TRADE AND AGRICULTURE DIRECTORATE

THE ROLE OF AGRICULTURE AND FARM HOUSEHOLD DIVERSIFICATION IN THE RURAL ECONOMY OF FRANCE

Foreword

This report reviews information on the role of agriculture and farm household diversification in the rural economy of France. It was prepared by Catherine Moreddu of the OECD Secretariat.

It is one of 13 country reviews prepared under Output area 3.2.1: Agricultural policy reform (Item 3.2) of the programme of work and budget of the Committee for Agriculture for 2007-08.

Based on material compiled from the available literature, these country reviews address all or most of the topics listed below:

- Definitions and underlying concepts of "rural" as they exist at the national level.
- The availability of data pertaining to the share of agriculture and the agro-food sector in the economies of OECD countries at the national level and in rural areas and trends therein.
- The availability of data relating to the income situation of farm households and in particular the availability of information related to non-farming activities.
- The extent to which non-farming income-earning activities of farm households are farm based (*i.e* using farm resources as in the case of farm tourism) or rural based (located in rural areas).
- The extent to which the industries upstream and downstream from primary agriculture are located in rural areas.
- The strength of multiplier effects between farm/farm based and up/downstream industries and rural economies.

The information in these country reviews was used as background to the report "The role of agriculture and farm household diversification in the rural economy: evidence and initial policy implications" [TAD/CA/APM/WP(2009)1/FINAL], which was declassified by the Working Party on Agricultural Policies and Markets in February 2009.

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This report first reviews the coverage of European Union (EU) and national statistical sources of information on the role of agriculture and related industries in the national and regional economies. It reports the share of agriculture and related industries in land use, employment and GDP at national and regional levels, and, as far as possible, developments in these shares. The definition and typology of rural areas used in this context are then supplemented with more detailed ones used in national statistics and research specific to rural issues.

The literature review is then organised along main questions, such as:

- What are the current thoughts, theories and practices regarding rural and territorial development in France?
- What factors explain the location of agri-food industries in rural or urban areas?
- What is the "basket" of goods provided by agriculture in rural areas?
- To what extent are farm households engaged in other gainful activities on and off the farm?
- Does the policy stance encourage this diversification?
- What is the contribution of farm tourism to the farm household income and the rural economy?
- What are the multiplier effects of agriculture and related industries compared to other sectors?

The share of agriculture and related industries in land use, employment and GDP

Coverage of EU Sources

Regional statistics on employment, value added and land use in agriculture and the overall economy are available from the on-line EUROSTAT database (REGIO),[1] at NUTS level 2 (Province) or NUTS level 3 (département), depending on the source and the variable. The region and period coverage varies depending on the source of the variable. In regional labour market statistics, the share of agriculture, hunting, forestry and fishing can be traced from 1999 to 2005, at NUTS level 2. In Branch accounts, gross value added at basic prices and employment can be obtained at NUTS level 3 from 1995 to 2003 for agriculture, hunting, forestry and fishing and for all sectors. This database has been used to compute some indicators presented in the main report [TAD/CA/APM/WP(2009)1/FINAL].

The EU data presented in this section are taken from a report published by the EU Commission on "Rural Development in the European Union - Statistical and Economic Information — Report 2006".[2] The report gives an overview of rural areas in EU regions and presents indicators of the importance of agriculture and farms in rural economies. These indicators are used to assess rural development policies. Among other things, the report includes data for 2002 or 2003 on:

1. http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1090,1&_dad=portal&_schema=PORTAL.

2. http://ec.europa.eu/agriculture/agrista/rurdev2006/index_en.htm.

- the share of land, population, gross value added (GVA), and employment in three types of rural areas: Predominantly Rural (PR), Intermediate Rural (IR) and Predominantly Urban (PU) defined in the next sub-section; and

- the share of the primary sector in total land, GVA and employment in each region and in the different types of rural areas.

The report also include information on the distribution of farms, farmers or farm land in each type of rural area (*e.g.* share of farms in PR), and on the average farm size by type of rural area.

Coverage of national sources

Statistics on agriculture come from the "Service de la Statistique et de la Prospective" of the Ministry of agriculture (SSP), which collects statistics on the agricultural and agri-food sector (AGRESTE, GraphAgri 2007). General economic statistics come from the national statistical institute, INSEE. Compared to EU statistics, French national statistics contain additional information on the share of agro-food industries, and forestry products (wood and paper) in GDP and employment. At the national level, most recent data are published for 2005 (GraphAgri 2007). The share of agriculture and related industries in GVA and employment is presented by region (NUTS2) for 1999 in GraphAgri Regions (2002).

Definition of rural areas in EU statistics

There is no common definition of rural areas in EU member states. EU statistics use the OECD methodology to classify NUTS 2 and NUTS 3 regions.

The OECD methodology is based on population density (OECD, Creating rural indicators for shaping territorial policy, Paris, 1994). It is based on a two-step approach: First, local units (*e.g.* municipalities) are identified as rural if their population density is below 150 inhabitants per square kilometre. Then, regions (*e.g.* NUTS 3 or NUTS 2), are classified in one of the three categories:

- Predominantly Rural region (PR): if more than 50% of the population of the region is living in rural communes (with less than 150 inhabitants / km2)

- Intermediate Region (IR): if 15% to 50% of the population of the region is living in rural local units

- Predominantly Urban region (PU): if less than 15% of the population of the region is living in rural local units.

Characterisation of the rural character at regional level, where most of the statistics are available, allows a picture of the different types of areas at national level to be drawn. As for the first step, the method requires information on population and areas at local level, the characterisation can only be made with a long periodicity (in general every ten years when a population census is made).

The OECD methodology is the only definition of rural areas internationally recognised. However, the results of this methodology are sometimes considered as imperfectly reflecting the rural character of areas, particularly in densely populated regions (UNECE, 2007).

In France, all NUTS2 regions are classified as Intermediate Rural except Île-de-France and Nord/Pas de Calais, which are Predominantly Urban, and Poitou-Charentes, Limousin and Corse, which are Predominantly Rural. This classification is very broad, in particular when used at NUTS 2 level. A large

share of crop production for example is produced in a predominantly urban area, Île-de-France, which covers the centre of the Paris Basin (see below). For analysing French rural development issues, INSEE and researchers use a more refined typology of rural areas described in Box. 1.

Box 1. A French definition and typology of rural areas

The French National Institute for statistics and economics (*Institut national de la statistique et des études économiques*, INSEE) defined in 2000 predominantly rural areas (*espace à dominante rurale, EDR*) as the total area occupied by small urban municipalities (*communes)* and by rural municipalities (those with less than 2 000 inhabitants), which do not belong to predominantly urban areas (*espace à dominante urbaine, EDU*). There are three categories of predominantly urban areas:

- *Urban centres* are defined as urban units with a minimum of 5 000 jobs in the centre itself or in adjacent units (61% of the population, 72% of employment and 8% of land in 1999).

- *Periurban rings* where urbanization is continuous (without enclaves) and a minimum of 40% of the population works in the main urban center or another municipality of the ring.

- *Multipolar municipalies* are contiguous rural municipalities and urban units outside urban areas, where less than 40% of active residents work in several urban areas, without reaching this percentage for any of them.

Periurban rings and multipolar municipalities are considered as periurban municipalities. They included 21% of total population, 12% of employment and 33% of land in 1999.

Predominantly rural areas, being defined by opposition to predominantly urban areas, are quite heterogeneous. They group rural towns with weak urban influence (at least 20% of their active residents work in urban areas), rural units which form rural centres offering between 2 000 and 5 000 jobs, municipalities under their influence and rural units with less than 2 000 jobs. Using the same principles as for predominantly urban areas, they are classified as:

- *Rural employment centres* comprised of urban units (or rural municipalities) grouping between 1 500 and 5 000 jobs.

- *Rural employment rings* where a minimum of 40% of the population commutes to a rural centre.

- *Other predominantly rural areas* (53% of land and 12% of population).

Rural employment centres and rings are forming rural employment areas representing close to 6% of the population, 6% of employment and 6% of land.

The National Strategic Plan distinguishes two types of rural areas: predominantly rural areas (58.8% of the national territory) and periurban areas (33.1% of the national territory). Periurban areas are considered in this plan because agriculture and forestry occupy 53.2% of the area and offers associated landscapes. In addition, over 35% or farms are located in periurban areas. French rural areas account for 39% of the population (22.8 million inhabitants).

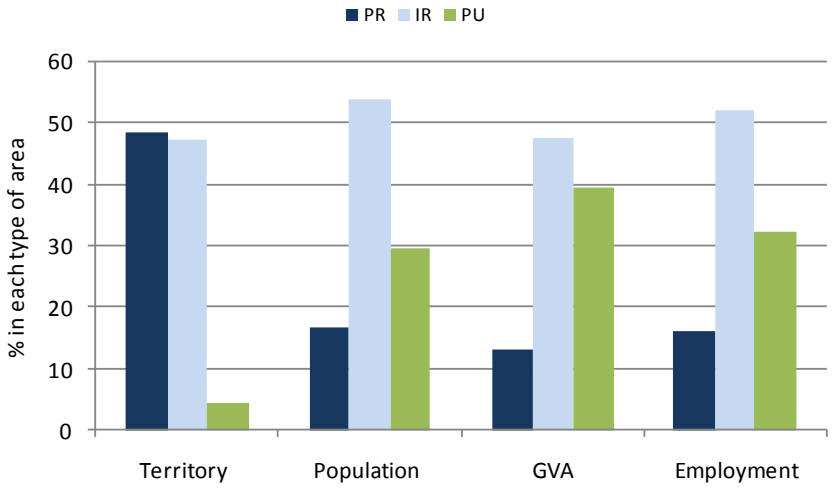
Besides, INSEE has developed in 2004 a zoning system for the French territory comprising 1 745 "*bassins de vie*", defined as the smallest territorial unit in which the population has access to both health, education, public services and shopping equipments, and employment. Employment has been grouped in three broad categories: residential-related sectors, agri-food-related sectors; other industry-related sectors. Territorial units are then classified according to the main employment sector. This classification can be combined with the rural-urban classification above. For example, categories such as residential, periurban rings can then be identified.

Source: INSEE (2002), "Organisation territorial de l'emploi et des services", *INSEE Première*, No. 870, November. Perrier-Cornet (2002), *Repenser les Campagnes*, éditions de l'aube; Aubert and Schmitt (2006), "Mécanismes économiques à l'œuvre dans les espaces ruraux, conceptions du rural et logiques de l'intervention publique", ENESAD/INRA. INSEE (2004), "Les bassins de vie des bourgs et petites villes: une économie résidentielle et souvent industrielle", Eric Ambiaud, Michel Blanc and Bertrand Schmitt, *INSEE Première* No. 954, April; Structuration de l'espace rural: une approche par les bassins de vie (accès en ligne sur www.insee.fr) http://www.insee.fr/fr/themes/detail.asp?ref_id=bassins_vie&reg_id=99&page=donnees-detaillees/bassins_vie/bassins_vie.htm

An overview of the importance of rural areas in France

Around half of French territory, population, agricultural value added and employment are in intermediate rural areas (Figure 1). Predominantly rural areas account for most the other half of land but for less than 18% of population and employment and for around 13% of agricultural value added. Although they account for less than 5% of the territory, predominantly urban areas contribute close to 40% of agricultural value added (Ile-de-France).

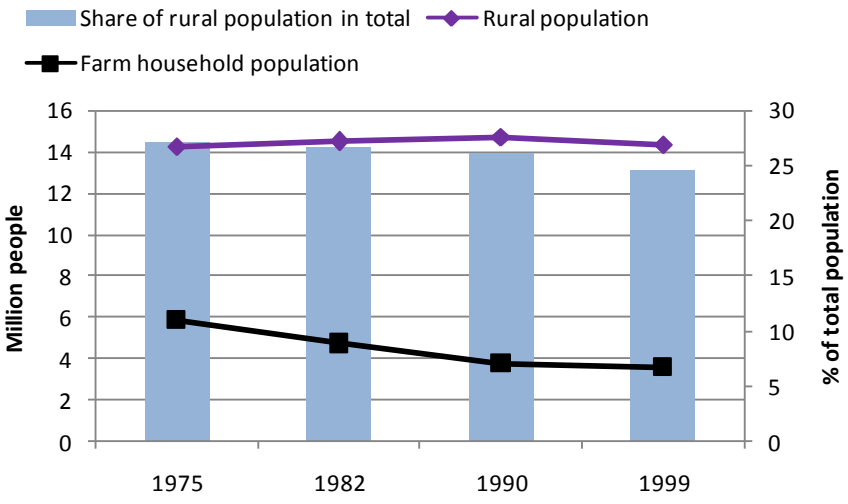
Figure 1. Share of rural areas in French territory, population, GVA and employment, 2002 or 2003



NUTS 3. 2002 for GVA and employment, 2003 for land and population.
Source: European Commission (2006), Rural Development in the European Union: Statistical and Economic Information - Report 2006, August. http://ec.europa.eu/agriculture/agrista/rurdev2006/index_en.htm

While the population of members of farm households decreases sharply over time, the rural population is relatively stable according to using INSEE yearly definitions of rural areas (Figure 2). In 1999, the rural population accounted for close to a quarter of the total population. About a quarter of the rural population belonged to a farm household in 1999, compared to 42% in 1975 (GraphAgri 2007, p. 33).

Figure 2. Evolution of the rural and agricultural population in France, 1975-99



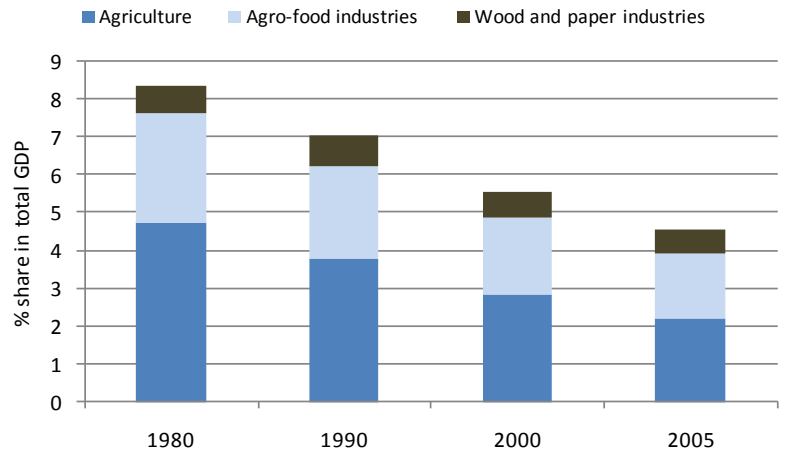
Source: GraphAgri 2007.

The importance of agriculture in French regions

In France, the farm household population still accounts for a quarter of the rural population, but agriculture's share in employment and GDP is decreasing over time. At the national level, agriculture accounts for a very modest share of GDP (2.2% in 2005) and employment (3.6% in 2005). The share of agriculture in GDP has been halved between 1980 and 2005 (Figure 3). The reduction in the share of agro-food industries in GDP has been significant but slower during the same period and these industries accounted for 1.8% of GDP in 2005.

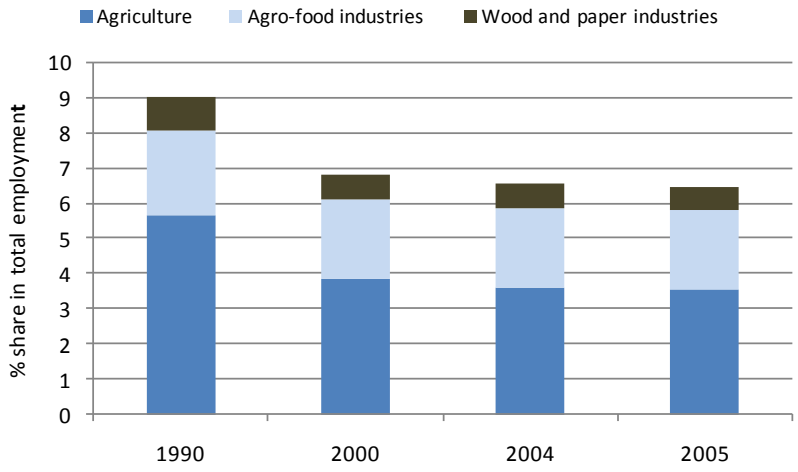
The decline in the share of agriculture in employment has been less pronounced than that in GDP in the 1990s, and it has slowed since 2000 (Figure 4). Agro-food industries have maintained their employment levels over that period. In total, agriculture and agri-food industries accounted for 4% of GDP and 5.9% of employment in 2005, compared to 6.2% and 8.1% respectively in 1990. The ratio of the share in employment and the share of GDP has increased from 1.30 to 1.47.

Figure 3. Share of agriculture and related industries in French GDP, 1980-2005



Agriculture, hunting, forestry and fishing.
Source: GraphAgri, 2007.

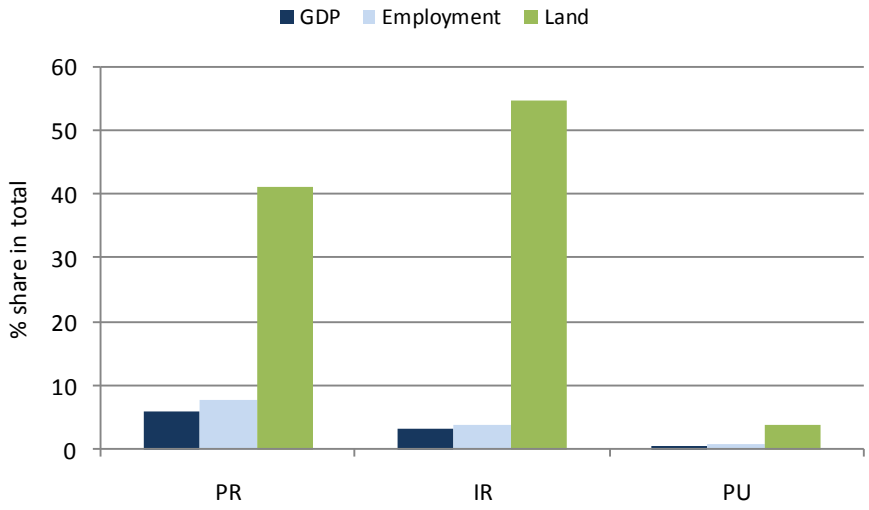
Figure 4. Share of agriculture and related industries in French employment, 1990-2005



Agriculture, hunting, forestry and fishing.
Source: GraphAgri, 2007.

Even in predominantly rural areas, the primary sector accounts on average for less than 6% of total GDP and less than 8% of total employment (Figure 5). It uses, however, a significant share of land in predominantly rural areas and an even larger one in intermediate rural areas.

Figure 5. Share of primary sector in land use, GVA and employment in rural areas of France, 2002



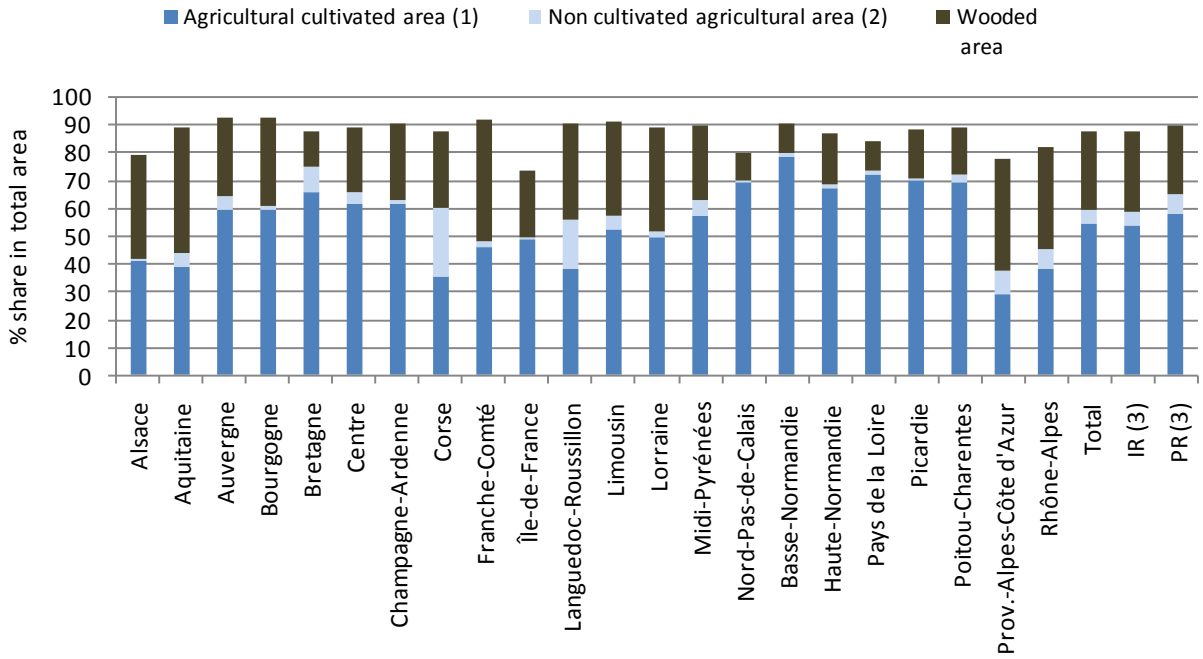
NUTS 3 level units (*Départements*).

Source: European Commission (2006), Rural Development in the European Union: Statistical and Economic Information - Report 2006, August. http://ec.europa.eu/agriculture/agrista/rurdev2006/index_en.htm.

The diversity of French regions is reflected in the relative share of agriculture and forestry in land use (Figure 6). The share of agriculture and agri-food industries in employment varies by region, from less than 2% in Ile de France to close to 15% in Brittany (1999 data). This share is close to or above 10% in 10 of the 22 French regions listed in Figure 7. At the same time, agriculture and agro-food industries account for over 6% of GDP in only four regions.

In some regions, agro-food industries add a significant share to the value added of agricultural commodities (Figure 8). Brittany, for example has a high concentration of agro-food industries. The agro-food value added in some regions is boosted by high value-added products like wine and specialty cheeses. But overall, the share of agriculture and agro-food industries in GDP is below 8% in all regions but one (Champagne). Compared to the national average, agro-food industries are relatively more important in employment in Brittany, Basse-Normandie and Pays de Loire, where their share in employment is over 6% and 4% respectively. Their share is above the national average in terms of employment, but stays below 14% in all regions and below 12% on average in predominantly rural regions. However, agriculture is the main user of land on average and in many regions, although forestry is also a major land user and forests occupies more land than agriculture in several regions.

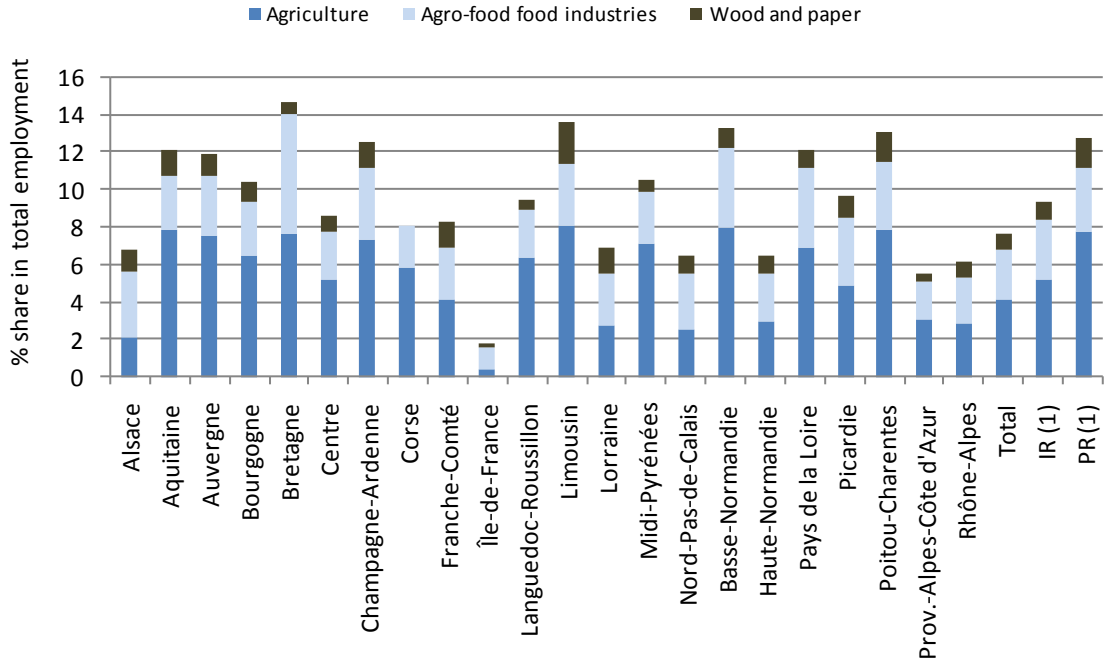
Figure 6. Share of agriculture in land use in French regions, 2000



1. Agricultural cultivated area: includes arable land and permanent crops.
2. Non cultivated agricultural area includes non productive moors, fallows and bare land.
3. NUTS 2 level aggregates (French regions).

Source: GraphAgri Régions, 2002.

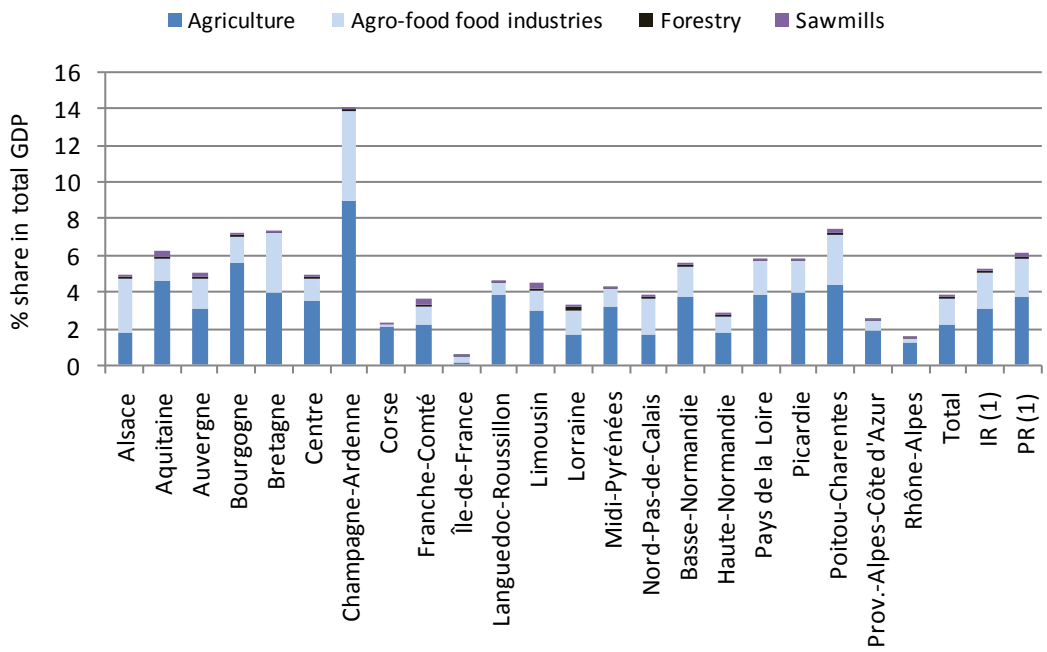
Figure 7. Share of agriculture and related industries in regional employment, 1999



1. NUTS 2 level aggregates (French regions).

Source: GraphAgri Régions, 2002.

Figure 8. Share of agriculture and related industries in regional GDP, 2000



1. NUTS 2 level aggregates (French regions).

Source: GraphAgri Régions, 2002 and INSEE web site for total GDP.

Main themes found in French academic literature on the role of agriculture and agro-food industries in rural development

Context

This section contains a review of the recent literature on the role of agriculture and related industries in rural areas, organised along a few themes. The review does not consider policy evaluation issues, which are the subject of another, separate study. Neither does it cover the broad subject of rural development, or only to the extent that agriculture and related products and services are mentioned. The following sub-section gives a flavour of approaches to rural development issues in the literature, where agriculture is treated as one sector among others and where the territorial/spatial dimension dominates the approached used.

What are current thoughts, theories and practices regarding rural and territorial development in France?

The literature on rural development generally adopts a spatial, territorial approach to rural development issues. It often draws on concepts developed by geographical economics, which describes the different forces underlying concentration: spatial externalities, which are economic spill-over effects in space; and increasing returns to scale. In this context, two main issues are analysed:

1. What are the factors underlying the development of rural areas?

2. What explains the localisation of activities? Why are some activities concentrated in specific areas?

The second question has been applied to agro-food industries as explained in the next sub-section, but also to agriculture itself to explain regional specialisations. The first question is often raised when comparing different regions and trying to explain their current specialisation and prospects for development or in looking for approaches to promote the development of rural areas. A case study approach is then applied, generally to rural areas with specific development problems or opportunities. The situation of two rural regions with broadly similar conditions is contrasted. The specific assets of each region are identified, in particular the factors explaining development differences. Suggestions are then made on how to better exploit these assets, and on the potential role for the government in promoting development.

Based on a case study of two remote rural regions in mid-mountain, Aubrac and Cézalier, Diry *et al.* (2000) look at the role of various types of resources and institutional/organisational/coordination issues to explain development differences. Among resources, they consider specifically local, fixed resources such as raw material difficult to transport, agricultural land and amenities; the labour force characterised by its low cost and low specificity; and the collective territory itself. They find that the organisation between agents is a crucial factor of differentiation. In Aubrac, there are externalities linked to the marketing of products (organised by water bottlers), quality production (Laguiole knives) and processing of agricultural products (cheese cooperatives) which have local roots, while in Cézalier, there are no specialty products and most firms originate from outside the region. Roux *et al.* (2006) consider similar issues when comparing Aubrac with Baronnies in the Alps. Bertrand and Vollet (2003) look at the role of territorial factors in the creation of service enterprises in two regions of the South of France.

In this context, agriculture and related industries are examined as one activity among others. The role of products with a strong local dimension in rural development is outlined as well as the agricultural externalities that contribute to the marketing of local products and the attractiveness of the region, in particular for tourists.

One study examines the evolution of the role of agriculture in changing rural areas (Triboulet et Langlet, 1999). It is mainly a statistical analysis that describes the share of agriculture in the population, employment, area and municipalities in different types of rural areas of the Midi-Pyrénées region, using the INSEE typology (Box 1). The study also looks at different types of farms (full-time, part-time, pension farms) and product specialisation.

What factors explain the location of agri-food industries in rural or urban areas?

France is a large agricultural country, accounting for around 20% of EU25 agricultural production. It has a long tradition in processing food for the domestic and export market, including some very high value added products. The role of the agro-food industries in developing value added along the chain and offering market opportunities to agricultural products is well recognized. French agro-food industries are very diverse in size and legal status, from small producers' cooperatives or local companies to larger regional cooperatives and companies and a significant number of French and Foreign multinationals.

In France, the role of agro-food industries in rural employment has also been examined. The traditional model regarding the location of food processing industries is that first stage handling and processing is located in rural areas next to production areas, while the last stages of processing and retailing are concentrated near the large urban centers where consumers are concentrated. A number of studies consider the location and concentration of agri-food industries using models derived from new geographic economics (Krugman, 1991), in which transport costs (more specifically trade costs between regions) and economies of scales are the main factors explaining the geographic concentration of industries. Fujita *et al.* (1999) added two more factors: access to demand and production costs.

Considering structural and technological changes in the food chain, in particular the fragmentation of specialized activities along the chain, Saives and Lambert (2001) suggest analyzing the linkages between agro-food industries and territory using two factors, product transportability and input availability, to determine four types of development strategies:

- opportunity, with centralized, speculative buying when transportability and input availability are high;
- stability, with contractual, bilateral relationships when transportability is high and input availability is low;
- trust, using local networks when transportability is low and input availability is high; and
- insurance, with local integration or local exclusive partnership when transportability and input availability are low.

The authors suggest logically that strategies 3 and 4 corresponding to a low transportability are likely to lead to strong regional concentration.

Renting *et al.* (2003) explore the importance of short food supply chains and their impact on rural development in seven EU member states, including France. They look at organic farming, quality production, direct selling, farm tourism and nature and landscape management. Of these, quality production and direct selling are significant in France. The authors conclude that the development of short food supply chains is uneven among EU member states but never negligible. They stress the role of these chains in forging a regional identity and suggest that the best way to encourage such development is by providing institutional assistance.

Chevassus-Lozza and Galliano (2003) analyze factors explaining agro-food firm's export strategies and competitiveness. They find that beyond the macro-sectoral effects related to national industrial

specialization, which impact mainly on large firms, the specific advantages of firms that are closely related to territorial factors remain the major strategic factors of competitiveness.

Agro-food industries in France play a particular role in regions where agricultural production is concentrated, such as in the North-West of France, and/or where high value added regional specialties are produced. However, few empirical studies look at the location of agricultural production. Using panel data, Daniel (2005) finds that agricultural production tends to concentrate close to areas where consumers are located. This is observed for all commodities, but concentration next to urban areas is particularly strong for horticultural products, while supported products are less concentrated (Daniel, 2003). Remote areas tend to specialize in sectors supported by agricultural policy. When domestic markets are opened and support is reduced, concentration in most competitive regions increases (Chevassus-Lozza and Daniel 2006; Daniel, 2007).

There are many geographical indications in France, particularly in the wine, cheese and meat sectors. In these cases, local processing is compulsory. As explained above, local specialty products not only generate employment from farming and processing, but contribute to the reputation of the region/territory and its attractiveness for visitors. They can also be an asset for the development of farm tourism (Table d'Hôtes). As increased competition is likely to lead to a concentration of agriculture in competitive regions, labels of origins are often considered as a way to maintain agriculture in less competitive regions (see for example Daniel, 2007). Using a new economic geography model, Callois (2006) explores the impact of product differentiation (quality labels) on rural industrialization. The model highlights the trade-off between the number of farmers who differentiate and the income generated by the differentiated sector, the positive effect of agricultural differentiation on rural industrialization due to increased demand for industrialized goods; and the role of higher transport costs for the specific good, which favour rural industrialization but limit the size of the differentiated agricultural sector.

What is the "basket" of goods provided by agriculture in rural areas?

The contribution of agriculture to rural areas has been described by Pecqueur (2001) as a "panier de biens" which adds to the concept of bundle of goods the link with a territory and territorial services. Compared to geographic indication systems, it includes a multiple output dimension. In other words, when the consumer buys a product, he also buys the multiple attributes of the territory of origin. Mollard (2001) also considers quality products associated with a territory. He introduces the concept of territorial rent and reports estimates of the value the externalities of agriculture in the Alps, obtained using the method of hedonic pricing. These studies point towards including the value of local externalities, when evaluating the role of agriculture in rural areas.

Other studies look specifically at the provision of environmental services from agriculture, forestry and other agents in rural areas (Aznar and Perriet-Cornet, 2003, 2004).

To what extent are farm households engaged in other gainful activities, on and off the farm?

EUROSTAT farm structural surveys report the share of farms that are pluriactive, but there is no information on what these other activities are, and how much they contribute to farm household income. There are plans to include additional information on other gainful activities on the farm in EU statistics, likely to be implemented in the 2010 surveys.

National statistics do not report information on non-agricultural income of farm households on a regular basis. In 1997 and 2003, the INSEE merged fiscal data with farm accounts data to estimate the total income of farm households (Guillemin and Legris, 2007). It shows that in main occupation farms,[3] the

3. Those were farm households derive more than half their income from farm sources.

share of farm income in total farm household income decreased from 67% in 1997 to 53% in 2003. However, this exercise does not provide any details on the non farm income sources, and in particular on the type of other gainful activities farm household members are engaged on.

National statistics also report the share of farmers that are pluriactive. This share is stable since the end of the 80s. In 2005, 3% of farmers had another main activity and 8% had another secondary activity, thus a total of 11% pluriactive farmers. But the share of spouses that are pluriactive has increased. The second activities of pluriactive farmers are: employee (22%), farm work independent activity or fishing (21%), elected professional or associative representative (19%), trader (12%), manual worker (9%), executive manager (8%), intermediary profession (6%) and artisan (4%). Farmers are asked specific questions on the incidence and nature of their other activities in the Census, but nothing about the income they generate.

Based on Census information, a fact sheet on the diversification of farms in Lorraine has been issued (Seyers, 2003). Over one quarter of farms in Lorraine are engaged in at least one other gainful (diversification) activity in 2000, compared to 22.7% in France. Direct sales to consumers is the main diversification activity: it concerns one-fifth of Lorraine's farms in 2000 (3 350 farms, including 1 350 professional farms), compared to over two-thirds of Lorraine's farms in 1988 and 15% of French farms in 2000. Other activities include contract farm work (3.4% of farms in Lorraine, compared to 2.1% in France), farm processing (2.8% compared to 9.2% in France), farm tourism (2.3% compared to 2.8% in France), other contract work like removing the snow and clearing bushes (1.6%), and forestry related activities (1.1%). The number of farms engaged in other gainful activities has decreased for almost all types of activities since 1988. This reflects the consolidation of farms, which have become less numerous, larger and more specialised.

Farm tourism is little developed in Lorraine and struggles to do so. It is concentrated in the Vosges, where 3.5% of farms offer tourism services. Housing is the most developed service and few farms offer meals. Investments needed to meet hygiene and safety norms are an impediment to the development of housing and meal services, but recreational activities are growing. The strengthening of food safety regulations is also pointed out as a factor explaining the decline in direct sales. 80% of horticulture farms sell their products directly, compared to 60% of poultry farms and 10% of cattle and crop farms.

Does the policy stance encourage this diversification?

The issue of whether regulations and policies encourage or hinder pluriactivity has been studied by both economists and jurists, indeed because French farmers and agricultural activities have a special status regarding social security, VAT and income taxation.

In the context of work on multifunctionality, Laurent *et al.* (2001, 2002 and 2004) compare eligibility rules for area payments, investment assistance to young farmers, LFA payments and some agri-environmental measures (grass premium in France) in Commission regulations and also in national implementation in Germany (Bavaria), Spain, France, Greece and the UK. The study looks at the following criteria:

- Farmers only.
- Minimum area.
- Main occupation farmers only.
- Condition on non farm income.
- Pluriactive farmers excluded.
- Minimum economic size.

Area payments are subject to EU regulation, which only stipulates a minimum size limit to define eligibility. There is no scope for countries to be more restrictive. When given the latitude, France tends to restrict eligibility to main occupations farmers only. Both LFA payments and the grass premium are restricted to main occupation farmers, who live in the area, with a ceiling on the share of non-farm income in the total income. For a period, France also excluded part-time farmers from subsidies to young farmers.

Specificities of the French legal and fiscal systems applying to agriculture are examined in the book edited by Hermon (2006). It contains the proceedings of a seminar of jurists held in Toulouse on 13 May 2005. Each Chapter of the book looks at one aspect of EU and French legislation concerning non-agricultural activities carried out by farmers. As in the previous article, it considers whether EU policies are only for main occupation farmers (Blanquet, p. 23). Barbieri (p. 51) looks at diversification from the point of view of business legislation. Raimbault de Fontaine (p. 65) and Baby (p. 99) look at taxation issues. Bernie (p. 129) discusses the status of diversification regarding labour legislation. Pigasse (p. 139) explains the situation regarding the social security system (MSA). Hermon (p. 151) considers the legislation regarding urbanization laws (can agricultural land be used for other activities by farmers? Do construction licences prevent them from developing other buildings?).

A synthesis is provided at the end. It concludes that the current legislation is not favourable to diversification. Agricultural activities are subject to different accounting, social security and tax systems. The main critic from jurists is that rules are not clear. When developing new activities, farmers are faced with a complicated and insecure situation in order to identify the legal status attached to each activity. Farmers need to keep separate accounts and make separate declarations to the fiscal and social authorities. If the income from non-farm activities becomes too large, they also take the risk of losing their agricultural status and the benefits that go with it, such as lower social levies, and access to some support measures. The proposals made by the various authors to facilitate the diversification of activities by farmer are then discussed.

What is the contribution of farm tourism to the farm household income and the rural economy?

Tourism is an important sector in France and rural tourism accounts for close to 30% of the number of rooms occupied. Statistics on tourism ignore the specificity of farm tourism and agricultural statistics mainly ignore farm tourism. This might reflect partly a problem of definition (Mamdy *et al.*, 2001). The most traditional form of farm tourism in France is the rural "gîtes", started in the 1950s, and very successful. However, farmers now account for less than 40% of owners of rural "gîtes" and other forms of farm tourism have developed. According to a 1993 survey, farm tourism was highly concentrated in Auvergne and the Alpes (Mamdy *et al.*). According to the 2000 Census, it is now more widespread but mainly in the South of France (Agreste Primeur, 2002).

Rural tourism is mainly outside farms. According to the 2000 Census, farm tourism remains marginal and the number of farms proposing housing or meals has decreased since 1988. Less than 2% of farm offer housing and 0.4% meals (Agreste Primeur, 2002).[4] This may be related to the fact that farm tourism activities are often initiated and managed by women and that an increasing number of women now work outside the farm. Farm tourism concerns mainly housing and meals, which are sometimes associated with direct sales and recreational activities. Direct sales to consumer have also decreased in the last ten years.

There are many studies and statistics on rural tourism but only one recent study specifically on farm tourism was found (Mamdy *et al.*,2001).[5] The authors list the different forms of farm tourism activities in

4. On average 2.2% of farms were engaged in farm tourism in the mid-90s (Mamdy *et al.*, 2001).

5. The study of Bae (2003) on the Bretagne analyses the multiplier effects of rural tourism on rural development in the Bretagne, but does not identify specifically farm tourism.

Auvergne: gîtes (41% of services), chambres d'hôtes, farm camping, direct sales associated with another activity, table d'hôtes, fermes-auberges, children's visits, horse riding farms and other (collation, randonnées, farm stay). Two-third of activities (91% of farms) concern housing only, 11% housing plus animals and 9% meals only.

Farms engaged in tourism are very diverse in size and type of production. Three-quarters of farm households involved in this activity want to increase their income and develop social contact (Mamdy *et al.*, 2001). The other quarter consists of "neo rural" households. Motivations and strategies are threefold: safeguarding the family heritage; increasing farm household income; and a business strategy. The authors identify territory specific logics in the development of farm tourism. They conclude that experiences are very diverse and that farm tourism is a diffuse phenomenon, which does not have significant impacts on land use or employment, but which contributes to the preservation of farms and creates local dynamics, which in turn reinforce local identity.

What are the multiplier effects of agriculture and related industries, compared to other sectors?

Regional input-output matrices are not very developed in France. Following pioneer work by Courbis building an interregional model (Regina) and other work in the 70s and 80s,[6] interest in undertaking research on regional modelling has decreased (Bossard *et al.*, 2000). Reviewing the literature on this issue, Léon and Surry (2008) discuss methodological issues and report estimates of multipliers effects of agriculture and agro-food industries in various regions of OECD countries, including small regions of France (Table 1) and two large regions of France, Brittany and Languedoc-Roussillon (Table 2).

Bossard *et al.* (2000) build an input-output table of agro-food industries in Brittany to estimate the impact of exogenous shocks in demand (BSE crisis) on the agro-food industries of the region. They calculate open multiplier effects[7] of production for various agricultural and industrial sectors in Brittany (Table 2).

6. Bossard *et al.* (2000) mention Courbis and Pommier (1979), Garrabé (1994) and Demans (1976), which have not been reviewed here.

7. Open multipliers consider only interdependencies between sectors arising from intermediary consumption. They do not consider effects through household expenditures.

Table 1. Production multipliers in small French regions

Authors	Small region	Year	Activity	Inter-industry multipliers	
				Open[1, 2]	Others[3]
Bossard and Daucé (2004)	Programme 5b areas in Brittany	1990	Agriculture	1.2 (1.8)	
			Meat industry	1.7 (2.1)	
			Dairy industry	1.8 (2.2)	
Daucé and Léon (2003)[4]	Lamballe area in Brittany	2000	Pig farming-small farms	1.5	
			Pig farming-large farms	2.3	
			Meat industry	3.2	
			Feed industry	3.1	
Mayfield *et al.* (2004)[5]		2004	Agriculture		
	Brioude (As)				1.22
	Mayenne (Am)				1.32
	Prades (Tm)				1.09
	Douanenez (Ts)				1.19
	Magny-en-Vexin (Ps)				1.06
	Ballancourt (Pm)				1.04

1. Open multipliers consider only interdependencies between sectors arising from intermediary consumption. They do not consider effects through household expenditures.
2. Multipliers between brackets are for the whole of Brittany.
3. Multipliers from Social Accounting Matrices, which include the impact of transfers, and inter-regional.
4. This study estimates employment multipliers as data needed to calculate production multipliers are not available.
5. The study includes agricultural (A), tourism (T) and periurban (P) regions around small (s) and middle (m) towns.
Source: Léon and Surry (2008).

The multipliers available for French regions are derived from input-output matrices established using the Leontieff model. They are open production multipliers, which take into account direct and indirect effects through intermediary consumption, but not the impact of household expenditures on production. As a result, they underestimate total multiplier effects. In one case (Mayfield *et al.*, 2004), employment multipliers have been estimated.[8] Estimates should be compared with caution as regions are of different sizes, years vary and estimation methods, though comparable, may not be strictly the same.

Production multipliers for agriculture vary between 1.2 and 2.2. Livestock farming has slightly larger multipliers than crop farming, reflecting stronger use of regional inputs. Larger and significant effects are found in Brittany, a region highly specialized in intensive livestock production, and in larger farms. However, in more remote regions of Brittany (objective 5 regions), the multiplier effects of agriculture are modest (1.2). Employment multipliers of agriculture are small, even in regions specialized in this sector.

Production multipliers of meat and dairy processing industries range between 2 and 3.2. They are significantly higher than those of primary agriculture and also compare favorably with other sectors. There is a wide variation in estimates for the feed industry, depending on the location.

8. This work has been undertaken as part of an EU research project "Marketown" looking at the integration of enterprises in 30 European rural regions in the local economy and the spatial distribution of their economic transactions.

Table 2. Production multipliers in Brittany and Languedoc-Roussillon

Authors	Region	Year	Activity	Inter-industry multipliers[1]
André-Fas (2003)	Languedoc-Roussillon	1996	Agriculture	1.40 (1.86)
			Agro-food industry	1.85 (2.15)
			All branches	(1.67)
Mahé *et al.* (2000)	Brittany	1990	Agriculture	1.75 (1.97)
			Meat industry	2.06 (2.44)
			Dairy industry	2.21 (2.44)
			Feed industry	1.45 (2.32)
			Other agro-food industries	1.90 (2.01)
Bossard *et al.* (2000)	Brittany	1990	Mixed crops	1.60
			Special crops	1.55
			Dairy cattle 1	1.75
			Dairy cattle 2	1.76
			Pig/poultry 1	1.82
			Pig/poultry 2	1.85
			Fisheries and forestry	1.47
			Bovine meat industry	2.39
			Other meat industries	2.02
			Dairy industry	2.24
			Preserves	1.63
			Feed industry	1.46
			Other agro-food industries	1.61
			Energy	2.08
			Chemistry	1.64
			Parachemistry	2.02
			Intermediate goods	1.65
			Equipement goods	1.83
			Consumption goods	1.82
			Construction-Building	1.41
			Services	1.40

1. Open multipliers, which only consider interdependencies between sectors arising from intermediary consumption, and do not include effects through household expenditures
2. Figures between brackets are open multipliers for France.
Source: Léon and Surry (2008) and Bossard *et al.* (2000).

Using economic base theory, Vollet (1998) estimates the direct and indirect multiplier effects (on employment) of residential and recreational functions in five small areas of France situated in the Burgundy and Rhônes-Alpes regions. He compares them with the multiplier effects of traditional industries (agriculture and industries). In all of the areas studied, the multiplier effects of residential and recreational functions are much higher than those of traditional functions (Table 3). However, the high capacity of residential and recreational functions to generate additional employment does not mean that their development is sufficient to offset the fall in agricultural employment (and industrial employment in some cases).

Table 3. Employment multipliers for traditional functions and residential or recreational functions

Area	Overall multiplier[1]	Traditional functions[2]	Residential and recreational functions
Montbard	1.56	1.29	2.52
Avallon	1.62	1.54	2.71
East Dijon	1.11	1.16	3.98
Aix les Bains	2.14	1.66	2.88
Southern Ardèche	1.78	1.44	2.93

1. All basic sectors, i.e. traditional functions and residential and recreational functions.
2. Agriculture and industries
Source: Vollet (1998).

Vollet and Dion (2001) apply the same model to estimate the employment multipliers of basic activities (agriculture, industries and some tourism activities like hotels) in six small areas of Northern Aveyron and Lozère, Cantal and Puy de Dôme, and compare them with Québec. The multipliers of the different activities they estimated are reported in Chapter 5 of the proceedings of the OECD workshop on the Coherence of agricultural and rural development policies (Vollet, 2007), together with the estimates calculated for three regions of Brittany by Samson-Gueguen (2003) (Table 4). The authors argue that this type of information could be useful to policy makers to help them focus intervention on areas and activities with the highest multiplier effects. Vollet and Bousset (2002) survey studies using meta-analysis to estimate economic base multipliers (Table 1, p. 486), assess the method, and outline its potential in analyzing rural and regional economies.

Table 4. Employment multipliers for traditional functions and residential or recreational functions

Area	Overall multiplier[1]	Traditional functions[2]	Residential and recreational functions
Aubrac[a]	1.63	n.a.	n.a.
Cézallier[a]	1.42	n.a.	n.a.
Morlaix[b]	1.97	2.95	n.s.
Redon[b]	1.79	1.33	6.24
Pontivy-Loudéac[b]	1.83	1.82	4.40

n.a.: not available; n.s.: not significant.
1. All basic sectors, i.e. traditional functions and residential and recreational functions.
2. Agriculture and industries
Source: Vollet (2006) reporting a) Vollet and Dion (2001) and b) Samson-Gueguen (2003).

Mathouraparsad *et al.* (2004) use Social Accounting Matrices of Guadeloupe to simulate the impact of various shocks on economic sectors, including agriculture (and rum consumption). For example, a 10% rise in investment in construction and public works would increase the value added of agriculture by 1%, while a 10% drop in tourist expenditure would reduce agricultural value-added by 0.7% and sugar, rum and alcohol consumption by 3.2%. A Social Accounting matrix of the Réunion was also built by Bonnal *et al.* (2003). They estimate the direct and indirect multiplier effects of the sugar food chain and the meat chains in terms of value added and employment.

A few older studies on multiplier effects are mentioned in the article reviewed, but they are unlikely to reflect the current situation of the agricultural sector, given the changes it has gone through in the last two decades. Overall, there is little evidence comparing the multipliers of various activities although this

would be useful to policy makers and rural actors in their efforts to develop rural areas. Estimates cover very few regions, often with a strong agricultural specialization. As a result, it is impossible to draw general conclusions on the importance of agriculture for rural economies, except that it varies by region and by type of production system. In order to guide policy makers interested in rural development issues, it would be useful to estimate and compare multipliers effects for different regions, agricultural production systems and other sectors of the economy.

In conclusion, rural development specialists seem to favour a horizontal, non-sectoral approach to rural development, while recognizing the specific role of agriculture in land use and in providing high quality products and externalities that contribute to the identity of the territory. However, it is widely recognized that agriculture has a limited potential for creating employment compared to agro-food and other activities.

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ANNEX 1

Annex Table 1. Classification of French regions

Île-de-France	**NUTS 2**	**(3) PU**	**Poitou-Charentes**	**NUTS 2**	**(1) PR**
Paris	NUTS 3	(3) PU	Charente	NUTS 3	(1) PR
Seine-et-Marne	NUTS 3	(2) IR	Charente-Maritime	NUTS 3	(2) IR
Yvelines	NUTS 3	(3) PU	Deux-Sèvres	NUTS 3	(1) PR
Essonne	NUTS 3	(3) PU	Vienne	NUTS 3	(1) PR
Hauts-de-Seine	NUTS 3	(3) PU	**Aquitaine**	**NUTS 2**	**(2) IR**
Seine-Saint-Denis	NUTS 3	(3) PU	Dordogne	NUTS 3	(1) PR
Val-de-Marne	NUTS 3	(3) PU	Gironde	NUTS 3	(2) IR
Val-d'Oise	NUTS 3	(3) PU	Landes	NUTS 3	(1) PR
Champagne-Ardenne	**NUTS 2**	**(2) IR**	Lot-et-Garonne	NUTS 3	(1) PR
Ardennes	NUTS 3	(2) IR	Pyrénées-Atlantiques	NUTS 3	(2) IR
Aube	NUTS 3	(2) IR	**Midi-Pyrénées**	**NUTS 2**	**(2) IR**
Marne	NUTS 3	(2) IR	Ariège	NUTS 3	(1) PR
Haute-Marne	NUTS 3	(1) PR	Aveyron	NUTS 3	(1) PR
Picardie	**NUTS 2**	**(2) IR**	Haute-Garonne	NUTS 3	(2) IR
Aisne	NUTS 3	(2) IR	Gers	NUTS 3	(1) PR
Oise	NUTS 3	(2) IR	Lot	NUTS 3	(1) PR
Somme	NUTS 3	(2) IR	Hautes-Pyrénées	NUTS 3	(2) IR
Haute-Normandie	**NUTS 2**	**(2) IR**	Tarn	NUTS 3	(2) IR
Eure	NUTS 3	(2) IR	Tarn-et-Garonne	NUTS 3	(1) PR
Seine-Maritime	NUTS 3	(2) IR	**Limousin**	**NUTS 2**	**(1) PR**
Centre	**NUTS 2**	**(2) IR**	Corrèze	NUTS 3	(1) PR
Cher	NUTS 3	(1) PR	Creuse	NUTS 3	(1) PR
Eure-et-Loir	NUTS 3	(2) IR	Haute-Vienne	NUTS 3	(2) IR
Indre	NUTS 3	(1) PR	**Rhône-Alpes**	**NUTS 2**	**(2) IR**
Indre-et-Loire	NUTS 3	(2) IR	Ain	NUTS 3	(2) IR
Loir-et-Cher	NUTS 3	(1) PR	Ardèche	NUTS 3	(1) PR
Loiret	NUTS 3	(2) IR	Drôme	NUTS 3	(2) IR
Basse-Normandie	**NUTS 2**	**(2) IR**	Isère	NUTS 3	(2) IR
Calvados	NUTS 3	(2) IR	Loire	NUTS 3	(2) IR
Manche	NUTS 3	(1) PR	Rhône	NUTS 3	(3) PU
Orne	NUTS 3	(1) PR	Savoie	NUTS 3	(2) IR

Bourgogne	**NUTS 2**	**(2) IR**	Haute-Savoie	NUTS 3	(2) IR
Côte-d'Or	NUTS 3	(2) IR	**Auvergne**	**NUTS 2**	**(2) IR**
Nièvre	NUTS 3	(1) PR	Allier	NUTS 3	(2) IR
Saône-et-Loire	NUTS 3	(2) IR	Cantal	NUTS 3	(1) PR
Yonne	NUTS 3	(1) PR	Haute-Loire	NUTS 3	(1) PR
Nord-Pas-de-Calais	**NUTS 2**	**(3) PU**	Puy-de-Dôme	NUTS 3	(2) IR
Nord	NUTS 3	(3) PU	**Languedoc-Roussillon**	**NUTS 2**	**(2) IR**
Pas-de-Calais	NUTS 3	(2) IR	Aude	NUTS 3	(2) IR
Lorraine	**NUTS 2**	**(2) IR**	Gard	NUTS 3	(2) IR
Meurthe-et-Moselle	NUTS 3	(2) IR	Hérault	NUTS 3	(2) IR
Meuse	NUTS 3	(1) PR	Lozère	NUTS 3	(1) PR
Moselle	NUTS 3	(2) IR	Pyrénées-Orientales	NUTS 3	(2) IR
Vosges	NUTS 3	(1) PR	**Provence-Alpes-Côte d'Azur**	**NUTS 2**	**(2) IR**
Alsace	**NUTS 2**	**(2) IR**	Alpes-de-Haute-Provence	NUTS 3	(1) PR
Bas-Rhin	NUTS 3	(2) IR	Hautes-Alpes	NUTS 3	(1) PR
Haut-Rhin	NUTS 3	(2) IR	Alpes-Maritimes	NUTS 3	(3) PU
Franche-Comté	**NUTS 2**	**(2) IR**	Bouches-du-Rhône	NUTS 3	(3) PU
Doubs	NUTS 3	(2) IR	Var	NUTS 3	(2) IR
Jura	NUTS 3	(1) PR	Vaucluse	NUTS 3	(2) IR
Haute-Saône	NUTS 3	(1) PR	**Corse**	**NUTS 2**	**(1) PR**
Territoire de Belfort	NUTS 3	(2) IR	Corse-du-Sud	NUTS 3	(2) IR
Pays de la Loire	**NUTS 2**	**(2) IR**	Haute-Corse	NUTS 3	(1) PR
Loire-Atlantique	NUTS 3	(2) IR	Guadeloupe (FR)	NUTS 2	(2) IR
Maine-et-Loire	NUTS 3	(2) IR	Guadeloupe (FR)	NUTS 3	(2) IR
Mayenne	NUTS 3	(1) PR	**Martinique (FR)**	**NUTS 2**	**(3) PU**
Sarthe	NUTS 3	(2) IR	Martinique (FR)	NUTS 3	(3) PU
Vendée	NUTS 3	(1) PR	**Guyane (FR)**	**NUTS 2**	**(1) PR**
Bretagne	**NUTS 2**	**(2) IR**	Guyane (FR)	NUTS 3	(1) PR
Côte-du-Nord	NUTS 3	(1) PR	**Reunion (FR)**	**NUTS 2**	**(3) PU**
Finistère	NUTS 3	(2) IR	Reunion (FR)	NUTS 3	(3) PU
Ille-et-Vilaine	NUTS 3	(2) IR			
Morbihan	NUTS 3	(1) PR			