In other words, the same timetable allowed us to make the topics of master plan and food planning consistent [...] It means we tried to work precisely to respond to the political order, which was the affirmation of a new public policy, which was still emerging at the time and was not very widespread. The planning documents, there is a slightly older regulatory framework, but it is moving. So it was how to make these two planning approaches progress together. [civil servant, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07]

In other territories, it was more common that the two planning projects did not progress at the same time, which hindered the collaboration. In some situations, since land-use planning had been approved before the elaboration of food planning, the food planning would base on the land-use planning, but no further connection would be made. In addition, even though the two planning projects were launched at a similar moment in some cases, the future procedures are not matched in timing. In other words, while land-use planning takes years to be designed and approved, food planning generally operates rapidly to have action plans to be put into implementation. Interviewees reported that the formulation and revision of land-use planning took a long time, whereas food planning was a project that needed to formulate and be implemented quickly, which led to the difficulty of the collaboration. As an interviewee claimed:

Indeed, there may be links (of food planning) with the land-use planning, which is a strategic document that is extremely long in administrative terms to set up. This is a very long, very complicated thing. [...] It is a general framework document on the territory's overall land policy, and the agricultural component is just a sub-layer of an overall urban policy. So I would like to say that by the time the land-use planning is updated and published, the food planning will have been in operation for a long time. [civil servant, inter-municipal body Caux Austreberthe, Normandy, 2021/05/26]

Another interviewee confirmed this claim. In this territory, food and land-use planning agricultural diagnosis already had a joint work (see 3.1.2). However, the interviewee claimed that food planning was implemented rapidly, whereas land-use planning took a long time. Therefore, food planning was able to be integrated into land-use planning strategic orientations but lacked gaining ambitions from what is designed in land-use planning:

My only regret is that we did not even find the time. Food planning goes very fast, very quickly. That is to say, we did the agricultural diagnosis last year and now we are finalising the food planning. We have been awarded the label. We are in the process of starting the actions. By contrast, with a land-use plan, we know that it takes much longer. So, we cannot quite put... we can put the agricultural orientations of the land-use planning into a concrete action plan of the food planning if we start at the same time. It is better to do a food plan after a land-use plan, if we really want to take that into consideration. [civil servant, inter-municipal body Coutances Mer et Bocage, Normandy, 2021/06/02]

The above statements indicate that if we treat food planning as a short-term programme, the practical processual mismatch between two planning policies would always be a hindrance. The studied cases show that things were evolving. In a few territories in which food planning had started early and was launching the second version, there was a reflection on the transition of the term territorial food “project” to “policy.” According to them, “policy” implied a long-term locally embedded policy with implementation, whereas “project” referred only to the short-term proposition of local actions. Such transition in discourses signifies a transition of mentality and the long-term political commitment in RAA issues, which may facilitate the interaction between land-use planning and food planning despite the timing issues.

Our elected official is very keen to emphasis that agroecological and food policy is not just a “territorial food project”; it is a long-term public policy. It has this labelling, but it is not just a project, it is over the longer term, it is a public policy. [civil servant, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07]

We started by talking about territorial food “projects.” And now, the word is evolving because a “project” is when we are in the prospective. We, today on our territory, speak of a territorial food “policy.” The word “project” is no longer really adapted because we are no longer in the project but in the action. [civil servant, rural cluster Haut Languedoc et Vignoble, Occitania, 2021/09/22]

Although the above statements were only symbolic change in discourse, it implies an unignorable reinforcement of local political commitment. It also indicates a potential to transform food planning, which is a three- or five-year programme, into a local policy in the long run. Such a transformation may facilitate the long-term collaboration between land-use and food planning. The case of Montpellier metropolis has demonstrated an example: food planning was integrated with master plan (SCoT) starting from 2014 and now (in 2021, the time of the interview) was in working to be integrated with land-use planning.

Overall, the research shows that the different timing was a practical hindrance between land-use and food planning most of the time. Such a hindrance is there not only when two projects are not launched at the same period but also

because land-use planning lasts a long time in formation compared to food planning which enters rapidly in the implementation phase. The two food planning projects with relatively long histories were in a discourse's transition from "project" to "policy", implying a strengthened political commitment to RAA issues in the territory, which may facilitate the land-use and food planning connection. Concretely, the research indicates that an adapted planning modification process might be necessary. For example, the process for land-use planning modification could be simplified if the associated project has been validated in the framework of food planning. Similarly, food planning could be updated if land-use planning-defined territorial orientation has evolved.

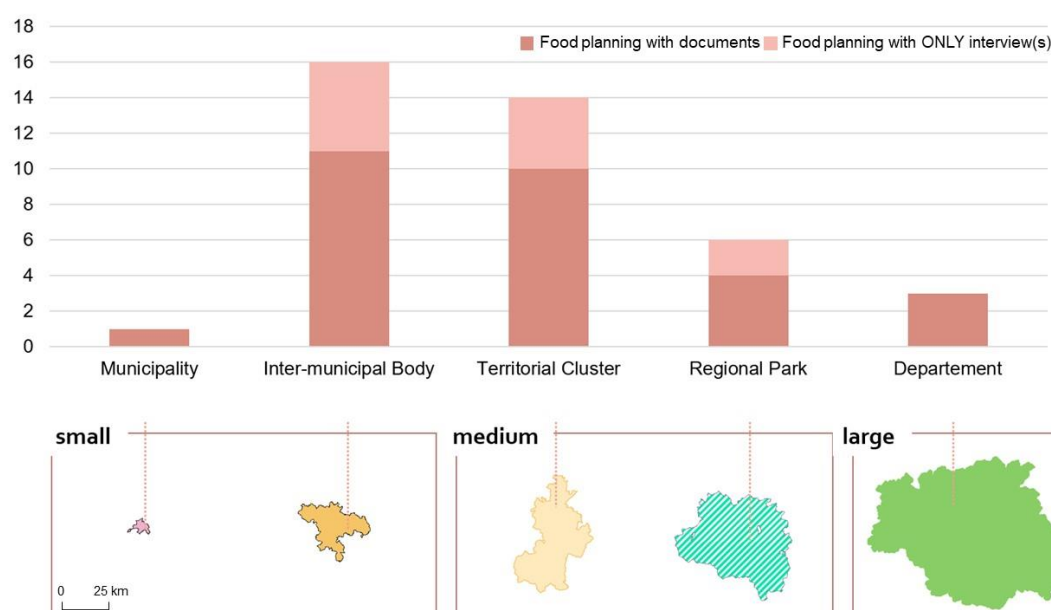
This sub-chapter 3.1 aimed to understand the cross-sectoral governance mechanisms that affect the planning of RAA. The results show that cross-sectoral collaboration is at stake for the complementary. Food planning can introduce RAA-associated expertise in land-use planning and facilitate achieving its goals by mobilising flexible instruments. In turn, land-use planning can reinforce the political legitimacy of food planning. Empirical studies showed that collaborative and interactive work could occur during the stages of diagnosis and orientation definition, facilitating more integrated planning. historical cross-sectoral relations and political awareness both affect collaboration. Some innovative institutional organisations emerged in different forms, showing that cross-sectoral collaboration can be designed. Some territories organised formalised internal cross-sectoral teams with defined responsibilities, while others created internal collaborative work based on the informal, spontaneous routines established between project managers. The different timing and procedures are a barrier to planning integration, which indicates a necessity of long-term political commitment to RAA.

The cross-sectoral collaboration is not only an internal issue, as food planning is not always at the same scale as land-use planning. In the next sub-chapter (3.2), I will discuss food planning at different scales and the scales' effect on planning.

3.2 WHAT PLANNING SCALE FOR THE LOCAL AGRICULTURE? A QUESTION OF CROSS-SCALE GOVERNANCE

This sub-chapter focuses on issues of planning at different scales. Investigated cases included food planning at diverse spatial scales: municipality (*commune*) ($n=1$), inter-municipal body (*EPCI*) ($n=16$), two neighbouring inter-municipal bodies ($n=2$), department ($n=3$), territorial cluster⁷⁷ (*PETR*, *Pays*, *Pôle Métropolitain*) ($n=12$), regional park (*Parc Naturel Régional*) ($n=5$) and one regional park plus one rural cluster ($n=1$). Figure 3. 5 shows food planning case studies by scales. These food planning projects further have complicated spatial relations such as adjacent, overlap or contain (Figure 3. 6).

Figure 3. 5. Dataset of food planning case studies by scale.



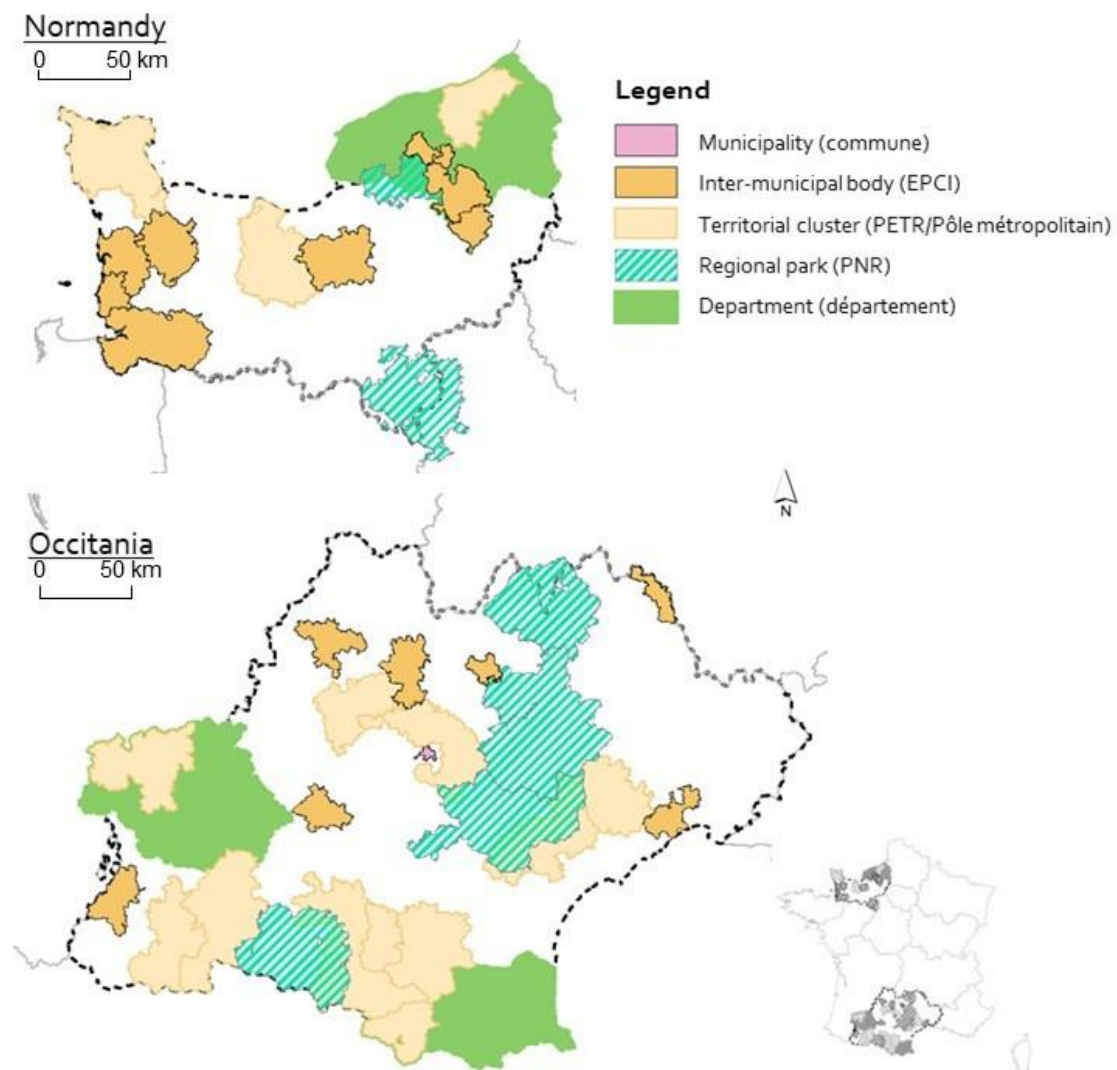
Note. (1) Food planning projects at the scale of two inter-municipal bodies were categorised as "rural clusters" considering the spatial scale. They were both at the scale of the ancient rural cluster. (2) Food planning at the scale of a regional park plus one rural cluster was categorised as a "regional park." (3) The studied cases include three project leaders that are not public institutions (non-government organisation, cooperative and an association).

To understand governance mechanisms to facilitate RAA planning, it is necessary to understand **how these food planning projects, at different scales and with spatial relations with each other, function.** First, does food

⁷⁷ The territorial clusters apply to urban or rural areas (in the studied cases, mainly in rural areas). They are composed of a group of inter-municipal bodies. The common major objective of these clusters is reinforcing the collaboration between local authorities (municipalities, inter-municipal bodies).

planning at different scales address RAA differently? If so, what are the differences? Here the links between food and land-use planning are a question, as when the two planning projects are not at the same scale of governance, it is not simply a question of cross-sector but also cross-scale relation. Second, what is the interdependence of the different authorities with spatial relations (in proximity/ adjacent, overlap or contain)? Do they work with each other? And how?

Figure 3. 6. Studied food planning projects by spatial scale.



The literature review (see chapter 3 introduction) shows that there is already research on the complex issue of food planning scale from both spatial and governance scale perspectives. The literature has emphasised the importance of a match between spatial and governance scales, implicating a cross-scale governance mechanism behind it. Yet, studies that explore different scales of food planning have not been made. Existing studies mainly focus on municipalities' food planning strategies and the role of municipalities, among

which most studied cases are cities (e.g., Cretella & Buenger, 2016; Sibbling et al., 2019; Doernberg et al., 2019; Candel, 2020). Several studies are about metropolitan or regional food planning (e.g., Great London by Parsons, Lang, and Barling 2021 etc., Waterloo region by Wegener et al., 2012 and Puget Sound Regional Food Policy Council by Horst, 2017). But studies to compare different scales of food planning are lacking. So far, there is also not enough understanding of the scales' effect on food planning or how to break the boundary if governance and spatial scales do not match.

The diversity of French food planning projects enables this sub-chapter's empirical study on scales of RAA planning. This section aims to address the question: **how do scales, both as spatial and institutional dimensions, affect RAA planning?** Three sub-questions are to be answered:

1. **Administrative scale: how do planning approaches differ by scale?**
The hypothesis is that food planning project leaders at different administrative scales may have respective RAA-associated competences (politically entitled and/or spatially relevant). Understanding such competences helps understand the different governance issues and challenges they face, by scales. To understand such competences, I analysed the role of project leaders, RAA-associated goals and instruments applied in food planning.
2. **Action scale: what does "local" mean to food planning?** The hypothesis is that food planning may have an action scale that it wishes to intervene in, which can differ from the administrative scale.
3. **Governance scale: how does food planning break the boundary**
when the action scale (for the local food intervention) does not equal the administrative scale? The hypothesis is that a governance scale may be developed beyond the administrative scale to match the action scale.

In this sub-chapter, I first present the particularity of planning RAA at different scales. The coherence between land-use and food planning at different scales is discussed there. Then I present the understanding of "local" as an action scale. Finally, local strategies that break the administrative boundary and create coherent governance are demonstrated.

3.2.1 Administrative scale. Planning RAA at different scales: similar goals, different instruments

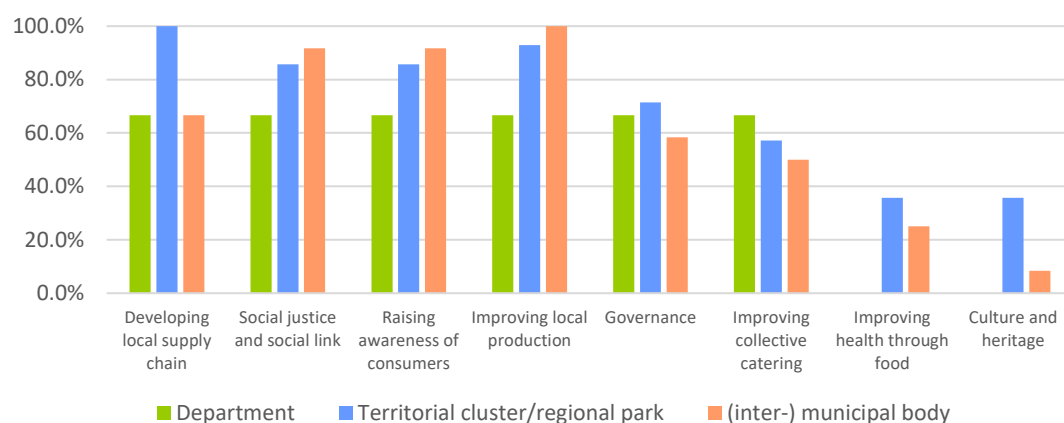
This section targets the particularity of each scale of RAA planning. To figure out the particularity, I first compared the policy goals and instruments targeted by different scales of food planning. I remobilised the chapter 1 (1.2) document

analysis and added a scale dimension. Based on the similarity and differences in planning approaches between different scales, I then tried to identify why by linking them to the competences of different administrative scales. The coherence between land-use and food planning at different scales is discussed after. Ultimately, I tried to understand the advantages and disadvantages of different scales from the local reflection on the scale issue.

1) Planning approaches by administrative scale: similar goals, different instruments

In this comparison of targeted policy goals and used policy instruments between different scales of food planning, municipality and inter-municipal bodies were combined and territorial clusters and regional parks were combined. This was for their relatively similar competences. In terms of **policy goals**, Figure 3. 7 shows the comparison between the most targeted eight food planning goals. It show that food planning at different scales generally share similar RAA-associated goals.

Figure 3. 7. Proportion of each policy goal targeted by different scales of food planning.



Note. Only the eight most targeted goals included.

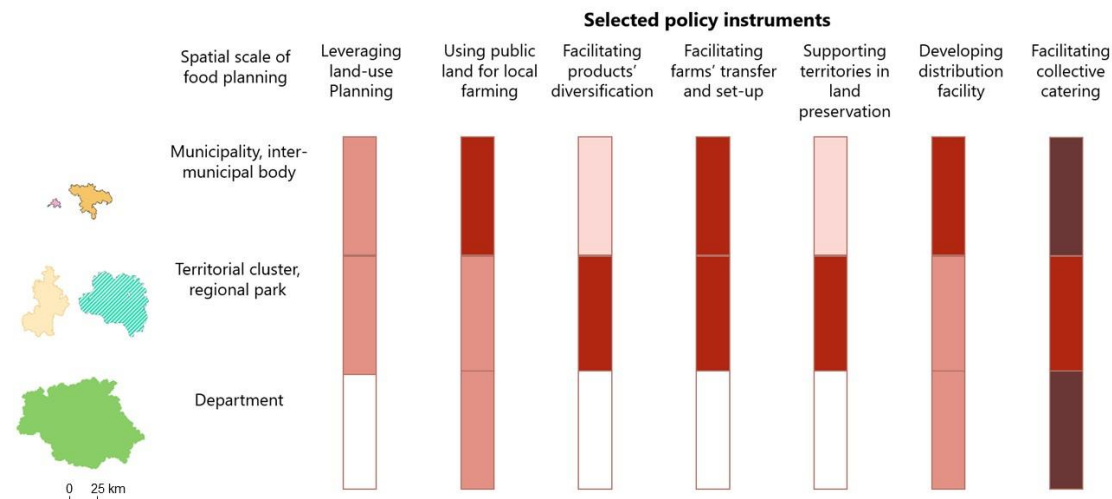
A distinguished goal is developing culture and heritage; only Rural Clusters (*PETR*) ($n=4$) and a Regional Park ($n=1$) adopted it as a main goal. Such a goal aims to develop the cultural value of local food and extend it to be touristic and territorial marketing resources.

In terms of **policy instruments**, selected policy instruments in action fields were compared to demonstrate the degree of prevalence of the use by food planning scale (Figure 3. 8).

Some instruments were adopted somewhat similarly by food planning at all different scales. Different scales food planning projects undertook similar actions to facilitate collective catering with local food provision and developing collective food infrastructure. The use of public land for local farming was also

an instrument mobilised by food planning at all scales, with (inter-) municipal body being the most focused ($n=8$ of 11), followed by departments ($n=1$ of 3), and only a few territorial clusters/regional parks ($n=3$ of 14) were engaged.

Figure 3. 8. Comparison between instruments leveraged in different-scale food planning. Colors show percent of food planning adopting the instrument, this version is draft, to update with document analysis.



Some instruments were mainly shared by inter-municipal bodies, territorial clusters and regional parks. Land-use planning: some inter-municipal bodies ($n=3$ of 10), regional park ($n=1$ of 4) and territorial clusters ($n=3$ of 10) included "preserving farmland via land-use planning or relevant tools" in their food planning documents. One regional park mentioned introducing the soil analysis method in land-use planning. The three territorial clusters all have their master plans (SCoT) with the same perimeter of food planning. Facilitating farms' transfer and set-up: some inter-municipal bodies ($n=6$ of 11) and regional parks / territorial clusters ($n=6$ of 14) adopted this instrument.

Other instruments were used more at a certain scale of food planning. (Inter-) municipal bodies dispose of publicly-owned land the most. Regional parks and territorial clusters seemed to be more prone to the instrument of facilitating product diversification than other institutions ($n=6$ of 14; compared to $n=3$ of 11 for inter-municipal bodies). They were also unique in adopting the instrument of facilitating local authorities (civil servants and politicians) in farmland preservation tools. Food planning at the scale of departments did not adopt instruments devoted to facilitating farm holdings' transfer, land-use planning or diversification of products.

Overall, food planning at different administrative scales primarily was similar in goals defined and action fields, but some instruments were adopted differently. To explain that, the rationales need to be linked with the understanding of food planning project leaders' different roles.

2) Roles of food planning project leaders by scale

The hypothesis to explain the different instruments used by scales was that they link to competences of administrations by scale. Food planning project leaders usually play both roles: project managers (i.e., in charge of certain actions' implementation) and project coordinators (i.e., coordinating other project managers of actions). Most food planning project leaders share some basic roles by default: they launch and manage the food planning, creating technical and steering committees, organising and monitoring agenda and budget; they coordinate action plans and apply to funding via financing programmes; they can also seek other partners to complement the competences that they lack (chapter 3.3). Other than that, each scale of project leaders has its special competences, which may lead to the different instruments used. They are analysed by three categories: 1) municipalities and inter-municipal bodies, 2) territorial clusters and regional parks and 3) departmental councils.

Municipalities (communes) and inter-municipal bodies (EPCI). They are the most common scale of food planning ($n=17$ of 40). As project managers, they can launch, manage and directly invest in RAA projects (e.g., creating a farm incubator, developing a vegetable centre). They can dispose of publicly-owned land and buildings to facilitate RAA. They may have the competence of school catering and therefore can intervene directly in the management of it (e.g., modifying rules of food supply). As project coordinators, they have the advantage of having close contact with and knowledge of stakeholders in the territory.

Project territories: rural clusters (PETR/Pays), urban cluster (Pôle Métropolitain) and regional parks (PNR). For most food planning at the territorial cluster or regional park scale, almost all interviewees reported that food planning was to continue the existing work on agriculture and local food issues that the project leaders had been taking for a long time. This includes agriculture and food with collective catering or local supply chains. Territorial clusters and regional parks are "territory of project." They can be in charge of relevant projects such as climate plans (Plans on the Climate-Air-Energy Nexus, PCAET), master plans (SCoT) and European projects from a perspective of coordinating the territory and working on issues of environment, ecological transition, agriculture, et cetera. Moreover, as some interviewees claimed, the nature of food planning is to coordinate and optimise existing initiatives. Therefore, project territory can be an appropriate scale.

Territorial clusters and regional parks as project managers are only capable to undertake "soft" measures (e.g., building internet platforms). By contrast, they mainly play the role of coordinator, facilitator and mediator as project leaders of food planning. As coordinators and mediators, territorial clusters and

regional parks can coordinate projects and bring innovation to a large scale. They connect different actors. As an interviewee reported:

We only conduct actions under the regional park's management if these actions are not carried out by other players. That is what we did with food: there were existing players, we would not steal their work. We had to do: coordinate all the actions and do complementary actions; things that are not done, let us do them. For example, today there is no Internet platform to promote and advertise the quality products of the Pyrénées Ariégeoises. So, we took the initiative to do it under the regional park's management and we will create this platform. [civil servant, regional park Ariège, Occitania, 2021/06/29]

Territorial clusters and regional parks also play an important role as facilitators. Although not disposing of their own finance, they can facilitate actors (i.e., project managers of food planning) through seeking finance (from CAP, the region, the state, food planning national financing project, etc). By obtaining funding, they can also convince the local authorities and elected officials to be engaged in food planning. Rural clusters and regional parks are particularly important for very local scale authorities (inter-municipal bodies and municipalities) because most of such authorities are small and rural and lack human resources. Four territorial clusters and three regional parks planned to support local authorities on land preservation tools. As an interviewee reported, rural clusters (regional parks as well) are a kind of **resource centre**: “*It (the rural cluster) is more like a resource centre, to be a resource for people who set up projects and to be able to help them benefit from the support, from the search for funding if they need it*” [civil servant, rural cluster Albigeois Bastides, Occitania, 2021/07/02]. It is worth noting that the coordination, facilitating and mediation role also raises problems and issues related to a lack of resources. These various roles have their positive and negative sides.

Departments. Food planning at the departmental scale developed later than others. This research only includes three projects at this scale. Among the three, one was not managed by the departmental council but by an association. Therefore, it may not be representative of other departmental food planning.

Department councils as project managers can intervene directly in collective catering for junior high schools. They can also dispose of publicly-owned land. Interviewees in food planning managed by the department claimed that it is possible to use such land if necessary and feasible. Departments also have the competence to launch preservation programmes of peri-urban pre-emption perimeters (PAEN) and sensitive natural spaces (ENS) and link them with RAA. However, none of these three cases showed a willingness to link them with food planning. Chapter 2.1.4 has discussed the barriers to launching such programmes as the strong political commitment required. **Further, departments might be hesitant to connect their competence with agriculture, considering the legal competence.** The competence of

agriculture disposed of by department councils had been removed by the New Organisation law (*loi NOTRe*⁷⁸, 2015). So, the department council was cautious when intervening in the agricultural fields in order not to be conflictual with other actors' competences. As an interviewee claimed, the department council had developed a preservation programme of sensitive natural space (*ENS*), which was not linked to agricultural issues due to political considerations:

I have a colleague in my department who deals with sensitive natural spaces (ENS) [...] in fact the relationship (between ENS and agriculture) could be made, there is no problem. We are even in the same building; the problem is really the department's policy. [...] the agricultural competence was withdrawn from the Gers department within the framework of the New Organisation law (loi NOTRe) [...] So, there are also interplay of actors in the territory for which we have to be careful; we must not carry out an agricultural policy within the department in order not to offend other players in the territory. So that is why the department decided to go for food planning, because it was politically easier. [civil servant, department council Gers, Occitania, 2021/06/17]

This statement also revealed that authorities were carefully exploring their position in the food and agriculture policy field. Food was used as a more neutral term than agriculture in order to gain political legitimacy.

As coordinator, a departmental scale food planning might be particular as it needs coordinate other infra-departmental food planning and that it coordinates numerous inter-municipal bodies: "identifying the areas of the territory where no action has been taken (white areas) in favour of sustainable food in order to encourage and coordinate a food strategy for the whole department" (food planning document of department *Seine-Maritime*). As emerging project, this coordinating responsibility was not in maturity:

This is a real question that the department is wondering: how it should be positioned? Should it encourage sharing and pooling? Can it be a support to help territories that do not necessarily have the means to develop food planning or that have not thought about it too much, should it be positioned as a support? Should it take charge of certain actions on particular competences? So the question of the articulation of the positioning... and the legitimacy of the actors to intervene in the different territories, it necessarily arises. [staff, Chamber of Agriculture of the region of Normandy, 2021/06/11]

The department, with a relatively large scale, may develop food planning in different forms. For example, an interviewee from Gers claimed that their food

⁷⁸ Before the New Organisation law (*loi NOTRe*) of 2015, the department disposed of the "general clause of competence" (*clause générale de compétence*). The general clause of competence gives local authorities an extended capacity to justify their decisions and areas of intervention without these being limited to a list of competences. Since 2015, the law deleted this "general clause of competence" of the department, and only municipalities benefit from it.

planning was not a regular “action plan” but rather a “road map” (*feuille de route*). It means that the food plan would be a general framework that guides the food policy for future years, and the detailed actions would be developed progressively. This may also explain why departments were not engaged in some actions because the food planning document may be only a frame without elaborated and detailed actions.

Overall, in general, project leaders at different scales can work as project managers as well as coordinators. Working as coordinators means they can mobilise other actors’ competences to develop food planning actions. The cumulated roles can explain why their characteristics are not that clear-cut (e.g., setting similar goals, using some similar instruments). Nevertheless, associated with their competences at different scales, food planning project leaders played different roles, which may have led to the differently used policy instruments.

Municipal and inter-municipal bodies relatively have more ways of direct interventions, such as land disposal and managing concrete projects that require material investment and maintenance. Territorial clusters and regional parks are rather coordinators and facilitators. They are a “resource centre” that supports inferior local authorities. For department councils, other than coordinating actions, they are responsible for coordinating infra-departmental food planning projects. In general, the food-associated competences are not clearly defined, which leads to two gaps in developing food planning. The first gap is between legal competence and political legitimacy. Although legal competences are not clear, local territories can have high political willingness to RAA issues. Therefore, local territories may explore different ways to develop strategies while simultaneously keeping cautious. The second gap is between the willingness to get committed to various roles and the lack of resources. This is especially the case for rural clusters where human resources are usually lacking. So, though they play different roles, it might be complicated to implement in practice. Next, I will zoomed-in on the land-use and food planning interaction.

3) Connecting land-use and food planning at different scales

Roles of food planning project leaders also link to the land-use and food planning linkage. Inter-municipal bodies are responsible for developing land-use planning (the unique municipality case included in this research did not dispose of land-use planning competence anymore). Therefore, for food planning at the inter-municipal scale, the land-use and food planning connection is an internal cross-sectoral issue (see 3.1). Here, concerning the cross-scalar issue, I mainly focus on territorial clusters, regional parks and departments. Table 3. 1 presents the basic land-use planning-related responsibilities by administrative scale.

Table 3. 1. Land-use planning-associated responsibilities by administrative scale.

Project leader of food planning	Land-use planning-associated projects	Associated public bodies (PPA) for land-use planning	Examination of building permits
Municipality	- *	-	-*
Inter-municipal body	(Inter-) municipal land-use planning (land-use planning) Master planning (SCoT), in some situation Protected agricultural areas (ZAP) in some situations	-	In some situations
Rural/Urban Cluster	Master planning (SCoT), in some situation Protected agricultural areas (ZAP) in some situations	In some situations	In some situations
Regional Park	Master Planning and Protected agricultural areas (ZAP), in one particular case** Charter of the regional park	Yes	-
Department	Peri-urban pre-emption perimeters (PAEN) Sensitive Natural Spaces (ENS)	Yes	-

* Municipality may have the right of developing a municipal land-use planning, proposing a protected agricultural area (ZAP) and/or keep the responsibility of examining construction permits, which is not the case in the studied case.

** Regional park Grands Causses disposed of a master plan (SCoT). This is a unique case.

*** Protected agricultural area (ZAP) has to be agreed by the prefecture (state service at departmental scale). It can be proposed by the municipality or public institutions in charge of PLU(i) or SCoT.

Territorial clusters and regional parks, where applicable, can suggest and impose certain requirements and regulations through legal documents (i.e., master plan (SCoT), Charter of the regional park). An exemplary case is the rural cluster of Midi Quercy in which a food plan and a master plan were ongoing. Thanks to the same timing, the master plan developed detailed requirements (prescriptions) and recommendations by integrating food planning (see 3.1). As a legal guiding document for land-use planning, the master plan has the capacity to integrate food planning-associated issues in the regulations, which are obligations or recommendations for land-use planning to follow. For example, this master plan of Midi Quercy integrated agri-food processing activities and on-farm diversification activities in its guiding documents (*document d'objectif et d'orientation, DOO*, in preparation). Once validated, they will guide inter-municipal land-use planning with this favourable environment defined for local supply chain activities (rural cluster Midi Quercy, DOO in preparation, p. 77).

Some other territories, though not linking master plans or regional park charters and food planning due to different timing, also presented the possibility to do so. For example, the regional park of Grands Causse defined in its master plan: “*authorising diversification activities in agricultural zone*” prior to the food planning (even prior to the Housing law (*loi ELAN*, 2018) that explicitly authorised such activities) and descended to the land-use planning. Other two regional parks (Haut-Languedoc and Boucles de la Seine) had quantified the land take objectives in their Charter of the Park (see also 2.1.2). Such quantified objectives were not legally binding but were set based on local authorities’ commitment; they then provided a guide to land-use planning. According to the experience of master plans (SCoT) and the regional park charters, another entry point to RAA is the ecological corridors (*trames vertes et bleues*) when associated with extensive livestock farming (see also 2.2.2). Therefore, master plans and charters may integrate food planning in such a way (ecological corridors and quantified land take objectives) to create coherence between land-use and food planning.

That being said, an unignorable barrier to linking food and land-use planning at different scales is that master plans (SCoT) and regional park charters only impose limited binding regulations (e.g., quantified land take objectives distributed to inter-municipal bodies). For many other recommendations and requirements, inter-municipal bodies have a large room for manoeuvre to interpret in their land-use planning. In such cases, the real link between food and land-use planning depends on the inter-municipal bodies’ political willingness to engage in the issue defined in food planning. An interviewee reported that the master plan as a potential intermediate between food and land-use planning might be limited in its capacity to impose rules when local authorities are not highly committed to the issue:

Once we have finished the master plan (SCoT), it will be up to the inter-municipal bodies to take over. I am not sure that they will include us in their thinking. They tend to work internally without always involving other actors. So maybe it will be up to us to continue sending emails, proposing meetings to raise awareness. We cannot do much more than raise awareness. [civil servant, rural cluster Midi Quercy, Occitania, 2021/09/28]

As to regional parks, the barrier to linking food and land-use planning through the regional park charter is that the charter usually does not have an agriculture-based entry point. Regional parks provide regulatory specifications (“*porter à connaissance*”/“*regard du parc*”) to the land-use planning makers, which is usually on heritage, landscape and biodiversity issues. As an interviewee reported:

...we do not have a purely agricultural entry point. While we have a diversity entry point, we have an urban planning and architecture entry point, we have a

lot of mobility topics, we do not have an agriculture entry point. On the other hand, we treat it in a very cross-cutting way by working on avoiding urban sprawl, because we have a part on this specific topic for example, but, let us say, we do not have an agriculture paragraph [...] On the biodiversity part, I do not know at all how they treat the topic of agriculture, to be honest. [civil servant, regional park Aubrac, Occitania, 2021/09/30]

As to territorial clusters, if they do not conduct a master plan (SCoT), then the link between food and land-use planning will be even weaker. As an interviewee reported, as the rural cluster was only an instructor of building permits, they were not obligatory consulted and only gave non-binding comments on land-use planning:

So, I do not have all the details (in land-use planning) because we were only marginally involved in the land-use planning, we were involved as an instructive service, but we were not involved in the elaboration. [...] We were consulted on the written regulations, because as the examining authority, this is our working document. [...] we did not necessarily have a very binding opinion and we were involved... to help. And we asked to be involved because we will instruct these municipalities and we need to know upstream what the thinking was when the rule was written because sometimes it is hard to interpret it. [civil servant, rural cluster Pays d'Armagnac, Occitania, 2021/06/17]

More than documents, cross-scale food and land-use planning can be connected during the working process. Studied cases provide evidence of the connection through land-use planning agricultural diagnosis. One regional park food plan adopted an instrument to apply land assessment method to land-use planning agricultural diagnosis. This shows how regional parks, as a facilitator, can intervene in land-use planning and indicates how territories not disposing of land-use plans can take action.

Another case was a cross-scale collaborative work between land-use planning and food planning project managers. To make mutual communication between food planning and land-use planning (as well as master plan), rural cluster Ariège organised a meeting with all the food planning and land-use planning managers (civil servants) and associated actors (Chamber of Agriculture, the state service, department council) of the territory. The author requested an interview when the rural cluster was launching the food planning with the first task to define the specification of diagnosis. After the author⁷⁹ evoked the topic of land-use and food planning linkage, the project manager came up with the idea of organising a group meeting with all infra-rural cluster land-use planning actors to communicate and exchange the information, in order to define the

⁷⁹ This meeting was organised after an interview. The author was invited to do a presentation with preliminary results of potential links between land-use and food planning, and observed the meeting.

specification for the food planning diagnosis. As well, as the organiser claimed, it was also an occasion to gather all the associated actors to co-develop the food planning.

Through discussion surrounding three themes (i.e., access to land, transition of farming practices and structuring local supply chains), land-use planning-associated actors expressed their opinion on the possible approaches and the barriers to implementing food planning through land-use planning, master plan and associated instruments (e.g., peri-urban pre-emption perimeters (*PAEN*), protected agricultural areas (*ZAP*)). Finally, this process enabled the food planning project leader to obtain information from land-use planning (what is the agenda, what they do, what they lack, what they wish to be complemented and documents of diagnosis). Other actors in charge of planning services would also help modify the specification with their knowledge of the territory and planning. The idea was that land-use planning actors propose needs for food planning diagnosis, so that food planning can, in turn, complement what land-use planning lacks. It is worth noting that such a group meeting was under no obligation but through the voluntary organisation of the institutions.

For departments, the only entry point to land-use planning is to deliver their opinions, which is not binding. Moreover, interviewees claimed that the department did not have an entry point of agriculture. The focus was on the environment, residences and roads. Even for farmland preservation, the entry point is indirect: the department council more often give opinions on densification, which is related to departments' competence in housing management. The lack of agriculture-associated focus may explain why no departmental scale planning referred to land-use planning as an instrument (Figure 3. 8). An interviewee reported as such:

When we give opinions on land-use planning documents, it is to limit the farmland consumption, to regroup the land, to densify it within the framework of hollow spaces, and therefore indirectly, by preserving farmland, we participate in the topic. It is a bit indirect. We, as a planning department, do not have an agricultural entry point. [civil servant, departmental council Seine-Maritime, Normandy, 2021/05/11]

To summarise, the cross-scale land-use and food planning connection depend very much on the spatial planning-associated competences the project leader has. Master plans (*SCoT*), regional park charters, technical studies, and informal collaboration between cross-scale planning project managers can all affect cross-level collaboration. RAA is not a compulsory component in the spatial planning system, and the adoption of supra-level planning rules is mainly not obligatory for land-use planning. So, links between cross-scale land-use and food planning do not naturally occur and depend on a combination of enabling conditions. The study identified some of these conditions: the political will of






inter-municipal bodies to integrate food planning, the capacity of supra-level planning instructions to integrate RAA, and the binding power the supra-level planning documents have (master plan, regional park charters regional plan) on local land-use planning.

After identifying the different roles and ways to collaborate between cross-scale planning, another element to understand is the advantages and disadvantages of different scales of food planning. It will help understand if there are “suitable” scales.

4) Planning RAA at which scale? Advantages and disadvantages in implementation

The scale was usually not a criterion for the launch of food planning projects. Most interviewees claimed that the food planning was launched as a continuation of existing agri-food initiatives. However, during some territories' initiation and working process, the question of scale provoked some reflection and led to the thinking of the scale adjustment of food planning. Five studied projects provided convincing evidence and revealed the advantages and disadvantages of food planning at different scales (Table 3. 2).

Table 3. 2. Exemplary territories in which “scale” has been taken into consideration when launching or modifying food planning.

Territory		Size	Rational
Municipality-Albi		48 526 p 44 km ²	Municipal scale: To be efficient
Rural cluster - Dieppois		109 821 p 855 km ²	Down-scale of food planning to inter-municipal body: Seeking efficiency
Rural cluster - Armagnac		43 387 p 1 700 km ²	Failed at inter-municipal scale, developed at rural cluster scale: Political willingness
Rural cluster - Pyrénées Comminges		77 435 p 2 137 km ²	An inter-municipal proposal to develop at rural cluster scale: Territorial coherence
Inter municipal body - Tarbes-Lourdes-Pyrénées		127 086 p 614 km ²	Evolution of food planning with a wish to upscale to departmental scale: Considering demand-offer balance

Note. Population and surface area data: Insee (2022a).

The first two cases (Table 3. 2) show that small-scale food planning can be more efficient in implementation. The municipality of Albi is the only food planning at a municipal scale in the examined cases. The municipality chose to work at such a scale to achieve rapid and concrete implementation, although it has been acknowledged that food planning should be at a larger scale. The

advantage is that actions are operational (e.g., pre-emption of land and dedicated to market gardeners, as presented in 2.1.3). The disadvantage is that the municipality is rapidly limited in its administrative boundaries. As the interviewee reported:

Why did we do it on a municipal scale? Because of the elected official leading the project. In the beginning, it was a political will. We do it on the scale of the municipality because we are on a scale that we control, with which we know that we will be able to be operational quickly and do concrete actions quickly. [...] So, the advantage is that it allows us to go a bit faster in setting up actions. The disadvantage is that conducting food planning at the municipal level is very complicated. There are lots of things to do (with) the rural areas around us. So it goes quickly, but we are quickly limited in terms of the actions we want to carry out. [civil servant, municipality Albi, Occitania, 2021/09/27]

The municipality was aware of the limitation of the small scale. Therefore, the food planning actions were not limited by the administrative boundary. Instead of conveying the food planning to a supra-scale authority, the municipality was always in charge of the food plan and developed governance (steering committee) with many other partners at supra-scale territories. These partners included such as the inter-municipal body, the Chamber of Agriculture and the agriculture high school. As claimed by the interviewee, these partners (e.g., the Chamber of Agriculture at the departmental scale) naturally facilitated the actions at supra-municipal scale:

The idea is to eventually make it upscale to the inter-municipal body (the city-region), to enlarge it. We have a field of action which is not limited to the municipality. [...] our partners with whom we work, for example the Chamber of Agriculture, it is a departmental Chamber, so they cannot limit their actions only to the city of Albi. What we do now is that we have a governance perimeter which is at the level of the municipality; and then, on the other hand, we have a slightly wider perimeter of action, which extends to the inter-municipal body, and sometimes even a little more. [...] For example, when we develop local supplies for the central kitchen with the Chamber of Agriculture, we cannot just call on Albi's farmers; we would soon have done the trick. So we necessarily call on the farmers of the inter-municipal body, and even of the department and sometimes even of neighbouring departments. [civil servant, municipality Albi, Occitania, 2021/09/27]

However, some actions are difficult to be undertaken beyond the boundary even with the support of partners. A typical example of the hindrance is about land use, i.e., intervention on land is largely limited by the administrative boundaries, as an interviewee reported:

When I set up market gardeners, for the moment, I do it on the scale of Albi. On this type of action, it is difficult to go elsewhere because each municipality is responsible for its own land; we will not "steal" land from our neighbours... [civil servant, municipality Albi, Occitania, 2021/09/27]

The interviewee in the municipality of Albi also reported that the long-term vision of the food planning is to be managed at the scale of inter-municipal territories. However, there are difficulties in changing the scale of food planning. It means re-organise the governance model and re-arrange the responsibility; it takes long time and risks of losing the label. As the interviewee reported:

The idea in the long term is to bring it up to the level of the inter-municipal body, but not necessarily immediately, because we are not ready. We do not want to go too quickly either. [...] if we move it to the scale of the inter-municipal body, we have to re-establish new governance, redefine the functioning of the food planning and of the steering committee. So, that means that something (the food plan) has to be rewritten a little. We have to define which administrative sector of the inter-municipal body is the most relevant to deal with this theme... [civil servant, municipality Albi, Occitania, 2021/09/27]

The second case (Table 3. 2) further proved that small-scale could be efficient, as political consensus might be easier to be reached. In the case of food planning of the rural cluster Dieppe Pays Normand, the large-scale food planning encountered the problem of efficient implementation. Finally, there was a downscaling of food planning into an inter-municipal body. As stated before, rural clusters play an important role as coordinators, meaning that concrete actions depend on partners, essentially local municipalities and inter-municipal bodies. However, inter-municipal bodies do not always have the same level of awareness. In such a situation, progress is difficult; the actions that the inter-municipal body wishes to take can even be hindered. This is the case of the rural cluster Dieppe Pays Normand, consisting of three inter-municipal bodies that were not equally involved in food planning. Among the three, one inter-municipal body was the most active with an engaged president, whereas the others were relatively passive. As interviewees claimed, it made the project complicated to move forward because the food planning requires all inter-municipal bodies' support: *"we have three territories that are at different levels of involvement and so it is a bit complicated precisely to coordinate that..."* [civil servant, rural cluster Dieppe Pays Normand, Normandy, 2021/05/28]. The active inter-municipal body wished to develop one food plan at its own scale, and it was on the agenda at the time of writing this manuscript. The inter-municipal body Terroir de Caux's food planning was even more advanced than that of the rural cluster.

In contrast to the previous two cases in which territories sought small scale and efficiency, **other three territories (Table 3. 2) had gone through a process of upscaling. The rationales were from political (if there is strong political support) and the spatial perspectives (if the spatial scale is reasonable).** In the Rural Cluster of Armagnac, the choice is rather political. The idea of developing a food planning was initiated by the chief of a school canteen. However, the inter-municipal body where the canteen is located lacked political

interest in developing food planning. That is why the food planning was finally managed by the rural cluster scale (four inter-municipal bodies). The rural cluster was very engaged in ecological transition and signed an Ecological Transition Contract (CTE) with the state. Therefore, food planning can also fit it.

The other two cases developed for spatial reasons. The inter-municipal body of Tarbes-Lourdes-Pyrénées had the consideration of enlarging the scale to the departmental scale. The consideration departed from the fact that the inter-municipal body (communauté d'agglomération) is mainly an area of consumers, whereas in the rest of the department, there are producers and a variety of high-quality local products. As the interviewee reported:

The question was asked: “Do we ask for recognition, a new label from the state on the same geographical perimeter, on the inter-municipal body, on the 86 municipalities?” And we started from the very operational observation that if we had the majority of consumers within the perimeter of the inter-municipal body [...] the majority of the local producers were elsewhere, in other parts of the territory. So the elected officials decided that we would represent a food plan, but on the scale of the Hautes-Pyrénées department [...] because there is a fairly large number of original products in the department. When you talk about Bigorre black pork, Trébons onions, a Madiran wine. [civil servant, inter-municipal body Tarbes-Lourdes-Pyrénées, Occitania, 2021/10/04]

In another case of the rural cluster Pyrénées Comminges (table 2.3.x), developing food planning at the rural cluster scale was for seeking territorial coherence. In the beginning, an inter-municipal body was actively engaged in the issue of local food. Then they proposed to launch food planning at the rural cluster scale for two reasons: 1) to be on a larger scale than the inter-municipal body so that the whole large territory of the rural cluster would have the same progress, and 2) in a similar context (rather than at the departmental scale) with mountainous and livestock farming.

RAA-associated planning efficiency is also related to the scale appropriateness of policy instruments; some arguments from interviewees' local observations demonstrated limitations and advantages at different scales. For example, an interviewee asserted that the department was too large to have a comprehensive agriculture and food census.

It is easier in a small area to take stock of all the farmers, to meet each of them, to assess[...] At the level of the department, it is impossible and it makes no sense. So we did more quantitative but approximate diagnoses of Gers agricultural production, consumption by Gers restaurants, the comparison between supply and demand. [civil servant, department council Gers, Occitania, 2021/06/17]

By contrast, according to several interviewees, the department might be the appropriate scale for developing collective food infrastructure, which was

already the case in several territories, as an interviewee reported:

The reflection (on logistics) only makes sense on the departmental scale, because here we cannot be autonomous, despite the diversity of environments, we will never be food self-sufficient. So we also need the neighbouring territories. And so it is more interesting to think about logistics on a departmental scale rather than just on our own scale. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

The above exemplary cases demonstrated that small-scale and large-scale food planning has disadvantages and advantages. While the small scale may gain efficiency, it risks being limited by the resource. Although a large scale seems more reasonable for an offer-demand balance, it may have to make many efforts to reunite stakeholders and reach a consensus. Political willingness, scale appropriateness and implementation effectiveness all affected the planning scale.

In synthesis, studied cases in France show that food planning can be managed at different scales. No one scale is the best choice, and all depend on local contexts. Although agriculture and food are “new” competences for all scales of local territories, they can be extended to other competences of which different public institutions dispose (e.g., the land issue at inter-municipal scale, the collective catering management at the department scale and the environment and ecological transition associated with existing projects that rural clusters undertake). It may explain why food planning can be and is taken at different scales. Each scale of territory can work as a “brokering institution”, as described by Mendes (2007) about the role of food planning project leader, meaning that a certain scale government can coordinate multi-scaled food policies and initiatives.

There is yet no clear distinction between policy goals defined by food planning at different administrative scales. It might be explained from three perspectives. Firstly, there is no distributed responsibility in matters of agricultural and food policies by scales of governments. Therefore, project leaders at different scales may approach RAA to reinforce their legitimacy in the agriculture and food domain. This is especially true for implementing policy instruments on developing collective food structure and collective catering. Food planning at all scales strongly emphasises such instruments in different ways. Secondly, many policy instruments are informational (Vedung, 1998) and/or largely depend on non-governmental partners, which is not associated with an embedded competence and can be managed by any scale of food planning. For example, although “collective catering” is the competence of department councils and (inter-) municipal bodies, rural clusters can intervene in a “soft” way by facilitating and supporting local actions. Thirdly, food planning has its nature of co-development; project leaders could work with partners (including

partners at other scales of governments) to extend their capacity. For example, food planning of the urban cluster of Caen adopted an action of setting publicly-managed food production places, though it is the competence of (inter-) municipal bodies. Similarly, in many rural clusters, when describing “developing” or “creating” a collective infrastructure, they actually mean the rural cluster facilitates project managers (public or private) to do so. It should anyhow be noted that such co-development depends very much on coordination and collaboration and may engender low efficiency.

That being said, the project leaders’ competences and the corresponding spatial scales determine their role in food planning and, to some extent, the policy instruments adopted. Municipal and inter-municipal bodies have competence in land use and planning and can have their own investment. They can work as project managers as well as coordinators. A distinguished instrument applied mainly by them is using publicly-owned land for RAA. Territorial clusters and regional parks are rather coordinators and facilitators. A unique instrument mobilised by such project leaders is supporting local authorities in land preservation tools. For department councils, other than coordinating actions, they are responsible for coordinating infra-departmental food planning projects. Case studies in this research are limited because departmental scale food planning samples are not sufficiently numerous to draw general conclusions.

Regarding links between land-use and food planning, when they are at different scales, the link can be built via master plans (*SCoT*) or regional park charters, technical studies, or influenced political willingness. Since the adoption of supra-scale planning rules is mainly non-obligatory (despite some obligations that can be interpreted locally), the effective link between land-use and food planning may depend on three factors: 1) the political willingness of inter-municipal bodies in integrating food planning, 2) the ability of supra-scale design guidelines/documents/instructions in integrating RAA and 3) the binding power of descending requirements of supra-scale planning documents to local land-use planning.

Though an evaluation of the implementation effectiveness of food planning at different scales was not made, the rationales of project leaders to have developed food planning at their scales explain to some extent the advantages and disadvantages by scale. Several cases indicate that smaller-scale food planning tends to be more efficient in rapid implementation but may be in “local trap” (Born & Purcell, 2006). By contrast, larger-scale food planning might be a better scale in the issue of RAA, as indicated by the literature on the “city-region” scale. However, it may risk a long process of coordination between actors and inefficient implementation. It indicates that the choice of developing food planning at a certain scale is a trade-off between political willingness, scale

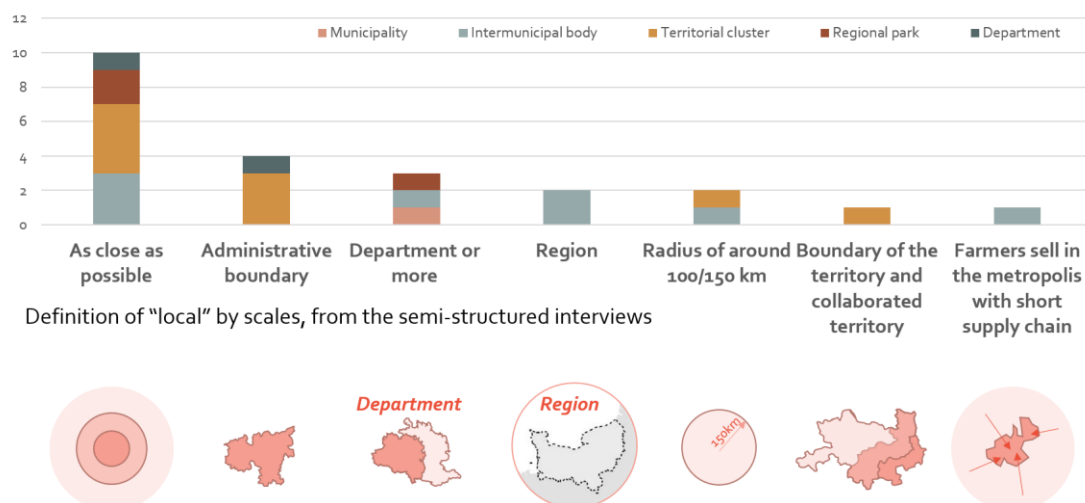
appropriateness and implementation effectiveness. It also implies that multi-scale and cross-boundary governance is necessary for efficient RAA planning, as proved by the studies on food planning in the London metropolis (Reynolds, 2009; Morgan & Sonnino, 2010; Parsons et al., 2021).

3.2.2 Action scale. Diverse understanding of “local”: an action scale larger than administrative scale

Research points out that the governance scale has to match the scale of actions, or the actions cannot be implemented efficiently because of the lack of resources and power (Morgan & Sonnino, 2010; Prové et al., 2019). To identify the scale of actions, I examined the territorial interpretation of “local” in food planning. It is worth noting that *no* studied food planning document defined “local” or “proximity” explicitly. Therefore, I collected information on the understanding of “local” from the interviewees. Such information represents the understanding and application of “local” during the working process (Figure 3.9).

Figure 3.9 clearly shows that local territories held different definitions of “local.” The most shared definition is “as close as possible.” This definition is followed by administrative boundary and “department or more.” A few territories treated “region” as local or a radius of living areas. The other two single cases had particular definitions based on their contexts.

Figure 3.9. Understanding of “local” in the framework of food planning.



Note. For “administrative boundary”, interviewees emphasised the administrative boundary but also mentioned food from neighbouring territories/department might also be recognised as local. Based on semi-structured interviews with food planning project managers.

It should note that although food planning usually aims to improve local food supply, *no* food planning identified auto-sufficiency as an operational objective

to achieve. The municipality of Albi had wished to achieve the goal of auto-sufficiency in the beginning. However, this goal did not exist anymore because it was too ambitious: *“it is not a goal in itself to achieve food self-sufficiency, because otherwise, we would not succeed; it would be discouraging after a while”* [civil servant, municipality Albi, Occitania, 2021/09/27]. The interviewees associated with two territories reported that their food planning was engaged with the idea of “auto-sufficiency.” But when it comes to operational objectives, “auto-sufficiency” was interpreted as improving local and high-quality food production:

Some food plans are involved in self-sufficiency concepts, trying to have as much production as possible from the territories. This is also our desire. But we also want to be able to export our quality food products to the territories that have the greatest need. So it is not just self-sufficiency, it is also opening up to the outside world. [...] So for some producers, on really high quality products, they have more of a desire to sell it outside than inside the territory. [civil servant, regional park Grands Causses, Occitania, 2021/06/16]

Most interviewees reported that “local food” in food planning means “as close as possible.” Such understanding is from the perspective of sourcing food to feed the population. It is related to the product types and the fact that territories cannot produce all required products due to the limit from climate and soil. Therefore, “as close as possible” refers to different distances for sourcing different types of products. As an interviewee explained:

There is a definition that we like. Local products where we set a perimeter, and local products, so that means as close as possible. We like this definition, which we find much more intelligent. So local meat will be very, very close. And local fruit, perhaps from the Tarn et Garonne, that is OK. But it is still in the short supply chain. And local clementines, that would come from Corsica or Spain, so we do it like that. We did not set an arbitrary perimeter. [civil servant, inter-municipal body Ouest Aveyron, Occitania, 2021/06/15]

A concrete example of a local food hub presented how the notion of “as close as possible” could be implemented. The food hub would be managed by a cooperative with collective interest (SCIC, *Société coopérative d'intérêt collectif*). When sourcing food, the food hub would define different grades of priority, with the priority given to the suppliers belonging to the cooperative. Moreover, by setting such a cooperative, proximity becomes not only geographical but also organised in the sense of the economy of proximities (Torre & Wallet, 2014). The interviewee reported as such:

So it will be done by priority. [...] The very first priority, the first suppliers will be the shareholders of the cooperative with collective interest (SCIC), the farmers who will be in the SCIC. Then, if the necessary products are not available among these shareholders, the platform can buy from producers in the Pyrénées-Orientales department. Then, if the necessary products are not

available from producers in the Pyrénées-Orientales, it will go to neighbouring departments and then to the Occitanie region, but really each time by strata. [...] We prioritise those who are involved, so the shareholders, then the closest, and the closest, the closest, while moving away a little. [staff, Chamber of Agriculture Pyrénées-Orientales, Occitania, 2021/09/24]

A few food plans (n=4) identified “local” as a principally administrative boundary. They are all large-scale food planning projects (i.e., rural cluster and department). For the rural cluster Haute Vallée de l’Aude, the boundary was limited administratively because the central goal of the food planning was to facilitate local producers rather than improve the supply chain :

Given that we are not really interested in distribution, what we consider to be local is what is produced on the territory. In fact, we accompany the farmers more than we accompany the supply chains. So if we support the farmers, we support the farmers in the territory. So, ultimately, local, for us, is defined essentially through the territory of the Haute Vallée de l’Aude. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l’Aude, Occitania, 2021/09/28]

In this case, the “local” is closely related to the planning goals. This interviewee also claimed that if actions are taken on local collective catering, the “local” will go beyond the administrative boundary.

Some other interviewees claimed that “local” food would be at **department scale or even neighbouring departments** considering the supply capacity. In Normandy, two inter-municipal bodies identified “local food” at **regional products**. By relating to the administrative boundary, there is not only an issue of spatial feasibility but also an issue of “culturally local.” In other words, a kind of local (departmental or regional) identity is embedded in the local food system.

Interviewees in two territories quantified the “local” by physical distances of 100/150 kilometres. For one, the distance around a 100 km radius is associated with consumers’ living area because it means local producers can reach consumers without depending on large intermediates. The interviewee justified such distance with local producers’ capacity; supply beyond that distance means a large volume of supply, whereas local producers may not be able to afford it. Such a definition also embeds a notion of short supply chains with limited intermediate. As the interviewee reported:

As a general rule, it is to think in terms of the consumers’ living area. So what are the producers or products, in the consumer’s living area, that are not part of the traditional mass distribution system and that are accessible to the consumer? If we were to set a geographical limit, we would find that it is a radius of about 100 kilometres. A maximum of 100-200 kilometres from one point to another, which are mainly the places that consumers frequent and the

places where producers in general distribute their products locally. Beyond that, it requires large volumes and the capacity for a producer to distribute over a relatively large geographical area. [civil servant, inter-municipal body Tarbes-Lourdes-Pyrénées, Occitania, 2021/10/04]

For another territory, the distance of a 150 km radius was defined by the production basin or academically called "foodshed" (Kloppenburger et al., 1996). The interviewee emphasised that this distance was viable thanks to the well-located territory. Surrounding areas with a rich diversity of production permitted the territory can source within such distance for essential supply:

There are several debates on this question. At the local level, it is mainly based on the production basin, that is to say, 150 kilometres around the Pays des Nestes. But then I think that we are in a region which allows us to be supplied in a rather large way, at the level of the Occitanie region, we are also close to the Aquitaine region with all the South Atlantic Pyrénées which have good prospects. So we are in a fairly large radius while remaining close to our territory. [civil servant, rural cluster Pays des Nestes, Occitania, 2021/06/22]

The rest two definitions were only used in single cases. For the rural cluster of Haut Languedoc et Vignoble, **the understanding of local is rather a governance scale with neighbouring partners (the regional park)**. For example, their digital map for local food information was at the scale of the global territory of the regional park plus the rural cluster. An interviewee **from Metropolis of Montpellier emphasised a short supply chain logic**: “we stick to farmers who can sell through short supply chains in the metropolis, who can sell directly without going through wholesalers” [civil servant, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07].

Overall, “local” was defined differently according to the territory, depending on the territory’s entry point of “local”, e.g., sourcing food, improving local production and supporting short supply chain producers. Scholars have asserted that the city-region scale is important for food planning because the surrounding rural areas are essential as “foodsheds” to feed cities (e.g., Kloppenburger et al., 1996; Carey, 2013; Valley & Wittman, 2019). This research shows that not only cities but also rural areas may need surrounding areas for supply, considering the limited production types the territory can produce (e.g., mountainous areas can be limited in fruit and vegetable production).

Similar to what Sonnino (2016) found in international food planning cases, none of the food planning case studies has explicitly identified the definition of “local.” One possible reason can be that project leaders wished to keep the food planning open and not limit actions. Some interviewees (e.g., inter-municipal body Coutances Mer et Bocage) even claimed they do not want to define “local.” By contrast, other interviewees do show that a shared understanding of “local” by food planning project leaders and partners is important in reaching a

consensus on shaping local food systems.

Despite the variety of understanding on “local”, a commonality is that most “local” is at a scale larger than the project leaders’ administrative scale, no matter what the scale of food planning. Therefore, a question for food planning is how to break the administrative boundary to intervene at its action scale. Food planning is unlike land-use planning whose actions are limited in its spatial boundary. As the example Albi presents, food planning has both an administrative and an action scale; the latter can exceed the former if appropriate governance is in place. The next section aims to identify how food planning breaks the boundary when the action scale is larger than the administrative scale and beyond its competence.

3.2.3 Governance scale. Break the boundary: multi-level and cross-local governance

Previous two sections (3.2.1 and 3.2.2) have shown that most food planning has to extend and break the administrative boundary to be able to intervene at its action scale to shape the local food system. From the governance perspective, food planning at a certain scale has its own strength and limits. It therefore requires other-scale governments’ capacity in complementation (e.g., infra-scale for implementation, supra-scale for coherence).

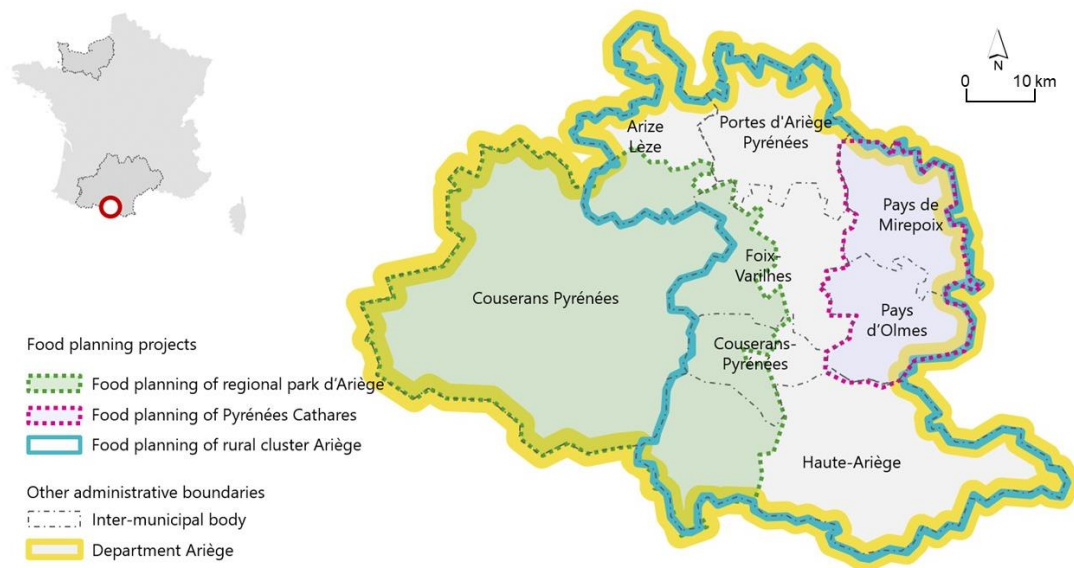
From the spatial perspective, when “local” is larger than the territory, food planning has to seek support from neighbouring territories or supra-territories. Further, there are now food planning projects developing at different scales, among which some are adjacent to, cover or overlap with each other (e.g., Figure 3. 10). Multi-level (here meaning different scales’ public institutions’ collaboration) and cross-local governance is necessary to create territorial coherence and optimisation of work. An interviewee explained such a necessity for creating optimised and coherent food planning:

Our objective is not at all to be 100% self-sufficient in production, in any case we could not, because we do not have enough farmland for the number of inhabitants. So we will necessarily have to work with neighbouring territories as well, because they themselves are thinking about the question of reterritorialisation. If they are interested in their local farmers to supply more in their territories, then we will inevitably be affected, because today we have many farmers outside our territory who come to deliver local products, especially to markets or specialised shops. So, inevitably in the governance, we will have this college of neighbouring local authorities or above which will be integrated. [civil servant, inter-municipal body Metropolis Rouen, Normandy, 2021/04/23]

Studied cases illustrate some ways of collaboration as well as the areas that were unclear during the exploration of developing food planning. They

represented local planning strategies to break the boundary. I present them from cross-local and multi-level governance perspectives, respectively.

Figure 3. 10. *Overlap of food planning at different scales. Example in Ariège.*



1) Cross-local collaboration

Four types of cross-local collaboration practice to facilitate RAA was identified: collaboration through formalised organisational relationship, co-construction of food planning, non-public actors as intermediaries to reunite the territories and economic project that bring territories together.

Some territories developed cross-local collaboration with neighbouring territories by establishing voluntary collaborative conventions or contracts. Recognising that the metropolis alone cannot achieve local food self-supply, the Montpellier Metropolis built a partnership with two neighbouring inter-municipal bodies). They signed a collaborative convention (Bocal Charter⁸⁰) to engage in agroecological transition and sustainable agriculture.

This approach was carried out in cooperation with the two neighbouring communities and had five fundamental objectives: (1) to offer healthy and local food to as many people as possible, (2) to support the economy and employment in agriculture and the food industry, (3) to preserve the landscape and natural resources, (4) to limit greenhouse gas emissions and adapt to climate change and (5) to promote social cohesion, by nurturing the link with nature and the links between city and countryside.

⁸⁰ <https://bocal.montpellier3m.fr/mots-clefs-actus/charte>

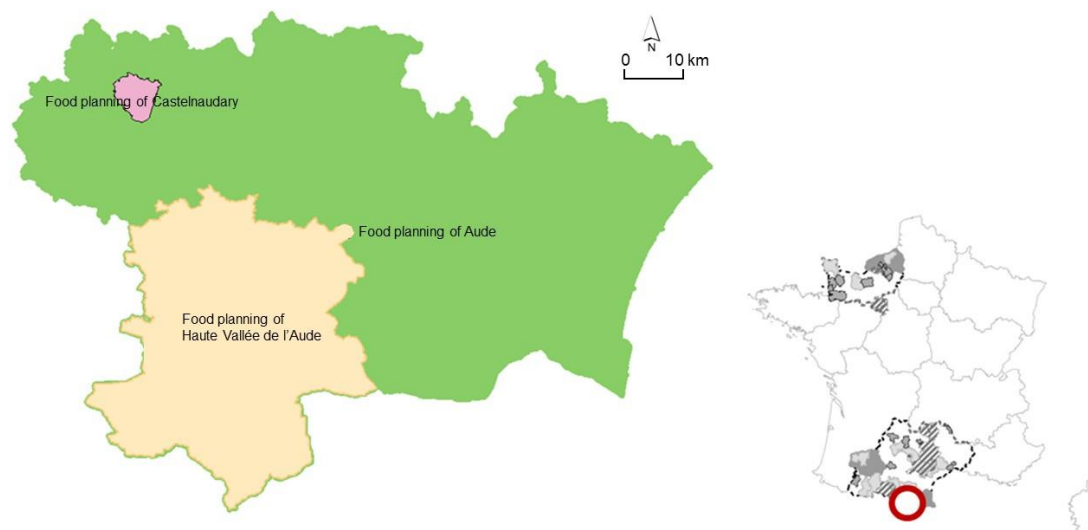
In another territory of Metropolis Toulouse, the metropolis built a neighbouring territory (a rural cluster) by signing a “reciprocal contract” with one of the themes of food (Comité interministériel aux ruralités, 2015). The idea was to build a rural-urban relationship so that the rural cluster could feed the metropolis with high-quality food. It is worth noting that these two food planning projects are both in urban territories (metropolis). These contractual frameworks were used as a frame for public policies to achieve cross-territorial collaboration. Though not legally binding or with strict obligations, they put the voluntary collaborative work into the political agenda and formalises a long-turn cross-territorial relationship (Gaudin, 2010).

Cross-local collaboration is not only in project implementation but also at the strategic level of food planning, meaning neighbouring food planning projects collaborate to define their strategies. Most interviewees claimed that the exchanges between neighbouring food planning were only technical communication between project coordinators. Actors at regional and departmental scales organised communications between food planning to communicate experience. Some food planning coordinators referred to others to define specifications for project tenders. Some interviewees reported that the lack of strategy-level exchange (for example, co-defining strategies with political commitment) was because food planning projects were at different stages of progress.

Nevertheless, some territories stepped further to develop strategic collaboration with neighbouring territories. One example in the Occitania region shows how neighbouring food planning can collaborate at a strategic level. The food planning of the rural cluster Haute Vallée de l’Aude (managed by a cooperative) and food planning Castelnaudary (a municipal food planning) together developed an “inter-food planning” (Figure 3. 11). The idea was that two food planning projects could be coherent to communicate the experience (especially for food planning Haute Vallée de l’Aude to learn experience from food planning Castelnaudary which is more mature) and co-create shared instruments:

And so, in 2018, this led to the signing of this charter and a second application to the National Food Programme (PNA), which this time was linked to another food planning, the one of Castelnaudary... They were a food plan that was a little older, more experienced, and already had actions in place. So we thought, we can try to make a common programme to try to carry out actions where we will be nourished by the experience of the other, on different topics or the particularities of the territories. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l’Aude, Occitania, 2021/09/28]

Figure 3. 11. Location relationship of food planning of Haute vallée de l'Aude and Castelnaudary.

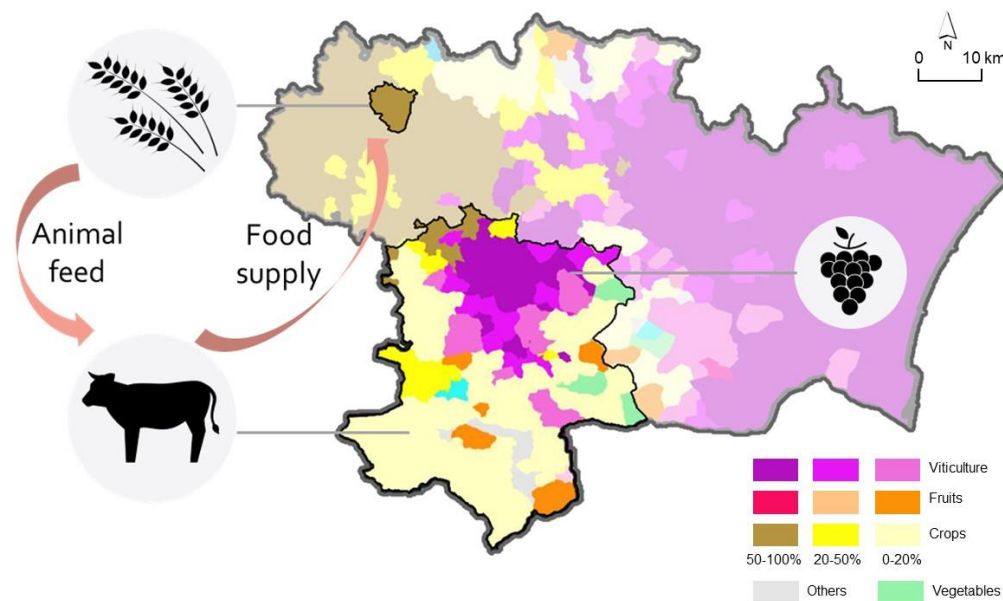


An embedded RAA-associated rationale of the collaboration was to develop the agri-food sector at a large scale to achieve a real re-territorialisation of food production and improve the added value of the agricultural sector. As the interviewee explained, there was a potential complementarity between territories regarding agricultural production. The livestock farmed in mountainous areas (Haute Vallée de l'Aude, yellow in Figure 3. 12) might be fed by crops provided from the plains (areas of Castelnaudary, brown in Figure 3. 12), while the collective canteens in the municipality located in plains could be supplied by livestock in rural mountainous areas.

Here, in the Haute Vallée de l'Aude, we are rather on a very rural territory, with two distinct zones, the plain around Limoux which is more of a wine-growing area, notably because there is a labelling food (AOC) around the wine, which is called the AOC of Limoux. You go up, and then you go deeper into the valley, the more you arrive at the foothills, which are a bit mountainous, where you see more livestock farming, which is dominant, a bit of all types... [...] On the other side, you have Castelnaudary which is the cereal plain. There are practically only cereals. [...] So we thought, how can we make exchanges between bringing cereals up to the Aude Valley to feed the livestock, and we bringing meat down for the catering industry, thoughts like that... [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

It is worth noting that such collaborations between territories refer to the agroecological transition. An autonomous farming system is to be rebuilt through connections between crops and livestock in proximity. This connects to what has been discussed in chapter 2.2 and indicates how scales can affect instruments mobilised.

Figure 3. 12. Major food production types and complementarity. Food planning of Haute Vallée de l'Aude and Castelnaudary.



Note. Map of dominant culture of municipalities in Occitania: DRAAF Occitanie, 2022, https://draaf.occitanie.agriculture.gouv.fr/IMG/jpg/culture_dominantes_cle881728.jpg, accessed 7 February 2023.

Two food planning project leaders developed shared strategies in food education, structuring supply chains, raising awareness to elected officials in farmers' set-up and food planning management. Such strategies were mainly about conducting studies, training, communication and networking between stakeholders in both territories. RAA-associated actions were on, first, training elected officials in facilitating farmers' set up; second, studying the feasibility of collective food infrastructure as well as collective catering supply strategies; and third, connecting the two territories that are complementary in terms of food production. For example, *"Economic exchanges between cereal farmers in the Lauragais and livestock farmers in the Haute-Vallée de l'Aude, in particular for the organic sector: linking the supply of fodder from the Lauragais with the demand for fodder for livestock in the Haute-Vallée de l'Aude. A. one meeting per year with the actors; B. follow-up of exchanges between farmers plus assessments of the action"* (food plan - rural cluster Haute-Vallée de l'Aude, p 16). The advantages of the cross-local collaboration between two food planning projects are 1) developing strategies and organising activities at a larger scale to avoid repetitive work, 2) connecting two territories that are complementary of products, and 3) communicating experiences and expertise.

To make the shared strategies operational, the food planning document of the rural cluster had an appendix that presents how to cooperate with the neighbouring food planning with the distribution of budget estimation and responsibility (Figure 3. 13):

Figure 3. 13. Example of responsibility distribution in food planning action plan.

Coût de l'action et justification de la répartition financière de l'opération :

Coût total : 22426 €

	Montant de l'action (HT)
PAT Castelnaudary	15056 €
PAT Haute-Vallée de l'Aude	7370 €

Note. From Plan d'Action complet avec descriptif - Annexe 1- Présentation de l'opération de coopération (SCIC Maison Payannne de l'Aude, 2021).

Another example of cross-local food planning collaboration is between the regional park Haut-Languedoc and the rural cluster Haut Languedoc et Vignoble, the two partially overlapping territories (Figure 3. 14). The regional park and the rural cluster developed a food planning project, respectively. The particularity is that two territories partially share the territory (two inter-municipal bodies). Therefore, there are elected officials of the local authorities that adhere to both the regional park and the rural cluster. Elected officials in two food planning were aware of linking two food planning and distributing responsibilities. The global distribution of responsibilities was based on the continuation of their previous work. The rural cluster works mainly on short supply chains to individuals while the regional park works mainly on collective catering. The scale of intervention, however, may be challenging. There was a principal responsibility distribution. For example, the rural cluster developed a digital online platform with local producers' information (Cliketik.fr) at the scale of both territories. For collective catering, although the regional park works on it, the rural cluster has to work on the territories that are not in the boundary of the regional park:

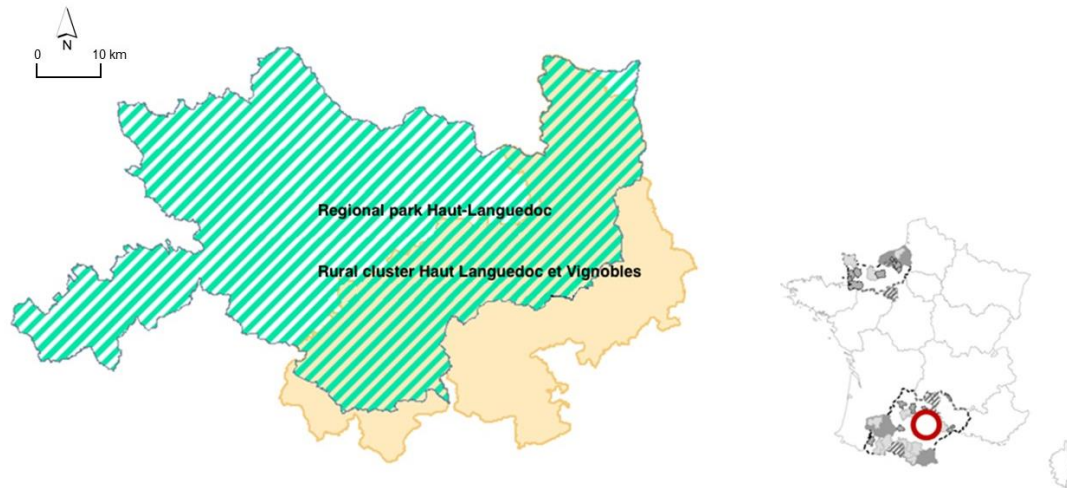
We work with the regional park, because we have two shared inter-municipalities. So we, the rural cluster, work on short supply chain issues, open-air markets, catering for the individual consumer. And the regional park does the same thing but works on collective catering. We try to distribute the collective catering over the whole of their territory, and we only deal with it in our two communities of communes. [civil servant, rural cluster Haut-Languedoc et Vignoble, Occitania, 2021/09/22]

Interviewees from the regional park also claimed that it was still tricky to clearly distribute responsibilities as there is always an overlap on responsibilities between those two territories as well as infra-local governments:

I would say that the biggest difficulty is finally with the municipalities linked to the rural cluster Haut Languedoc et Vignoble, where there is more confusion about "who does what" to be transparent. Because we have elected officials who are in both organisations, the rural cluster and the regional park; as a result, even if we try to have a clear dividing line, inevitably at some point,

between the municipalities, the inter-municipal bodies, the rural cluster, the regional park (things are confusing) ... [civil servant, regional park Haut-Languedoc, Occitania, 2021/06/15]

Figure 3. 14. Overlapping food planning projects: regional park Haut-Languedoc and rural cluster of Haut Languedoc et Vignobles.



Other than a global level of collaboration between territories (territorial contracts or co-construction of food planning), associations (civil society or professional) and private actors as project partners can facilitate breaking the administrative boundary. This relates to the fact that non-public institutional actors' activities usually are not limited by administrative boundaries. Several interviewees reported that the partnership with the Chamber of Agriculture (departmental scale) and other professional associations naturally brings actions at a larger scale than the food planning administrative scale. For example:

The connection is also made in a natural way, because the Chamber of Agriculture is a partner of other food planning. The APABA (an association specialised in organic farming) is also a partner of other food planning. So we often have the same operators who intervene in the different food plans. So even if we do not have a direct link, the link is made by the project leaders who navigate between us. [civil servant, regional park Grands Causses, Occitania, 2021/06/16]

In addition, economic projects can be an opportunity to connect territories.

Some territories worked with neighbouring territories when developing collective food infrastructure. Such infrastructure (i.e., processing centre, transport and logistic organisation, food hub, producers' shop) might be developed in one territory but requires a larger scale to reach economic scale. Interviewees claimed that the administrative scale could be easily broken for economic projects, e.g., producers' shops, vegetable centres and central kitchens. Such projects, though they may prioritise food in proximity, have their own operational scale of "local" considering the viability and feasibility of the

projects. When such projects seek suppliers or members, the distance might be a priority but will not be limited by the administrative boundary of the food planning. For example:

When I work on producer groups, for example, to think about creating a shop, there may be a producer from the neighbouring department. We still try to have more producers from here (the rural cluster) in the majority, but we do not want to close ourselves off... We also have producers from our territory who work in shops in the neighbouring territory, so we do not want to exclude... [civil servant, rural cluster Midi Quercy, Occitania, 2021/09/28]

An example is a vegetable centre (*légumerie*) project envisaged by Metropolis Rouen and Agglomeration Seine Eure. Both situated in an urban cluster (*Pôle métropolitain Rouen Seine-Eure*), they had been working together for the market gardening supply chain and were planning to develop a vegetable centre project to do the processing, notably to offer surrounding small municipalities that do not have means to have their own processing centres.

Another case is the logistics platform (to deliver local and sustainable products to canteens) project managed by the inter-municipal body of Ouest Aveyron. The local authority planned to work with neighbouring territories as "*there has to be a minimum size for there to be a model behind it. So we will certainly look at neighbouring territories*" [civil servant, inter-municipal body Ouest Aveyron, Occitania, 2021/06/15]. This also indicates a pooling and sharing possibility for neighbouring territories with similar challenges, as an interviewee reported:

With the inter-municipal body Ouest Aveyron, we have begun to build links. Because we have problems that are quite similar, notably on questions of logistics, we had a first exchange last week to see how we could potentially mutually share things. [civil servant, regional park Grands Causses, Occitania, 2021/06/16]

Overall, territories in experiments showed different ways of cross-local collaboration in planning RAA. Some are based on creating formalised contracts. Some territories co-develop food planning strategies and find coherence and complementarity through the co-construction process and the distribution of responsibility. Though not framed by binding rules, voluntary contracts or the locally negotiated responsibility distribution may help build a long-term collaborative relationship. Associations and private actors also help break the administrative boundary of actions. They played the role of intermediaries, as their functions were not limited by the administrative scale. Finally, economic projects (e.g., collective processing centres, producers' shops) can be an occasion to bring territories together. The empirical studies showed collaborations not only between rural-urban territories but also between rural-rural territories, which is not always identified in food planning studies.

2) Multi-level governance

Other than collaboration between neighbouring territories, multi-level governance was also organised in different ways according to the scales of food planning. **In general, food planning project leaders seek supra- and inferior-scale public institutions when requiring their competences.** For example, the inter-municipal bodies seek the rural cluster for farmland preservation (the developer of master plan (SCoT)) and the department for social aid and collective catering. Or, rural clusters and regional parks work with inter-municipal bodies to achieve concrete actions related to land issues. As claimed by interviewees, the difficulty is that inter-municipal bodies do not have the same level of interest in RAA. For most food planning, the steering committee includes supra- or infra-scale public authorities, though the commitment can differ.

The major challenge for the multi-level governance was revealed in the relationship between food planning at different scales, i.e., one department and its inferior inter-municipal bodies and rural clusters develop each one's food planning (see Figure 3. 6 as a general overview, see Figure 3. 10 as a concrete example). In most cases, supra-scale food plans (in most cases, departmental scale) were developed after. Interviewees reported three rationales that pushed the launch of supra-scale food planning: first, to cover the "empty territory" in which no infra-food planning has been developed; second, to develop projects with which they have competences (e.g., collective catering for the departments); and third, to coordinate infra-actors at a larger scale including coordinating infra-food planning. When it is the second case that supra-scale food planning was developed to complement actions by their competences, it is less struggle for infra-food planning to find its position. For example, some interviewees claimed that when the departments/Chamber of Agriculture at the department scale cover something, they will not repeat and maybe will develop strategies to fit that:

A1: We take into account the fact that the department council was going to develop training courses within the framework of their food planning and we did not include any in our food planning application because there will be some in the department's application.

A4: Particularly with regard to collective catering, because for everyone it was more relevant to have actions on collective catering at the departmental level rather than at the level of the inter-municipal body. [civil servants, inter-municipal body Haut Allier, Occitania, 2021/10/04]

Regarding coordination between food planning at different scales of the territory, territories seem to be exploring how to implement that, which is not yet clear. In most cases, the collaboration was still in the technical communication phase. In the case of the department Seine-Maritime in

Normandy, several infra-department scale food planning were in place. Gathering different food planning project leaders was to develop exchange at the technical level. The idea was to enable communication between experiences and information and, where possible, co-develop actions. The interviewee, at least during the interview period, claimed that the coordination would be at the technical level but not to intervene in political decisions.

It is mainly exchanges between food planning managers throughout the territory, in order to see how we can pool actions or deploy actions that are envisaged perhaps on a smaller scale than the department [...] But it is more a sharing of information and resources. We are more of a resource, in relation to all of the food planning and in relation to the evolution of each individual's projects, and we do not intervene in any way in the food planning of the inferior territories. [civil servant, departmental council Seine-Maritime, Normandy, 2021/05/11]

Such communication between food plans is necessary considering the optimisation of projects and territorial coherence. A major problem, as already mentioned in 2.3 about the collective food facilities, is that responsibilities between authorities at different levels are not clear. An interviewee gave a concrete example of the necessity of coordinating infra-food planning to optimise the development of collective food infrastructure. Such coordination enables planning food infrastructure at a global scale, avoids vicious competition and may create cooperation. Again, a difficulty is that no guide of "appropriate scale for actions" has been proposed. The interviewee reported as such:

... not all the food planning projects are going to have their own vegetable centres or logistics platforms, even though this is an ambition in every food planning. It is clear that we cannot all have our own vegetable centre throughout the territory. So, the objective of the department's food planning is rather to enable exchanges between project leaders to see if pooling and sharing is possible. [civil servant, departmental council Seine-Maritime, Normandy, 2021/05/11]

In terms of the need for collaboration and the fact that no responsibility distribution was clear, the multi-level governance might be challenging in terms of forms and contents. An interviewee warned that the complexity of multi-level governance might be too many overlaps and, therefore, too many requests. An appropriate scale of communication and well-organised multi-level governance is necessary:

... for the moment, there is a real desire to work together. There are several food planners who are looking to us for feedback [...] Then, there is articulation with the department's food planning... so it is certain that if we ask them for X number of meetings on the same themes, the department and us, it will be a lot. So I think we will have to find a way to organise ourselves. [civil servant, inter-municipal body Cœur du Perche, Normandy, 2021/06/10]

Figure 3. 15. Example of integrated action plan with the supra-scale food plan.

Axis	Sub theme	Action	
Collective catering	Supporting out-of-home catering projects to be sustainable and local, favouring introducing local and organic products in collective catering	Collective catering assessment of the rural cluster	Food planning of the rural cluster: funding from the recovery plan
		Locating the territorial offer in collective catering	
		Supporting voluntary municipalities to regain the re-municipalisation of their canteens	
		[...]	
	Awareness-raising in collective catering	Animal- and plant- based protein: finding a balance	Food planning of the rural cluster: other funding
		Promoting local and organic products in the institutions	Food planning of the department
		Developing activities for schools "taste the world around me"	

Note. Translated and simplified by author based on the food planning of Haute-Vallée de l'Aude document, 2021.

The studied cases present a few concrete experiences in the multi-level governance between food planning projects. An exemplary case of multi-level food planning coherence was the food planning in the department of Aude. The action plan of food planning of the rural cluster Haute-Vallée de l'Aude integrated the actions of the departmental food planning (Figure 3. 15). The rural cluster considered the departmental food planning actions to find complementarity and avoid repetition. In that way, a certain level of coherence can be found.

Overall, multi-level governance was still an issue in progressing and in experimenting. Who is responsible for what was not always clear, especially when different scales of food planning projects were developed in the same territory. There may even be competition. It also refers to the innovation in the institutional organisation and a process of learning.

In synthesis, though not systematically, case studies show evidence of how food planning was able to break administrative boundaries. Cross-local collaboration can be found in several ways, such as conventions between territories (urban-rural complementarity), collaboration surrounding collective food infrastructure (economic viability) and neighbouring food planning collaboration. As concluded by Caste (2019) in research on four French food plans, such cross-territory collaboration is driven by economic and political willingness. Besides, associations and private actors break the administrative

boundary naturally. For example, when developing a producers' shop or a vegetable centre, the project manager will not limit the food sourcing within the administrative boundary but a more economical and demand-offer reasonable scale. A further question is whether a shared definition of "local" among different actors associated with food planning is necessary, and if "local" is not a consensual concept among stakeholders, what impact could it have.

Regarding multi-level governance among case studies, it occurs naturally when project leaders find other-scale partners necessary to complement the competence. An interesting and potentially useful multi-level governance is between food planning at different scales in the same territory. Until the field investigation date, this multi-level collaboration was still under exploration. When certain actions are already defined/naturally embedded in larger-scale food planning, inferior-food planning tends to integrate the action and be coherent. If not, coherence is necessary. However, which scale for what instruments and how to collaborate remain unclear.

This raises a question of appropriate policy instruments by scales. Again, there is not yet a clear distribution of responsibility by scales of food planning, which might be necessary to be defined. After several years of practice, actors in territories have started to realise the problem due to the overmuch projects in the neighbouring territories that are not scale-viable; for example, food hubs and vegetable centres should be developed at which scale? Civil servants in the territory were aware of that and may have their own opinions. Still, a comprehensive scientific study on viability, appropriateness of scales, et cetera. are necessary. I suggest that the study should combine both social-economic viability (i.e., economic viability at the scale) and political appropriateness (i.e., match the competence and other projects that the project leaders at such scale have).

This sub-chapter aimed to identify scales' effects on RAA planning in order to understand how planning deals with cross-scale issues. The results show that food planning at different administrative scales shared similar RAA-associated goals and had some less clear-cut characteristics in applying instruments. The characteristics were associated with project leaders' competences and their different roles. The results show that there is no unique suitable scale for food planning, and different scales may have advantages, disadvantages. Although local definitions of "local" varied, planning generally faced the issue that actions have to break the administrative boundary. The empirical studies showed some local experiments on how to break the boundary, for example, through formalised organisations, co-developed strategies and external civil actors' implementation. This also shows that food planning differs from land-use planning, it is flexibly framed and is able to create a soft space of communication and collaboration, which recalls the complementarity between

“soft” and “hard” planning (Mattila & Heinilä, 2022).

It is worth noting that the exemplary case of creating cross-local and multi-level collaboration relationships was the food planning of the rural cluster Haute Vallée de l’Aude. The food planning project was managed by a cooperative with collective interest (*SC/C*). To a certain extent, it shows the capacity of a non-institutional organisation to break the boundary. It indicates the role played by civil actors. These actors’ roles and their interplay with public actors are discussed in the following sub-chapter (3.3).

3.3 PLANNING LOCAL AGRICULTURE WITH MULTI-STAKEHOLDERS: TOWARDS A REAL PARTICIPATIVE PROCESS?

After discussing the cross-sectoral and cross-scalar governance, this sub-chapter aims to understand the planning of RAA affected by the interplay between public institutions and civil society actors. Planning literature addresses this private-public interaction and the interplay between bottom-up and top-down processes, claiming that they compensate for each other and emphasising a democratic and inclusive participatory process (e.g., Campbell, 2004; Duvernoy, 2018). This sub-chapter focuses on the RAA-associated stakeholders. It presents land-use planning and then food planning to show how these different planning policies differ in integrating civil stakeholders. Finally, it discusses the possibility and benefits of connecting the two planning processes.

3.3.1 Land-use planning: a framed participatory process

Land-use planning has a relatively stable participatory framework as required by the Planning Code (Code de l'urbanisme, articles L. 132-7; L. 132-9 and L. 132-10). Inter-municipal body is the leading stakeholder in charge of the land-use planning, agenda setting, and policy design until approval. More than that, obligatory RAA-associated participators are mainly the state's local office (at a departmental scale), associated local authorities (region, department), the Chamber of Agriculture, associated master plan (*SCoT*) managers, and, where applicable, regional parks. Their participation is to ensure that laws, regulations and supra-sale interests are taken into account in land-use planning. It is worth noting that such participators give advice to land-use planning, but the advice is not all binding. Land-use planning usually also engages neighbouring inter-municipal bodies. The Rural Land agency (*SAFER*) and watershed organisations were involved in a few cases. Technically, the enterprise (design office or “bureau d'études” in French) in charge of the planning plays a role in land-use planning (most often a private consultant and sometimes a public planning agency in the jurisdiction of major cities). The public also participates in the process but in a more passive way. They are invited to give suggestions and feedback during the questionnaires.

In the studied cases, the most present RAA-associated bodies were the **Chambers of Agriculture and the state's local office** (services déconcentrés de l'Etat). **Other stakeholders** participated in rather an occasional way. They are presented with the following two major parts concerning their role in land-use planning: first, Chambers of Agriculture and second, other stakeholders.

1) Chambers of Agriculture: a double role in land-use planning

In France, Chambers of Agriculture are “public bodies representing French farmers and the rural world” (French Chambers of Agriculture). They offer advisory services to farmers and other rural stakeholders as well as provide expertise to public authorities. **In the studied cases, Chambers of Agriculture played mainly two roles in land-use planning.** First, they are compulsory stakeholders to be consulted (associated public bodies, *personnes publiques associées*, PPA) in the whole process of land-use planning. They give comments and advice to land-use planning to make sure that agricultural issues have been taken into consideration. Second, in one-third of the studied land-use planning, they were in charge of the agricultural diagnosis of the land-use planning⁸¹.

The fact that Chambers of Agriculture could play the double role⁸² of “player” (as a technical team that conducts the agricultural diagnosis) and “judge” (as an associated public body to give comments and advice to land-use planning) was a concern for local authorities in charge of land-use planning. For some of them that invited the Chamber of Agriculture to conduct agricultural diagnosis, it was a kind of obligatory choice because planning documents have to go through the Chamber of Agriculture. For some that did not make this choice, it was to avoid the double role they play in land-use planning, which might be unreasonable and unfair.

According to interviewees, an agricultural diagnosis had advantages and disadvantages at the technical level when it is made by consultants other than the Chambers of Agriculture. Taking planning enterprises as an example, the disadvantage was that they could hardly obtain comprehensive information from local farmers as they did not have close contact with farmers compared to the Chamber of Agriculture. Also, planning enterprises are usually composed of planners, architects and landscape designers; they do not have enough knowledge of the agriculture profession. For this reason, the agricultural diagnosis might not be as comprehensive as what could be done by the Chambers of Agriculture, as an interviewee reported:

I think they (planning enterprise) are NOT THAT skilled. But I think the

⁸¹ Agricultural diagnosis is a part of the territorial study technical work. Some inter-municipal bodies request an individual agricultural diagnosis, though it is not compulsory for land-use planning. The one-third means among 60 studied land-use planning documents, 20 were with an individual agricultural diagnosis by Chambers of Agriculture. Information was obtained from land-use planning documents and complemented by interviewees.

⁸² The persons in charge of consultancy and official opinion on land-use planning have to be part of different divisions at the Chamber of agriculture. But this separation does not totally prevent conflict of interests as it remains the same institution.

diagnosis is very interesting. Surely they did some things that the Chamber of Agriculture did not do. [...] (but) they do not have access to the same data as the Chamber of Agriculture. They do not have knowledge of the local situation. They have advantages and disadvantages. The Chamber of Agriculture [...] is wearing two hats, they are associated public bodies (PPA), and at the same time, the consultant service, and at the same time, stakeholders. [civil servant, inter-municipal body Saint-Lô, Normandy, 2021/01/26]

It should be aware that local territories held different expectations for their agricultural diagnosis. Some interviewees claimed that they wished to have a comprehensive understanding of the territory from an agricultural perspective. In contrast, for some interviewees who were land-use planning project managers, the goal of an agricultural diagnosis was to facilitate the zoning decision. So, they thought that in the framework of land-use planning, the agricultural diagnosis did not require too much information. For example, an interviewee reported his opinion on agricultural diagnosis:

Not too (skilled), that is normal, they (planning companies) are not experts in the agricultural part. I do not know if you have the same expectations as us in terms of agricultural diagnosis. In land-use planning, the idea of agricultural diagnosis is to take an inventory of all the farmers. And we already questioned them. [...] That is enough for us to be able to put in place regulations. [civil servant, inter-municipal body Villes Soeurs, Normandy, 2021/05/26]

The advantage was that planning enterprises tended to hold a view as an environmentalist. Therefore, they could be a balance with the Chambers of Agriculture, who might emphasise farmers' rights but neglect the environmental impact, as an interviewee reported:

People from the planning enterprises are not farmers, they are perhaps more environmentalists. So, in the regulations, when they wrote certain points in the written regulations, certain elements did not seem very relevant to the Chamber of Agriculture, particularly with regard to farm buildings, they should have allowed more farm buildings in certain places [...] But we also have to balance things out a little, that is to say that the Chamber of Agriculture sometimes forgets a little about the environment and the environment sometimes forgets a little about the agricultural side. So we have to try to balance things out so that we can find a consensus. [civil servant, inter-municipal body Grand Cahors, Occitania, 2021/10/05]

As associated participators of the land-use planning formulation, Chambers of Agriculture have their mission to defend farmers. So, according to interviewees, the wish of the Chambers of Agriculture in land-use planning was usually at two dimensions: on the one hand, they wish to preserve as much as possible the farmland, particularly to avoid urban sprawl; on the other hand, they wish to leave enough rooms of building rights for farmers to develop their farming projects. As an interviewee reported:

The Chamber of Agriculture in general opposes any project that would restrict the (farmers') right to build on agricultural land. Whatever it is. We really need to have environmental prescriptions, especially the one in the master plan (SCoT), but they are quite limited. [...] For the remaining farmland, the Chamber of Agriculture wants the land-use regulations to be as light as possible. [civil servant, urban cluster Caen, Normandy, 2021/04/01]

Such a double wish is, on the one hand, related. As reciprocal distances are applied between some farm buildings and non-farmers' residences, avoiding urban sprawl means leaving room for farmers' building rights (see also 2.1.2). However, such a double wish is also, to a certain extent, self-contradictory. The construction in agricultural zones, though initiated for agricultural uses, may have a risk of being further changed into non-agricultural uses and lead to land take in rural areas (Melot et al., 2018). Moreover, the too much building possibility for farmers also risks a negative environmental impact and raise discontent from the public.

In some territories, interviewees claimed that the Chambers of Agriculture (and the major farmers' unions that, in the most cases, they work for⁸³) were too dominating in land-use planning. Such a dominant place in land-use planning on agriculture-associated issues may hinder the innovative methods and strategies for land-use planning to intervene in the agricultural world. In chapter 2, I have presented that the opposition from the Chambers of Agriculture led to the failure in some territories to achieve soil quality assessment for zoning decisions (2.1) and the failure to establish specific zones for market gardening (2.2). Their major argument was to avoid conflicts arising between farmers. This fact shows that a wish for land-use planning to develop more environment-oriented or promote product diversification might be hindered by the strong position of the Chambers of Agriculture.

Some local authorities applied strategies in the land-use planning process to find stakeholders to balance the strong wish of the major farmers' organisations. For example, an interviewee reported that the local authority actively invited stakeholders that defend environmental interests in land-use planning formulation to balance the dominating stakeholders from the side of the major farmers' union:

They are extremely vigilant to ensure that land-use planning does not aggravate

⁸³ Chambers of Agriculture are organisations at scales of région and département. Here in land-use planning they are all about département scale Chambers. They worked for the professional elected officials which are composed of different types of farmers' unions. In most French départements, the dominant farmers' unions that manage the Chambers of Agriculture are the majority farmers' union (FDSEA). The majority farmers' union defends rather for the conventional farming practices than peasant farming or organic farming practices.

these conflicts of use (between farming activities and non-farmers). We have an FDSEA (major farmers' union at departmental scale) that is very present in public policy. [...] the final idea is that I should go and look for actors on environmental issues, actors such as the protection of biodiversity, etc., to get them around the table as well. [civil servant, inter-municipal body Saint-Lô, Normandy, 2021/01/26]

Overall, the Chamber of Agriculture had an important function in introducing agriculture-associated expertise in land-use planning. This function was achieved by their role of consulted associated public bodies (PPA) but also the role of agricultural diagnosis technical team in some situations. The strong role they play may be a barrier for local land-use planning to explore innovative methods and strategies and might risk ignorance of the environmental interests. Though not a general choice, local authorities, might balance the interests through involving multi-stakeholders in the concertation.

2) Involving wider range of stakeholders: towards a multi-stakeholders' land-use planning process

The state, through its local branch offices (at the department scale), plays a significant role as inspector of farmland preservation. In chapter 2.1, on land preservation issues, I have discussed the conflictual interests between the state and local authority representatives. Local territory interviewees usually claimed that the state was becoming more and more vigilant on farmland conversion, especially related to the recent issue of no net land take (*zéro artificialisation nette*, ZAN).

In 3.2, I have discussed the interventions on land-use planning from public authority at supra-scale territories. For the departmental council, the issue of agriculture was not an entry point for their comments on land-use planning. The regional park usually has a departing point from environment and heritage architectural perspectives and less in agriculture. In some territories, the national institute of quality labels (*institut national de l'origine et de la qualité*, INAO) also participated and gave opinions on preserving land for quality labelling food production. This reinforced the finding that the Chambers of Agriculture and the state's local offices were the most dominating stakeholders in land-use planning.

Nevertheless, involving a wider range of agriculture-associated civil actors started to be taken into consideration by the local authorities. Such a consideration was usually for engaging environmental issues that tended to be neglected by Chambers of Agriculture. An interviewee reported that it was necessary to involve associations in land-use planning at the beginning because such associations might have innovative propositions and that it could prevent their opposition at the end of the land-use planning. This interviewee also

claimed that such associations were usually environment-oriented:

Our land-use planning documents are increasingly being attacked on the environmental and agricultural aspects by the associations. In other words, we did not enough consideration to the role of agriculture, or not in the right way. [...] In the preparation of the land-use planning document, we have an important job to do in terms of concertation with associations. And I think that these are actors that we should not forget because it is better to associate them upstream, in particular because they can also have interesting ideas to submit to us, also because in general, if we do not associate them from the beginning, we find ourselves attacked at the end and we do not always win. So I think that we should really give an increasingly important role to this associative fabric and really consider them as actors associated with our projects. [civil servant, inter-municipal body Tarbes-Lourdes-Pyrénées, Occitania, 2021/10/04]

Similarly, in another territory, interviewees claimed that the issue of creating a market gardening belt was not achieved in the existing land-use planning. However, it would be an issue to be developed in the revision as it was strongly promoted by civil society organisations:

Farmers did not necessarily want to designate the zone (agricultural zone with a market gardening indication) so as not to create competition. From what I understand, this is a bit of a blockage, but in any case it is the beginning of something, maybe in revision 6 we will go further, we will make belts perhaps. It is also a bit of what the the citizens' collective who worked on the bill want (market garden belts around the cities). [civil servant, inter-municipal body Rodez, Occitania, 2021/06/16]

Further, there was a pioneer among cases in exploring involving multi-stakeholders in the planning process (in this case, a master plan), which could give insights into land-use planning. In the rural cluster of Midi Quercy, where a food plan and a master plan (SCoT) were ongoing, the master plan actively engaged a wide range of RAA-associated stakeholders, including the participants required by the Planning Code but also non-compulsory ones. For the first meeting, the rural cluster invited numerous agriculture-associated stakeholders (as following in the interview excerpts, they were not all presented). It is noteworthy that not only the major farmers' union (FDSEA) but also minority unions (*Confédération paysanne, coordination rurale*) were invited, which shows the rural cluster's wish to engage rural stakeholders with different interests.

With a focus on sustainable agriculture development as defined by the strategic plan, the rural cluster organised a workshop to gather stakeholders to discuss the definition of territorial orientations and objectives (guidance document-*document d'objectif et d'orientation, DOO*-of the master plan (SCoT)). This workshop engaged multi-stakeholders in the domain (Table 3. 3). More than the usually engaged stakeholders (Chamber of Agriculture and the state), they involved a wide range of stakeholders that are not required by the Planning

Code. An external expert was invited to present food planning with the project manager. The Rural Land Agency (*SAFER*) was engaged in sharing expertise on land preservation issues. Minority farmers' union was engaged. Professional associations that are more engaged in environmental issues and peasant farmer models were involved. Such an agriculture-focused working process in engaging various types of stakeholders was also based on a close exchange between the master plan and the food plan. This will be discussed at the end of the sub-chapter 3.3.

Table 3. 3. *Participators in an agriculture meeting of the master plan Midi Quercy.*

Category	Stakeholder(s)	Shared expertise on the workshop
Local public authorities	Elected officials and civil servants of the territory of the master plan (SCoT) of the rural cluster, inter-municipal bodies and municipalities	Food planning and food security
External expert	An expert in food security	
The state service	The state's departmental service in charge of planning (<i>DDT</i>)	Fallow land reclaim
Supra-scale local authority	Region	-
Farmers' support organisations	Chamber of Agriculture	Farm holding's transfer and set-up
	Peasant farmer support organisation (<i>Association pour le Développement de l'Emploi Agricole et Rural, ADEAR</i>)	Land instruments for local authorities to facilitate farmers' set-up
	Campagnes Vivantes and CIVAM Semailles (for protecting environment and agroecological transition)	-
Minority farmers' union	Peasant Confederation (<i>Confédération paysanne</i>)	-
Resource management agency	Rural Land Agency (<i>SAFER</i>)	Land instruments and farmland preservation
	Water agency	Water and climate change adaptation
Master plan (SCoT) Consultant	Planning enterprise	-
Civil society group	Territorial development council	-

Note. Based on the interview with the master plan project manager of Midi Quercy and Master plan Midi Quercy website: The meeting note of 2020.12.15 SCoT agriculture workshop (<https://paysmidiquercy.fr/projet-de-scot-retour-sur-latelier-agriculture-du-15-decembre/>, accessed by October 2022).

In synthesis, planning RAA through land-use planning shows a general top-down framework with fixed stakeholders to participate and be consulted. The inter-municipal body manages the land-use planning and requests advice and comments from invited stakeholders and the public. Such a finding resonates with what I identified from the literature. It also shows that a “hard” law-framed local policy is well-structured but may lack flexibility.

The study shows that Chambers of Agriculture played a dominating role in land-use planning through their roles as compulsory stakeholders to be consulted and agricultural diagnosis. Their involvement guaranteed the introduction of agricultural expertise in land-use planning. However, Chambers of Agriculture had a complex role as they represent all farmers but are usually managed by majority farmers’ unions. They might, to a certain extent, ignore environmental issues and are not dedicated in RAA issues in land-use planning. Minority farmers’ representatives were usually not involved in land-use planning. Such an unbalance between representatives of different farming models may make RAA issues not sufficiently emphasised in land-use planning.

Although other civil society organisations were not actively engaged in land-use planning, there was a raised awareness for local authorities to involve them. Local authorities realised that it was essential to bring environmental and ecological transition issues into land-use planning in order to avoid conflicts at implementation stages and balance interests with other stakeholders. In one of the cases, the close interaction between the master plan (*SCoT*) and food planning facilitated diverse stakeholders’ involvement in the planning process. It demonstrates the potential for land-use planning to be more engaged in RAA issues from its organisation.

It is noteworthy that the Climate and Resilience law (*loi Climat et Résilience*) established in 2021 reinforced the commitment of environment-associated public stakeholders in master plans (*SCoT*). Public institutions for the basin and water management became compulsory stakeholders to be consulted (Planning Code L. 132-8). This evolution did not apply to land-use planning but could give insights into future legislative modification. Nevertheless, it should also note that involving multi-stakeholders in land-use planning is challenging given the diverse and conflictual interests stakeholders have (Holtslag-Broekhof et al., 2014).

Compared to the land-use planning process with a framed participatory member composition, food planning has a flexible framework which enables wider groups of participators to be involved in the whole process.

3.3.2 Food planning: a field to explore the common table gathering stakeholders

As defined by the Agriculture Law (*loi LAAAF*) in 2014, food planning projects "are developed in consultation with all the stakeholders in a territory" (Rural Code, Article L111-2-2). Understanding different stakeholders' roles and relationships helps understand the food planning process. This part is presented following the major stakeholders and relationships in RAA-associated issues in food planning: first, I discuss the state-local and public-civil relationship; second, I present the role of professional stakeholders and the other civil society stakeholders. Food planning policymaking has several stages. Stakeholders are presented in their roles in the initiation (agenda setting), policy design, decision making and actions' implementation.

1) *An interplay between the state, local public authorities and civil society stakeholders*

The state: essential driver of the food planning initiation and implementation

The state⁸⁴ plays two major roles in food planning. **First, the state is an important impulsion for initiating food planning and provides a framework for the themes that food planning works for.** The national law-defined food planning has provided visibility, legitimacy and a working framework for local territories. The national funding framework based on different ministries and agencies (see general introduction I.4) complemented this framework. The recovery plan (*plan de relance*) in 2021 has also reinforced the local initiation of food planning, given the more important financial incentive. As an interviewee observed at the regional scale, the objective defined by laws (e.g., Food law, *loi EGalim* in 2018), associated requirements by the state agencies (e.g., Water management agency) and the financers' requirements provided a framework for local territories to develop their food planning.

I think that one of the aspects that has had a great impact is the request from the state to work on a certain number of topics, notably the Food law (loi EGalim, 2018), which means that we now have a topic on collective catering, but which also leads to work on food waste, which also leads to questions of accessibility and food for all. So we have both, a somewhat regulatory framework which also led to diversify the reflections also in relation to the expectations of the funders. [...] there is also the Water Agency, which has quite a lot of impact on working on strong land strategies with the desire to work on approaches that are a bit more sectoral, in connection with water resources.

⁸⁴ The state includes both the national government and its local offices at the scale of région and département.

[...] we also have the impulse given by the state to set up the Contracts for the Recovery of Ecological Transition. [staff, Chamber of Agriculture of the region of Normandy, 2021/06/11]

The regional organisation further reinforced the national programme. The state's service of agricultural and food (DRAAF) worked at the regional scale and incited local territories to develop food planning by providing finance, expertise and information. For example, one of the missions of the Normandy regional food planning network was to incite the territories to develop food planning by providing information on administrative and financial resources. Such networks may be conveyed to other managers, but the state was the initiator.

Second, the important monetary funding programme from the state through the recovery plan (*plan de relance*) has pushed food planning into more operational schemes. If the national "call for projects" was to finance the development of food planning (see introduction I.4), the recovery plan involved a measure (13 B) that was dedicated to the action implementation with amplified investment. For that reason, it also changed relationship between the food planning project and other local stakeholders. Therefore, the food planning had a responsibility to coordinate and identifying local initiatives to be funded by the national funding. food planning project leaders could have a panorama of local actions and better coordinate them. An interviewee claimed that this process facilitated the food planning to be a facilitator of getting funding without necessarily providing their own finance. It also reinforced the role of food planning project leaders as the coordinator and organiser of the territory.

The increased financial investment also promoted different stakeholders' interests and commitment in food planning if they were not that interested before. Several interviewees claimed that the Chamber of Agriculture was not initially interested in food planning or RAA-associated issues. However, the recovery plan with the funding possibilities raised their interest. For example, an interviewee reported the observation of such a transition:

They (the Chamber of Agriculture) did not see the interest of the food planning at the beginning, they did not position themselves as the main partner, or even, they do things on their own. [...] Now that they see that the project is gaining in value, that there are the recovery plan measures with a lot of money and that we are labelled and that we can therefore respond, they are beginning to realise that it is relevant, that we have mobilised a lot of players behind us and that there is a system in place which is moving forward, that it is a big machine which is starting to take off. So I think that they will see the interest. [civil servant, departmental council Gers, Occitania, 2021/06/17]

Overall, the state has played an essential role in promoting the development of food planning and, more recently, the implementation of defined actions. This

was facilitated by the national laws, financial programmes and the organisational work of their regional offices (DRAAF). At the local scale, public authorities are essential players.

Local public authorities: major initiators of food planning projects

Local public authorities in general played dominant roles in French food planning initiation and implementation. I identified from interviews major local drivers of launching a food planning. Other than the impulsion from the state, **most food planning projects were developed based on local public authority's political willingness.** For example, to increase the auto-sufficiency level of the territory (Albi), to develop local food strategies (Grand Cahors) or to supply school canteens with quality food (Seine Eure). Some interviewees claimed that the electoral change (which occurred in 2020) opened possibilities for territories to develop the issue of RAA; elected officials with ecological thinking were more engaged than before. I have discussed in previous chapters that these initial ambitions have evolved along the elaboration of the food planning for diverse reasons (see 1.2 regarding the food planning towards a systematic project and 3.2 regarding the issues of scale).

Other than that, interviewees from two territories claimed that **local elected officials were willing to develop food planning as a territorial project to consolidate the territories which were newly established**⁸⁵. Food planning as a project with goals for gathering local stakeholders was taken as an opportunity to unify former local authorities and reinforce the new territories' legitimacy. As an interviewee reported: *"because we are very young, there is also a lack of legitimacy, so there is a need to structure ourselves and to federate the territories. So there is this issue at stake in the territorial food project"* [civil servant, inter-municipal body Cotentin, Normandy, 2021/04/02].

The launch of food planning in two territories presented a model of food planning driven by policy entrepreneurship, namely, by individuals who exploit opportunities to influence policy outcomes so as to promote their own goals (Emas & Jones, 2022). In one case, one central kitchen chief started from practices in school canteens and mobilised public stakeholders to extend the issue to food planning (rural cluster Armagnac). In another case, the elected official targeted the issue of agroecology and food to reinforce the political influence (Montpellier Metropolis) (Michel & Soulard, 2019).

Most territories developed food planning based on their existing local political tasks. Food planning then provided the public authorities an opportunity to develop an individual local policy. Rural clusters and regional

⁸⁵ A merger of inter-municipal bodies occurred in 2017 in France.

parks usually had been working on local supply chains, collective catering local supply and CAP agro-environmental measures issues for a long time. Departmental councils generally had a starting point from collective catering. Some developed food planning based on existing political projects: one based on local health contract (CLS); two territories developed their food planning based on climate plans (PCAET).

Territories usually launched food planning based on multiple impulses: the reinforced political willingness (for example, from electoral change, from a leading person), the existing projects and competences as a base and the opportunity to develop food planning given the legal title identified by law and the financial incentive (the 2014 first definition of food planning, 2018 collective catering, 2021 recovery plan). For example:

We had started to work on the theme of agriculture and food with the collective catering section and then with the section on promoting producers from 2010. But there was not yet this notion of food planning, it was rather the targeted actions, there was not this action, this will to work on cross-cutting and multi-thematic actions in connection with agriculture and food. And that is what happened in 2015. The elected officials rewrote the territorial project by setting strategic axes for the territory for the new 2014-2020 term. And it was at this point that the elected officials decided to work more deeply on agriculture. [civil servant, rural cluster Albigeois Bastides, Occitania, 2021/07/02]

As major initiators, public authorities were often project leaders of food planning. They were in charge of the food planning, developing working methods in engaging stakeholders, defining actions, making decisions, implementing and monitoring. Chapter 3.2 has discussed different roles local public authorities play at different spatial scales.

Overall, most food planning was driven by local elected officials' political commitment and also managed by public authorities. This should not be taken for granted because international cases have shown that many food planning projects were initiated by civil society organisations (e.g., Moragues-Faus & Morgan, 2015; Haylock & Connelly, 2018; Cretella, 2019). The significant role played by local authorities might be further proof of the state's incentive.

Although public authorities played significant and sometimes leading roles in food planning, they usually needed civil society stakeholders. Studied cases show different forms of civil society stakeholders' involvement in food planning and different relationships with public authorities.

2) Civil society stakeholders: roles and relations with public stakeholders

Civil society stakeholders (including professional organisations or cooperatives and non-profit associations) played different roles in food planning. Some of

them initiated and managed the food planning projects. Others, though not managing the projects, were more or less involved in and were in charge of the implementing certain actions. In some situations, civil society stakeholders facilitated the evolution of food planning. Food planning involves civil society stakeholders differently depending on how it was organised.

Some food planning projects were initiated by non-public actors. Three in Occitania were initiated by a health-based association, an environmentalist association and the Chamber of Agriculture⁸⁶. These three projects are in the two departments that are the third and fourth for poverty proportion in metropolitan France (INSEE, 2019). This fact may explain the non-public organisations' role (civil or professional) to compensate for the absence of the public authorities' active commitment.

In another case, the rural cluster authority of Coeur d'Hérault launched food planning based on a strong citizens' concertation activity. Although the rural cluster had been working on land, agriculture and collective catering issues, agriculture and food were not put on the political agenda until a citizens' concertation. The citizen participative assembly on food (États généraux de l'alimentation et de l'agriculture durable, EGAAD) supported the development of food planning through different stakeholders' involvement and concertation,. It put food and agriculture into the political agenda, enabled the set of office and human resources in the rural cluster authority and enabled the application of different financial programmes. Although this concertation activity was based on the public authority (through the development council, a citizens' participation organisation attached to the public authority), it shows how much civil society stakeholders promoted the RAA-associated issues in the political agenda. As the interviewee reported:

We moved from land and agriculture to food progressively, via the development council with the preparation of the General Assembly of Sustainable Agriculture and Food (EGAAD) [...] I think that this is also one of the specificities of this food planning. It is not just the elected officials who do it, it is really the citizens who make it emerge" [civil servant, rural cluster Coeur d'Hérault, Occitania, 2021/09/17].

Although other food planning projects were managed by public authorities, civil actors were usually taken into account by the project

⁸⁶ Food planning of department Pyrénées-Orientales was initiated by the Chamber of Agriculture and later managed by an association reunifying other public institutions. Food planning of the rural cluster Haute-Vallée de l'Aude was initiated by an environmentalist association Nature et Progrès and later on managed by a cooperative with collective interest (SCIC). Food planning of the rural cluster Pyrénées Catalanes was initiated and managed by a health-based association Chemin Faisant. See also Table 1. 2.

leaders. It is often because public authorities need external resources and skills to fulfil the actions for food planning (Moragues-Faus & Morgan, 2015; Duvernoy, 2018). Most interviewees claimed that the implementation of food planning would base not only on the project leader but also on a wide range of civil actors for compensating the limited human and technical resources disposed of by the public authority. An interviewee provided a concrete example:

...the difficulty today is that there are only two of us in the agriculture sector. To be able to do that (follow farms' development), we would have to go to each farm to check the follow-up, et cetera. Clearly, we do not have the means to do that. So, what we do is working with the Chamber of Agriculture and other associations that are present on the territory and work directly with the farmers to motivate and support them. [civil servant, inter-municipal body Metropolis Rouen, Normandy, 2021/04/23]

In some cases, the involvement of civil stakeholders facilitated the maturation of food planning. The inter-municipal body Grand Cahors provided an emblematic example. It had the first version of food planning only with actions conducted by the local authority. However, in the evolution of food planning, the local authority realised a necessity to involve diverse civil society actors, especially NGOs, to conduct other actions that the local authority lacked resources to invest in. As the interviewee claimed:

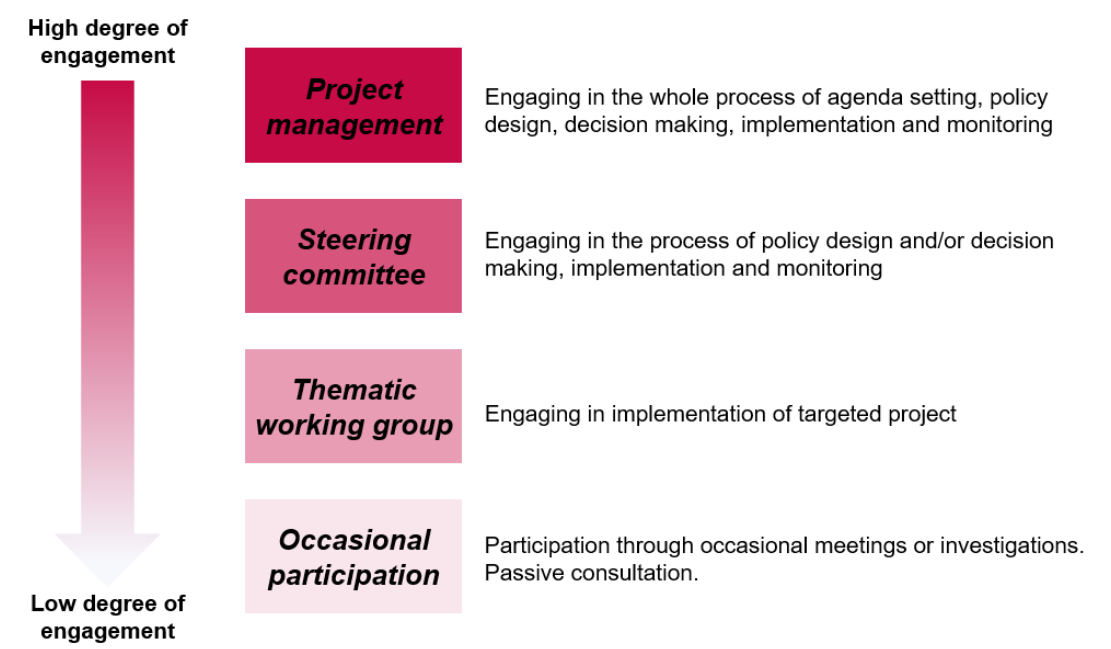
The old food planning was really only focused on the actions of the agglomeration, whereas it seems to me that the territorial food project feeds on a lot of initiatives in fact. The idea is not to strip away or appropriate the initiatives of associations, not at all. We do not have the time, we do not have the means, it is not our job. But on the contrary, we rely on them in fact. And it is coherent, they take over and we take over, in the end, we are linked. [civil servant, inter-municipal body Grand Cahors, Occitania, 2021/10/05]

Depending on the food planning organisations, civil stakeholders participated in food planning in different forms. Figure 3. 16 concludes four general types of roles in food planning and the correspondent level of commitment based on observation of studied food planning cases. The first degree is food planning project management. Project (co-) leaders engage the most, from agenda-setting to implementation and monitoring. The second degree is the steering committee. Most food planning project leaders organised such committees to engage the long-term participation of partners. Depending on the organisation forms, partners were engaged in policy design or more stages of the food planning. The third degree is participation in the thematic working group. This usually happens after defining goals, depending on which project leaders might extend to seek expertise and project managers to conduct projects. The fourth degree is other forms of participation; for example, project leaders in the beginning stage of the project invited potentially-associated

actors to participate in meeting and express opinions voluntarily. Such participation is occasional and does not guarantee long-term commitment. For example, an interviewee claimed:

Each time, we had 45 people. We invited associations, partners, a bit basic, the consular Chambers, the elected officials. And we also invited private individuals: supermarkets, et cetera. But they did not involve much. We also invited stakeholders related to food bank. There is the regional health agency (Agence Régionale de Santé, ARS) on the health and food aspect. But that is the same thing: we did not go far enough. [civil servant, inter-municipal body Coutances Mer et Bocage, Normandy, 2021/06/02]

Figure 3. 16. Different levels of stakeholders’ commitment in food planning.



Note. Technical group was not listed individually because they were often attached to the listed groups.

According to interviewees (both food planning project managers and regional observers), major participants in almost every food planning were the local authorities at different scales, Chambers of Agriculture, Agricultural professional high schools and organic/agro-ecological farmers’ organisations. Rural Land Agency (SAFER) was sometimes there when land was an issue defined in food planning. Agri-food enterprises (for processing, logistics, et cetera.). Local NGOs are also usually partners.

Territories were exploring their private-public collaboration models to facilitate RAA. There are roles for different stakeholders. I focus on two major groups of RAA-associated stakeholders: professional ones and other civil society members.

Professional stakeholders

Here RAA-associated professional stakeholders include farmers' unions, their support organisations and the food supply chain enterprises. Among them, there are both majority and minority farmers' groups. In general, majority groups defend more conventional farming and provision models; minority farmers' groups defend a practice with environmental and ecological thinking and peasant farmers' values. Food planning has its advocated value on environmental and social benefits. Therefore, food planning might be labelled as a policy that supports minority farmers' groups and not concerns the majority group. An elected official pointed out his observation on such opposition between different farmers' groups and their relations with food planning:

We see clearly that food planning is not the major farmers' union (FNSEA), it is not the major young farmers' union (CDJA): it is not them who do the food planning. It is a citizen's movement within the rural cluster, a movement of the population that does not really represent agriculture. It is rather the new trends in agriculture, the neo-ruralists and all that, who are not in any of these unions. [elected official, inter-municipal body Quercy Rouergue et des Gorges de l'Aveyron, Occitania, 2021/06/28]

Chambers of Agriculture have a complex position in RAA-associated issues. Although representing all the farmers and rural stakeholders, they have been mostly managed by major farmers' unions. Therefore, on the one hand, they were essential stakeholders in creating dialogues with farmers; on the other hand, it was necessary to juggle the delicate values and interests of different farmers' groups.

Studied food planning cases generally engaged the Chambers of Agriculture for four principal reasons. First, Chambers of Agriculture are important stakeholders in dialogue with local farmers. As interviewees claimed, public authorities usually did not have the right and the position to intervene in the farming world. As an interviewee emphasised: "*also as a reminder, on the agricultural field, this is the domain of the Chamber of Agriculture. We (rural cluster) have no competence, so we have very little power over this really agricultural part*" [civil servant, rural cluster Pays d'Armagnac, Occitania, 2021/06/17]. Therefore, Chambers of Agriculture were essential mediators between public authorities and the farming actors. Second, they are significant farmers' support stakeholders. Their expertise in the agricultural world, especially in facilitating farm holdings' transfer, is significant for food planning, although not only targeting RAA. Third, some territories aimed to facilitate conventional farmers' transition to improve RAA. For such a goal, Chambers of Agriculture were considered significant in facilitating the transition of farmers' perception, therefore promoting the territorial transition towards a reterritorialised food system. The fourth reason is related to the third point: engaging the Chambers

of Agriculture was a strategy to promote the transition of the Chambers themselves. As an interviewee reported:

From the point of view of the perception of things, too, because it is also important that breeders put themselves in the spirit that it will be necessary to change the type of products they will bring because the consumer needs more quality (food). There are elements and there, in this case, we still had many breeders here, who were not necessarily concerned about the downstream, what became of their products in terms. So the idea is to also say, if you make quality products, one, you will have short supply chains; and in addition, they also bring added value to the territory. In this case, the Chamber of Agriculture knows that we are at a turning point and that we must help farmers to take this turn. [civil servant, inter-municipal body Haut Allier, Occitania, 2021/10/04]

Therefore, Chambers of Agriculture played diverse roles in food planning.

In one region (Normandy), the Chamber of Agriculture was co-manager of the regional network of food planning. It burdens three major missions: 1) providing information, including financial obtention and political requirements; 2) networking, organising the experience sharing between territories and, if applicable, pooling of the projects; and 3) sharing resources such as methodology and experiences of food planning. As an interviewee reported, the Chamber of Agriculture was important in this network as it can easily mobilise agriculture-associated resources and actors:

The state's regional service on agriculture and food (DRAAF) wanted to rely on the Chamber of Agriculture, because in the beginning, food planning projects are really part of the development of agriculture, of local supply chains. So it was the stronger mobilisation of agricultural actors initially in connection with local authorities; also because it wanted to be able to provide the network with a certain number of resource tools that could be more easily mobilised by the Chamber of Agriculture. (Chamber of Agriculture Normandy)

The Chambers of Agriculture were (co-) project managers in three of the studied cases, meaning they worked with other partners to manage food planning. The partnership was built differently in the three cases. In a department (of Pyrénées-Orientales), the Chamber of Agriculture initiated food planning and searched to collaborate with public authorities and other organisations to manage the planning. In an urban cluster (of Caen), the Chamber of Agriculture-Planning Agency-urban cluster partnership was built to co-manage food planning. This was based on an agreement⁸⁷ signed between the urban cluster authority and the Chamber of Agriculture before the food planning. In an inter-municipal body (of Haut Allier), the local authority intentionally invited the

⁸⁷ It is also noteworthy that this Chamber of Agriculture (departmental level) was one of the rare ones managed by the minority farmers' union (Coordination Rurale) during that period.

Chamber of Agriculture to be co-manager in the evolution of food planning. Interviewees reported that this was based on the inter-municipal body's wish to engage better with the Chamber of Agriculture, which still defended the mainstream farming practices. The inter-municipal body realised that the territory's fundamental transition must be based on the Chamber of Agriculture because they have the channels to mediate and dialogue with farmers, for which the inter-municipal authority lacked the capacity. This choice represents the local authority's strategy to mobilise important stakeholders and engage them deeply in the issue. As an interviewee reported:

Yes, that is why the inter-municipal body preferred that the Chamber of Agriculture be directly involved in the food planning by co-managing it, because we expect a lot from the Chamber of Agriculture in the framework of advice, because the Chamber of Agriculture is there to advise farmers in their development, in their evolution, et cetera. If they do not believe in the first place what is being done or what is being said, it will be impossible to get the farmers to join. So, in the advisory mission, we have to bring the fact that we have to change the way of producing, the way of seeing things locally. And this is what will define this sort of convergence between the consumer and the producer. But, as long as we were a local authority, if we go and talk to the farmers, we will never have the right message because today it is the Chamber of Agriculture who is with the farmers to prepare their evolution. [...] It must be a driving force in the system, that is what we hope. [civil servant, inter-municipal body Haut Allier, Occitania, 2021/10/04]

In other territories where Chambers of Agriculture were not food planning (co-) managers, their roles differ according to the local contexts. In some territories, they were central and active in food planning. For example, in one territory, the Chamber of Agriculture had a long-term partnership with the public authority in short supply chain activities. Therefore, it also has an important role in facilitating short supply chain farmers' set-up in food planning. Interviewees claimed that they worked well together.

Since 2009, there has been a partnership between the Chamber of Agriculture and the regional park to work on the short supply chain. [...] Between 2009 and 2012 there was even a shared post of short supply chain coordinator which was financed half by the regional park and half by the Chamber of Agriculture, which allowed the development of partnerships with the producers in short supply chains who were setting up. [...] (this relationship) was translated afterwards: at the beginning by short supply chain, now we talk about food, and we have the same objective, which is how to better develop our producers locally, how to better consume the local products on the territory. [civil servant, regional park Grands Causses, Occitania, 2021/06/16]

In some other territories where the Chamber of Agriculture did not historically play an active role in RAA, strategies need to be taken to mobilise them. Some food planning project leaders identified consensual actions and discourses to

engage different organisations and avoid raising conflicts. For example, as an interviewee claimed, by emphasising developing short supply chains and facilitating local producers, the Chamber of Agriculture could easily agree with goals in food planning. However, it is worth noting that such a strategy was also a compromise to avoid raising issues related to farming practices' transition in food planning. For example, in this case, the diversification of existing vineyard spaces was not an issue raised in the debate, although it provided a potential good method. Other issues, such as the organic farming transition, have been discussed in 2.2.

Well, in any case, I think that the Chamber of Agriculture in the region is rather open. Why is it open? I think it is because we are also in a territory which ... in any case, the Aude is a very wine-growing territory, so in fact the dominant agricultural model is wine-growing in cooperative cellars. [...] in fact, technically, we should come to question that. Because vines occupy spaces that could potentially be used for other crops. But in the end, in fact, we do not question that. On the other hand, in addition to what you were explaining, we are going to promote short circuits, the diversification of production, rather a local agriculture. And I think that as long as this is not done to the detriment of an agro-industrial viticulture which is that of the Aude, the Chamber agrees. They are not against the idea of diversifying, of having more local producers. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

By contrast, in some other territories, Chambers of Agriculture were not really active, although they participated in the food planning. Some interviewees claimed that the Chamber of Agriculture participated in the meeting and provided professional advice for food planning but without playing a non-active role. In one territory, an interviewee reported that such an inactive role was due to the lack of no long-term political commitment between the public authority (in this case, the departmental council) and the Chamber of Agriculture:

(Chamber of Agriculture) They are partners, to a certain extent [...] we give them all the elements we have to help them move forward when they ask us, but at the same time they set up projects that could fit completely into the food planning and of which we are not even aware, so it is not a fluid partnership. [...] It could be much better if there was political cohesion, because even technically, it is complicated if there is no backing. There is no partnership agreement, there is no partner, it is not set up... For the moment, it is just exchanges between technicians that do not go too far, unfortunately. [civil servant, departmental council Gers, Occitania, 2021/06/17]

Other than Chambers of Agriculture, minority farmers' organisations (e.g., peasant farmer support organisation ADEAR, CIVAM, APABA) were often engaged in food planning through implementing actions that facilitate RAA-associated farmers' set-up, diversification and ecological transition. As interviewees claimed, although Chambers of Agriculture present all the

farmers, organic farmers may trust more their own organisations. Therefore, it is frequent that Chambers of Agriculture and other specialised farmers' (support) organisations were both food planning partners in charge of different issues. For example, an interviewee reported:

There are action sheets that specifically target organic farming, without actually dividing. On the other hand, there are separate factions for everyone. What we tried to do in the food planning is to do something fairly balanced that includes all the stakeholders. [...] We will have the Chamber of Agriculture, where they are for organic or conventional farming. So we will include all the farmers. But we know that even if the Chamber of Agriculture works for organic or conventional farming, very few organic farmers trust the Chamber. So, that is why we will work with Bio en Normandie, for example, or Biopousse, which works for farm incubators, so exactly for organic farmers. [civil servant, inter-municipal body Coutances Mer et Bocage, Normandy, 2021/06/02]

For some territories, food planning was also an opportunity to bring together different farmers' groups. Some interviewees reported that the different farmers' groups were in opposition and did not facilitate the territorial projects. Therefore, the food planning project leader meant to engage different stakeholders to balance the dominating role of the Chamber of Agriculture in farming issues. The idea was to identify a pathway through discussion between stakeholders with different RAA-associated interests, even sometimes conflictual. As an interviewee reported:

...there is the majority network and the alternative network. [...] We would like the inter-municipal body to play this role of facilitator and mediator because we are a neutral actor. [...] Depending on the project, some people will go to peasant farmer support organisation (ADEAR) and others to the Chamber of Agriculture. So in the end, it almost works well like that, because they divide up [...] So our objective is to get everyone working. We have this objective of impartiality and equity. We consider them all to be more or less on the same level. [civil servant, inter-municipal body Ouest Aveyron, Occitania, 2021/06/15]

Another professional stakeholder in shaping the local supply chain is existing agri-food enterprises. They are potential stakeholders in making a transition of their economic models in engaging more local producers and products so that shaping the local supply chain. In a few territories, some economic actors were already working on local food provision activities (they were local logistics in the studied cases). In such cases, they strongly engaged in food planning in participating in different stages' concertation. Public authorities facilitated them through financial aid and technical aid. However, most interviewees shared their observations on the difficulty of mobilising economic stakeholders in food planning. For example, an interviewee claimed that:

We had about 130 inhabitants who responded to the surveys, we have about thirty elected representatives and about thirty farmers who expressed their opinion, and we actually had zero processing companies who responded. [civil servant, inter-municipal body Lisieux Normandie, Normandy, 2021/04/12]

Multiple reasons could explain such phenomena. From a practical perspective, economic stakeholders might not be able to dedicate time to participating in food planning. From their operational method, the established economic models might be difficult to change, or they did not see the opportunity from food planning. An interviewee reported that such enterprises might have their own link with local producers but operate in a different way than what the food planning does. Enterprises had their own sourcing methods and the quantity that they required. Therefore, links between food planning and such enterprises were difficult to find:

We (local authority and supply chain enterprises) are completely different supply chains. We do not have the same demands. They do not have the same problems as us. They do not have the same quantities as us. [...] They came (to the meeting). I have one (mentioning the enterprise) who came to every meeting and did not open his mouth. So I went to meet him alone. He explained to me what he was doing with the local producers, but they have volumes, they negotiate alone and do not need the local authority to tell them what to do. So. I did not find the link. [civil servant, inter-municipal body Coutances Mer et Bocage, Normandy, 2021/06/02]

Some interviewees shared different observations. An interviewee claimed that economic sectors evolve rapidly to respond to consumers' and farmers' needs. For example, enterprises used to practice long supply chain activities may develop a sector for local food to meet consumers' needs.

When we made the interactive cartography, we were careful to include the Leclerc centre among the very first actors, of which there are about forty, and which was able to show what its motivation was in creating a short supply chain in its department stores, i.e. a local supply chain, because it actually responds to a demand. And the economic players actually respond very quickly to the demand, in the same way that farmers know how to convert very quickly according to needs. So we are in a world that moves very fast, perhaps even faster than the capacity of planning to keep up with the speed of change. [staff, planning agency of Caen, Normandy, 2021/04/22]

Some territories proposed to change the communication method to actively engage economic stakeholders, for example, to dialogue with regional agri-food enterprises associations to raise awareness at the institutional level, to actively contact enterprises instead of waiting for their participation, and to demonstrate the distribution of different stakeholders through mapping. It shows that involving multi-stakeholders needs to be accompanied by different working methods concerning their characteristics.

In general, both majority and minority farmers' groups were engaged in food planning. Chambers of Agriculture were unneglectable stakeholders and played different roles according to local situations and strategies. Also, food planning was a platform to engage diverse and even conflictual stakeholders. Other economic stakeholders (supply chain enterprises) were generally less engaged in food planning.

It is worth noting how local authorities involved the Chambers of Agriculture in food planning. On the one hand, there is a logic of "path dependency", meaning that the historical relationship between the public authorities and the Chambers of Agriculture determined their collaboration efficiency in food planning. On the other hand, public authorities can actively build the relationship through the design of institutional organisation. The inter-municipal body of Haut Allier has given a good example; the inter-municipal body intentionally involved the Chamber of Agriculture as co-manager of the food planning. Through this formalised form of co-leadership, the role of the Chamber of Agriculture was reinforced. The study shows that food planning could be an opportunity for the public authority to bring together both majority and minority farmers' groups. It gives insight into the evolution of an institutional design with the co-existence of farming models.

Other civil society stakeholders

Civil society stakeholders other than professional ones also played their roles in food planning. They were mainly NGOs, cooperatives and citizens' groups.

In most cases, associations were not food planning project leaders but participators. In the implementation stage, NGOs were usually project managers related to actions with social and environmental values, for example, collective gardens and raising awareness to citizens. An interviewee reported a case in which the local authority facilitated this initiative by giving the right to use publicly-owned land:

Today there are actions that are carried out by an association in Cahors called "Autonomie Alimentaire Cahors" which has set up a project. [...] The city has given them a plot of land. And they designed a permaculture vegetable garden with the inhabitants of the city, with the schools that came. [...] The aim is to make it a demonstration site first, and then a tool for raising awareness, providing information and a place for exchange. [civil servant, inter-municipal body Grand Cahors, Occitania, 2021/10/05]

In some territories, **NGOs played significant roles in launching food planning**. Two food planning was launched and firstly managed by NGOs (Box 4). The food planning of Pyrénées Catalane was launched and managed by an association specialising in the theme of health. The second case was the food planning in the rural cluster Haute Vallée de l'Aude. It was managed by a

cooperative (SCIC) which has an accent in defending peasant farmers. The food planning was launched for mainly two reasons. First, the association had been working on collective catering for around ten years. Second, public institutions (inter-municipal bodies, municipalities, the rural cluster) were weak in human, technical and financial resources. For example, the rural cluster of Haute Vallée de l'Aude only had one civil servant working half-time. The second reason (the fact that the territory is not rich) incited an active network of associations in the territory. The interviewee reported the active actors in food planning:

... the local authorities are following and are starting to get involved in food planning. But the base, the core, is the associative network and the actors of the agricultural world, such as the Chamber of Agriculture ... and others. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

Box 4. *Initiation of two food planning projects launched by associations.*

Food planning initiation of Pyrénées Calatanes

The territory has a history of development surrounding the theme of "health" because there are many healthcare-associated centres. The association coordinated the Local Health Contract (contrat local de santé, CLS), which is important for the territory. The association started its intervention on food issues from the perspective of healthy food provision. It then enlarged the scope by collaborating with other local stakeholders and applying for financial programmes. The national food planning financial programme was one of them that brought the association to develop the project.

Food planning initiation of Haute Vallée de l'Aude

The association engaging in agroecological ambitions (Nature & Progrès) launched and managed the food planning and then transferred to this newly-established cooperative with collective interest (SCIC): with members from professional organisations mainly with peasant farmer models (ADEAR, Confédération paysanne, Accueil paysan), environmental association (Nature et Progrès), land trust organisation (Terre de Lien) and associations that support farmers in set-up, solidarity and training (Graines de Paysans, L'AFOCG, Solidarité Paysans).

Note. Based on interviews with project managers.

NGOs have its advantages and disadvantages in leading food planning.

According to interviewees, the advantage of NGO-led food planning could be the neutral place beyond the administrative position and beyond the boundary. An interviewee reported that food planning issues were related to different institutions' competences and might generate conflicts. In such a situation, the NGO could be a neutral mediator to organise the issue beyond political conflicts and administrative limits. This is also an advantage in terms of flexibility in operating actions:

.... the association has a strategic position on the territory in this somewhat politically neutral side. We are a bit like the Swiss here because there are two

inter-municipal bodies, plus, the Catalan cross-border aspect, plus, the nature park. So the competences are a bit intertwined. And the difficulties in moving forward are often linked to the fact that, politically, everyone defends their own thing. When we have a food strategy that is based on a territorial logic, which goes beyond political competences, which are really based on a living area logic, on links in the supply supply chain, we are in logics that go beyond politics and beyond administrative structures. [staff, association Chemin Faison, rural cluster Pyrénées Catalanes, Occitania, 2021/09/21]

The interviewee in charge of the cooperative-led food planning project confirmed such an argument. As the interviewee claimed, cooperative-led planning differed from public authority-led planning, which might prioritise public stakeholders and give only a tiny place to other stakeholders. The civil society members-organised food planning tended to involve small-scale local stakeholders. The cooperative as project leader aimed to give different stakeholders equal power so that small and minority organisations could have equal rights in food planning. The interviewee emphasised that this was also a process to reinforce the solidarity and the organisation of the territory.:

We have a very cross-cutting model, it is: one structure = one voice. So, whether you are in the Chamber of Agriculture, the inter-municipal body or the small association of Jardins Partages, you have the same weight in the food planning. [...] For me, the main challenge of food planning is really to have this governance role, to link up and get everyone to agree on actions to be developed collectively. [...] It started from the associative milieu, and we attached the somewhat institutional structures to the dynamic. And it works well because everyone is involved. The Chamber of agriculture, for example, is not excluded from food planning. It does not feel excluded, it participates fully. But we pay a great deal of attention to the small local structures, which not only benefit from a little support if they want it, but are also fully active in the construction of the action programme. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

The disadvantages for non-public authorities to manage food planning are their limits in finance and the public intervention power. A shared opinion by interviewees from these two territories was the difficulty in obtaining stable funding. The basic consequence was the difficulty in guaranteeing human resources in food planning. The post of the project manager was dependent on external funding. Then, there was difficulty in funding the daily organisation work of food planning and investing in actions. As most funding required a certain amount of self-funding, such associations had to advance the expenses, which could be a burden for them.

In terms of financial arrangements, it is quite complicated. And for European funding, the rules, there is a self-financing percentage of 20%. And self-financing is not public funding. This means that the money we had from the state's regional agriculture and food service (DRAAF), in relation to the National Food Programme (PNA), we could not put it into the self-financing

side; it was a refinancing. So, to an association, it was a significant amount.[...] local authorities would not have as much difficulty in obtaining (the financing). So the difference between an association and a local authority is the financial resources. [...] So every year, the budget is questioned. [staff, association Chemin Faison, rural cluster Pyrénées Catalanes, Occitania, 2021/09/21]

Other than financial uncertainty, interviewees shared the opinion of the difficulty for non-public authority associations to intervene in public issues. As discussed in chapter 3.1, food planning has to be achieved based on diverse local policies and competences. Association-based interviewees claimed that they had difficulty dialoguing with public institutions and leveraging public authority power. It is also worth noting that these two food planning project managers were not mobilised in the associated ongoing land-use planning formulation. As interviewees reported:

We do not have the ease of a food planning carried out by a local authority, in order to reach out (to institutions)... For example, when you say, “Hello, this is the inter-municipal body, we need an appointment with the mayor or the cook”, it is not the same as when you say, “Hello, we work on the food planning, which is supported by the Maison Paysanne.” In fact, there is not this facility and convenience that people can have when they are a public structure to address everyone collectively. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

But the political level is necessarily there. So the challenge is to say: “We need all the political levels to be able to move forward on certain topics, like land-use plans, climate plans, [...] all these competences which are political.” If we want to be able to move forward on very concrete topics that we are facing in our actions, the political level must be there. [...] The fact that we are not within a public authority for food planning makes it difficult. It is exactly this articulation with territorial policies such as the one you said about the land-use planning and therefore the master plan (SCoT) on the other side. [staff, association Chemin Faison, rural cluster Pyrénées Catalanes, Occitania, 2021/09/21]

Therefore, while civil society organisations could compensate for the absence of public power, NGOs and cooperatives, in turn, need support from public authorities. They have to rely on public institutions to achieve projects because associations are limited in competences, especially legal ones. This mutual relationship needs to be based on local political commitment and, above all, on awareness-raising. As an interviewee claimed, one of the goals of the cooperative-led food planning was to raise awareness of local public authorities, from a passive involvement into active commitment in RAA-associated issues:

Today, as the facilitator of the food planning, I think that a system of trust has been set up between the actors. We have defined action plans. What I would like to see is that the local authorities also take hold of the tool, that tomorrow they speak on behalf of food planning, that they integrate the system a little more

into their discourse, that it really becomes something shared with the public authorities. Today they say to us: “What you are doing is good, continue.” Tomorrow, I would like them to say to us: “What we are doing is good, because we are doing it together and let us go forward.” It is a nuance, but very important because that is how food planning will be sustained and how doors will be opened. [staff, Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

Civil society stakeholders other than professional ones, in general, had their place in food planning. In most cases, they were involved in implementing actions with environmental and social values. In a few territories, they were leading stakeholders that achieved the initiation and management of food planning. They had advantages in engaging diverse stakeholders in food planning but also disadvantages in unstable finance and limited public intervention power. Overall, civil society stakeholders and public authorities are mutually needed in human, technical resources and institutional power (Moragues-Faus & Morgan, 2015; Duvernoy, 2018).

3) Exploration of a food planning policy with democratic participation

Food planning, with its definition by the Agriculture Law (*loi LAAAF*, 2014) and the national labelling requirements, needs to involve diverse local stakeholders. However, the methods and the degree of involvement vary. An interviewee criticised that some food plans were only making use of funding opportunities but were not developed in a co-construction way and were decided too rapidly:

Food planning has developed a lot because there is money dedicated, which is the fact of being a financial device, technical engineering ... which means that there were a lot of food planning projects that have been set up very quickly, and which do not have the collective construction at all, and which for me are not really food planning. It is more like an opportunity to get money for agricultural activities but not at all co-constructed. It is “opportunistic” food planning. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l'Aude, Occitania, 2021/09/28]

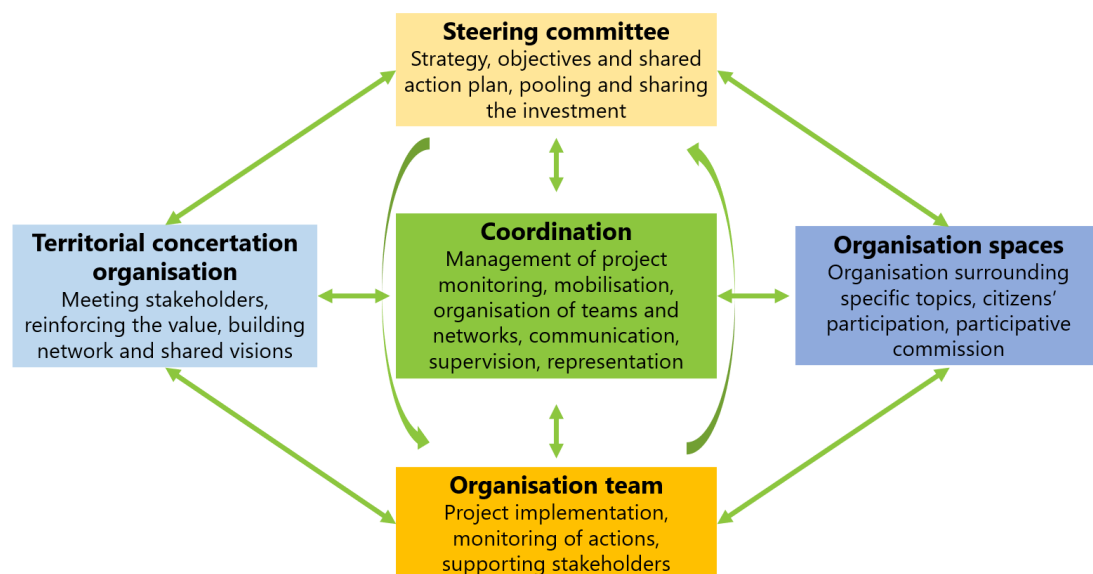
A general criticism of food planning was its “symbolic” concertation which does not allow a just and real participation process. Some interviewees criticised that some food planning only symbolically consulted stakeholders but did not really engage them in the whole process. Such participation did not enable the co-construction of the food planning, and there was a discontinuity between policy design and implementation. For example, as an interviewee criticised: “...I found that participatory approaches were often just: ‘well, we consult, eh!’ And that when we integrate policies, there are many things that can no longer be done in the same way” [staff, association Chemin Faison, rural cluster Pyrénées Catalanes, Occitania, 2021/09/21]. Some territories were aware of that and were rethinking “a real concertation rather than simple consultation” [civil servant, inter-municipal body Tarbes-Lourdes-Pyrénées, Occitania, 2021/10/04].

The methods of engaging stakeholders in food planning vary according to territories. Some food planning projects were largely decided by the public authority project leaders, whereas others made more efforts to engage stakeholders to understand the territory, co-define the ambitions and implement actions. Many food planning project leaders established steering committees with partners, but committee composition and operation methods were not the same. However, some explorative exercises in the territories provided examples of how local territories explored different ways of a “real” democratic food planning process.

First, in the two territories with food planning managed by association/cooperative, engaging in diverse stakeholders was the project managers’ central task. One of them emphasised equal and just participation with distributing equal weight for different stakeholders. As the interviewee emphasised, this was for the goal of co-construction:

For me, the main advantage is really that of guaranteeing a very cross-cutting governance. [...] Not only do we include many organisations, but each one has an equivalent weight. [...] It is a space for consultation, discussion and co-construction, before being something that allows us to take action. [staff, cooperative Maison Paysanne, food planning of Pays Haute Vallée de l’Aude, Occitania, 2021/09/28]

Figure 3. 17. Diagram of “food planning governance spaces” of food planning Pyrénées Catalanes.



Note. Translated from the document of food planning governance by the association Chemin Faisant, 2021.

Another territory designed a governance model (Figure 3. 17). It designed different governance spaces and assigned functions and responsibilities. There were spaces for engaging diverse stakeholders for concertation, for the steering

committee, for working on thematic issues and for engaging wider stakeholders into open and dynamic food planning. Although most territories may have more or less similar organisations, the accent that this association put on governance models demonstrated a strong wish to create a platform for exchange between stakeholders. This is experimentation towards an inclusive, participative food planning project.

Second, the food planning of Cotentin was exploring a concertation method by conveying the mission to a third-party member. With the ambition of experimenting a participative planning model, the local authority committed the regional Sustainable Agency (*Agence Normande de la Biodiversité et du Développement Durable, ANBDD*) to work on the concertation. This organisation was in charge of exploring a concertation model and emphasised “putting everyone on the same level.” The association looked into strategies to organise concertation to reach a democratic concertation without generating too much conflict which may hinder the discussion, as the interviewee reported:

... on the first phase, it is really the idea to put everyone on the same level. [...] Indeed, there will be the (major) farmers' unions. We know that they can be present and often be a bit negative, saying “Yes, but that is not possible!” Okay, but we'll still try to see if it is possible! So it is really through organisation and coordination. And that is why we avoid plenary sessions, because in plenary sessions, when everyone is together at the same time, it is often the person who takes the microphone and speaks and that puts a bad atmosphere on everyone. The fact of always being in small groups etc., at worst, there is a small group which is a bit polluted, but it is up to the facilitator to be on the lookout. [staff, regional sustainable agency (ANBDD), Normandy, 2021/06/02]

I have presented before in the text that this local body launched food planning to consolidate the territory. So, there were no predefined goals or ambitions for food planning. It might explain why an open concertation was desired. The interviewee emphasised that they would like that all the different stakeholders adhere to the process:

And in 2019, so the first step was to say to ourselves: how do we build this food planning, what do we want behind it? And in fact what we want is above all to find the support of all the stakeholders in the area. So there are no priorities that have already been defined. [civil servant, inter-municipal body Cotentin, Normandy, 2021/04/02]

Overall, local territories had diverse ways of engaging stakeholders in food planning, which might reflect the function of food planning for the territories. Some were more an opportunity for local territories to obtain funding and implement certain projects. Others, in contrast, were treated as an occasion to bring together different stakeholders in the territory and create more dynamics.

Territories were exploring working methods to engage stakeholders and provide a platform of co-construction.

In synthesis, this section presented the interplay between the state and local territories and between the local public authority and civil society stakeholders. The state and public authorities played significant roles in launching, managing and organising food planning. Despite the active public actors, professional actors and other civil organisations also played vital roles. Depending on the local context, their involvement in food planning differs. And empirical cases showed that institutional design could affect actors' relationships and their roles in planning.

French Chambers of Agriculture have a particular position in the farming world. Although it represents whole farmers, it has been largely managed by mainstream farmers. In food planning, they were significant mediators with farmers and therefore were naturally a partner, but their roles vary according to the local contexts. They played different roles in food planning: manager of regional food planning network, food planning initiator and co-project manager, active partners that contribute expertise and implement actions, or symbolic participators without active involvement. The study has shown that the historical position of the Chambers of Agriculture in local agriculture significantly affects their role in food planning, showing a path dependency. However, empirical cases also demonstrated that local organisational strategies could affect the Chambers' role in food planning. An exemplary case is the co-leadership built between the local authority of Haut Allier and the Chamber of Agriculture. Such a co-leadership was a strategy of the local authority to incite the Chamber of Agriculture to play a more active role and to make the transition to favour RAA.

Minority farmers' groups were also common participants in food planning. This differs from their roles in land-use planning. A major issue of food planning is to balance the different farmer's groups around the same table. The strategy adopted locally was generally to avoid conflicts by finding points of common interest (e.g. by emphasising the benefits of short supply chains for local farmers instead of promoting organic farming) and by balancing the actions of their respective interests. For example, food planning usually includes actions that benefit general farmers and organic farmers. At the same time, food planning is a good opportunity for local authorities to promote dialogue between the two, providing a neutral place for negotiation. However, what kind of governance models to engage these different farmers' groups can facilitate the scaling-up of the RAA transition is a further question to be explored. The governance models for planning may need to be linked to the co-existence between farming models (Dumont et al., 2020; Gasselin et al., 2020).

Other civil society organisations were an important component in food planning for their roles in engaging environmental and social issues, as well as their neutral role that has the potential to promote food planning into a more just and inclusive programme.

Local territories may have different definitions and expectations of food planning. Correspondingly, the degree of stakeholders' involvement and the working methods were diverse. Further, food planning is in starting and exploring phases. Territories were in the process of experimenting and exploring different methods. This fits the previous finding based on the food planning investigation of Occitania, showing that diverse forms of governance co-exist in the territory (Santini & Fournier, 2022). Santini and Fournier (2022) warned that while an inclusive involvement of diverse stakeholders could facilitate food planning towards a real territorial project that serves as common goods, such a process also risks difficulty in coordination and reaching consensus. Conversely, although small numbers of stakeholders could facilitate efficiency, this process might lead to food planning that lacks value in meeting the expectations of diverse food system stakeholders. This research shows that some territories were pioneers in exploring "real" concertation. I call on practitioners that the methods to guarantee efficient implementation should not be ignored

3.3.3 Connecting land-use and food planning: facilitating more integrated RAA planning?

When comparing RAA-associated stakeholders' participation in land-use planning and food planning, a distinct difference is **the diversity of participator groups, especially the involvement of civil society stakeholders (both professionals and non-professionals)**. Land-use planning, as well-framed by the Planning Code, is largely top-down. It is launched, managed, designed and decided by local authorities. It follows a legal framework to consult associated stakeholders. In agriculture-associated issues, such stakeholders are limited and dominated by Chambers of Agriculture. However, they are not always stakeholders that represent RAA-associated interests and may even hinder a local transition by defending a conservative way of farming. To a certain extent, the lack of RAA-associated stakeholders' participation in land-use planning represents a view from the mainstream planning field on agriculture. However, when engaging RAA issues, some traditional ways of thinking have to be evolved.

Comparatively, food planning presents a planning process that engages multi-stakeholders, which implies a co-construction planning and mutual learning process. Diverse RAA-associated stakeholders were involved, including the minority and alternative farmers' groups. Other non-profit civil society

organisations were mobilised. Stakeholders may defend diverse and even conflictual interests. But the platform provided by food planning to engage them is a good opportunity to learn from each other through exchange and communication (Campbell, 2004; Bassarab et al., 2019). Food planning's involvement of multi-stakeholders shows that a soft and flexible framework of food planning enables the possible co-construction process (Mattila & Heinilä, 2022). An interviewee confirmed this point from local observation:

The characteristic of food planning is that it is a kind of "voluntary planning", i.e. you are not obliged to do it, unlike land-use planning or the master plan (SCoT). And the second characteristic is that it is a real co-construction of actors and it is not a very top-down aspect with a very framed consultation which means that we are not at all in a co-constructed approach. [staff, planning agency of Caen, Normandy, 2021/04/22]

The food planning process in exploring multi-stakeholders participation can provide insights into the land-use planning process in engaging issues of RAA. RAA, as a new issue in local policies, challenges the existing mainstream farming system and decision groups. More inclusive participation with exchanges of knowledge and ideas could facilitate a better understanding of RAA and a better integration in land-use planning. With a "hard" law framework of land-use planning, one potential way could be the modification at the legislative level to require the necessary different RAA-associated groups to be involved in the land-use planning.

Moreover, land-use and food planning interaction may facilitate a more inclusive land-use planning process. Among the studied cases, the master plan (SCoT) of the rural cluster Midi Quercy presented a good example. Because of the close interaction between land-use and food planning projects, the multi-stakeholders associated with RAA were introduced in the master plan (SCoT) working process (see Table 3. 3 for various stakeholders' participation in the master plan). According to the interviewees, the food planning project leader facilitated in identifying RAA-associated stakeholders and therefore expanded very much the participators in RAA issues in the master plan.

As a result of the various RAA-associated stakeholders' involvement in the master plan (SCoT), the orientation that it defined contained diverse aspects of RAA, which are not compulsory components as defined by law. For example, sustainable agriculture constituted an important section, diversification of agricultural activities was emphasised, agri-food processing activities were integrated into prescription (meaning land-use planning has to conform with that) local and short supply chain activities were integrated with recommendations. The active interaction between land-use and food planning gives insights into the reflection on how to build more integrated and participative planning for RAA.

CONCLUSION: SHAPING AN ENABLING INSTITUTIONAL ENVIRONMENT FOR INTEGRATED PLANNING

The purpose of this chapter 3 was to understand the governance mechanisms that affect RAA planning through three cross-cutting perspectives: 1) cross-sectoral, 2) cross-territorial collaboration and 3) collaboration between public institutions and civil actors. By referring to the factors on integrated planning (Stead & Meijers, 2009), the findings demonstrate that factors such as the established collaborative working procedures, the distributed responsibilities and accountability, the open networks of collaboration and the engaged project managers affect planning integration. The results show that local territories experimented with different governance models, played different roles and attempted various institutional organisations, in a formalised or informal way, in this cross-cutting planning field. The research demonstrates an on-going process of organisation design and the diverse strategies applied in this new policy area of RAA.

The first cross-cutting issue investigated is the sectoral planning policies.

Local stakeholders' observations showed that food planning could contribute to land-use planning by flexibly integrating agricultural and food expertise and implementing goals. Integrating land-use planning is important for food planning regarding gaining legal certainty in the long-term commitment of territorial development. Together, they could reinforce each other by providing political legitimacy towards elected officials and consolidating local political commitments to RAA.

From an institutional organisation perspective, some territories developed cross-sectoral collaboration on the local food issue, representing different ways the local territories organised. Well-equipped urban territories developed formalised internal teams with distributed responsibilities and introduced expertise. By contrast, rural territories with less-equipped teams developed rather informal and spontaneous collaborations based on close contact among staff, demonstrating a high degree of agility. From a processual and practical perspective, usually, compatible timing could enable inter-sectoral dialogue in all planning procedures, for example, through the consolidation and mutual use in the agricultural diagnosis, involvement in strategic projects, and regulations that integrate projects.

The second explored issue is cross-territorial relations, which departed from the highly diverse situation of food planning projects in France in terms of scales.

The research indicates that food planning has much more flexibility in addressing RAA issues at different scales with a soft space of communication. Food planning is able to break the boundary and create different scales of intervention according to needs. The research identifies

different roles played by project leaders by scales and corresponding competences. Inter-municipal bodies: more direct management but also coordination; territorial cluster and regional parks: rather coordination, facilitating and mediation; department councils: coordination between territories as well as between food planning projects.

Studied cases have presented local experiments with developing formalised cross-territorial contracts and projects (e.g., reciprocity contracts, conventions, collaborative work on inter-food plans). Such formal forms of collaboration, though voluntary, are significant in shaping a long-term relationship between authorities. RAA-associated competences between different levels of territories were not clear, leading to a kind of confusion and may risk competition between territories. However, it also induced diverse initiatives. The cross-territorial collaboration between land-use and food planning is challenging due to the cumulated dimension of cross-sector and cross-scale. The political willingness, the ability of supra-scale design guidelines or documents to integrate RAA and the binding power of regional and master plans on local land-use plans are influential in the collaboration.

The third strand of investigation is the interplay between public institutions and civil actors. The latter include both professional stakeholders and other civil society members. The investigation results on the stakeholders' involvement in planning show that the two planning policies are distinct in their working methods. In general, food planning tends to create a soft space, be open to stakeholders and build upon co-construction. In contrast, land-use planning is highly formalised but may lack the involvement of a wider range of civil participators. Food and land-use planning collaboration may influence the process of land-use planning by introducing more diversified stakeholders and, further, creating a more innovative sphere of governance. The research shows different forms of public-civil society relationships. Different forms of formalised organisations (e.g., steering committees, working groups) have been identified but can have different roles played by stakeholders.

Altogether, the research demonstrates a wide range of local contexts and corresponding local strategies for the consolidation of institutional organisations and the facilitation of integrated planning. All these local strategies indicate a reorganisation of power relationships and an evolution of competences. This is to be studied further.

The first three chapters have highlighted the French land-use and food planning approaches and institutional organisations for RAA. A certain kind of French RAA planning style can be identified when compared to international studies. For example, RAA is a central issue, whereas urban agriculture is not as much emphasised; local organisational ways in experimentation, both in urban and

rural territories, show a high diversity; major farmers' union plays an important role in both land-use and food planning, which is not revealed in international studies in other countries (see, for example, Sonnino, 2009; Sibbing et al., 2019; Prové et al., 2019; Candel, 2020). Following these results, I assume that the national institutional framework may have played a role in shaping the planning policy style. This leads to the next chapter (chapter 4) on a cross-nation comparative analysis between France and the Netherlands.

Chapter 4. HOW DO NATIONAL INSTITUTIONAL SETTINGS MATTER THE PLANNING STYLE? COMPARING THE NETHERLANDS AND FRANCE

INTRODUCTION

After the previous three chapters, this chapter 4 moves beyond the territory of France and takes a cross-national comparative lens. International studies have shown that territories take different planning approaches to RAA and share certain similarities within countries and regions. For example, North American authorities focus on urban agriculture and healthy neighbourhoods, French authorities prioritise public food procurement to facilitate local food consumption, and countries in the Global South address food production (Filippini et al., 2019; Candel, 2020). Public policy theories emphasise that institutions affect policy approaches (Lodge, 2007). However, few systematic, cross-nation comparative analyses have been performed to understand institutional effects on planning approaches for RAA.

This chapter 4 aims to address this knowledge gap using an international comparative study of a panel of French and Dutch cases (8 cases in each country). The Netherlands was chosen because it has relatively similar social-economic contexts and increasing political awareness on local food issues with France, but, has different policy styles towards food planning. **France has a national law-defined food planning scheme; the Netherlands does not.** France and the Netherlands have similar proportions of agricultural land use (52.3% and 54.4% in 2018, respectively) (Eurostat, 2021c). Both France and the Netherlands have a strong agriculture sector (first and seventh in European Union (EU) standard output, respectively) (Eurostat, 2021a), and are, respectively, the highest-ranking countries for the non-EU net food exports and EU net food exports (Eurostat, 2021b). Given their emphasis on exports, reterritorialisation is an important issue for agriculture sectors in both countries.

This chapter is guided by the question: **How do the institutional settings and strategies of local stakeholders influence food and land-use planning approaches for RAA in France and the Netherlands?** The study was designed around the following sub-questions: What are the foci and strategies for RAA in food planning and land-use planning in France and the Netherlands? What are the links and missing links between the two planning policies for the implementation process? What are the stakeholders' (public authorities, non-governmental organisations (NGOs), farmers' organisations, etc.) representations of the planning strategies suited for RAA?

In this chapter, I initially provide an overview of the state-of-the-art to highlight challenges for RAA planning. Then I specify the research gaps that the empirical study addressed. After introducing the institutional context of both countries, the next section presents case study areas, the analytical framework, and methodological steps. The results are presented after. The chapter ends with a discussion and conclusion about the implications of this comparative study on RAA planning in practice and research.

Institutional context of RAA planning in the Netherlands and France

Major actors in agri-food domains

France and the Netherlands are decentralised unitary states. There are three main tiers of local administration in France (region, department, and municipality) and two tiers in the Netherlands (province and municipality). France and the Netherlands develop their agricultural policies within the framework of the European Union's common agricultural policy (CAP). Supra-municipality governments (France: the state and regions; the Netherlands: the state and provinces) are responsible for execution of the rural development programme of the CAP. The transition towards environmentally sustainable farming is an increasing focus of the CAP (European Union, 2019). Municipalities do not have the traditions and competencies in agricultural issues in either country, except for intervention in agricultural land use through land-use planning.

NGOs and quasi-autonomous NGOs (QUANGOs) have roles in public intervention in agriculture. Professional farmers' organisations participate in policymaking processes in both countries. In France, a QUANGO (a company with public function; Sociétés d'Aménagement Foncier et d'Etablissement Rural, namely Land Development and Rural Establishment Company) manages rural land by applying its pre-emption rights to avoid land speculation (Boinon, 2011; Piet et al., 2021). Stringent rent control is also in place (Boinon, 2011). Consequently, France has a relatively lower average farmland price (average of €6,000/ha in 2019) than other European Union countries; this price is less than one-tenth of that in the Netherlands (average of €69,632/ha in 2019) (Eurostat, 2022).

Food planning

Food planning is a new local policy field in France and the Netherlands. The French state defined food planning (Projet Alimentaire Territorial) in its Agriculture Law (*loi LAAAF*, 2014). The main objectives of the law are to structure the agricultural economy and implement a local food system. It aims to bring producers, processors, distributors, local authorities, and consumers together and to develop local agriculture and food quality. Since 2015, the state funds

food planning via an annual national financing programme. There is a recognition system of “labelling food planning” charged by the Ministry of Agriculture. Although food planning is not compulsory for local governments, increasing numbers of projects emerged in recent years; a total of 373 food planning projects have been recognised by the Ministry of Agriculture through 2022 (Ministry of Agriculture, 2022).

A state-defined food planning framework does not exist in the Netherlands; local governments have had increased interest in local food policymaking in recent years, especially as the interest from civil society has increased (Sibbing et al., 2019; Van der Valk, 2019).

Land-use planning

French inter-municipal bodies or municipalities are responsible for land-use plans. Since 2017, land-use planning responsibility is transferred automatically to the inter-municipal body, except when there is an exception. (Inter)municipal governments have a high level of independence when developing land-use plans within the framework of national laws. These governments are only required to adhere to the guidelines of regional plans and specific legally-binding aspects of intermediate master plans. Higher-scale governments must be consulted, but their advice is not binding during the land-use planning process.

As described by Van der Valk (2002, p. 204): *“the key to understanding Dutch politics is the deep-rooted conviction that power flows from consensus.”* In the Netherlands, land-use planning is conducted by municipalities. Land-use regulations must, where applicable, follow provincial planning rules. Related to agriculture and food, provincial planning priorities are about rural development, landscape, and biodiversity. Because the central government has decentralised planning to the provinces (Korthals Altes, 2018), they determine planning issues mostly free from the national framework (OECD, 2017).

French and Dutch land-use plans have different capacities during intervention in agricultural production. The French Planning Code regulation specifies that land-use planning does not have the right to define agricultural production. The Dutch Planning Act previously included a similar regulation, but this prohibition (i.e., setting rules on the structure of agricultural businesses) was not included in the 2008 Planning Act.

The Netherlands is known for its “active” land-use planning role in urban development (Tennekes, 2017). Municipalities are actively involved as buyers and sellers in the land market (Buitelaar, 2010). French municipalities usually do not have this tradition, with some exceptions (e.g., the Lyon conurbation) (Carpenter & Verhage, 2014).

Research design and methodology

Case study selection

Eight cases in the Netherlands and eight cases in France were included in the study (Figure 4. 1). In each case, the food planning was at the same scale or a larger scale, compared with the land-use planning. I also chose various types of territories (Table 4. 1). Eight French cases were identified among the 40 food planning projects studied in the previous three chapters. They were chosen for several criteria: 1) with available documents, so that a comprehensive comparison is possible, 2) covering different contexts and 3) avoiding overly remote areas in order to be comparable to Dutch cases (i.e., Dutch territories are generally denser than French ones).

Figure 4. 1. Case study areas for comparison.

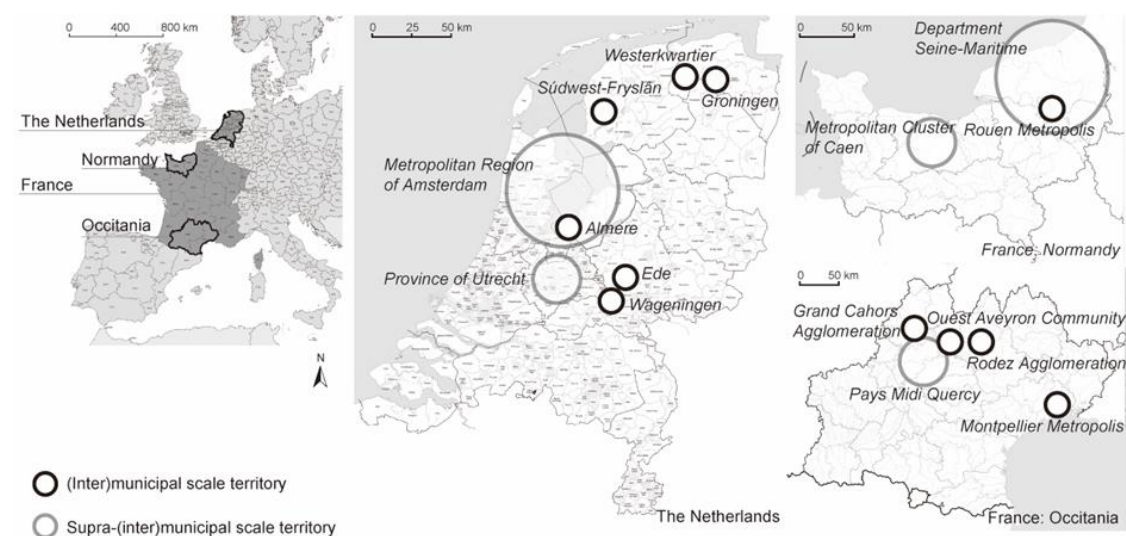


Table 4. 1. Overview of case study area characteristics

Country	Scales	Territory of the food planning	Spatial planning responsibility	Area (km ²)	Population (p)	Density (p/km ²)
The Netherlands	Municipal	Almere	Land-use planning	129.2	214,715	1,662
		Wageningen		30.4	39,635	1,303
		Ede		318.2	118,530	373
		Groningen (municipality)		185.6	233,273	1,257
		Westerkwartier		362.7	63,678	176
		Súdwest-Fryslân		523.0	89,999	172
	Supra-municipal	Metropolitan area of Amsterdam	No	4,076.4	3,316,712	813

Country	Scales	Territory of the food planning	Spatial planning responsibility	Area (km ²)	Population (p)	Density (p/km ²)
		Utrecht (province)	Provincial planning	1485.46	1,361,153	916
France	Inter-municipal *	Montpellier Metropolis	Land-use plan and Master planning	421.8	491,417	1165
		Rouen Metropolis	Land-use planning	663.8	494,299	745
		Rodez Agglomeration		205.3	56,080	273
		Grand Cahors Agglomeration		593.2	41,795	71
		Ouest Aveyron Community		668.0	27,224	41
	Supra-inter-municipal **	Department Seine-Maritime	No	6,277.6	1,255,633	200
		Rural cluster Midi Quercy**	Master planning	1192.2	50,271	42
		Urban cluster of Caen**		1595.7	390,417	245

Note. From CBS (2022): data for the Netherlands (2021); Insee (2022a): data for France (2019).

* French inter-municipal bodies categorised as metropolis, agglomeration, and community, according to population size and are responsible for land-use planning from municipalities except for special occasions.

** Supra-inter-municipal bodies: There are several forms of supra-inter-municipal bodies in France. One form is the department which is an upper-level authority. Other than that, France set up cooperation mechanisms bringing together inter-municipal bodies to develop and implement strategic development and planning projects. Pays in rural areas and Metropolitan Clusters in urban areas are two scale types used for such projects.

Analytical framework, data collection and analysis

The theoretical point of departure was comparative public policy analysis theory, which seeks “what accounts for the observed patterns in public policy” (Lodge, 2007, p. 275). Among the aspects proposed by Lodge for comparative analysis, I focused on institutional effects. I focused on interaction patterns between public authorities and societal groups at the local planning policy scale (Lodge, 2007). I examined how the macro-institutional context, the strategies of local stakeholders, and the implementation process affected local governance models and thus, affected planning approaches. Two major components were

identified from existing local food policy studies: 1) multi-level government relationships and government-society relationships and 2) the transition to co-governance (Morgan, 2015; Sonnino et al., 2019). I paid particular attention to farmers because they have been identified as not sufficiently included in the planning process.

The same method to collect data in French case studies was applied in Dutch cases. I collected land-use plans (the Netherlands: Omgevingsvisie and Bestemmingsplan at municipal level, equivalent to French "Plan Local d'Urbanisme intercommunal" at inter-municipal level; the) and food plans (the Netherlands: Voedsel-agenda, -visie, -akkoord, -strategie, equivalent to French "Projet alimentaire territorial"). I studied documents to identify policy goals and instruments by RAA-associated action fields by applying the same method applied in French cases (see chapter 1).

I conducted semi-structured interviews in the Netherlands between November 2021 and February 2022. Interviewees were mainly civil servants who were associated with the planning projects. Other interviewees included activists, farmers' representative and consultant. The interviews were 45 to 100 minutes, were recorded with permission from interviewees and were then transcribed. The semi-structured interview framework is the same as that in French cases (general introduction 1.6).

In the next sections, I present the results of the document analysis and interviews. The results are organised according to the research design: action fields, links between land-use and food planning, and governance models.

4.1 COMPARING POLICY GOALS AND INSTRUMENTS

4.1.1 Farmland availability and access to land

I distinguished two types of activities, professional farming and urban agriculture, which were overlapping or non-overlapping domains. The major distinction between them was that professional farming was about finding land to set up farmers, while urban agriculture was usually multifunctional and emphasised direct citizen linkages.

1) Farmland preservation and new farmers' access to land

A main goal of all French food plans was to emphasise farmland preservation and/or facilitate farmers' access to land. They included the following instruments: first, land-use planning was referred to as a lever in food plans used to preserve farmland ($n=4$). The second instrument was networking potential buyers and sellers and accompanying the take-over of agricultural holdings ($n=4$). The third instrument was finding land to set up farmers: utilising

publicly-owned land ($n=3$), reclaiming agricultural fallow land ($n=2$), grouping new farmers to achieve collective land purchasing ($n=1$), or diversifying crop farms ($n=1$). Based on finding available farmland, establishment of farm incubators was a frequent action of every food planning project. French land-use plans preserved farmland through exclusive zoning, only authorised farm buildings that were necessary, and usually specified the maximum distances between new and existing farming buildings to avoid disordered sprawl.

No food plan in the Netherlands included farmland preservation or setting up new farmers as a main goal. Only one municipality proposed using publicly-owned land as an instrument for RAA. Implementation was challenging: the municipality did not own much land, and buying new land for RAA lacked drivers: *"It brings a lot of work and responsibility extra on everything you already have. And it is not our common business, so you need special expertise for that"* [civil servant, municipality Wageningen, the Netherlands, 2022/01/24]. Usually, local governments kept land for future urban development (municipalities) or nature (provinces). One province rented its provincial land for nature-inclusive farming but did not target local chain activities. The lease term was short (1 year) because the goal was to transform into nature, which did not favour nature-inclusive farming [civil servant, province Gelderland, the Netherlands, 2022/01/24]. Dutch land-use plans defined agricultural areas and assigned building blocks to restrict construction. No land-use plan explicitly included RAA as an agricultural zoning criterion.

2) Urban agriculture that integrates civil society

All French food plans included promotion of urban agriculture as an action, though usually not as a major goal. They included collective food gardens that were demonstrative and educational. Some metropolitan territories also included urban farms ($n=3$). All land-use planning regulations included special zones for collective food gardens, in which small-scale construction was allowed.

As an essential component, urban agriculture contributed to most Dutch food plans' main goals of a "healthy food environment" and/or "sustainable food economy" ($n=7$). Objectives included the promotion of collective food gardens/community support agriculture/urban farms ($n=3$), setting food forests ($n=5$), and edible greenery in public spaces (e.g., fruit trees in the street and squares, housing estates, and parks) ($n=4$).

Some Dutch municipalities had supportive land-use regulations for urban agriculture. Almere, for their experimental area, defined "urban agriculture" as a multifunctional activity involved in short food chains; the activity could be professional or performed for self-sufficiency (Gemeente Almere, 2016). The municipality of Almere used publicly-owned land and implemented regulations that integrated food gardening into housing development. Wageningen had a

land-use category, *"Agricultural with values - Urban fringe area"* where *"commercial and hobby agricultural land use, recreational and sporting use are authorised"* (Gemeente Wageningen, 2014).

In some municipalities, agricultural activities at agricultural areas on the urban fringe can encounter obstacles from land-use regulations. Food forests can be hindered by municipal land-use planning regulations, which may define the use of agricultural land as *"agricultural land use, with the exception of a tree and/or ornamental nursery, growing wood or fruit"* (Gemeente Grootegast, 2016). The regulations followed provincial instructions to remain open landscape and protect meadow birds, or to avoid environmental impacts of intensive arboriculture (civil servant, municipality Sudwest-Fryslan, the Netherlands, 2021/12/14; Gemeente Grootegast, 2010). Large-size food gardens encountered restrictive regulations for building shelters on the urban fringe because building construction was strictly limited to assigned building blocks.

4.1.2 Transition of farming practices

The transition of farming practices is for the sake of the environment, a healthy diet, and a local food balance between food production and consumption. In subsequent sub-sections, I discuss diversification of food production and sustainable farming. Those two sub-categories were interrelated. For example, diversifying existing intensive livestock farming can lead to fewer negative environmental effects and contribute to biodiversity. Sustainable farming used here refers to farming practices that aim at improving environmental performance (e.g., organic farming, agroecological practice, nature-inclusive farming).

1) Diversification of production types

Although diversification of products itself was not a main goal, all French food plans supported product diversification through facilitating market gardening. This objective was accomplished via the creation of farm incubators, which served to diversify products and were connected to sustainable farming and local supply chains. Diversification of existing livestock or crop farms was an associated instrument used in the food plans. Land-use planning does not have the right to define agricultural production. I found one case that included the creation of the zone *"agriculture – market gardening"* (Rodez Agglomération, 2021). It aimed to preserve several existing market gardening areas.

Dutch food plans tended to facilitate transitions to plant-based protein production. Three food plans explicitly aimed to promote more plant-based protein production by referring to cooperation with regional actors. Other food plans aimed to encourage plant-based protein production from the consumer side, via increasing awareness about diet transition and integration into local

procurement. Market gardening was only indirectly referred to in strategies related to food gardens and food forests; it could even be prohibited by land-use regulations. One municipality defined its agricultural area only for “*the pursuit of a livestock business*” (Gemeente Weesp, 2015). One interviewee described an example of a difficult situation related to farm product diversification:

... they (market gardeners) start a new garden, and customers come up to pick up their food, then the neighbours will complain to the municipality. And the municipality will close down the garden. This has happened a couple of times already, because there the land allocation plan (land-use plan) specifies agricultural land uses as open pastures, for example. [activist, Food council Metropolitan area of Amsterdam, the Netherlands, 2021/11/11]

These rules did allow diversification based on pasture farming, such as selling farm cheese. So, on-farm activity diversification was not related to a diversity of food production. This point is discussed in the next section.

2) Transition to sustainable farming

Three French food plans explicitly encouraged sustainable farming as a main goal and aimed to protect natural resources and counter climate change. They planned to achieve this goal by facilitating farmers’ sustainable farming practices and outlets for production. In the Netherlands, four projects proposed facilitating a transition to sustainable farming. Two of the four proposed land lease modification, but implementation strategies were unclear. How to find innovative market opportunities to make sustainable practices profitable was a concern in both countries.

Land-use planning can affect the transition to extensive farming, especially in livestock farming. All studied Dutch land-use plans controlled intensive farming via prohibition of building construction for intensive farming businesses or by restricting them to assigned locations. Some land-use plans created natural zones with the regulation that only permitted extensive livestock farming. This regulation worked as an external factor that pushed the transition of farmers’ practices. Thus, livestock farming helped maintain the grassland.

4.1.3 Structuring local supply chains and diversification of farming activities

Structuring local supply chains was a major goal shared by most food plans in both France ($n=8$) and the Netherlands ($n=7$). Results are presented at the individual and collective levels.

1) Individual on-farm projects

Food plans facilitated on-farm projects (e.g., on-farm processing, direct sales) by networking between local actors and/or increasing the visibility of initiatives aimed at consumers (e.g., an interactive map and a processing facility map).

In France, most examined land-use plans authorised on-farm diversification that was “processing, packaging, or sale that is part of the extension of production activities”; only one authority did not permit this activity. In one ongoing urban territory project, on-farm diversification was considered a threat because agricultural buildings might transit illegally to tourism or secondary residences, which could lead to disordered sprawl [civil servant, inter-municipal body Metropolis Montpellier, Occitania, 2021/10/07].

Dutch land-use regulations usually incorporated flexibility for on-farm diversification activities. All interviewees indicated that land-use regulations were not major obstacles. All examined land-use plans authorised small-scale sale facilities in agricultural zones, usually with conditions that specified maximum surface area (e.g., 120 m² of Westerkwartier) and the condition “locally produced products” only (e.g., Ede). *Four* land-use plans explicitly authorised cheese factory/dairy processing activities. In many cases, diversification outside the food sector, such as a small camp with up to 25 sites or small-scale care functions up to 650 m², was also allowed (Gemeente Weesp, 2015).

2) Collective food infrastructure

Food plans considered collective infrastructures to facilitate farmer profitability. Most French food planning projects ($n=7$) envisaged projects on collective processing infrastructures ($n=7$, 4 for local vegetable centres, 1 for a local slaughterhouse, 2 for “general transformation facilities”). Five food plans also included development of local food logistics or more specific food hubs. Compared with the French projects, fewer Dutch food planning projects envisaged collective processing infrastructure projects. Two food planning projects included a programme on food processing that began with mapping existing initiatives. One worked on building new food processing facilities. Three food plans wanted to develop food hubs, though the form was unclear.

No specific components of collective infrastructures was found in land-use plans. The local authority of Montpellier Metropolis (France) had a reflection on transforming vacant heritage farm buildings into collective processing centres, which was related to preserving farmland from excessive individual building construction.

4.2 DIFFERENT FOCUSED AREA ON THE LINKAGE BETWEEN LAND-USE AND FOOD PLANNING

There was mutual interaction between food planning and land-use planning (or master plan) at the agricultural diagnosis stage in most French cases ($n=5$). Land-use planning as a compulsory project included territorial diagnosis and contributed to food planning. At the strategic stage, objectives of food planning were integrated into the strategic plan of land-use planning in both countries, if the land-use plan was compiled after the conception of food planning. At the implementation scale, investigations in both countries revealed the difficulties involved in the translation of food-associated orientation into land-use regulations, as *"it is not physical"* [civil servant, municipality Súdwest-Fryslân, the Netherlands, 2021/12/14], and as agricultural practices were considered *"the responsibility of the agricultural world itself"* [civil servant, inter-municipal body Quercy Rouergue et des Gorges de l'Aveyron, Occitania, 2021/06/28].

In France, the land-use planning and food planning interactions that occurred during the implementation stages were mainly in rural areas. When a food plan referred to land-use planning as a lever, the aim was to preserve farmland ($n=4$). Interviewees indicated that the interaction could occur when an RAA project was to be localised, such as modification of downzoning to agricultural land use [civil servant, inter-municipal body Metropolis Rouen, Normandy, 2021/04/23]. The Montpellier Metropolis example showed the potential of synergies between farmland preservation and vacant heritage reuse schemes when land-use planning and food planning occurred together.

Dutch cases revealed coherence between land-use planning and food planning in urban projects. In one instance, integration occurred between the planning of food hubs and the spatial planning for associated transport networks. In another example, neighbourhood design guide booklets contained inspiring examples of locations that integrated food into development projects. The new urban area of Almere applied an innovative land-use strategy; at least half of the land sold to private owners (e.g., for housing) should be dedicated for food production (Jansma & Wertheim-Heck, 2021).

There were conflicts between Dutch land-use planning regulations and food planning actions (as presented in Section 5.1). In one case, the farmer who wanted to set up in a municipality was pushed to settle in the neighbouring municipality because the building construction necessary for market gardening was prohibited by land-use regulations.

I found that when land-use planning and food planning were not on the same scale, links between the two planning policies were weak. I also found some places where links between land-use and food planning were higher than others.

This difference will be discussed in regard to institutional settings in the next section.

4.3 NEW GOVERNANCE MODELS ESTABLISHED IN DIFFERENT CONTEXTS

In the following sub-sections, I present inter-governmental and government-civil society relationships and link them to planning approaches.

4.3.1 Multi-level governance

Based on the political commitment of the state to food planning, France had strong state-local relationships with the RAA. One interviewee confirmed from her observation of regional food plans that the national law, labelling system, and funding incentivised local authorities to develop food plans. The national financing programme reinforced that food plans would line up with the national framework [staff, Chamber of Agriculture of the region of Normandy, 2021/06/11]. The Ministry of Agriculture's charge of the financing and labelling programmes, together with the Agricultural Law's focus on the agricultural economy, positively affected local food plans' central focus on agriculture (more than urban agriculture) and local chains.

There were weak connections between different local governmental levels for RAA planning in France. These weak relationships led to disconnections between planning policies when the food planning occurred at a larger scale than the land-use planning. Interviewees from one French department (supra-inter-municipal authority) indicated that they "*do not have an agricultural entrance*" [civil servant, departmental council Seine-Maritime, Normandy, 2021/05/11] when providing comments about inter-municipal land-use planning. In one supra-inter-municipal territory where the authority operated food planning and master planning, a close mutual working relationship was developed between the two planning projects. However, integration with land-use planning was difficult because the inter-municipal government with land-use planning responsibility lacked political willingness.

Unlike France, the Netherlands did not impose a national law for food planning. Cross-level governance for RAA was mainly between provinces and municipalities. Some municipalities tended to leave the responsibility of agriculture and short supply chain activities to the provinces because they considered it beyond municipal competency. Some provinces were not in alliance with municipal local food goals, stating "*we (the municipality) want local food and here we have the province who says we want to grow for export*" [civil servant, municipality Súdwest-Fryslân, the Netherlands, 2021/12/14]. Provinces were sometimes referred to by municipalities as partners in sustainable farming but not necessarily in local food. Provinces did have a guiding role during the creation of municipal land-use regulations as some provinces' requirements are

legally-binding. These requirements were negotiable if there was political willingness. However, our investigation did not find evidence of negotiation associated with RAA.

4.3.2 Government-society relationships

1) Farmers' organisations

In France, major farmers' organisations were systematically involved in local food planning projects, usually through the farmers' support organisations Chambers of Agriculture. They were often close partners in food planning projects to facilitate the take-over of agricultural holdings and to support the exchange of practices between farmers. In one case, the farmers' support organisation was a co-project leader for food plan implementation. One regional farmers' support organisation managed the regional food planning network (Normandy) and oversaw communication and facilitation of food planning projects. The systematic participation of farmers' support organisations matched the French food planning scope in the professional farming and agricultural system.

Farmers' support organisations were also influential in French land-use planning. They were indispensable actors that were consulted during the formulation of land-use plans. In some cases, they also performed the agricultural diagnosis (i.e., territorial inventory and analysis of the status quo of agriculture) ($n=5$). The interviews revealed that farmers' organisations wanted farmers to be unhindered, especially in farming practices. In several cases, when land-use planning wanted to involve a specialised zone for certain types of farming practices (often market gardening), opposition from farmers' organisations prevented it from happening.

In the Netherlands, major farmers' organisations (LTO: the Netherlands Agricultural and Horticultural Association) were less involved in food planning and participated less formally in land-use planning. In only one case, a major farmers' organisation was a core actor in food planning to facilitate a transition to plant-based protein production at the regional scale. In other cases, when farmers were active they were minority farmers (or farmers' groups) working on sustainable farming and alternative business models.

2) Civil society representatives

NGOs were partners in French food planning projects to implement actions and enlarge food planning action fields. As one interviewee explained, "*... the food planning, it is fed by many initiatives in fact. The idea is not to take away or appropriate the initiatives of associations, not at all. We do not have the time, we do not have the means, it is not our job. [...] we rely on them.*" [civil servant, inter-municipal body Grand Cahors, Occitania, 2021/10/05]. Food planning project leaders can directly

provide economic aid or find funding for NGOs.

NGOs and activists in the Netherlands were essential actors during food planning. NGO participation helped establish several food planning projects. NGOs can provide expertise when local authorities lack expertise in food. For example, an association helped draft food planning documents and organised working groups to implement action items. In addition, there was an informal but embedded food network that affected RAA planning. One interviewee described how actors from different professional fields (e.g., local government, academia, consultancy) who were interested in local food issues formed informal networks, which facilitated knowledge and information communication. This network helped to counter the instability associated with political change [*activist, Food council Metropolitan area of Amsterdam, the Netherlands, 2021/11/11*].

Governments-NGO relationships differed depending on political interests and governance models. The food planning team of Ede aimed to identify what civil society actors could do independently. Súdwest-Fryslân was still exploring how to involve NGOs. NGOs worked on purchasing farmland collectively for sustainable farming in some territories. But, no clear relationships between those organisations and the food planning process were found. Limited funding was a frustration expressed by some NGO-associated interviewees; they encountered instability and lacked the power to make essential changes.

CONCLUSION

In this chapter, I conducted a comparison of Dutch and French cases to examine institutional effects on planning interventions for RAA. The two countries have governance models that perform differently depending on institutional context. The state-local relationship in France and civil society-government relationship in the Netherlands have prominent effects on the planning approaches used for RAA. These institutional disparities lead to the use of different styles when approaching RAA-associated action fields, the policy instruments leveraged, and the areas of interaction between land-use planning and food planning.

First, this study reveals the newly formed relationships between actors on RAA that are performed differently in the two countries. Cases in France have examples of state-local government relationships and a government-led planning approach towards RAA. Dutch cases mainly are examples of civil society-government relationships. The French law and financial support system has formed state-local relationships, though they depend on soft laws with no binding forces (Bodiguel, 2018). The Dutch cases have similar characteristics, as previous studies showed for RAA planning, which are driven by civil society-

related effects: instability of food planning when facing local political changes, lack of farmer participation, and lack of representation of actors from higher levels of governance (Sonnino et al., 2019; Van der Valk, 2019). Previous results suggested that NGOs compensate for the absence of state power and the lack of local expertise (Hamilton, 2011; Hodgson et al., 2011), but risk inequity occurs between territories that rely on developing an active civil society (Moragues-Faus & Morgan, 2015). The cases in France reveal advantages of government guidance: the national framework had a guiding role, farmers' organisations were more active, and imbalance between territories was not obvious.

Second, the institutional setting have affected the style of RAA planning approaches. French planning interventions focused on achieving a local agricultural economy by facilitating the local food production and supply chain in the field of professional agriculture. In contrast, most of the Dutch cases tend to work in the context of small-scale urban agriculture surrounding the themes of health and sustainability, and avoid the broader field of large-scale agriculture.

The style used in France is consistent with "agricolisation" of French food policy (Michel et al., 2020), in which agriculture dominates the food policy focus. The national law's central focus on agriculture and the active role of farmers' organisations may explain this agricultural domination of food policy. The Dutch performance has features like those in existing international studies on local food systems that connect to the "healthy city" discourse (Morgan, 2015). The latter has been introduced to link food and planning and only emphasises food access (Morgan, 2015). One study found that food plans of large Dutch cities focus mostly on production, "but only small scale, urban" (Sibbing et al., 2019). This study, which included peri-urban and rural territories, has similar findings. Dutch municipalities tend to leave agriculture to higher-level government and farmers, while supra-municipal food plans address local supply chains but do not emphasise production. This difference is likely related to the fact that in the Netherlands, intervention in farmers' production models is difficult; traditional professional farmers are difficult to mobilise for participation in RAA planning. Farmers involved in food planning tend to be new entrants into farming.

Third, the findings reveal that during RAA planning, the territories in the two countries leveraged different policy instruments within their respective contexts. The instruments represent how local authorities introduce competencies into the new field of planning policy. There is disparity between the land-use instrument used for RAA and the styles that were historically used by local governments. French authorities tend to enlarge their competencies in agriculture via existing available instruments. Though not having a tradition of land purchase, they used publicly-owned land to support RAA. Dutch local

governments had a tradition of land purchase but did not apply these land strategies during RAA planning. NGOs were engaged instead.

The finding on policy instruments for food infrastructure echo the question of the “missing middle” between agricultural production and food consumption (Sonnino et al., 2019). The case studies in both countries started to explore using this middle food infrastructure as a lever. This exploration suggests progress was being made because previous findings from international examples indicated that local governments rarely address food infrastructure (Sonnino et al., 2019). Consequently, collective food infrastructure issues remain in the emerging phase. I claim that implementation is, therefore, more challenging, and an area that needs further study.

Fourth, institutional effects reflect the intersection between land-use planning and food planning. Consistent with their focused action fields, French plans have more interactions in agricultural zones (e.g., studies on agriculture and modifying agricultural zoning). Dutch cases have more innovative integration in urban areas (e.g., integrating food into housing development on publicly-owned land and food-integrated neighbourhood design guidelines).

Links between land-use planning and food planning relevant to RAA should be strengthened during the regulation development phase. Land-use regulation barriers of on-farm diversification activities identified by previous studies (Nichol, 2003; Horst & Gwin, 2018) are not apparent in our studied cases. However, there are major constraints on the transition of farming practices. French land-use planning has little flexibility to adopt regulations for specific types of production, even though the food planning supports them. Dutch land-use planning could define regulations relevant to landscape and biodiversity. However, those regulations might prohibit diversification of production and urban agriculture promoted by food planning. RAA should be included in local political debates about the development of land-use regulations.

In practice, more fields of intersection should be examined, such as the combination of food hub schemes and revitalisation of neighbourhoods (Luoni, 2021). During the planning process, food planning brings common knowledge when diverse groups of stakeholders meet together. The limitation was that the participative procedures required for land-use planning were not necessarily clear.

In conclusion, the literature reveals that there are certain national and regional characteristics associated with planning for local food systems. But, there was also a lack of understanding about the driving forces underlying the planning process. Previous studies focused on planning strategies for local food systems, but have rarely focused on RAA. To compensate for the research gaps, I

proposed to identify institutional effects on planning approaches for RAA. I performed an international comparative study of a panel of case studies, which combined document analysis and semi-structured interviews. This approach allowed us to identify highly generalisable patterns from an examination of in-depth and detailed information.

France and the Netherlands can learn from each other's experiences. The results also provide insights for other countries. I provide an overview of action fields and policy instruments for RAA planning. The findings reveal connections between institutional settings, the stakeholders involved, and the approaches taken. The study results have policymaking implications for policy design in different contexts and how to think about institutional design to achieve more effective RAA planning.

This research has examined RAA planning from several aspects of the institutional setting. It is not a comprehensive examination of contextual effects on planning patterns. Increases in planning practices will make it possible for future research to compare the effects of diverse contexts (e.g., the urban functions, planning scales, and project leader attributes for different types of territories). Research on RAA planning is still in the early stage. Territories are experimenting with their competencies, policy instruments, and governance models in the RAA field. Future research on planning implementation will help understand institutional effects on RAA.

GENERAL CONCLUSION

This thesis project aimed to provide a better understanding of the land-use and food planning approaches for RAA. It was set within a theoretical framework of policy instrumentation and policy integration with reference to research on food systems. A central focus was the sociological understanding of the use of policy instruments. The aim was achieved by investigating land-use and food planning policies as well as their intersections by answering sub-questions in four stages.

First, I conducted a planning documents analysis to identify the policy goals and instruments for RAA applied in land-use and food planning. Through that, I obtained an overview of the policy outputs with diversified policy instruments mobilised. Second, I investigated links, missing links as well as rationales between land-use and food planning policy instruments in three RAA action fields (i.e., farmland preservation and access to land, the transition of farming practices and structuring local supply chains). This investigation presented an understanding of the social use of instruments driven by the local stakeholders as well as the drivers of the (missing) links between the two planning policies. Third, I identified governance mechanisms that affect RAA planning from empirical cases. The collaborative relationships between cross-sector, cross-scale, and public-private stakeholders were analysed. And fourth, I conducted a cross-nation comparative analysis between France and the Netherlands to understand how institutional settings at the national level affects local actors' relations and planning approaches. Through that, a "style" of French planning for RAA was identified. The last three stages were achieved through semi-structured interviews, mainly with local planning project managers.

These four questions and their answers lead to two main categories of results that I discuss in this General Conclusion. The first deals with **policy instruments** and the social use that affect land-use and food planning for RAA. The second addresses the issue of **governance mechanisms** that refer to the design of policy inputs that can affect RAA planning. This general conclusion focuses on complementarity and integration between the planning policies.

1) Diversified policy instruments designed for RAA in land-use and food planning as a result of social use: integration is still marginal but with high potential

The first perspective of the discussion focuses on policy instrumentation on RAA. The mobilised RAA-associated policy instruments in land-use and food planning present the local strategical design of instruments within distinct planning frameworks. The action fields (i.e., access to land, transition of farming

practices and structuring local supply chains) have been addressed with varying degrees of importance, emphasising “local” rather than “agroecological transition.” Between land-use and food planning, direct integration is still marginal, and missing links result from both processual complexity and political tensions between local stakeholders with the co-existence of agriculture and food models. Nevertheless, land-use and food planning policy instruments present a high potential to be complementary and create synergies. Such complementarities and synergies need more integrated working processes, organisations and innovative methods to be identified and achieved.

First, I studied the local design of RAA-associated policy instruments. This study highlights the local stakeholders’ strategic use of legal rules within distinct planning frameworks, which results in a great diversity of innovative instruments. The findings provide insights into sociological studies on public policies. The document analysis provides a comprehensive overview of mobilised policy instruments. In-depth interviews further complement it through the understanding of local mobilisation by stakeholders. Land-use and food planning develop various policy instruments with different logics under their respective framework.

Land-use planning instruments present how local stakeholders use the room for manoeuvre given by the legal rules to achieve various goals. The major issue that the local actors deal with is finding trade-offs between preserving rural spaces through restricting building possibilities and leaving room for farmers’ development and rural revitalisation. Gerber, Hengstermann, et al. (2018) have explicitly explained the interplay between local stakeholders and the top-down framed rules, which leads to the gap between rules and local implementation. The research highlights how planning rules are implemented, sometimes ignored, and, more importantly, adapted to local situations and mobilised in an innovative way.

A typical locally adapted use of legal rules is setting specific conditions to achieve RAA-associated goals. Exemplary cases identified in this research are the creation of specific zones for market gardening and the specified regulations requiring the link to local food provision. These kinds of local adaptation and innovative interpretation of rules present explicitly the local strategy to favour RAA. However, they may also be subject to contention and be questionable. Taking market gardening as an example, the in-depth investigation clearly reveals that many local stakeholders used the argument from the Planning Code to refuse land-use planning intervention in agriculture, claiming that land-use planning is not entitled to regulate farming practices. In this sense, the set of market gardening specific zones is innovative but not fully supported by legal rules. So, this type of instrument may serve as a demonstration of the political wish rather than being substantially functional,

playing a role somewhat more symbolic than pragmatic (Lascoumes & Le Gales, 2007). Nevertheless, although not necessarily functional from a pragmatic point of view, these adapted local uses of the rules provide a sense of legitimacy through their legal form and serve as an incentive to RAA practitioners.

An example of the innovative application of rules is the use of design guidelines (*orientations d'aménagement et de programmation, OAP*) for agriculture, which have been an instrument mainly dedicated to urban development. The empirical evidence from this research shows that it has started to be an issue related to agriculture, though mainly urban agriculture. The exercises include both thematic (without spatial specification) and sectorial (with spatial specification) design guidelines. Such an application indicates a possibility to address agricultural issues in a qualitative perspective through design specifications on functions, heritage and landscape, and not only in a mere quantitative approach of farmland preservation. Such an innovative use of rules implies a possibility of land-use planning to move from restrictive regulation to a set of guidelines in integrating different perspectives of design issues with agriculture. By doing so, land-use planning can gain more flexibility in defining conditions for future development and more possibility for local authorities to design locally adapted requirements.

In a different way from land-use planning, food planning shows experimentation with a new field of local policy given the flexibly guided framework (i.e., by the national financial programme and labelling system). In the new policy field of food and agriculture, without clearly defined competences and responsibilities, food planning reaches out to diverse associated competences to design the instruments. Such competences are not only related to the project leader on its own but also to diverse stakeholders, highlighting the “co-constructed” nature of food planning that is. Food planning instruments are either based on legal instruments or newly created ones, showing a high degree of flexibility and diversity in this field of exploration.

The results show that some policy instruments are mobilised by adapting the use of long-established instruments for the new field of RAA. For example, using publicly-owned land for RAA and fallow farmland inventory have been issues mainly for urban development, but they start to be mobilised as an instrument for local farming. Such use of long-established instruments, though supported by experiences from other fields, may face challenges when adapting to the RAA issues. Local stakeholders reported the challenge in setting agricultural fallow land inventory due to the lack of shared definition and technical resources in rural territories. Also, the challenge is justified by the finding that publicly-owned land use was usually only on small-scale parcels for demonstrative uses. This finding echoes a recent study by Vandermaelen et al. (2022) on the publicly-owned use for RAA in Belgium, showing that though

practices exist, they constitute only a small proportion of the total publicly-owned land use. Though there are limits and challenges in adapting established instruments for RAA, the demonstrative uses of these instruments have a function of political legitimacy to the issue of RAA, which goes beyond the quantitative scope.

Other food planning policy instruments are rather a result of local initiatives. They are mainly informational, on the provision of technical advice, networking, et cetera. In the field of agriculture and food, which has long been managed by the national government and farmers' world, local territories carefully design instruments in order not to engender conflicts. That is why food planning mobilises largely economic and informational instruments, affecting RAA-associated stakeholders in a facilitating and persuasive way rather than imposing rules (Vedung, 1998).

It is worth noting that at the national level, food planning is also supported and framed by financial and informational means (e.g., national financial programme, national labelling system and network organised at the regional scale). Even though the national framework tends to become more strict and formalised over time, it does not assign coercive and legally-binding rules. Food planning is not compulsory for any level of authority, and there is no directly assigned competence to local authorities. It indicates the reluctance and hesitancy of the state to intervene in agriculture and food issues in an imposing and forcing way. In addition, a local-state interplay must be addressed because the national framework also evolves and develops, accompanied by the evolution of local strategies.

Second, when looking together at the land-use and food planning policy instruments mobilised, there is a general focus on “local” rather than “agroecological” transition. Unbalanced voices are addressed in different action fields, represented by the instruments mobilised. The document analysis shows that much more instruments have been put on access to land and shaping local supply chains rather than on the transition of farming practices. The in-depth interviews support this and provided a perspective to understand it as a choice of compromise. The comparative analysis between the Netherlands and France further confirms this style of French planning on RAA: much effort has been made into professional farming.

Many instruments are used for farmland preservation and access to land and structuring local supply chains, representing an important place of RAA at a professional scale more than urban agriculture. The results of the comparative analysis between French and Dutch cases indicate that centralising RAA is a feature of French planning. The generalisation of RAA is reflected by the various instruments designed, compared to international cases. The exemplary case is

the use of policy instruments related to collective food facilities, which show distinct results from what has been revealed in international literature. While international studies have shown that middle-stage food infrastructure is a “missing middle” in local food strategies (Sibbing et al., 2019; Sonnino et al., 2019; Candel, 2020), my research demonstrates that French food planning projects do not fit this finding. By contrast, developing middle-stage food infrastructure is a key issue in French food planning projects.

Comparatively, fewer efforts have been made in facilitating the transition of farming practices than in the other two action fields. Fewer instruments are mobilised for the transition of farming practices, and the instruments used are mainly informational. The lack of emphasis on agroecological transition implies a contradiction between the requirements of the national and contextual framework and the local policy response. No matter from which perspective, the agroecological transition still remains a central challenge for public policies: it is a response to the national law requirements on the provision of organic and sustainable food, it is related to local competences (e.g., water management and climate plan), and as revealed by the interviewees, there is a shared willingness of project managers to facilitate the transition. However, the reality is a lowered voice on that.

The unbalanced efforts made in the action fields represent that, in general, the compromise has been made to prioritise engaging diverse stakeholders and generalise the reterritorialisation (i.e., bringing into more agricultural actors) at the cost of steering a transition towards agroecological practices. On the one hand, “local” and “short supply chain” refer to the local economy. Local economy corresponds to a shared interest between stakeholders, thus facilitating the generalisation of RAA (i.e., a large population of agricultural stakeholders can be involved). On the other hand, this is at the cost of the transition towards agroecology. The issue of transition has been intentionally avoided or addressed in a superficial way in order to mitigate contentions and exclusion of farmers. The compromise presents a strategy of using food planning as a neutral platform to engage stakeholders in the divergent agricultural models: given that transition also depends on the conversion of the majority and conventional practitioners, they should be engaged in the game. Overall, the “neutrality” of food planning on this issue is both a weakness due to the failure to promote a shared vision and an opportunity for flexible compromises as it keeps representatives of diverging agricultural models together around the table.

Concretely, my field survey results reveal that trade-offs have been made with the co-existence of agriculture and food models (Gasselin et al., 2020). The established mainstream agri-food stakeholders are usually unwilling to see the transition. This is both the case for agroecological transition and product

diversification. The field survey results shows that for the first case, conventional farmers may be opposed to the transition and unwilling to engage in food planning. For the second case, the farmers and cooperatives of mainstream products defend their products and might be against diversification, thus blocking the possibility of strategic land use for product diversification. The results indicate that there is an absence of consensus and shared vision on agricultural models. The co-existence of agri-food models is generally not thought of as a coordinated system.

The compromise made between “local” and “agroecological” also resonates with the policy integration theory, which identifies an inverse relationship between the comprehensiveness and consistency of the policy. In other words, the more comprehensive issues the policy is, the harder to find consistency between cross-cutting issues (Holden, 2012). This has also been approved by the study on local food issues, showing that social inclusion is contradictory to economic goals (Cretella & Buenger, 2016). This fact shows a challenge for policy integration.

Third, the research reveals that direct links between land-use and food planning are still marginal, and missing links are from both processual complexity and political tensions between local stakeholders. The document analysis shows the direct link was limited and only in the action field of preserving farmland. The in-depth investigation indicates some links in the ongoing processes, not only the policy outputs but also the procedures. Missing links are differently driven in the action fields.

Farmland preservation and access to land are the action field with the closest connection between land-use and food planning for their shared goal of farmland preservation. It should be noted that the actual goal of no net land take (*zéro artificialisation nette*, ZAN) has reinforced this shared interest. Missing links, however, mainly derive from the reluctance to engage land-use planning issues in food, as it touches many interests. Land-associated instruments take a long time and complicated administrative procedures and local political debates, thus hindering local involvement. This is not only about land-use planning regulations but also about the associate land management instruments, such as peri-urban pre-emption perimeters (*PAEN*), protected agricultural areas (*ZAP*) and identifying fallow land from land-use planning diagnosis.

In the scientific world, some methods have been explored in land assessment to identify land appropriate for short supply chains so that can be the basis for developing food-enabled land-use regulations. Researchers (Sanz Sanz et al., 2018; Boussougou Boussougou et al., 2021) have proposed a methodology to identify land appropriate for RAA by integrating factors such as the socio-

economic features of farms, their landscape functions and demography. They suggest applying prioritised land-use and food planning interventions to the identified land. This research shows that such methodology is of great importance in providing technical solutions to connecting RAA and land-use planning. Nevertheless, in its implementation, local willingness and interplay between stakeholders will have to be taken into account. According to what has been identified in this research, identifying prioritised land can be conflicting with the willingness to avoid hierarchy between farmers to prevent conflicts.

In terms of the transition of farming practices, the major constraints for the land-use and food planning linkage are the lack of legitimacy and the confrontation between stakeholders in the co-existing agriculture and food models. Territories seem to be reluctant to use regulatory instruments (including land-use planning) to impose power on the agricultural transition. This is to avoid tensions between agricultural actors. For land-use planning, this is also an issue of the lack of legitimacy. By referring to the legal rule “planning regulations govern the use of the land, except for agricultural production” (Planning Code, L. 101-3), local stakeholders can easily refuse the land-use planning regulations that touch farming practices. Researchers have argued that agroecological transition requires a legal reimagination on property rights (Calo et al., 2021). My findings support that argument. A radical transition of farming practices may have to rely on an update of land policies.

Regarding the legitimacy of land-use planning intervention on farming practices, the research shows that there is a self-contradiction among the local actors’ use of land-use regulations. On the one hand, actors (especially agricultural actors represented by the Chamber of Agriculture) are largely against the creation of specific zones for a defined production by referring to legitimacy defined by the Planning Code. On the other hand, they indeed do so to differentiate the building rights of products through Agriculture and Urbanism Charters (at the departmental level). Ultimately, such a contradictory logic of legal rules mobilisation presents the inequity engendered by the unbalanced political voices and the inequity between producers in the territory (Perrin & Nougaredes, 2020).

Regarding the structuring of local supply chains, the missing link derives from the disconnected topics. Both land-use and food planning projects contain various policy instruments. However, topics are not brought together, e.g., land-use planning focuses on on-farm individual building rights whereas food planning mainly aims at developing collective food facilities. This also reflects a lack of collaboration between the two planning processes.

Fourth, despite the lack of linkage, there is a high potential to build complementarity and create synergies between policy instruments in land-

use and food planning. Basically, by referring to the typology by Vedung (1998), the document analysis provides an overview of the complementarity between the principally regulatory land-use planning instruments and mainly informational and economic food planning instruments. Because these types of instruments shape different social and power relations, their combination helps to complement what cannot be achieved by a single instrument. It is also an issue of complementarity between the strategic and flexible “soft” food planning instruments, which are rather persuasive and encouraging, and the regulative “hard” land-use planning instruments, which impose government power on stakeholders. In the meantime, land-use planning is strictly framed, whereas food planning can reach diverse instruments.

Concerning the concrete uses of policy instruments, the analysis based on the gradient integration levels by (Howlett & Del Rio, 2015) allows the understanding of conflict, complementarity and synergy, which represents different degrees of policy integration. Here I focus on complementarity and synergy.

An exemplary case of complementarity is the mobilisation of land management instruments. Van Dijk and Van der Vlist (2015, p. 1900) have argued that local governments play a double role in active land policy by intervening in land markets: as “referees” via land-use planning regulations and as “players” via active control as public landowners. This research demonstrates that on RAA issues, both roles are implemented in land-use planning and food planning, respectively. While land-use planning is not entitled to mobilise the various land market intervention instruments (e.g., publicly-owned dedication, land purchase), food planning can reach out to the corresponding capacity and do that. The land-use regulations can thus be coherent, even integrative, with food planning. This research also shows that in RAA-associated cases, food planning project leaders (not only local governments but also organisations) also play a role as “facilitators.” They may have limited publicly-owned land or are not willing to intervene directly in the agricultural world to avoid contentions. Instead, food planning project leaders, together with their partners, can facilitate private actors to develop RAA by providing information, technical resources, networking, awareness-raising, et cetera. The central issue is then how to make the role of “referee”, “player” and “facilitator” coherent, avoiding conflicts and creating complementarities as well as synergies.

It should be noted that conflicts and complementarities are dependent on the local use of rules. The representative case is the ongoing no net land take (*zéro artificialisation nette*, ZAN) scheme. From the perspective of farmland preservation, such a goal will indeed reinforce the consistent objective of land-use and food planning. However, when it comes to practice, the in-depth interviews have anticipated the conflicting issues, such as between densification

(as an important layer for no net land take) and urban agriculture, between anti-farmland conversion and local farmers' development.

The no net land take goal might also challenge the issue of diversification activities in agricultural areas. In the existing French context, preserving agricultural and natural spaces has been interpreted as the preservation of agricultural zone and natural zone areas. Buildings for residence and diversification in such areas have not been counted in the consumption of spaces. However, the application of zero net land take might calculate such buildings as "land take" if the notion is interpreted as creating irreversible land (see chapter 2.1). The land take implementation regulation is now being written, and uncertainties exist. In the European context, European Environment Agency defined the land take as a transfer from agricultural and natural function to urban and other artificial land development: *"the land take indicator to address the change in the area of agricultural, forest and other semi-natural land taken for urban and other artificial land development"* (European Environment Agency, 2019). If this definition is applied in the French context, the instrument of change of uses would be challenged. The transformation from vacant or old farm building to residence or tourism accommodation would be counted as land take, as it means the transfer of uses from non-human to human activities.

Studied cases present the synergies created in some issues. One of the issues is on the water catchment or other water-sensitive areas. Water management, nature maintenance, land use, land pre-emption, agroecological transition and quality food distribution can be combined. Integrated planning can contribute to finding the synergistic solution. Another issue is transforming heritage farm buildings into collective food facilities, which integrates issues of reducing land take (not allowing on-farm individual food facilities), allowing farmers' diversification, reinforcing the value of heritage buildings, reuse farm buildings to maintain the agricultural use of the space. Both cases require not only coherent land-use and food planning but also long-run territorial management and implementation.

Future research agenda. Synergies (including potential ones) identified through this empirical study are far from comprehensive. My research perspective on the integration of planning policies echoes recent insights of systemic studies on sustainable development known as "nexus" approaches. The water-energy-food nexus is a new approach for sustainability-directed research that deals, in particular, with the complex and competing issues surrounding climate change and sustainable development (Smajgl et al., 2016). My research also reveals trade-offs between choices in resources management which could be analysed with "nexus" approaches, e.g., renewable energy can be a competition with food production when it comes to using farmland. A nexus framework may facilitate a better understanding of the issue with other

conceptual tools.

The diversity of policy instruments also derives from the highly diversified typologies, among which the spatial characteristics could be influential (i.e., urban, peri-urban and rural territories). The limitation of this thesis project is it did not include a systematic exploration of the correlation between spatial features and the instruments mobilised for RAA. Future research on this correlation can offer a better understanding of the different suitable strategies in urban and rural areas and give insights into a more coherent territorial development. A challenge might be combining the spatial typology (rural, peri-urban and urban) and the institutional typology, which is highly diverse in terms of scale (municipality, inter-municipality, territorial cluster, department).

This research focuses mainly on two French regions. It provides the analytical framework between the two planning policies. The framework can be a basis for a future more detailed study in enlarging the scope, and comparing regions can facilitate a comprehensive understanding of the RAA planning issues in France.

An evolving dynamic can be identified through the use of policy instruments in this integrated issue. Land-use planning is confronted with the necessity to evolve so that to respond to challenging issues such as climate change, water management and no land take. Food planning is challenged by exploring the cross-cutting issues in this new policy field, going beyond the conventional ways of intervention in agriculture. In this sense, both planning policies deal with evolving mechanisms, which are challenged by the renewal of planning methods to coordinate stakeholders in the territorial transition. This leads to my second discussion on governance mechanisms and institutional organisations.

2) Integrated planning of RAA as an avenue to explore the institutional organisations: diverse contexts, strategies, opportunities and challenges

The second theme for discussion is the governance mechanisms and institutional design that can affect integrated RAA planning. Policy integration is not only in outputs (substantial policy instruments) but also during the whole process of inputs (working process) (Nilsson & Persson, 2003; Stead & Meijers, 2009).

The research identifies complementarities between land-use and food planning regarding their functions (other than instruments). Empirical cases give evidence on facilitators and inhibitors that affect land-use and food planning integration, within which institutional organisations are identified as significant. The diversified cases, within France as well as between France and the

Netherlands, show that no one unique governance mechanism is suitable for RAA, and different strategies can be suitable for different contexts. It presents that planning for RAA is a process of exploring the new policy field, as well as a challenge to the institutional organisation and restructuring of power between different levels of authority.

First, local interviewees' observations provide evidence of the complementarity between "regulative" land-use planning and "voluntary" food planning in terms of governance efficiency. Food planning contributes to land-use planning by integrating agricultural and food expertise, implementing goals flexibly and approaching diverse stakeholders to join the debate. Integrating land-use planning is important for food planning regarding gaining legal certainty in the long-term commitment of territorial development. Such complementarities confirm the mutual relationship between "soft" and "hard" law-framed planning (Mattila & Heinilä, 2022). More importantly, they can reinforce each other by providing political justification and raising awareness of elected officials so as to increase the political commitment to RAA. Two concrete issues are particularly worth discussing:

One issue is that food planning can introduce agricultural expertise into land-use planning. It is significant as land-use planning has long been detached from agriculture (Pothukuchi & Kaufman, 1999; Vitiello & Brinkley, 2014). This empirical research also confirms such detachment with evidence of the lacked agriculture-associated expertise in land-use planning practices. The research shows that by integrating food planning into land-use planning agricultural diagnosis, the diagnosis can be enriched and has multiple benefits. Food planning could benefit from land-use planning territorial resources and economise the cost, which is important for a non-compulsory local project. Land-use planning can be enriched on the agri-food issues with a more comprehensive understanding of the agriculture and food system. This mutual benefit is also a collective process of learning, which resonates with the policy integration theory. The theory emphasises policy learning and knowledge improvement in working on cross-cutting issues, which are matters of sense-making, capacity to act and decision-making (Atkinson & Klausen, 2011; Holden, 2012). Further, the integration between food and land-use planning can reinforce the political legitimacy of food planning, a newly established local policy without stable institutions. This is also what can "hard" planning benefits "soft" planning by giving a certain type of legal certainty.

Another issue deals with public participation and a deliberative planning process. The research demonstrates that planning RAA through land-use planning has a general top-down framework with fixed stakeholders to participate and be consulted. The inter-municipal body manages land-use planning and requests advice and opinions from invited stakeholders and the

public. Comparatively, food planning usually has a planning process that engages a wider range of multi-stakeholders, which implies planning in a co-constructive way and a mutual learning process. The pioneering case of the rural cluster Midi Quercy showed how the interaction between land-use and food planning could enrich the stakeholders in land-use planning and affect its output. In this territory, thanks to the close interaction between the two planning projects, the multi-stakeholders associated with RAA were introduced in the master plan (*SCoT*) working process. The food planning project leader facilitated the identification of RAA-associated stakeholders and expanded the participators in the master plan. As a result of the various RAA-associated stakeholders' involvement in the master plan, the orientation it defined contained diverse aspects of RAA that are not necessarily compulsory components. It shows that the planning policies integration may facilitate a more inclusive land-use planning process.

Second, empirical cases provide evidence on factors that affect land-use and food planning integration, within which institutional organisations are worth particular attention. Local attempts have been identified to formalise and stabilise institutional organisations in the studied cross-cutting perspectives (cross-sectoral, cross-territorial and public-private).

The study demonstrates different forms of institutional organisations. In terms of cross-sectoral collaboration, in the exemplary case of Metropolis Montpellier, a formalised internal cross-sectoral team working on food planning was settled, which facilitated the coordination between land-use and food planning. In terms of collaboration that breaks the territorial boundary, there were exercises on building reciprocal contracts or conventions between territories. Though voluntary and not binding, such contracts or conventions formalised collaborative relationships between territories to a certain extent. Regarding collaboration between public institutions and civil actors, there was, on some occasions, the establishment of steering committees which engage these different actors. A formalised institution has the potential to distribute responsibility and accountability, promoting long-term commitment.

The study also shows that such organisations could be operated in various forms, corresponding to different degrees of commitment. For example, there were formal collaborative leaderships (co-management of food planning), steering committees and thematic working groups. These organisations do not play the same role and do not mobilise the same actors. Engaging what stakeholders at what stage, at what scale and through what kind of organisation are still questions to be explored. When compared to international studies, food policy council as a prevalent issue in international literature was not widespread in French cases. Food policy council is considered a collaborative governance network that engages diverse stakeholders and is organised in various forms

(Bassarab et al., 2019; Prové et al., 2019). This kind of international food governance experience may give insights into French practices.

It should be noted that among the studied cases, institutional organisations that involve both cross-sector and cross-scale perspectives are not evident, especially when it comes to food and land-use planning collaboration. The research shows that the effective link between cross-scale land-use and food planning is very much weak and may depend on three factors: 1) the political willingness of inter-municipal bodies in integrating food planning, 2) the ability of supra-scale design guidelines or documents to integrate RAA and 3) the binding power of regional and master plans on local land-use plans. An ongoing change of institutional organisation in terms of the issue is that the no net land take goal (ZAN) is being addressed at the regional level. Such a change may imply the restructuring of power relations and affect land-use and food planning integration as a cross-scale issue.

I observed that governance practices combining vertical and horizontal collaborations are difficult to implement. This resonates with the studies on policy integration I previously discussed, which have concluded that policy integration is seldom along both dimensions simultaneously (Lafferty & Hovden, 2003) and that the more collaboration is needed, the more capacities are needed (Stead & Meijers, 2009). The more cross-cutting actors are involved, the more complex the process will be to reach a consensus, which may reduce the efficiency of policymaking. This point has also been suggested by a recent France-based food planning study (Santini & Fournier, 2022).

This research contributes to a better understanding of the factors likely to facilitate or, by contrast, inhibit policy integration (Stead & Meijers, 2009). Theoretical proposals have listed the factors as contexts and conditions. In contrast, this research with empirical cases shows that institutional design can adjust the context and create a more favourable environment for policy integration. This research reveals that the institutional design is induced by the new issue of food planning. So, we can also conclude that the new planning policy itself is a process that facilitates institutional structuring.

Third, this research with highly diversified studied cases clearly shows no unique governance model for RAA planning. Different contexts present local strategic responses as well as challenges and hindrances. The diversity is represented by the food planning at multiple scales of territory, managed by public institutions or civil actors. In this new policy field of agriculture and food, territories experiment and explore the planning in diverse ways and present various possibilities. Three types of diversified cases provide surprising findings.

One is the diversified scales of food planning. For reminding, studied cases include food planning at the scale of a municipality, inter-municipal body, territorial cluster, regional park and department. The research shows that different scales can be relevant. Each scale of territory can work as a “brokering institution” to carry out food planning, as described by Mendes (2007) about the role of food planning project leaders. It means that a certain scale of government can coordinate multi-scaled food policies and initiatives. The research identifies different roles project leaders play by the scale and corresponding competence. Inter-municipal bodies: more direct management but also coordination; territorial cluster and regional parks: rather coordination, facilitating and mediation; department councils: coordination between territories as well as between food planning projects.

Several cases indicate that smaller-scale food planning tends to be more efficient in rapid implementation but may be limited by the small size of the territory that is limited in the food supply. By contrast, large-scale food planning might be a better scale in the issue of RAA, as indicated by the literature on the issue of the “city-region” scale. However, large-scale planning may risk a long process of coordination between actors and inefficient implementation. It also raises the question of the pertinent scale for the concertation and mobilisation of actors. The research indicates that the choice of developing food planning at a certain scale is a trade-off between political willingness, scale appropriateness and implementation effectiveness. This finding echoes the issue of the “local trap” proposed by Born and Purcell (2006), claiming that local does not inherently bring benefits to what we imagine from environmental, social and economic perspectives. Indeed, from a technical perspective, there can easily be a “local trap.” But this research shows that appropriate governance mechanisms can break the boundary and avoid such a “trap.” It also implies that multi-scale and cross-boundary governance is necessary for efficient RAA planning, as proved by the studies on food planning of the London metropolis (Reynolds, 2009; Morgan & Sonnino, 2010; Parsons et al., 2021).

Another diversity concerns the different strategies of institutional organisation occurring in urban, well-organised territories and rural, less equipped ones. The research shows that both types of territory have capacities to develop strategies to improve institutional organisations. Regarding cross-sectoral collaboration, the study shows that some urban territories with rich human resources developed well-organised teams for cross-sectoral collaborations. They were even equipped with expertise that could link the particular issues of agriculture and land-use planning. By contrast, some rural territories with small technical groups also developed a high degree of cross-sectoral collaboration. There, project managers were familiar with each other and co-worked on the RAA issue in land-use and food planning projects. Although they did not have a formalised institutional organisation of an internal working team, the informal,

spontaneous routines they established to collaborate between colleagues facilitated the policy integration. These cases suggest that territories may have context-based solutions. Small territories may have high agility.

Beyond the diversified cases within France, the cross-nation comparative analysis between France and the Netherlands shows the diversity at a global scale. The analysis demonstrates that different institutional settings at the national scale triggered different local responses in terms of local-level planning-making and institutional organisations. The research shows that the two countries had governance models that performed differently depending on institutional context. The state-local relationship in France and the civil society-government relationship in the Netherlands have prominent effects on the planning approaches used for RAA. Contrary to France, in the Netherlands, where there is no national framework and steering force on food planning, local territories rely much more on civil society organisations and interaction with non-agricultural actors. In other words, Dutch food planning projects integrate a bottom-up approach to compensate for the absence of a top-down steering force. The different state-local relationships have affected the local power relations and finally impacted the planning approaches for RAA.

Given the instability of this power relationship and responsibility, there may be a need for technical guidelines and restructuring of institutional organisations and competences in terms of RAA.

Future research perspectives. RAA, as a new exploration field of local competences, brings challenges as well as opportunities in testing territorial governance mechanisms. Shreds of evidence demonstrate that diversified solutions have been induced in an evolutionary environment. These solutions indicate a reorganisation of power relationships and an evolution of competences. This research is limited in identifying local strategic solutions as a result of stakeholders' interplay but not questioning further the issue of the different institutional organisations' impacts on policy effects. What kind of local organisations can facilitate integrated RAA planning? At a local scale, what is the appropriate? At a larger scale, how should the responsibilities and competences be allocated between different levels of authority? Or, more fundamentally, should they be defined? Also, what should be the role of the state, as well as the role of international policies (e.g., CAP), in shaping the relationship with local food (Détang-Dessendre et al., 2021)? They are questions requiring more studies in the future.

Future study in terms of the organisational relations on RAA issues also deals with an evolution of land-use planning in integrating issues of agriculture and food. There is, at first, the issue of agriculture and food expertise in land-use planning in terms of both education and the profession. Then, there is also the

issue of the legitimacy of land-use planning's intervention in farming practices. Should agriculture remains as "farmers' businesses" and keep being co-managed by the central government and farmers' unions, or should local authorities gain more legal power to intervene in that, for example, through land-use planning? This is worth studying and can have implications for the change of legal rules.

The institutional environment for local food issues is in evolution. Institutional settings are dynamic and updating, even at a rapid speed. We can find similar dynamics in the evolution of inter-municipal land-use planning: initially, it developed slowly with much resistance and opposition from municipalities but then evolved with rapid acceleration. My work during the three-year thesis project witnessed the change and the evolution of issues, for example, rapidly emerging food planning projects, the formalisation, the diversity as well as the change triggered by the Covid-19 pandemic⁸⁸. Future research can be conducted on this challenging issue of territorial development and transition, comparing the chronological evolution to identify significant factors that trigger the change.

⁸⁸ See the individual appendix the book chapter contribution (in preparation): "Recovery from the pandemic: planning the reterritorialisation of agricultural activities."

APPENDIX

1. ENGLISH-FRENCH GLOSSARY

This English-French glossary includes the proper terms, legal titles and titles of institutions that appear multiple times in the text.

English expression	French term and commonly used abbreviation
1. Laws and codes	
Climate and Resilience law	Loi Climat et Résilience, loi n° 2021-1104 du 22 août 2021 portant lutte contre le dérèglement climatique et renforcement de la résilience face à ses effets
Food law	Loi EGalim, loi n° 2018-938 du 30 octobre 2018 pour l'équilibre des relations commerciales dans le secteur agricole et alimentaire et une alimentation saine, durable et accessible à tous
Housing law	Loi ELAN, loi n° 2018-1021 du 23 novembre 2018 portant évolution du logement, de l'aménagement et du numérique
New Organisation law	Loi NOTRe, loi n° 2015-991 du 7 août 2015 portant nouvelle organisation territoriale de la République
Agriculture law	Loi LAAAF, loi n° 2014-1170 du 13 octobre 2014 d'avenir pour l'agriculture, l'alimentation et la forêt
Urban Renewal law	Loi SRU, loi n° 2000-1208 du 13 décembre 2000 relative à la solidarité et au renouvellement urbains
Coastal law	Loi Littoral, loi n° 86-2 du 3 janvier 1986 relative à l'aménagement, la protection et la mise en valeur du littoral
Mountain law	Loi Montagne, loi n° 85-30 du 9 janvier 1985 relative au développement et à la protection de la montagne
Planning Code	Code de l'urbanisme
Rural Code	Code rural et de la pêche maritime
2. Planning-associated terms	
Food planning (food plan)	PAT, Projet alimentaire territorial
National Food Programme	PNA, Programme National pour l'Alimentation
Recovery Plan	Plan de Relance
Land-use planning (land-use plan)	PLU(i), Plan local d'urbanisme (intercommunal)
Regional plan	SRADET, Schéma régional d'aménagement, de développement durable et d'égalité de territoire, direct translation

English expression	French term and commonly used abbreviation
Master plan	SCoT, Schéma de cohérence territoriale
Climate Plan (Plans on the Climate-Air-Energy Nexus)	PCAET, Plan Climat Air-Énergie Territorial
No net land take	ZAN, Zéro Artificialisation Nette
Strategic project	PADD, Projet d'aménagement et de développement durable
Design guidelines	OAP, Orientations d'aménagement et de programmation
Development zone	Zone à urbaniser
Urbanised zone	Zone urbaine
Urban economic area	ZAC, Zone d'activité concertée
Peri-urban pre-emption perimeter	PAEN, Périmètre de Protection des Espaces Naturels et Agricoles Périurbains
Protected agricultural area	ZAP, Zone agricole protégée
Sensitive natural space	ENS, Espace naturel sensible
3. Institutions and organisations	
The state's regional service on agriculture	DRAAF, Direction régionale de l'alimentation, de l'agriculture et de la forêt
The state's departmental service on planning	DDT(M), Direction départementale des territoires (et de la mer)
Municipality	Commune
Inter-municipal body	EPCI/intercommunalité, Etablissement public de coopération intercommunale
Metropolis (inter-municipal body metropolis)	Métropole
Rural cluster (together with urban cluster): territorial cluster)	PETR, Pôle d'équilibre territorial et rural
Urban cluster	Pôle métropolitain
Regional park	PNR, Parc naturel régional
Department	Département
Region	Région
Major farmers' union	FNSEA/FDSEA, Fédération nationale/départementale des syndicats d'exploitants agricoles
Chamber of Agriculture	Chambre d'Agriculture
Rural Land Agency	SAFER, Sociétés d'aménagement foncier et d'établissement rural

2. INFORMATION OF SEMI-STRUCTURED INTERVIEWS

Interviewees are anonymised due to ethical considerations.

Interviews in France

No.	Date	Associated territory/organisation	Number, profile of interviewee(s)	Form	Duration
Normandy					
1	2021/01/26	Inter-municipal body Saint-Lô	2 civil servants	In person	1.5h
2	2021/01/26	Inter-municipal body Granville Terre et Mer	2 civil servants	In person	1.2h
3	2021/01/27	Chamber of Agriculture Centre Manche	1 staff	Online	1h
4	2021/04/01	Rural cluster Caen	2 civil servants	In person	1.5h
5	2021/04/02	Inter-municipal body Cotentin	2 civil servants, 1 intern	In person	1.2h
6	2021/04/12	Inter-municipal body Lisieux Normandie	2 civil servants	Online	1h
7	2021/04/14	The state's regional service of agriculture (DRAAF)	1 civil servant	Online	45min
8	2021/04/22	Planning agency of Caen	2 staff	Online	1.5h
9	2021/04/23	Inter-municipal body metropolis Rouen	2 civil servants	Online	1.5h
10	2021/05/10	Inter-municipal body Terroir de Caux	1 civil servant, 1 elected official, 1 intern	In person	1.2h
11	2021/05/11	Department Seine-Maritime	4 civil servants	Online	1.5h
12	2021/05/17	Inter-municipal body Mont Saint-Michel	3 civil servants	Online	1h15
13	2021/05/18	Inter-municipal body Baie du Cotentin	2 civil servants	In person	1.5h
14	2021/05/26	Inter-municipal body Pays de Falaise (food planning rural cluster Caen)	1 civil servant	Phone call	1h
15	2021/05/26	Inter-municipal body Villes Soeurs	1 civil servant	Online	1h
16	2021/05/26	Inter-municipal body Caux Austreberthe	1 civil servant	Online	45min
17	2021/05/27	Inter-municipal body Yvetôt	1 civil servant	In person	1.5h
18	2021/05/27	Regional park Perche	2 civil servants	Online	1h15min
19	2021/05/28	Rural cluster Dieppe Pays Normand	2 civil servants	In person	1.5h
20	2021/05/28	Regional park Boucles de la Seine	2 civil servants	In person	1.5h
21	2021/06/02	Inter-municipal body Coutances Mer et Bocage	2 civil servants	Online	1h
22	2021/06/02	Regional sustainable agency in Normandy (Agence Normande de la Biodiversité et du Développement Durable, ANBDD)	1 staff	Online	1h
23	2021/06/09	Inter-municipal body Seine Eure	2 civil servants	In person	1.5h
24	2021/06/10	Inter-municipal body Coeur du Perche	1 civil servant	In person	1h
25	2021/06/10	Inter-municipal body Mortagne au Perche	1 civil servant	In person	1h

No.	Date	Associated territory/organisation	Number, profile of interviewee(s)	Form	Duration
26	2021/06/11	Chamber of Agriculture Normandy	1 staff	Online	1h
27	2021/07/01	Public Land Agency (EPF) Normandy	1 civil servant	Online	1.5h
Occitania					
28	2021/06/07	Department Gers	2 civil servants	Online	1h10
29	2021/06/15	Inter-municipal body Ouest Aveyron	2 civil servants	In person	2h
30	2021/06/15	Regional park Haut-Languedoc	2 civil servants	In person	2h
31	2021/06/16	Inter-municipal body Rodez	2 civil servants	In person	1.5h
32	2021/06/16	Regional park Grands Causses	2 civil servants	In person	1h40
33	2021/06/17	Rural cluster Pays d'Armagnac	2 civil servants	In person	2h25
34	2021/06/22	Rural cluster Pays des Nestes	1 civil servant	Online	1h
35	2021/06/23	Chamber of Agriculture Haute Garonne (food planning Toulouse Métropole)	2 civil servants	Online	1h
36	2021/06/24	La DRAAF Occitania	1 civil servant	Online	1.5h
37	2021/06/25	Inter-municipal body Ténarèze	4 civil servants	In person	1.5h
38	2021/06/28	Inter-municipal body QRG	1 civil servants, 2 elected officials	In person	2h
39	2021/06/29	Rural cluster Midi Quercy	1 civil servant	Online	1.5h
40	2021/06/29	Regional park Ariège	2 civil servants	Online	1h40
41	2021/07/02	Rural cluster Albigeois Bastides	2 civil servants	Online	1h
42	2021/09/17	Rural cluster Coeur d'Hérault	2 civil servants	Online	1h40
43	2021/09/20	Rural cluster Pyrénées Comminges	2 civil servants	In person	2h
44	2021/09/21	Association Chemin Faisant	1 staff	In person	3h
45	2021/09/22	Rural cluster Haut Languedoc et Vignoble	1 civil servant	In person+phone call	1.2h
46	2021/09/23	Rural cluster Haut Languedoc et Vignoble	1 civil servant	Online	1h
47	2021/09/24	Chamber of Agriculture Pyrénées-Orientales	2 staff	In person	1h
48	2021/09/27	Inter-municipal body Aure Louron	1 civil servant	In person	2h
49	2021/09/27	Municipality of Albi	2 civil servants	In person	1h6
50	2021/09/28	Rural cluster Midi Quercy	1 civil servant	Online	1.5h
51	2021/09/28	Cooperative with collective interests (SCIC) Maison Paysanne, food planning Haute-Vallée de l'Aude	1 staff	In person	2h
52	2021/09/30	Regional park Aubrac	1 civil servant	Online	1h20
53	2021/10/01 & 2021/11/15	Rural cluster Ariège*	PETR de l'Ariège	In person+Online	30min+2h
54	2021/10/01	Inter-municipal body Pays de Mirepoix	2 civil servants	In person	1h
55	2021/10/01	Inter-municipal body Pays d'Olmes	2 civil servants	In person	2h
56	2021/10/04	Inter-municipal body Tarbes-Lourdes-Pyrénées	2 civil servants	In person	2h
57	2021/10/04	Inter-municipal body Haut Allier	4 civil servants	Online	1.5h

No.	Date	Associated territory/organisation	Number, profile of interviewee(s)	Form	Duration
58	2021/10/05	Inter-municipal body Grand Cahors	2 civil servants	In person	1.5h
59	2021/10/07	Inter-municipal body metropolis Montpellier	2 civil servants	Online	1h
60	2021/10/08	Inter-municipal body Muse et Rasperes du Tarn	1 civil servant	Online	1.5h
61	2021/10/21	Master plan (SCoT) Gascogne	1 civil servant	Online	1h20

* Interview in this territory contains two stages. First, the author and the project manager had a talk about understanding the basic information. Second, a group meeting was organised. The author was invited to do a presentation with preliminary results of potential links between land-use and food planning and observed the meeting.

Interviews in the Netherlands

No.	Date	Associated territory/organisation	Number, profile of interviewee(s)	Form	Duration
1	2021.11.11	Food council of Metropolitan area of Amsterdam	1 activist, researcher	In person	2h15
2	2021.11.16	Individual consultant (related to project Ede and Wageningen)	1 consultant	In person	1h25
3	2021.12.14	Municipality Súdwest-Fryslân*	2 civil servant	Online	1h10
4	2021.12.15	Associated with project of the municipality of Almere	1 activist, researcher	Online	51min
5	2021.12.15	Voedselverbindt (related to project of Metropolitan area of Amsterdam)	1 staff	Online	1h15
6	2021.12.20	Municipality Westerkwartier	2 civil servants	Online	1h27
7	2021.12.21	Municipality Groningen	1 civil servant	Online	1h27
8	2022.01.05	Westerkwartier regional cooperative (related to project of Westerkwartier)	1 staff	Online	1h24
9	2022.1.12	Municipality Ede	1 civil servant	Online	45min
10	2022.1.13	A branche of farmers' union	1 representative	Online	1h29
11	2022.1.24	Municipality Wageningen	2 civil servants	Online	52min
12	2022.1.24	Province Gelderland	1 civil servant	Online	1h10
13	2022.2.7	Municipality Groningen	1 civil servant	Online	1h
14	2021.02.07	Province Utrecht	1 civil servant	Online	1h

* After the first interview, the author and interviewees had two extra online communication to 1) exchange the experience of French cases and 2) update the information in Súdwest-Fryslân food planning.

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