

**Relationship between  
Agricultural and Rural  
Development within  
the Context of the European  
Union's Common Agricultural  
Policy: the Case of Finland**

**Doctoral Dissertation**


**Olli Voutilainen**



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# Relationship between Agricultural and Rural Development within the Context of the European Union's Common Agricultural Policy: the Case of Finland

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Olli Voutilainen

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## Abstract

The relationship between agricultural and rural development and the territorial impacts of agricultural policy are crucial issues from the viewpoint of rural development in both Finland and the whole European Union (EU). The EU's Common Agricultural Policy (CAP) has extended its objectives beyond sectoral policy and is increasingly concerned with the territorial development of rural areas. At the same time, the socioeconomic role of agriculture is undergoing transformation. This thesis has three main tasks. First, based on earlier studies and key theoretical concepts, the relationship between agricultural and rural development and the role of the CAP in the development of rural areas are studied. Secondly, the relationship between agricultural and rural development from a socioeconomic point of view in Finnish rural areas is explored. Thirdly, the allocation of the CAP and complementary national support payments in Finland is analysed. By examining the issues above, conclusions on agricultural and rural development policy are drawn.

The empirical analysis is grounded on extensive statistical and register data. The data on agricultural and rural development support cover the EU's programming

period 2000–2006. The time period used in the analyses of regional agricultural and rural development is from 1995 onwards. Furthermore, this thesis utilises farm-level data such that almost every single farm support payment can be allocated to a single farm and support flows can be related to farm characteristics. The money flows of agricultural and rural development support are related to the regions and types of rural municipalities.

Based on the earlier studies, clear territorial dissociation and diversification of agricultural and rural development have been identified. In general, rural development is now understood in a more integrated way than earlier. However, while the CAP has now many territorial dimensions, a major part of support payments are still farm-based. It is generally acknowledged that the CAP has not been by far an effective tool to promote regional cohesion. The empirical results of this work show that agricultural and socioeconomic development in rural areas and their relationship varies remarkably between Finnish regions. In addition, the regional structures and developments of agriculture and their links to rural development are multidimensional. In general, there was no

significant correlation between agricultural and rural development at municipal level in Finland. Because a major part of agricultural and rural development support is channelled into individual farms, the largest part of support is allocated to southern and western Finland where most farms are located. In addition, the regions with stronger agricultural development—based on the municipal-level analysis of this work—received more support in terms of support per farm and total support than other regions. However, the greatest challenges of regional development occur in the sparsely populated rural areas of eastern and northern Finland. From the standpoint of both agricultural and

regional development, the current CAP and the complementary national support have not considerably promoted the uniform development of Finnish rural areas. The results of this thesis support the requirement of endogenous and tailor-made as well as integrated rural development policy for different regions of Finland.

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**Key words:**

*rural development, agricultural development, EU's Common Agricultural Policy, territorial impacts, Finland*

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# Maatalouden ja maaseudun kehityksen suhde Suomessa Euroopan unionin yhteisen maatalouspolitiikan kontekstissa

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Olli Voutilainen

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## Tiivistelmä

Maatalouden ja maaseudun kehityksen suhde sekä maatalouspolitiikan alueelliset vaikutukset ovat keskeisiä seikkoja maaseudun kehittämisen kannalta niin Suomessa kuin koko Euroopan unionissa (EU). EU:n yhteinen maatalouspolitiikka (YMP) on laajentanut tavoitteensa sektorilähtöisestä eli maatalouden tukemisesta maaseutualueiden kokonaisvaltaisempaan kehittämiseen. Samanaikaisesti maatalouden sosioekonominen rooli muuttuu. Tällä tutkimuksella on kolme päätehtävää. Ensiksi, perustuen aikaisempiin tutkimuksiin ja avainteoriatähtöisyyksiin, tarkastellaan maatalouden ja maaseudun kehityksen suhdetta sekä YMP:n roolia maaseutualueiden kehittämisessä. Toiseksi selvitetään maatalouden ja maaseudun sosioekonomisen kehityksen suhdetta Suomen maaseutualueilla. Kolmanneksi analysoidaan YMP:n ja tätä täydentävien kansallisten tukien kohdentumista Suomessa. Lopuksi esitetään johtopäätöksiä maatalouden ja maaseudun kehittämissä politiikan kannalta.

Empiirinen analyysi perustuu laajaan tilasto- ja rekisteriaineistoon. Maatalouden ja maaseudun kehittämistukiaineisto kattaa EU:n ohjelmakauden 2000–2006. Maatalouden ja maaseudun kehitystä tarkas-

tellaan vuodesta 1995 eteenpäin. Lisäksi tutkimuksessa hyödynnetään maatilakoh- taista aineistoa siten, että lähes jokainen yksittäinen maataloustukimaksu voidaan kohdentaa yksittäiselle maatilalle ja tuki- rahavirtoja voidaan heijastaa maatalon oma- naispiirteisiin. Maatalouden ja maaseudun kehittämistukien rahavirtoja tarkastellaan alueittain sekä peilataan maatalouden ja maaseudun kehitykseltään erityyppisiin alueisiin.

Aikaisempien tutkimusten perusteella sel- keää alueellista eriytymistä ja erilaistumis- ta maatalouden ja maaseudun kehityksissä on tunnistettu. Yleisesti maaseudun kehittä- minen nähdään nykyään kokonaisvaltai- sempana kuin aiemmin. Kuitenkin valtaosa YMP:n työkaluista on edelleen maatala- perustaisia, vaikka YMP:lla onkin monia alueellisia elementtejä. On yleisesti tun- nistettu, että YMP ei ole ollut tähän men- nessä tehokas työkalu alueellisen kohee- sion edistämiseksi. Tämän tutkimuksen empiirisen analyysin tulokset osoittavat, että maatalouden ja maaseudun muu so- sioekonominen kehitys sekä näiden välinen suhde vaihtelivat huomattavasti alueiden välillä Suomessa. Lisäksi maatalouden alue- rakenteet sekä niiden kytkökset maaseudun kehitykseen ovat moniulotteisia. Yleisesti

ottaen merkittävää korrelaatiota maatalouden ja maaseudun kehityksen välillä kuntatasolla Suomessa ei havaittu. Koska valtaosa maatalouden ja maaseudun kehittämistuista kanavoituu yksittäisille maataloille, suurin osa tuesta kohdentuu eteläiseen ja läntiseen Suomeen, missä valtaosa maataloista sijaitsee. Lisäksi tutkimuksen empiirisen analyysin mukaan vahvimman maatalouden kehityksen alueet saavat tukea niin maataloa kohden kuin kokonaisuudessaan enemmän kuin muut alueet. Aluekehittämisen haasteet ovat kuitenkin suurimmat harvaan asutuilla maaseutualueilla itäisessä ja pohjoisessa Suomessa. Sekä maatalouden että aluekehittämisen näkö-

kulmasta nykyiset YMP:n ja tätä täydentävät kansalliset tuet eivät merkittävästi ole edistäneet Suomen maaseutualueiden yhdenmukaista kehitystä. Tutkimuksen tulokset tukevat aluelähtöisen ja alueellisesti räätälöidyn, kaikki maaseutualueiden toiminnot huomioivan maaseudun kehittämisen tarvetta erityyppisille alueille Suomessa.

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**Avainsanat:**

*maaseudun kehitys, maatalouden kehitys, EU:n yhteinen maatalouspolitiikka, alueelliset vaikutukset, Suomi*

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Porvoo 15 June 2012

Olli Voutilainen

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# PART I: BACKGROUND AND POSITIONING

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## 1 Introduction

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### 1.1 Aims and arguments

For centuries, agriculture has been the driving force of a rural economy and also a pervasive influence in the organisation of rural society and culture (Woods, 2005, p. 42). However, the role of agriculture as a basic industry in rural areas has been diminishing in western countries over the last decades. As a result, the regional role of agriculture has also undergone a strong transformation. This has also meant a changing relationship between agriculture and rural areas and pressure to modify agricultural and rural development policy. From the viewpoint of promoting agriculture and integrated development in rural regions, it is essential to explore the relationship between agricultural and rural development and the impacts of the policy measures on rural areas. This thesis focuses on these issues.

A sparse population, long distances and the lack of (urban) centres have meant that Finland, compared with many other developed countries, is still exceptionally rural. In the Finnish Rural Typology (see Malinen et al., 2006), some 374 out of 432 municipalities were classified as rural in 2005. These municipalities hosted 41.7% of the population and 94.1% of the territory. Based on the Organisation for Economic Co-Operation and Development's<sup>1</sup> (OECD) definition of rural areas, in 2002, some 400 municipalities out of 432<sup>2</sup> were considered rural because their population density

was less than 150 inhabitants per km<sup>2</sup>. These municipalities hosted 55.9% of the population and covered 98.6% of Finland (OECD, 2008, p. 35). When comparing Finland with other OECD countries, based on the OECD's Territorial Level 3 (TL3) regional classification, Finland ranks within the top five in terms of rural territory, rural population and rural share of gross domestic product (GDP) (OECD, 2008, pp. 33–34; for further information about the OECD regional classification: OECD, 2010b).

The regional division of labour has been one of the most important factors explaining the polarisation and diversification<sup>3</sup> of regions and rural areas in Finland and other countries as well (see more about the settlement and formation of spatial division of labour in Finland in a historical perspective: Katajamäki, 1988; Tykkyläinen & Kavilo, 1991). The diversification of regional economic activities and functions

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<sup>1</sup> The OECD currently in 2012 has 34 member countries which are Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States of America (OECD).

<sup>2</sup> According to the municipal division in force in 2005.

<sup>3</sup> The term diversification in the context of rural development is defined in Chapter 2.1.

can be divided into three classifications. First, the differences between natural conditions and circumstances create usually rather constant, zonal structures. An example of that is the Finnish settlement structure which extends to nearly all parts of Finland and is the result of pursuing agriculture and forestry practically all over the country. Secondly, the settlement centres create strengthened zonal core-periphery structures. Thirdly, the regional diversification is affected by a number of local factors, which, in turn, create complex and mosaic-type regional structures (Malinen & Muilu, 2009, pp. 11–12). In the context of Swedish rural development, Persson and Westholm (1994) expressed that the change taking place is a change “towards the new mosaic of rural regions.” It can also be seen that a region has a so-called ‘first nature’, consisting of the resources of the region before the functioning of human beings. However, the ‘first nature’ alone cannot explain dramatic differences in regional economic development. The functioning of human beings leads to a so-called ‘second nature’ of a region and, hence, the differentiation in the circumstances of a region and uneven development even across ex ante identical places (Ottaviano & Pinelli, 2004, p. 14). Furthermore, coincidence can play a crucial role when explaining the original situation patterns and, later on, the regional development trends of socioeconomic activities.

Structural changes in society have meant that the role of other rural industries beyond agriculture has become increasingly crucial. In Finland, urban-adjacent rural areas have been able to respond to the structural changes in society quite well. The disappearance of jobs in primary production has been compensated for by the growth of processing and, especially, of service sectors in a way which has not been possible in other types of rural areas. A sparse population poses great challenges for regional development, because regional

economies are weak and there is little demand for either products or services. It is therefore difficult to develop and diversify the industries and to ensure the provision of basic services.

Overall, Finnish rural areas have faced quite dramatic changes over the past decades. The whole country suffered from mass unemployment after the exceptionally deep depression in the early 1990s (for further information about depression in Finland: Jonung et al., 1996; Honkapohja & Koskela, 1999). Recovering from the depression was particularly difficult in sparsely populated rural areas and agriculturally-oriented poorer sub-regions (Kangasharju & Pekkala, 2004; Muilu & Rusanen, 2004). Since then, there has been continuous diversification in development between rural areas in aggregate regional level<sup>4</sup> (see e.g. Malinen et al., 2006; Ponnikas et al., 2011).

Within agriculture, regional diversification and different development trends have taken place, which can, at least partly, be explained by many factors such as natural and environmental conditions, historical and cultural factors, and economic and societal factors (Junttila, 1991; Rosenqvist, 1997). In addition, the characteristics and the role of agriculture continuously changes as the changes in the society as a whole and globally have been taking place. Regional importance of agricultural production can become weaker or stronger, and new agricultural and farm-based activities can arise.

Within agriculture in Finland and generally in developed countries, regional concentration and specialisation of agriculture can be noticed. However, agriculture as a whole is still one of the most evenly dispersed economic activities

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<sup>4</sup> The measurement of regional development can be divided into region-based measurement and human-based measurement. See more in Chapter 2.2.

in Finland (Wuori, 2007). Over the last five decades or so, structural change in agriculture has generally been the strongest in eastern and northern Finland as measured by all indicators. Consequently, agriculture is concentrating in southern and western Finland where population and economic activity as a whole also concentrate. On the other hand, the most challenging situation in the light of regional development is in the sparsely populated rural areas located mainly in eastern and northern Finland (see more about the structural change of agriculture from regional perspective: Niemi & Häkkinen, 1988; Häkkinen, 1991; Kuhmonen, 1996a, Pyykkönen, 2001; Tiainen & Juntunen, 2006).

As a result of structural changes in society as a whole and in agriculture since the mid-1900s, in particular, the number of farms and jobs in agriculture and primary production has drastically decreased in rural areas of Finland. At the same time, the average size and productivity of farms have grown and the diversification and multifunctionality of farms have increased. Decrease in the number of farms indicates well how impressive the structural change in agriculture has been after World War II. The high point was more than 300,000 farms in the early 1960s when the resettlement policy ended (Pyykkönen, 2001, p. 1). Up to 1990, the number of active farms had decreased to about 130,000 (Niemi & Ahlstedt, 2005, p. 86).

There was an unexceptionally strong decrease in the number of farms during 1990–1994, i.e. during the last years before Finland joined the European Union (EU). At the time of Finland's entry into the EU in 1995, the number was about 100,000 and, by 2010, only 63,000 remained (Niemi & Ahlstedt, 2011a, p. 87). The change in the number of farms cannot be explained by weakening profitability of agricultural production

alone. As opposed to the development of the number of farms, the total arable area of farms has not decreased during EU membership because the average farm size has increased (Linden et al., 2008, p. 28). At the same time, the number of jobs in agriculture has continuously decreased while productivity has grown. In addition to the EU's Common Agricultural Policy (CAP), also national agricultural policy has to be taken into account when explaining the development of Finnish agriculture during EU membership (*ibid.*).

Finnish rural policy and policy thinking were dominated by agriculture for a long time. The reason for this derives largely from Finland's history. Compared with central, southern and western Europe, the crucial role of agriculture in maintaining the basic settlement in rural areas and as the most important economic activity continued much longer. This was partly a matter of politics, and partly one of natural geography and demography.

Three reforms in the 1900s had major impacts on the conditions for pursuing agriculture in Finland (Linden et al., 2008, p. 28). The first reform was the settlement of tenant farmers and landless population after the Finnish Civil War which took place in 1918–1919, and which resulted in the increase of the number of farms by over 100,000 in only a couple of years (Linden et al., 2008, p. 28; see also Jalas, 2002, p. 28). The reform meant remarkable emancipation in land ownership in rural areas (Granberg, 1989, pp. 33–34; Peltonen, 2004, pp. 252–257).

The second reform was the settlement of immigrants and war veterans on small holdings after World War II so as to improve social stability which again increased notably the number of small farms and the number of people earning at least part of their living from farming (Linden et al., 2008, p. 28; see also Jalas, 2002, p. 31). After World War II, a large

cession of territory to Soviet Union meant that about 40,000 farm families had to be resettled, along with other refugees (Varjo, 1977, p. 26; Varjo, 1980, p. 30; Roiko-Jokela, 2004). The settlement of immigrants and war veterans on small holdings increased the number of people earning at least part of their living from farming when the trend was already the opposite in other countries. In addition, the sparse population, long distances and the lack of (urban) centres indirectly linked to these slowed down the appearance of other livelihoods alongside with agriculture (see also Tykkyläinen & Kavilo, 1991).

The third reform was the reform brought by the EU membership in 1995. The whole Finnish agricultural policy was reformed when Finland became a Member of the EU on 1 January 1995 (see more in Chapter 3.2 and Kettunen & Niemi, 1994, pp. 22–37; Kuhmonen, 1996b, pp. 35–38; Linden et al., 2008, pp. 27–29). Since EU membership, there has been a continuous consolidation process between special interests of Finnish agriculture and the EU's Common Agricultural Policy (CAP). The basic structure of the CAP has been designed in terms of the dominant agricultural countries of the EU. For countries such as Finland, with peripheral location, unfavourable natural conditions for pursuing agriculture, and the history of agricultural policy of its own kind, it has been in many ways challenging to respond to the challenges brought by the CAP (Linden et al., 2008, pp. 27–28).

Today, the CAP and national complementary support provide the basis for agricultural policy in Finland. With the integration of rural development policies, the CAP has also extended its objectives beyond a purely sectoral policy and became directly concerned with spatial development. The legitimacy of the CAP is now clearly argued for its regional impacts and for its impacts on rural vitality. Still, the possibilities of regions to affect the

implemented policy measures remain limited.

From the regional point of view, a major challenge in the CAP is still that most of the policy measures and support are restricted to farms and farmers only, while a great and growing proportion on rural inhabitants all across the EU are not engaged in farming. Still, efforts are being made to reinforce the role of rural development measures which would then be likely to lead to a stronger emphasis of regional perspectives in the CAP. The support for agriculture, both in terms of its nature and amount, plays a central but varying role in different parts of Finland and types of production. The spatial effect of policies is of particular interest for still quite a rural country such as Finland with a large area and remarkable regional development differences. These facts call for the research on spatial impacts of agricultural and rural development payments.

The role of agricultural and rural development policy and the regional role of agriculture are both crucial questions for the development of rural areas. The CAP and the national complementary policy measures are meant to be the central instruments in rural development policy, not only from the viewpoint of agriculture but also from the viewpoint of a more integrated rural development. In addition, an analysis on the relationship between agricultural and rural development in different areas is highly important from the standpoint of agricultural and rural policy as well as in the light of regional development policy as a whole. From the viewpoint of policy planning and implementation, it is also easier to deal with agriculture if the regional dimensions of agriculture and agricultural and rural development support can be identified and if the relationship between agriculture and rural areas can be structured analytically. This thesis aims at responding to these challenges. By using comprehensive and



detailed regional statistics, farm-level data and data on every single support decision, the thesis also brings about new value added and goes beyond many earlier studies on the subject.

## 1.2 Objectives and structure

The main research questions of this thesis can be presented as follows:

1. Based on the earlier studies and key theoretical concepts, which is the relationship between agricultural and rural development and what is the role of the CAP in the development of rural areas?
2. Which is the relationship between agricultural and rural development in Finland since 1995 from the regional and socioeconomic point of view?
3. How are the CAP support payments and national complementary payments in Finland allocated in the EU's programming period 2000–2006, especially from the regional point of view?

By examining the issues above, conclusions on agricultural and rural development policy are drawn. The positioning and making research questions operational are presented in more depth in Chapter 5.1.

The research questions and the background of the thesis described above lead us to two research hypotheses:

- 1) Agricultural development and rural development are not the same phenomena nor are these developments necessarily parallel within the regions.

- 2) From the viewpoint of balancing regional development and integrated rural development, agricultural and rural development support is not allocated in an optimal way.

The structure of the thesis is as follows: In Chapter 1, the subject to be studied is introduced, and the objectives and structure of the work are described. Key theoretical concepts are then presented in Chapter 2. In Chapter 3, the CAP is described from territorial and rural points of view, including the implementation of the CAP and national complementary support in Finland. In Chapter 4, earlier empirical analyses regarding the subject are presented. In Chapter 5, the positioning and focus of the thesis is deepened. In addition, material and methods used in the work are described. Chapters 6–10 contain the empirical analyses of this work. In Chapter 6, the regional characteristics and regional development of agriculture are analysed. Next, in Chapter 7, distribution of support within the context of agriculture is explored. Chapter 8 contains the analysis of socioeconomic development in rural areas. In Chapter 9, the relationship between agricultural development and rural development at municipal level is studied. Chapter 10 contains analysis on the distribution of support from the regional point of view and in the light of the relationship between agricultural and rural development. Finally, key findings and conclusions of the thesis are presented in Chapter 11.

This thesis can therefore be categorically divided into three parts. The first part provides background and positioning of the thesis and consists of Chapters 1–5. The empirical analysis done in the thesis, i.e. Chapters 6–10, constitutes the second part of the work. Finally, the third part, i.e. Chapter 11, presents key findings and conclusions.



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## 2 Key theoretical concepts

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In this chapter, key theoretical concepts relating to the subject of the thesis are discussed. The objective of the chapter is to provide understanding about the key concepts used in the studies of this subject. It is divided into two parts: understanding what is 'rural' and rural development, and regional economic development. This chapter along with Chapters 1, 3 and 4 provide the basis for the latter parts of the thesis which, in turn, focus on the positioning and methods, empirical analysis, key findings, and conclusions of the work.

### 2.1 Understanding what is 'rural' and rural development

#### 2.1.1 Definitions of the term 'rural' and understanding rural within the context of rural development policy<sup>5</sup>

The way we understand the term 'rural' is crucially important from the standpoint of designing policy measures. There is no one correct definition of what is 'rural'. Instead, rural can be understood in many ways depending on the context. Woods (2005, pp. 3–13) has categorised the definitions of what is rural as

- descriptive definitions,
- socio-cultural definitions,
- the rural as locality, and
- the rural as social representation.

*Descriptive definitions* attempt to identify rural territories. These approaches are grounded on the assumption that a clear geographical distinction can be made

between rural areas and urban areas on the basis of their socio-spatial characteristics, as measured through various statistical indicators. In *socio-cultural approaches*, distinctions are made between urban and rural society on the basis of residents' values and behaviour within the social and cultural characteristics of communities. The socio-cultural approaches attempt to identify rural societies. When the rural is defined as *locality*, the focus is on the processes which might create distinctive rural localities. The *social representation approach* can be seen as a more robust and flexible way of defining rurality. In this approach, attention is shifted from statistical features of rural areas to the people who live or visit there. The crucial question then is how people construct themselves as being rural (Woods, 2005, pp. 5–11).

A number of other classifications regarding the conceptualisation of the rural also naturally exist, which are more or less comparable with the classification by Woods (2005, pp. 3–16). Terluin (2001, pp. 21–23), for instance, divided the approaches to rurality into two main approaches: concepts which denote the rural as a distinctive type of locality and concepts which describe the rural as a social representation. In his study, Rosenqvist (2004, pp. 39–42) divided the approaches of rurality into rural as a space and rural as a discourse. Cloke (2006, pp. 20–22) recognised three significant theoretical frames which have been influential in constructing conceptualisations of rurality: functional concepts of rurality, political-economic concepts of rurality and social constructions of rurality. Halfacree (2006, p. 51) suggested a model of rural space which has three facets: rural localities inscribed through relatively distinctive spatial practices; formal representations

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<sup>5</sup> Term 'rural development policy' within the context of the implementation of the CAP is also described in Chapter 3.

of the rural such as those expressed by capitalist interests, bureaucrats and politicians; and everyday lives of the rural, which are inevitably incoherent and fractured.

The different approaches to rurality also reflect the implementation of rural development policy. In a *spatial approach* of the rural, a traditional regional core-periphery dichotomy is emphasised. The rural area is primarily associated with periphery and agriculture in terms of land use (Terluin, 2001, pp. 21–22). This means that policy guidance and the related exercise of power also take place through agriculture. Consequently, perceiving agriculture as space has provided a logical starting point for continuing the support for agriculture in the name of supporting rural areas (Maaseutupolitiikan yhteistyöryhmä, 2004, pp. 47–48). According to the Finnish Rural Policy Committee (Maaseutupolitiikan yhteistyöryhmä, 2004, p. 48), the agriculture-oriented rural development of the EU represents primarily this kind of approach to rurality and rural policy thinking.

In the *territorial approach* of rurality, when rural is perceived as regions, the focus is on the economic diversification of rural areas which are understood as regional entities (Terluin, 2001, p. 22). In policy thinking, the focus is on local and regional economies and their special characteristics independent of whether there is one major centre with little open space or several smaller centres and a lot of open space. Therefore, the policy measures are directed to regional units with regional or local economies consisting agricultural, industrial and service activities. The rural character is one possible dimension for analysing and classifying these regional units and territories (Maaseutupolitiikan yhteistyöryhmä, 2004, p. 48).

When the rural area is understood as *one relevant dimension in organising society*, we

are dealing simultaneously with several potential ‘countrysides’. Different meanings and perceptions of the countryside are put forward by different actors. Rural policy should recognise all the numerous actors and the wide range of well-justified and, perhaps, mutually contradictory countrysides. In this approach, rural issues are politicised as an independent sector which confuses the traditional power settings of both agricultural and regional policy (Maaseutupolitiikan yhteistyöryhmä, 2004, p. 48; for further information about the relationship between agricultural, regional and rural policy in Finland: Uusitalo, 2009; and at the EU level: Van Depoele, 2000). Finnish rural policy has been constructed for a long time on this foundation (Maaseutupolitiikan yhteistyöryhmä, 2004, p. 48). Vihinen (2007, p. 60) stated that

*“Finnish rural policy has taken as its starting point the fact that countryside has value as such. Countryside offers an alternative to urban regions and lifestyles, and its very existence and availability is an important social value.”*

The separation between agriculture and rural areas is not a new idea but the need for new analyses of the regional connections between agriculture and rural development has often been recognised. The idea of the dissociation of agriculture and rural areas has been strengthened by the notion of *territorial diversification*. From the rural point of view, territorial diversification can be understood as the process where “rural has changed from a sort of ‘national rural space’, based on the central place of agriculture in both spatial and political terms, towards a ‘differentiated set of regional formations’, based on a range of functions and potentials, either within or outside agricultural sector” (Bremen et al., 2010, p. 368). Agriculture also has divergent roles between regions. In addition, the destinies of agriculture, rural society and space have been separating

because of the regional differences between the conditions for function and potential and the way they are exploited. In addition, rural territories themselves have been developing along diversifying trajectories (ibid.).

Van der Ploeg et al. (2008, pp. 5–7) divided the rural regions into specialised agricultural areas, peripheral areas, new rural areas, segmented areas, new suburbia and dreamland. The quantitative relevance of the agricultural sector varies between these idealised types of regions: the relevance of agriculture is the most notable in specialised agricultural areas and the lowest in suburbia. However, the characteristics and role of the regions can be undergoing transition. This means that the division of the rural regions is not static (ibid.).

In Finland and other countries, agriculture has various kinds of socioeconomic meanings depending on the type of rural areas. According to one view, agriculture will continue to play a key role in rural development, although its role may well change over time (see e.g. Knickel & Renting, 2000; van der Ploeg et al., 2008). In accordance with this view, rural development is in many ways based on agriculture and farms. However, it is emphasised that rural development is not only sectoral, i.e. agricultural development. Different levels of rural development

analysis can be separated: farm, farm household, regional and global level (Knickel & Renting, 2000). Consequently, agriculture and farms are in many ways directly connected to local and regional economies and more generally to other activities of rural areas.

Compared with the discussion above regarding the connections between agricultural and rural development, the new rural paradigm outlined by the OECD emphasises more strongly differentiated activities than purely agricultural ones. While the old approach—which can be called an agricultural modernisation paradigm—rests on agriculture, the new OECD approach makes use of the integrated rural development paradigm (OECD, 2006b, Table 2.1). Against the background of the OECD’s paradigm, there are three factors which are present in all OECD countries. First, the emphasis of rural policy has shifted from compensating the disadvantages towards exploiting the assets of rural areas. Secondly, the role of agricultural policy in rural development is seen as limited and international pressures to reform agricultural policy have grown. Thirdly, regional policy has launched new tools such as regionalisation and decentralisation of activities. According to the new rural paradigm of the OECD, rural areas should be analysed in an integrated way, with agriculture being an ‘equal’ part. It is seen essential that rural development is

Table 2.1 Comparison between old and new approaches in rural policy (OECD, 2006b)

	<b>Old approach</b>	<b>New approach</b>
<b>Objectives</b>	Equalisation, farm income, farm competitiveness	Competitiveness of rural areas, valorisation of local assets, exploitation of unused resources
<b>Key target sector</b>	Agriculture	Various sectors of rural economies (rural tourism, manufacturing, the ICT industry etc.)
<b>Main tools</b>	Subsidies	Investments
<b>Key actors</b>	National governments, farmers	All levels of government (supranational, national, regional and various local stakeholders [public, private, non-governmental organisations])

region-based, and rural policy is founded not on central control but rather on multi-level governance within and between different levels of government, civil society and the private sector (Maaseutupolitiikan yhteistyöryhmä, 2009, p. 12).

The characteristics of the old approach are still dominant in the CAP and also in the complementary Finnish agricultural policy. Most recently, however, the term rural development has acquired a new and highly contested meaning in EU parlance through the establishment of the CAP's second Pillar, i.e. the Rural Development Regulation (RDR) (Shucksmith, 2010, p. 3). According to Shucksmith (ibid.),

*“While this again derives from attempts to reform the CAP from a sectoral policy towards a more territorial integrated rural development policy, in this context the term rural development has become a site for symbolic and material struggle between agricultural and other interests.”*

The relationship between agricultural and rural policy is discussed not only in EU contexts but also in other countries (OECD countries: see Diakossavvas, 2006; political discourses in Norway: see Cruickshank et al., 2009).

*Broad rural policy* in Finland represents the new rural development approach (OECD, 2008, p. 109; see also Ponnikas et al.,

2011). Broad rural policy consists of the political outlines, decisions and allocation of resources by different administrative sectors which may have various kinds of impacts on the preconditions for rural development. *Narrow rural policy*, in turn, refers to actions whose specific and defined purposes are to promote rural development (Maaseutupolitiikan yhteistyöryhmä, 2009, p. 9). The CAP and national complementary support is an essential part of narrow rural policy in Finland.

Terluin (2001, pp. 38–51) found several aspects of rural development policy in the EU: policy aimed at reducing regional disparities, general development measures, agricultural structural policy, shift from sectoral to territorial policy, shift in governance framework and dissident views. On the basis of these aspects, Terluin (2001, pp. 40–41) recognised four main emerging shifts regarding to the contents and implementation of rural development policy (Table 2.2). These overlap strongly with the factors of old and new approach of rural development presented by the OECD (see Table 2.1).

*The focus of this thesis is on agricultural structural policy which in this context can be understood as the CAP and complementary national support. Besides agricultural support, also the non-agricultural measures under the CAP are considered in this work.*

Table 2.2 Four emerging shifts in rural development policy according to Terluin (2001, p. 40)

<b>Field</b>	<b>Shift from</b>	<b>Towards</b>
<i>General development measures</i>	Encouragement of inward investments (exogenous development model)	Enhancing local development potential (endogenous development model)
<i>Agricultural structural policy</i>	Productivity growth (productivism)	Multifunctionality (post-productivism)
<i>Coverage of policy</i>	Sectoral	Territorial
<i>Governance</i>	Top-down	Bottom-up

Terluin (2001, pp. 40–41)—as well as many other researchers in rural studies—sees the shift in agricultural structural policy as a shift from productivism towards post-productivism, or as a transformation from the agricultural modernisation paradigm to the rural development paradigm. In the next chapter, a closer look is taken on that issue.

### **2.1.2 Transition from productivist towards post-productivist agriculture**

#### *Productivist–post-productivist transition*

In accordance with Lowe et al. (1993, p. 221), productivism can be largely cited defined as ‘a commitment to an intensive, industrially driven and expansionist agriculture with state support based primarily on output and increased productivity.’ Bjørkhaug and Richards (2008, p. 99) stated that productivism “refers to a mode of both agricultural policy and practice that is input intensive and where emphasis is placed on the maximisation of the production of commodities.” Crowley et al. (2008, p. 8) argued that productivism of agriculture

*“describes the political and economic imperatives to increase farm production, and comprises the processes of farm consolidation, production intensification and farm-system specialisation. It is characterized by the vertical integration of farms into the agri-food supply chain.”*

Other conceptualisations broadly concur with these definitions.

The central aim of productivism—which was the dominant policy trend in agriculture after World War II from the mid-1940s to the mid-1980s—was to increase agricultural production (see e.g. Woods, 2005, p. 47). The tools for achieving the aim were the intensification and industrialisation of agriculture,

including agrichemicals, mechanisation and the specialisation of farms (ibid.). Ideologies of productivism have been characterised by a central hegemonic position of agriculture in rural society (Wilson, 2001, pp. 79–80).

The productivist regime in agriculture was certainly a success story as comes to its central objective of increasing production. In fact, increased production finally led to the problems of overproduction. According to Woods (2005, p. 51), agricultural production in the developed world increased by around 62% between 1961 and 1990. In addition to overproduction, productivist regime of agriculture has led to environmental problems and budgetary problems in agricultural policy. All of these problems have roots in the productivist agricultural regime which dominated earlier in agricultural policy. From the regional viewpoint, regional concentration of agricultural production has been one result of productivist agriculture (Woods, 2005, p. 49).

The future of rural areas can be seen as being increasingly dependent on so-called post-productivist functions and multifunctionality of agriculture, no longer based on agricultural production (Bremen et al., 2010). Correspondingly, Wilson (2009a, p. 379) found that two key arenas which have influenced recent research and thinking on conceptualisations of agricultural and rural change are the proposed transition from a ‘productivist’ to a ‘post-productivist’ agricultural regime and the notion of ‘multifunctional agriculture.’

Post-productivism is often seen as the ‘mirror-image of productivism’ or ‘antithesis with productivism’ and as a move away from the agricultural fundamentalism and exceptionalism (Wilson, 2001, p. 82; Argent, 2002, p. 99; Wilson & Rigg, 2003, p. 682; Mather et al., 2006, p. 442). Hence, there has been



an attempt to define productivism and post-productivism explicitly in relatively few studies (Argent, 2002, p. 99).

On the basis of his literature review, Wilson (2001, pp. 78–79) stated that productivism and post-productivism have been conceptualised on the basis of seven inter-related dimensions: ideology, actors, food regimes, agricultural production, agricultural policies, farming techniques and environmental impacts. Thus, various different characteristics need to be considered to fully understand the postulated post-productivist transition (ibid.). Woods (2005, pp. 47–57) has listed extensification, farm diversification, an emphasis on countryside stewardship, and enhancing the value of agricultural products as key components of the post-productivist transition, while the key characteristics of productivist agricultural regimes are intensification, concentration and specialisation of agriculture. Woods (2005, p. 54) defined post-productivist transition as “the general term employed to refer to changes within agricultural policy and practice that have shifted away from production towards the creation of a more sustainable agriculture.”

A general view is that productivist era of agriculture in advanced nations began in the 1940s. While the ideology behind productivism precedes World War II, greater intensification of production can be traced to war efforts to increase production and secure food for war-torn nations (Bjørkhaug & Richards, 2008, p. 99). The appearance of the term post-productivism can be traced back to the mid-1980s, when the logic, rationale and morality of the productivist regime were increasingly questioned by various state and non-state actors on the basis of ideological, environmental, economic and structural problems and when the so-called ‘Farming Crisis’ led to the substantial reforms in the CAP (Wilson, 2001, p. 81; Walford, 2003, p. 491). According to Walford (ibid.),

*“the supposed intention was to limit agricultural production in order to reduce the budgetary cost of the CAP’s Guarantee Fund and to proceed some way towards ameliorating environmental damage associated with ‘industrialised’ agriculture.”*

Since the 1980s,—not only in the EU—numerous initiatives have been adopted to gradually reform agriculture by shifting government subsidies away from production. In general, there has been a substantial shift towards post-productivist thinking characterised by extensification of agriculture, farm diversification, environmental, and landscape values (Woods, 2005, p. 54). Since the early 1990s, there has been much debate about the possible transition of agricultural regimes from a productivist to a post-productivist era (Wilson & Rigg, 2003, p. 682).

The concepts of productivism and post-productivism can be seen useful in highlighting existing spatial differences in contemporary agricultural landscapes. In addition, these concepts have acted as a useful basis for conceptualisations of a ‘multifunctional’ agricultural regime (Wilson, 2001). However, critics towards these concepts have been present as well. Ward et al. (2008, p. 119) stated that key criticism relating to the concept of post-productivism has been the uncritical and simplistic application of the idea of an historical transition from one ‘regime’ to another. This, in turn, has led to the debate about the specific character of the transition, its driving forces and spatial and temporal contingencies, and whether is appropriate to think in terms of a new regime having been established (Ward et al., 2008, p. 119). Mather et al. (2006) divided the critique towards post-productivism into four groups. First, it is argued that the literature relating to post-productivism is dominated by the contributions from the United Kingdom or England. Secondly, discussion of post-productivism has focused on agriculture,

with little attention being paid to forestry and other rural land uses. A third group of critics laments the fuzziness of definition. Fourthly, the lack of empirical evidence relating to actual transition towards the post-productivist era has been criticised (Mather et al., 2006, pp. 441–442). It has also been criticised that debates on agricultural change have failed to engage with behavioural and actor-oriented research on rural change and the evidence of farm-level dynamics (Wilson, 2001; Potter & Tilzey, 2005; Burton & Wilson, 2006). Furthermore, Wilson (2001) suggested that the concept might be modified by looking beyond agriculture to a wider rural change.

### *Multifunctional agriculture*

Buttel (2006, p. 224) stated that *multifunctionality* consists of two interrelated notions. The first meaning of multifunctionality is that, in addition to production of food and fibre (and other marketable goods), agriculture has a number of other, mostly non-commodity outputs (ibid., see also e.g. Wilson, 2009b). A second aspect of multifunctionality is that of a type of agricultural policy, i.e. a policy which involves investments in and payments for the non-commodity functions of agriculture so as to ensure that they are provided at optimal levels (Buttel, 2006, p. 224). Multifunctional agriculture discourses have emerged synchronously within policy-based and academic discourses (Wilson, 2009a, p. 382).

According to the OECD (2001, p. 13), the first key element of multifunctionality is the existence of multiple commodity and non-commodity outputs which are jointly produced by agriculture. The second key element is the fact that some of the non-commodity outputs exhibit the characteristics of externalities of public goods, with the result that markets for these goods do not exist or function poorly. Additionally, multifunctionality can be

interpreted either as a characteristic of an economic activity or in terms of multiple roles assigned to agriculture. In the first interpretation, multifunctionality is not specific to agriculture, but rather it is a property of many economic activities. In the latter description, agriculture as an activity is entrusted with fulfilling certain functions in society (OECD, 2001, p. 14).

Terluin (2001, pp. 40–41) argued that there has been a gradual shift from agricultural measures directed at productivity growth towards measures emphasising the multifunctional role of agricultural sector. This shift is also often referred to as a shift from productivism towards post-productivism or as a transformation from the agricultural modernisation paradigm to the rural development paradigm. In the rural development paradigm, highly mono-functional farms are being replaced by new multifunctional agricultural enterprises, supplying new products and services such as landscape conservation, new nature values, agro-tourism, organic farming, and high quality and region-specific products, associated with the development of new markets (ibid.). Hence, the concepts of multifunctionality and post-productivism can be even understood as synonyms, though not everyone accepts this.<sup>6</sup>

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<sup>6</sup> Wilson (2009a, p. 379), for instance, defined multifunctionality as “territory bounded by agricultural/rural productivist and nonproductivist action and thought characterized by multiple pathway opportunities”, and post-productivism, in turn, as “the era ‘after productivism’ associated with agricultural and rural spaces characterized by reduced emphasis on maximizing food and fiber production where non-agricultural uses of rural space assume greater importance”. Wilson (ibid.) used the concept of nonproductivism, which he defined as “the opposite of productivism in the multifunctionality spectrum of decision making; action and thought associated with agricultural practices where maximization of food and fiber production is ‘not’ important”. According to Wilson (ibid.), the concept of nonproductivism provides a better conceptual term to describe the opposite end of productivism.

## 2.2 Regional economic development

The focus of regional and rural development is increasingly shifting towards area-based policy and regional differentiation. Many regional and rural development studies have concluded that policy measures focusing on endogenous development are often more effective than exogenous development measures (see Terluin, 2001; 2003). Particularly, many studies indicate that the external strategies have not been very effective for improving the economic situation of less developed and peripheral regions and countries (Tödting, 2009).

Endogenous development can be understood as local development, produced mainly by local impulses, grounded largely on local resources and driven in a bottom-up manner (Terluin, 2003; Tödting, 2009). Oostindie et al. (2008) saw two interrelated notions—local resources and local control—as central to the concept of endogenous development. External development paradigm has also been called ‘top-down regional development approach.’ Top-down development is designed and implemented by central government or external agencies. In addition, top-down development emphasises external factors such as interregional trade, or mobility of capital, labour and technology between regions and countries (Tödting, 2009). Mixed exogenous/endogenous development approach rejects the polarisation of exogenous and endogenous development models and proposes. Instead, the interplay between local and external forces in the control of development processes is stressed (Terluin, 2001, pp. 332–333; Ray, 2006; Shucksmith, 2010; Hyyryläinen et al., 2011).

O’Connor et al. (2006, p. 9) argued that theories of agricultural development have mostly focussed on the model of exogenous

modernisation, while the practices of endogenous development have been largely hidden. Traditionally from the viewpoint of policy implementation, agricultural policy has, in many areas, been exogenous development: rural development is considered as having been transplanted into particular regions and externally determined (Terluin, 2003). However, a potential transition from the agricultural modernisation paradigm towards the rural development paradigm means also that the role of endogenous development might be growing.

In rural studies, different approaches on economic development in rural regions can be distinguished especially according to different implications for the strategies of local actors and for rural development policy. Three main approaches can be distinguished: the exogenous development approach, the endogenous development approach and the mixed exogenous/endogenous development approach. Contributions to this debate in rural studies have mainly originated from rural geography, rural sociology, agricultural economics, demography, ecology, rural planning, and administrative sciences (Terluin, 2003, p. 331).

In general, regional development can be analysed in the light of locational structures and in the light of the living conditions of the people living in certain regions. The analysis based on *locational structures* can be defined as a region-based measurement. Development of locational structures can be studied through the development of production, employment and population. One dimension of this type of analysis is to clarify how centralising or dispersing regional development has been (Tervo, 2000, p. 404). When analysing regional development through the *living conditions of the people* resident in the region, the measures of this development can include indicators such as the amount of production, income per inhabitant or the



unemployment rate. This type of analysis can be called human-based measuring. In this case, it is crucial to clarify the extent of the differences and their development in living conditions, individual income rates and unemployment rates between regions (Tervo, 2000, p. 404).

It must be remembered that development at individual level in a region is not necessarily parallel with the aggregate regional development. In Finland, for instance, there has been a concentration of economic activities in regional structures. However, in the light of individual or human perspectives, e.g. income per capita, a clear reduction in regional differences can be seen (see Tervo, 2000; OECD, 2008). In this thesis, it is not attempted to make interferences about aggregated data being used at an individual level. The erroneous inferring individual or behaviour based upon aggregated data is called ecological fallacy (Martin, 2009; Wong, 2009).

The theories and perspectives of economics have often been exploited when analysing regional growth and development. It can be said that the research on regional economic growth and development has traditionally considered being included in the research area of economics. However, already for many decades, the general view has been that the research on development is multi-disciplinary. Development is not only the economic process and the problems of the development never belong to one discipline alone<sup>7</sup> (Lumijärvi, 1983, p. 7).

Traditionally in regional economics and economic geography, regional economic development has been understood as the development of production (output) in a region. In accordance with Armstrong and Taylor (2000, p. 66), the most commonly used measures of regional growth are

growth of output, growth of output per worker and growth of output *per capita*.

The amount of output is normally measured by the value of output (GDP or value added) and this, in turn, can be analysed for instance in terms of production lines. In the simplest way in regional economics, economic development can be understood as a change in the volume of regional production. Regional production, in turn, is directly dependent on the competitiveness of the production lines in a region. However, the competitiveness of a region's industries is made operational in many different ways depending on the regional economic growth theory (see more about different regional economic growth theories: Armstrong & Taylor, 2000; Huovari et al., 2001a; 2001b; Terluin, 2001; 2003). The common characteristic for theories in regional economics is that they focus on explaining the growth of output in a region (Terluin, 2003, p. 329).

The debate on economic development in rural regions has generated much discussion in the multi-disciplinary field of rural studies. This debate, according to Terluin (2003, p. 331), is concerned with theories on economic development in rural regions, and on the other hand with the question of how rural development policy can stimulate economic growth in rural economies.

It has been stated in a number of studies that a wide range of factors can affect the socioeconomic performance of rural regions and regions as a whole. Agarwal et al. (2009), for instance, examined the determinants of local economic performance in English rural areas. They argued that a range of facets of economic and human capital essentially affect economic performance in rural areas, including three key drivers of productivity (skills, investment and enterprise), spatial factors (peripherality and accessibility), and other key factors (economic

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<sup>7</sup> See more about the differences between growth and development: Lumijärvi 1983, pp. 7–8.

structure, government infrastructure, road infrastructure, and occupational health).

In addition to tangible factors, also less tangible and intangible factors affect the socioeconomic performance and development of the regions. Bryden et al. (2000) studied the economic performance of rural regions in Germany, Greece, Scotland, and Sweden. They included natural capital (land), human resources (labour), infrastructural capital, investments and economic structures as tangible factors, and market performance, institutional performance, networks, community, and quality of life as less tangible factors.

As discussed above, traditionally in regional economics and economic geography the regional economic development has been understood as the development in regional production. The factors affecting and the theories explaining the development trends are numerous. The list of indicators used in the analysis of economic and socioeconomic situations, developments and development prospects is largely dependent on the aim and objectives of the study. In addition to production (gross domestic product or value added), often used separate indicators include the unemployment rate, the number of jobs and the amount of population, among others (Terluin, 2001, p. 33). While measuring local economic development in Canada, Bollman (1999), for instance, used four measures which are admittedly focussed on the performance of the labour market:

- the rate of growth of average real earning per worker in the community,
- the rate of growth of average real hourly wage rates for workers in the community,
- the rate of growth of employment in the community; and
- the rate of growth of community aggregate earnings.

The numerous indicators explaining regional economic development have been presented (from regional economics point of view, see Armstrong & Taylor, 2000) and a part of the studies, paradigms and theories have concentrated on the analysis of rural areas (Aldrich & Kusmin, 1997; Terluin, 2001; 2003). In Finland, the widely used Finnish Rural Typology divides Finnish municipalities into different municipal classes based on several socioeconomic factors (Malinen et al., 2006; the typology is also described in Chapter 5.5).

## Summary

This chapter has described key theoretical concepts relating to the subject of the thesis. Key concepts relating to the definitions of what is 'rural' and understanding the term 'rural' within the context of rural development policy and regional economic development were identified.

Many definitions of rural exist. Definitions of the term 'rural' can be divided into territorial-based descriptive definitions, socio-cultural definitions, the rural as locality and the rural as social representation, for instance. Approaches to rurality also reflect the implementation of rural development policy. In different approaches, the role and importance of agriculture, the region-based approach and the range of different actors and dimensions in rural development varies. The idea of the dissociation of agriculture and rural areas has been strengthened by the notion of territorial diversification. Furthermore, rural development is now understood in a more integrated way than earlier.

The future of rural areas can be seen as being increasingly dependent on so-called post-productivist functions and multifunctionality of agriculture, no longer based on agricultural production.

Productivist–post-productivist transition can be understood as the changes within agricultural policy and practice which have shifted away from production towards the creation of a more sustainable agriculture. In agricultural policies generally, there has been a substantial shift towards post-productivist thinking characterised by extensification of agriculture, farm diversification and environmental and landscape values.

Regional economic development can be analysed in the light of locational structures and in the light of living conditions of the people living in certain

regions. The former type of analysis can be defined as a region-based measurement, while the latter type of analysis can be called as a human-based measuring. In rural studies, different approaches of economic development in rural regions can be distinguished especially according to different implications for the strategies of local actors and for rural development policy. Three main approaches can be distinguished: the exogenous development approach, the endogenous development approach and the mixed exogenous/endogenous development approach. Over time, the role of endogenous development approach has grown.

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## 3 EU's common agricultural policy from rural and territorial point of view

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The EU's Common Agricultural Policy and agricultural policy in Finland and their history from territorial and rural points of view are presented in this chapter. The aim of this chapter is not only to present the territorial dimension of the CAP at EU-level and in Finland *per se*, but also, by considering the history of agricultural policy, provide some explanation for the current structures of agricultural policy both at EU level and in Finland. The chapter is divided into a description of the EU level and a description of agricultural policy in Finland.

### 3.1 EU level

#### 3.1.1 Background and reasons behind reforms and modifications of CAP

The CAP provides the basis for agricultural and rural development policy in EU Member States. It takes up the major share of the EU budget. At present, the CAP's share of the total EU budget is roughly 40%. However, while the socioeconomic importance of agriculture is shrinking, also the CAP's share of the budget has been constantly shrinking—from 71% in 1984 to an expected 39% in 2013 (European Commission c). The CAP has notable effects on farming in all regions, as well as widespread economic, environmental, social, cultural, and political implications (Shucksmith et al., 2005, p. 2).

Because the CAP is still strongly sectoral in its policy and a major part of the subsidies are being allocated to individual farms, the role of the CAP with respect to the overriding objective of EU regional cohesion is increasingly questioned (Esposti, 2007, p. 116). At EU-level today, over 70% of the CAP spending is concentrated on direct payments to farmers and market support (the CAP Pillar I). The rest of the CAP budget is being spent on Rural Development Regulation measures (the CAP Pillar II) (Niemi & Ahlstedt, 2011a, p. 43). Pillar II includes the measures such as agri-environmental support, aids for farming in Less Favoured Areas (LFA support), structural and investment aids for farms, aids for farm diversification, farm-related rural development provisions and other than farm-related rural provisions such as enterprise development projects and communal development projects. Due to the reforms of the mid-1980s, Pillar II of the CAP has been growing in importance.

With the integration of rural development policies, the CAP has extended its objectives beyond a sectoral policy and became directly concerned with the spatial development of Europe. Still, efforts are being made to reinforce the role of rural development measures, which would be then likely to lead a stronger emphasis of regional perspectives in the CAP. In fact, the role of these measures is already strengthened. However, the financial structure of the CAP—i.e. the share of each policy measure in the budget—varies a great deal between the EU countries.

In addition to the CAP, national agricultural and rural development funding plays a major role in many rural areas across the EU. While the CAP provides a framework for agricultural and rural development policy in each EU Member State, national financial support complements it. Many other policy instruments, such as EU structural funds

and a number of national policies have also various impacts on rural areas (e.g. role of EU structural funds in rural development of Finland: see Sisäasiainministeriö, 2006).

The roots of the CAP are in the western European countries of the 1950s when agriculture was in bad condition because of World War II and hence the self-sufficiency ratio of food stuff was low (Linden et al., 2008, p. 28). The original objectives of the CAP were laid down in Article 39 of the Treaty of Rome in 1957. The Article 39 objectives were (and are, since the Treaty remains in force, though subject to re-interpretation) to increase agricultural productivity, to ensure a fair standard of living for farmers, to stabilise markets, to guarantee food security and to ensure reasonable prices for consumers. The CAP was an agricultural policy seeking clearly to increase agricultural production and to advance structural changes of agriculture (Linden et al., 2008, p. 28). Hence, the territorial or larger rural dimension was not included in the original objectives of the CAP.

Farmers were motivated towards high volumes of production by the provision of support and by the CAP ensuring high producer prices. The inherent conflicts in the aims and objectives of the CAP have meant that the EU has continuously grappled with a 'rural' and a 'farm' problem as the CAP is simultaneously seeking to ensure a fair standard of living for the agricultural population and to increase agricultural production through promoting technical progress (O'Connor et al., 2006, p. 3). In the light of its central objective, i.e. increasing agricultural production, the CAP was clearly a success story (Linden et al., 2008, p. 29), and so too was productivist agricultural regime in general (Woods, 2005, p. 51). In the EU, the problems of overproduction started to become concrete in the early 1980s when the EU overproduction existed among

nearly all main products of agriculture (Linden et al., 2008, p. 29).

Agriculture has been struggling for some decades with the so-called agricultural crisis in Europe. The problem in question is also common for other developed countries such as the United States (Woods, 2005, pp. 51–54). The roots of the crisis can be found in the productivist model of pursuing agriculture. In the EU context, triple concerns of agriculture which have also affected reforms of the CAP can be separated: overproduction, environmental degradation and the financial cost of the CAP (Woods, 2005, p. 141). Since 1980s, the transformation of European agriculture away from productivist model and towards a multifunctional one has, to a certain extent, been stimulated by reforms of the CAP (O'Connor et al., 2006, p. 3).

According to Trouvé et al. (2007, p. 445), territorialisation is said to be a form of adaptation to changes in the nature of agricultural production issues and to the expectations of society. European agricultural policy did not pay particular attention to territorial connections (nor environmental impacts) of agriculture until the 1980s. Instead, the CAP and national policies promoted technical advances and a substantial increase in labour production and productivity through a policy of market organisations and the selection of the most productive farms. As a result, agricultural modernisation led to specialisation and concentration of agricultural holdings (Trouvé et al., 2007, p. 446).

Gray (2000) examined how the CAP has defined rural space. Using two conceptions of rurality—rural as social representation and rural as locality—he argued that, in the way in which the CAP has understood rurality and rural space and hence also implemented policy measures, a clear transition has taken place. Earlier, rurality

and rural space was understood mainly on the basis of agriculture, while rurality and rural spaces are now understood as comprising heterogeneous activities—consumption and production, and also other than agricultural activities. In addition, local characteristics and diversified rural areas are more emphasised (Gray, 2000; Halfacree, 2006, pp. 47–48).

### **3.1.2 Concrete steps towards stronger territorial and rural dimension of CAP**

As stated in the previous chapter, a regional or territorial aspect is not included in the original objectives of the CAP. However, the CAP has faced a number of notable reforms or modifications such as the 1992 MacSharry Reform, the Agenda 2000 Action Programme, the 2002/2003 Mid-Term Review and the 2008 Health Check. This has meant a cautious shift towards territorial considerations which have also been strengthened in wider EU policy. Currently, for instance, the EU Commission is required to submit a report every three years on the extent of progress towards the objective of economic and social cohesion and the manner in which various EU policies—including the CAP—have contributed to this (Kuokkanen & Vihinen, 2006, p. 7; see the reports of the EU Commission: European Commission, 2001; 2004; 2007; 2010a). However, little consideration has been paid so far to the design and implementation of the CAP as for the territorial concepts of balanced competitiveness, economic and social cohesion and polycentricity, which were set out e.g. in the European Spatial Development Perspective (European Commission, 1999) and in the Third, Fourth and Fifth Cohesion Reports (European Commission, 2004; 2007; 2010a) even though several CAP measures have strong territorial characteristics (see Shucksmith et al., 2005; O'Connor et al., 2006).

The diversity of production structures and conditions, and the need to promote the modernisation of agricultural structures have been recognised for a long time. The tools for structural development of agriculture are important in order to improve competitiveness and to support farm incomes and bring them more in line with other sectors of the economy (Kuokkanen & Vihinen, 2006, pp. 6–7). An EU agricultural structural policy was launched in 1972 consisting of three directives:

- 1) Directive 72/159 on farm modernisation provided aid for investments on farms considered 'suitable for development' and able to generate an income comparable with other occupations for 'one or two' labour units;
- 2) Directive 72/160 on farmer retirement offered payments to outgoers in the form of annuities or lump sums to elderly farmers, or premiums to younger ones;
- 3) Directive 72/161 on socioeconomic guidance and training intended to restructure the extension system to give training and education to the agricultural labour force, both for those who wanted to stay in the agricultural sector and for those who wanted to leave.

In 1977, the EC Regulation 355/77 on processing and marketing of agricultural, forestry and fishery products was launched (Terluin, 2001, p. 46).

According to Shucksmith et al. (2005, p. 35), the first initiative to introduce an explicitly territorial dimension into the CAP was the Council Directive 75/268/EEC on Less-Favoured Areas (LFAs) introduced in the mid-1970s. As Vihinen (2001, p. 71) expressed it,

*"this was the first time an explicitly territorial approach had been used in agricultural structural policy, and thereby introduced the whole concept of discrimination between regions, since the common market policy had been fundamentally the same for all regions."*

The Directive aimed at supporting farming in mountain areas, helping farming in small areas with natural physical handicaps, maintaining a minimum level of population and conserving the countryside in certain other less-favoured areas which were predominantly dependent on agricultural activity (ibid.). Since the Council Directive 75/268/EEC, the LFA Directive has faced a number of modifications. Regulation EEC No. 2328/91 in 1991 provided for extra payments in designated Less Favoured Areas characterised by one or more of the following attributes:

- permanent handicaps (altitude, poor soils, climate, steep slopes),
- undergoing depopulation or having very low densities of settlement, and
- experiencing poor drainage, having inadequate infrastructures, or needing support for rural tourism, crafts and other supplementary activities.

Over time, the area designated as LFA has expanded. This is partly because the accession of further Member States with especially high share of LFA's, but also because States have proposed extensions to their LFAs (Shucksmith et al., 2005, p. 37).

The 1992 MacSharry Reform strengthened the status of environmental and rural issues on the agenda of the CAP. However, concrete policy measures regarding these issues remained vague and left EU Member States room for choosing as to how far to implement them (Vihinen, 2001, pp. 81–82).



In 1996, the Cork Declaration articulated the European Commission's commitment to multifunctionality and the notion of the 'Living Countryside'. The Rural Development Regulation (EC Regulation 1257/99) launched in 1999 and introduced in the Agenda 2000 reforms represented a very definite shift in policy stance, designed to foster and support viable rural communities. The Regulation contained three basic approaches:

- 1) multifunctionality, (i.e. rewarding farmers for the range of services they provide while emphasising the creation of alternative sources of income);
- 2) a multi-sectoral approach to developing the rural economy and society, and;
- 3) increased efficiency through strategic, integrated and simplified programmes underpinned by the necessary degree of flexibility (O'Connor et al., 2006, pp. 4–5).

The 2002/2003 Mid-Term Review of the CAP strengthened and expanded Rural Development Programmes in order to achieve a better balance between the two Pillars of the CAP and create a CAP which would meet social expectations of promoting food quality, sustainability and value for money (O'Connor et al., 2006, p. 5). The EU Commission stated that one of the objectives for EU agriculture should be strengthened rural development, and this would be achieved, for instance, through more money for rural development policy (Shucksmith et al., 2005, p. 27). In 2003, the Salzburg Conference on Rural Development reiterated the commitment of the European Commission to multifunctionality. It was stated that farmers have a duty as stewards of the many natural resources of the countryside to emphasise the importance of agriculture as a major interface between people and the environment (O'Connor et al., 2006, p. 5).

In 2008, the CAP Health Check was introduced. In accordance with the words of the then Commissioner for Agriculture and Rural Development, Mariann Fischer Boel:

*“The Health Check is all about equipping our farmers for the challenges they face in the upcoming years, such as climate change, and freeing them to follow market signals. Transferring money into Rural Development gives us the chance to find tailor-made solutions to specific regional problems. The changes agreed represent a major step forward for the CAP.”* (European Commission a)

However, in the light of integrated development of rural areas, it might be said that a major step forward did not take place. Although support is shifted from direct aid to Rural Development, the money obtained this way may be used by EU Member States to reinforce programmes in the fields of climate change, renewable energy, water management, biodiversity, and innovation linked to the previous four points and for accompanying measures in the dairy sector (European Commission a). Hence, all of these measures are farm- and agricultural-based.

In *The CAP towards 2020* document by the European Commission (European Commission, 2010b), it was argued that balanced territorial development would be one of the three main objectives for the future CAP while the other objectives would be viable food production, and sustainable management of natural resources and climate action. However, the document by the European Commission (ibid.) saw rural development rather agriculturally oriented—'agriculture remains an essential driver of the rural economy in much of the EU'—and the future instruments of the CAP relating to rural development were also understood as rather agriculture driven (for further information: European Commission, 2010b).

The new proposal for a regulation of the European Parliament and the European Council (European Commission, 2011) indicates possible changes in rural development. Compared with the current programming period 2007–2013, territorial development is now one of the three main objectives of the programme, which indicates a stronger link with agriculture and the regional dimension. However, the way how priorities are set and which kind of policy measures are proposed are more likely to restrict the activities to farm enterprises more exclusively than before. In this sense, the rural dimension can diminish to the volumes it had in the early 1990s.

Since the beginning of the 1990s, the transition towards stronger territorial emphasis has also taken place within Pillar II of the CAP. However, the transition varies between EU Member States. In the each Member State, Pillar II of the CAP is implemented by national and/or regional Rural Development Programmes (RDPs). Most of the Member States have developed a national RDP. Where this has happened, regional authorities have a limited role in RDP implementation and financing. Overall, the regions are strongly limited by budgetary and regulatory constraints imposed by the state. In addition, it is the state which negotiates agricultural policy with the EU and decides on Pillar I measures (OECD, 2006a, p. 28). However, as a result of decentralisation process, regions have increasingly wider latitude in deciding on agricultural-related rural development policies. This, in turn, has led to the development of region-specific policies. The decentralisation process has also changed the nature of the relationship between the EU, national and regional levels (OECD, 2006a, p. 28). Notwithstanding this, the decentralisation process is hesitant and heterogeneous in the different States of the EU (Trouvé et al., 2007, p. 446).

## **3.2 Implementation of CAP and national complementary policy in Finland**

### **3.2.1 Time before EU membership**

In Finland, the settlement policies after the Civil War (1918) and World War II (1939–1945) increased the number of farms and decreased the average size of farm which, in turn, has had far-reaching impacts. Finnish agricultural policy after the wars was for a long time based on the fact that a middle-sized farm had to provide sufficient living for the full-time farm households. Hence, income policy was the most important element in national agricultural policy. This again slowed the development of productivity and effectivity in agriculture. However, the technological development of agriculture was so fast that the first problems of overproduction in Finnish agriculture were emerging already by the late 1950s. In fact, since then and until EU membership, Finnish agricultural policy was a balancing act between controlling overproduction and ensuring sufficient income for farmers and farm households (Linden et al., 2008, pp. 28–29).

The main principles of Finnish agricultural policy have not differed notably from the agricultural policy of the EU. The main objectives of Finnish agricultural policy have been self-sufficiency in food stuffs, securing and developing farmers' income levels and, at the same time, keeping food prices at a reasonable level by developing the structure of agriculture and securing the settlement of rural areas. Hence, these are quite similar to the objectives of the EU, although the emphasis between the measures may differ to some extent. In Finland, price policy has received particular emphasis in agricultural policy. For this purpose, the Farm Income Act has been used since 1956 (Kettunen & Niemi, 1994, pp. 13–14).



The regional support of agriculture in Finland obtained a fixed form in the early 1940s when the support for milk production was started to be paid in the northern parts of Finland. Since then, regional support forms have been adopted also in other production lines. For the payment of regional agricultural support, Finland is divided into seven support areas. Before Finland joined the EU, the support areas changed many times as the principles of allocating the support were fine-tuned. In the early versions of the regional agricultural support system, the support areas were defined by taking into account the natural preconditions of municipalities to pursue agriculture. Later, also economic circumstances such as farmer income were included in the criteria of regional support (Junttila, 1991, p. 30).

The exploitation of regional agricultural support has been argued by balancing the income differences within agriculture, and by fostering production and marketing (Junttila, 1991 p. 30). Granberg (1989, p. 153) highlighted the two-dimensional impacts of regional support. On the other hand, regional support affects the profitability of different production lines in different regions and hence creates conditions for and enhances the regional division of labour. At the same time, regional support affects the farmers' decisions regarding which production line(s) to pursue. According to Granberg (ibid.), the importance of regional agricultural support in the processes of the regional division of labour has been low until the 1970s. Furthermore, Granberg (ibid.) stated that in the 1980s, the regional support of agriculture started rather with the aim of maintaining existing regional agricultural structures than with changing them. In this situation, Granberg (ibid.) saw that the tools of regional support should be enlarged if wishing to include the social and welfare dimensions in agricultural policy. In this way, rural areas with only one dominating

agricultural production line could more easily diversify their production and hence to become more resistant to external threats (ibid.). Rosenqvist (1997, p. 189) argued that regionally proportioned support complements natural conditions as an explanatory factor for the regional specialisation of agriculture.

### **3.2.2 Finnish agricultural policy after joining EU**

When Finland joined the EU in 1995, implementation of the EU's MacSharry Reform was already under way. This meant that producer prices had already been cut. For Finnish farmers, the price cuts for EU producers meant notable losses of income. The CAP support, based on the arable area, was not enough to keep Finnish farms alive. To adapt to this new situation, two measures of the CAP, i.e. Less Favoured Area Support (LFA support) and agri-environmental support, were adopted as the central instrument in Finnish agricultural policy (Linden et al., 2008, p. 29).

Today, the CAP provides the basis for Finnish agricultural policy. In addition, the role of national support is crucial for farmers in Finland. The support of the CAP is not enough to keep the Finnish farming sector alive under the current market prices. Thus, Finland has negotiated the right to pay an extra, totally nationally financed support. The principles to be applied in national payments were agreed in the EU membership negotiations. The aid may not increase production, nor may the total amount of support exceed the level before the EU membership (Niemi & Ahlstedt, 2011a, p. 47). In Finland, the role of the CAP and the national complementary support payments to the income formation of the producers is more important on average than in the EU. Finland pays over a half of the agricultural support and the share of support payments is on average around a half of the total

return on agriculture (see e.g. Niemi & Ahlstedt, 2011a, p. 90).

Finland is divided into seven agricultural support areas. Farm-based agricultural support payments are regionally differentiated in Finland: that is, the more northern the area the higher the support rate is (when comparing the same type of farms together) (Figure 3.1). This inevitably has also certain regional and rural policy impacts, some of these intentional and some unintended. Additionally, in the case of other rural development measures than farm-based measures, core rural areas and sparsely populated rural areas are prioritised (see e.g. Maa- ja metsätalousministeriö, 2008; Ministry of Agriculture and Forestry, 2008).

In Finland, the EU funded and EU co-funded support payments of the CAP are supplemented by national aid, i.e. totally nationally financed support. National aid comprises the northern aid, national aid for southern Finland, national top-ups to LFA support and certain other forms of support. The aim of the national support is to ensure the preconditions for Finnish agriculture in different parts of the country and types of farming. Northern aid is paid to support area C, i.e. to the northern areas of Finland. Northern aid consists mainly of milk production aid and aids based on the number of animals and cultivated area. National aid for southern Finland, i.e. support areas A and B, comprises direct national aids for livestock production and raised investment aid for livestock production and horticulture. The national aid for southern Finland also contains investment aids and start-up aid for young farmers. A third crucial element of national aids is national top-ups to LFA payments which have been paid in whole Finland since 2005. These top-up payments per arable hectare are higher in the most northern areas of Finland (support areas C2–C4) (Niemi & Ahlstedt, 2011a, pp. 47–48). National top-ups to

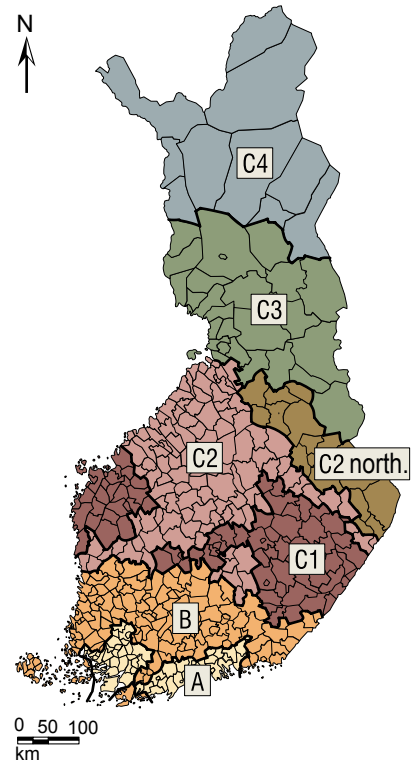


Figure 3.1. Agricultural support areas in Finland<sup>8</sup>

agri-environmental payments were paid in the programming period 2000–2006 but this support is not available in the current programming period 2007–2013. A major part of the national aid is the so-called Pillar I type support, i.e. direct aid to farms on the basis of livestock production and arable area (see more: Table 10.1 in Chapter 10.1).

In Finland, the CAP Pillar II is implemented by national and regional Rural Development Programmes (RDPs). Although Finland also has regional RDPs, the regional authorities have rather modest

<sup>8</sup> Based on the municipal division in force in 1995, i.e. when Finland joined the EU. The mergers of municipalities do not affect the borders of agricultural support areas. Source: Niemi & Ahlstedt, 2010a, p. 50

input in financing RDPs. In Finland in the programming period 2000–2006 as well as in the programming period 2007–2013, the share of the ‘regional money’ (including the money admitted to local action groups) in total support of RDP measures was a bit over 10%.<sup>9</sup>

In contrast with the EU on average, most of the subsidies paid in Finland come from Pillar II of the CAP, and they are legitimised by their contribution to the viability of rural areas. However, a great majority of support, approximately 80% of Pillar II support, is allocated to agri-environmental support and LFA support, of which both are farm-based subsidies. A minor part of Pillar II support is allocated to rural development measures which in this context are defined as the measures not directed to primary agriculture or forestry on the farms. The aim of the rural development measures is to keep rural areas populated and advance the diversification of economic activities (see also Chapter 5.4.2).

Pillar II support comprises the essential part of the Finnish farmers’ income. Therefore, it can be said also that in Finland, agri-environmental support and LFA support are one type of income support. This finding is also in line with some other studies. The study done by the OECD (2008, p. 138) stated that “the political priority in Finland appears to be to support farmers with subsidies rather than to produce public goods or to invest for the future.” Compared with earlier, subsidies have now to be couched in terms of ‘green box,’ ecology, landscape and biodiversity (ibid.). Schmidt-Thomé and Vihinen (2006, p. 50) argued that the relative allocation of resources to agri-environmental support is highest in some of the countries with the least

severe environmental problems, such as Finland. The finding is in line with that of Dwyer et al. (2007). According to Linden et al. (2008, pp. 30–31), the dominant role of Pillar II has shrunken the difference between Pillar I and Pillar II in Finland. This is because in Finland, LFA support is paid to every active farm and agri-environmental support is paid to a majority of farms. Furthermore, agri-environmental support is paid practically on the basis of surface area (ibid.).

## Summary

The CAP occupies still a notable share of the EU budget. Originally, the CAP was the agricultural policy seeking solely to increase agricultural production and advance the structural changes of agriculture. However, with the integration of rural development policies, the legitimacy of the CAP is now clearly argued not only from the viewpoint of agriculture but also for its regional impacts and its impacts on rural vitality as a whole. The CAP has faced a number of notable reforms and modifications. This has also meant a cautious shift towards territorial considerations which have also been strengthened in wider EU policy.

For the adaptation of the EU membership and the CAP, two measures of the CAP, i.e. Less Favoured Area Support (LFA support) and agri-environmental support, were adopted as the central instrument in Finnish agricultural policy. Hence, in contrast with the EU on average, most of the subsidies paid in Finland come from Pillar II of the CAP, and they are legitimised by their contribution to the viability of rural areas. However, a great majority of Pillar II support is allocated to agri-environmental support and LFA support, of which both are farm-based subsidies and are paid to a majority of farms. These support payments comprise the essential part of the Finnish farmers’ income. Therefore, it can be said that in

<sup>9</sup> Based on the unpublished information provided by the (Finnish) Ministry of Agriculture and Forestry

Finland, agri-environmental support and LFA support are also one type of income support. Farm-based agricultural support payments are regionally differentiated in Finland: that is, the more northern the area the higher the support rate is (when comparing the same type of

farms together). Additionally, national agricultural aid of Finland has other regional elements. Furthermore, in the case of other rural development measures than farm-based measures, core rural areas and sparsely populated rural areas are prioritised.

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## 4 Earlier empirical analyses on subject

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In this chapter, earlier studies made on the subject of the thesis are described. The studies are divided into those on the relationship between agricultural and rural development and those on the territorial impacts of the CAP. These are also the two main themes of this work.

### 4.1 Relationship between agricultural and rural development

It has been stated in a number of rural development studies that the dissociation of agriculture and rural areas has been strengthened by the notion of territorial diversification. Already in the early 1980s, for instance, it was noticed that agriculture does not necessarily have a crucial role in keeping rural areas vital. In many rural regions, agriculture is not a dominant sector in the local economy. The structural changes in agriculture and the loss of agricultural jobs obviously cause problems in the rural areas. In addition, the dominant role of agriculture in rural development in many regions means that there are weaknesses in the comprehensive development of rural areas (Wibberley, 1981).

Thomson (2001) explored the relationship between rural development and

agriculture especially from the viewpoint of agricultural economics. According to him, the importance of agriculture in the light of food production has decreased in rural economies both in Great Britain and in western Europe. Furthermore, “most people in rural areas now have few or limited links with the land that surrounds them” (Thomson, 2001, p. 9). His conclusion was that much would be gained in policy making by a clearer separation between the economics of land, covering its environmental aspects as well as food production, and that of rural population and economy.

The book edited by Diakossavvas (2006) contains expert articles about the relationship between agriculture and rural areas and between agricultural and rural policy. These themes are explored qualitatively, quantitatively, by international comparisons and by case analyses. In the conclusion of the book, it is argued that the importance of agriculture in the light of employment and income source brought to a region has decreased in every OECD country. Furthermore, a notable part of agricultural production is located in urban or urban-adjacent regions. The objectives of agricultural and rural policies differ from each other but there is some overlapping as well; particularly,

agriculture is a dominant user and manager of land. Overall, it was stated that rural development policy should be more than just part of agricultural policy and, at the same time, agricultural policy needs to reflect the wider contribution to rural development which agriculture can make. Agriculture is one element of rural areas and rural economies but not the only one (ibid.).

Van Berkel and Verburg (2011) used the concept of territorial capital to consider spatial characteristics in assessing the capacity for rural development. The study utilised expert-based descriptions of territorial capital. The experts represented a number of European countries. In addition, statistical and empirical approach based logistic regression was employed. Territorial development capacities were divided into intensive agriculture, off-farm employment, rural tourism and conservation. The results showed strong variation between regions in rural development potentials in the regions across the EU. Consequently, the importance of regional targeting of rural development potentials was recommended.

New analyses of different connections between agricultural and rural development and the policies concerning them is needed (Diakossavvas, 2006; see also van der Ploeg & Marsden, 2008). According to Diakossavvas et al. (2006), the issues and research requirements which need to be addressed in defining best policy approaches include the following:

- *investing the extent to which structural policies in agriculture, through their impact on competitiveness in the food chain, can affect the broader economic and social viability of rural areas;*
- *analysing the extent to which non-agricultural development in rural areas can improve the economic and social well-being of farm households;*
- *monitoring and evaluating policies—including the spatial distribution of financial transfers—in a rigorous way with appropriate disaggregated data, and the clear identification of policy objective;*
- *identifying the respective role of policies and market approaches, and the appropriate governance and institutional structures; and*
- *defining the approaches that might improve the coherence between agriculture and rural development policies.”*

This work aims at responding to some of the above challenges identified by Diakossavvas et al. (2006).

As regards to the studies made in Finland, particularly in the field of rural studies, it has also been stated that agricultural-based thinking in policy implementation is not enough to keep Finnish rural areas vital (Hyryläinen, 2003; Schmidt-Thomé & Vihinen, 2006; Uusitalo, 2009). This also means that the (potential) transition from productivist agriculture to post-productivist and multifunctional agriculture (for further information about these concepts: see Chapter 2.1) is not sufficient for solving all of the socioeconomic challenges in Finnish rural areas where agriculture and farms are only one economic activity among many others.

In Finland, some studies have been made to analyse agricultural development from a regional or more integrated



rural perspective (see Häkkinen, 1991; Katajamäki, 1991; Kuhmonen, 1996a; Kuhmonen, 1998; Pyykkönen, 2001; Tiainen & Juntunen, 2006). Overall, the main message of these studies is that the structural development of agriculture differs between regions and this development can have notable different regional effects depending on the type of a region. From the viewpoint of regional development, the most challenging situation seems to be in remote rural regions, where the role of agriculture as an employer, for example, can still be crucial and where the structural change of agriculture has had the strongest impacts.

Katajamäki (1991) studied regional and rural marginalisation and the role of agriculture in the light of the structural transformation of Finnish economy. He argued that the specialisation of agriculture has led to the deepening of the regional division of labour, which in turn makes many rural areas increasingly fragile particularly in remote regions. In his studies, Kuhmonen (1996a; 1998) has analysed the economic role of primary production in terms of regional employment and income generation and the consequences of the structural change to rural areas. Kuhmonen (1998) stated that agriculture has rapidly polarised as a result of EU membership.<sup>10</sup>

Pyykkönen (2001) argued in his study that the investigation of regional differences between structural change in agriculture and the factors affecting these needed more sophisticated analysis. This is an important topic particularly because agricultural policy has traditionally contained regional political objectives. In addition, the importance of agriculture in regional economies is totally different between different parts of Finland (ibid.).

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<sup>10</sup> This paragraph is mainly based on the literature review by Breman et al. (2010).

In his study, Pyykkönen (2001) used numerous regional levels, of which the most accurate was the municipal (LAU<sup>11</sup>-2) level. The time periods used were 1993–1997 and 1995–1999. Overall, the structural change of agriculture seemed to be the strongest in peripheral rural areas. Pyykkönen (ibid.) observed a weak positive correlation between the development of the number of agricultural jobs and other jobs. Hence, the development of other than agricultural jobs did not seem to substitute the development in agricultural jobs. Rather, in the regions where agricultural jobs decreased the most strongly, other jobs also seemed to decrease slightly faster than on average. In his empirical analysis, Pyykkönen (ibid.) stated that the competitiveness of a region is usually weaker in agriculture-dominated regions than in other regions.

Tiainen and Juntunen (2006) found that agricultural production has concentrated regionally since Finland joined the EU in 1995. In addition, the situation, both in the light of the structural change of agriculture and socio-economic circumstances and development, seems to be the most challenging in sparsely populated rural municipalities.

Some studies in Finland, of which some have been comparative studies with Portugal, have been highlighted the relationship between agricultural and rural development through the concept of *marginalisation* (for further information about the concept of marginalisation: see Leimgruber, 2004). Different regional levels and indicators—also other than socioeconomic ones—have been used in these studies. The studies indicate that the development of agriculture and socioeconomic development of other

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<sup>11</sup> For each EU member country, two levels of Local Administrative Units (LAU) are defined: LAU-1 and LAU-2, which were previously called NUTS 4 and NUTS 5 respectively.

rural activities in regions do not always interrelate (see e.g. Breman & Pinto-Correia, 2004; Vihinen et al., 2005; Tapio-Biström et al., 2006; Breman et al., 2010). As a result, for example, productive agriculture cannot always prevent rural areas from becoming marginalised (Breman et al., 2010). However, in the case of Finland, comprehensive studies on the relationship between agricultural and rural development at municipal level have not been made except with case studies.

## 4.2 Territorial impacts of CAP<sup>12</sup>

While the general economic and other studies of the CAP have been many, analyses on the territorial impacts of the CAP have been relatively few and patchy, and both theoretical and empirical evidence on regional redistributive effects of the CAP is still limited (Anders et al., 2004, p. 105; Shucksmith et al., 2005, p. 3). However, the analysis of the territorial or regional impact of the CAP has become a research concern in the past two decades. This indicates increased interest in regional and distributional issues (Anders et al., 2004, pp. 105–106). Little of the earlier work on this subject extended beyond farming itself (see more about the regional impacts of the CAP from the viewpoint of agriculture: e.g. Commission of the European Communities, 1981; Buckwell et al., 1982; Brown, 1990). Nevertheless, some of the recent studies have considered the subject from a non-sectoral territorial perspective. The territorial impacts of the CAP have been studied, for example, in the light of enlargement in the EU, as to changes in the policy and from the standpoint of the scenarios of alternative changes in the policy in future. The issue has been analysed at national, EU and global level.

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<sup>12</sup> In this chapter, the literature review by Kuokkanen and Vihinen (2006) is utilised.

As regards to the methods of the studies on territorial impacts of the CAP, the quantitative analyses based on statistics have been common methods. However, the interpretations of the results, for instance, have also included qualitative and case analyses. As to the spatial scale of these studies, they have been commonly conducted at NUTS<sup>13</sup> 2 or NUTS 3 level. While GIS (Geographic Information Systems) techniques continuously develop, more and more regionally sophisticated data are available and to be handled. However, farm-level data have not been generally used. Next, some studies concerning the territorial impacts of the CAP are presented.

In the European Commission's (2001) study on the impacts of the CAP on economic and social cohesion, it was analysed how transfers from the CAP are distributed across farm types and regions in the EU members and their federal states. From the territorial point of view, in 1996, as in 1989 and 1994, positive transfers of the CAP payments *per capita* were prevalently concentrated in regions where gross domestic product *per capita* was below the EU average. This implies that the CAP support has contributed to the pace of lagging regions. However, over time, there was no clear evidence of positive developments concerning wider regional redistribution of the CAP benefits and losses across the EU. The overall regional effect of the CAP and the impacts of the 1992 reforms and Agenda 2000 were also analysed. The analysis of the overall impact was made by econometric estimation. The results have elements in common with Tarditi and Zanas (2001), but the territorial conclusions of the study are not so clearly presented.

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<sup>13</sup> The NUTS (nomenclature of territorial unit for statistics) classification represents a standard framework for analysing economic and social developments in the EU regions. The NUTS classification is largely based on institutional spatial divisions.

Tarditi and Zaniias (2001) studied the impact of the CAP on cohesion and competitiveness at EU level with quantitative data. According to them, the CAP has been the sectoral policy of the EU generating the largest redistribution of income among citizens of the Union because of the large monetary transfers to producers from taxpayers and consumers of agricultural products. Tarditi and Zaniias (ibid.) stated that the impact of the EU's agricultural policy is a result of different and contrasting effects both in terms of equity (income distribution) and efficiency (competitiveness and economic development). A positive effect in terms of territorial distribution among countries was detected, particularly within each member country at regional level. On average, agricultural price support seemed to transfer income from richer, urbanised and industrialised regions towards poorer regions, where the share of agriculture in regional gross domestic product was bigger. However, the highest regional accuracy used in the study was NUTS 2 level, which divides Finland, for instance, into only five regions. In the case of Finland, NUTS 2 level is a rather rough regional level for the regional analyses because of strong regional variations within these, and even smaller (e.g. NUTS 3 level) regional entities.

The analysis of the impact of community policies on regional cohesion carried out by Labour Asociados Consulting (2003) rested on two studies: an in-depth research of the results of three Community policies including the CAP and a qualitative and 'bottom-up' case study of 28 regions, each of which was analysed in relation to the impact of the most relevant Community policies operating in the region. The general study confirmed the results of earlier research on social and territorial cohesion. In accordance with the study, the global impact of the CAP price policy is substantial and damaging to a number of less developed countries. In these countries, the main resources for their

economic development might still be agricultural (for more detailed discussion about the CAP and globalisation: see Groupe de Bruges, 2008). On the other hand, structural and rural development policy measures in general allow the support of agriculture in a more efficient and equitable way. It was concluded that the contribution of the CAP to cohesion is a difficult and ambiguous assessment from the regional perspective. In addition, the influence of the CAP on cohesion is important in maintaining agricultural income, although not evenly in all parts of the EU. The sectoral and short-term nature regarding the impacts of the CAP was also mentioned (Labour Asociados Consulting, 2003).

Anders et al. (2004) analysed the primary effects of the CAP on producers at a disaggregate level of NUTS 3 regions. Some 26 regions in the Federal State of Hesse in Germany during 1986–1999 were utilised as a case study. One of the important results was that a uniform CAP and its possible modifications affect the regions very differently.

According to the third report on economic and social cohesion (European Commission, 2004) the potential future effect of the CAP on cohesion will depend more than in the past on the objectives defined by the Member States (and where relevant, by regions), which will have wider scope for determining the form of direct payments. The enlargement has widened disparities in agriculture and increased its dual nature because of the number of small holdings in the new Member States with higher employment than in the EU15.

Perhaps the most extensive study on the spatial allocation of agricultural and rural development support on the EU level is the ESPON (European Spatial Planning Observation Network) study (Shucksmith et al., 2005) which analysed the allocation of the CAP payments at regional level



across the EU. The project was primarily focused on economic and social cohesion, but also on competitiveness (and to a lesser degree, on sustainable development). The support flows were reflected in the light of the socioeconomic performance of respective NUTS 3 areas. Register data of the support and several statistical data were analysed with various statistical and GIS (Geographic Information Systems) methods. The principal conclusion was that in aggregate the CAP has worked against the objectives of balanced territorial development, and has not supported the objectives of economic and social cohesion. In short, it can be concluded that the CAP has not been by far an effective tool to promote regional cohesion (see also Howley et al., 2009). Moreover, according to Shucksmith et al. (ibid.), in terms of polycentricity at EU level, Pillar I of the CAP appears to favour core areas more than the periphery of Europe and, at local level, the CAP favours the more accessible areas.

According to Shucksmith et al. (2005), some of the recent reforms of the CAP have ameliorated these conflicts of objectives: for example direct income payments are distributed in a way more consistent with cohesion than market price support, and higher levels of Pillar II payments—mainly consisting of agri-environmental support and support for less-favoured areas in Finland as well as in the EU on average—are associated with more peripheral regions than Pillar I support. The study also stated that there is scope to amend Pillar II to favour cohesion, but the potential is not currently being realised. One important finding of the study was also the difficulties to find coherent data to be able to evaluate the territorial impacts of the CAP.

From the theoretical and political perspectives, the question phrasing and the methods used in the ESPON project (Shucksmith et al., 2005) are a relevant and excellent starting point for the

future studies. However, more detailed information about spatial allocation of different forms of support payments is needed. In Finland, for instance, NUTS 3 classification used by Shucksmith et al. (2005) is too rough because of such notable variation within NUTS 3 regions in the light of the role of agriculture and other socioeconomic characteristics. In addition to the EU funding, national agricultural and rural development funding should also be taken into account.

The results by Shucksmith et al. (2005) are in line with the study on the relationship between agricultural subsidies and rural development by Daniel and Kilkenny (2009). On the basis of New Economic Geography (NEG) modelling, Daniel and Kilkenny (ibid.) concluded that the economy-wide effects of Single Farm Payment Pillar I subsidies are small.

Hermans et al. (2006) analysed geographic distribution of the CAP subsidies in the Netherlands. The report presented the geographic and sectoral consequences of the CAP payments. The study mapped the distribution of subsidies paid out in 2004, the expected situation in 2006 based on the historic entitlement allocation model and the expected situation if the flat rate model were adopted. The calculations also included a number of variations on these two models in which non-trade concerns are addressed to different extents. The non-trade concerns considered in the study included production circumstances, landscape quality and sustainable production. The analysis revealed that compared with the situation in 2006, which is based on the historic entitlement model, the geographic and sectoral consequences could be enormous and differ from each other depending on the scenario. In addition, the outcome of the analysis can be affected by changing the level of regional level in the analysis. Compared with most of the studies done in this subject, the study was methodologically

more sophisticated in terms of the database used. The database included the addresses of direct payment recipients as well as the amounts they received under each EU Regulation. In addition, the farm-level data concerning the farm characteristics, such as the size and production line of farms, were included in the data. Compared with a majority of studies on this subject, the results concerning spatial allocation of the CAP subsidies were remarkably detailed.

Some of the studies might have given a fairly positive assessment on the territorial cohesion effects of the CAP. However, according to the analysis of Labour Asociados Consulting (2003), the positive impact of the CAP on interregional income distribution is not a sufficient reason for maintaining the price policy of the CAP. Firstly, the same result could be achieved if farmers were compensated for positive externalities and for improving the structure of their farms. Secondly, if such transfers would be allocated from rich regions to poorer ones without sectoral constraints, their impact would be much larger and more transparent (*ibid.*). The essential question is how much other than agriculture oriented measures should be emphasised in the CAP.

In spite of notable socioeconomic differences between regions within EU member countries, the weights of the separate CAP measures can be remarkably similar between these regions. In addition, it has been stated that the regional differences between the relative weights of the measures can not necessarily be explained by the differences between regional characteristics or by the regional differences between the needs for regional development (Terluin & Venema, 2003; Dwyer et al., 2007, see more about financial emphases in the Rural Development Programmes of the EU Member States in the light of the weights of each Pillar II Axis: Tietz & Grajewski, 2009). Rather, the differences

can reflect a more complex combination of economic and political drivers within each country (Dwyer et al., 2007, pp. 876–877). According to Schmidt-Thomé and Vihinen (2006, p. 50), the problem with the policy measures as a whole is that they are constantly used as farm income subsidies irrespective of their original purpose. Hence, consideration should be given to adjusting the balance between different types of measures (*ibid.*).

While modelling the impacts of the CAP Pillar I and Pillar II measures on local economies in Europe, Psaltopoulos et al. (2011) showed that local economy linkages play a major role in the economic impacts of the CAP. These results are comparable with the study by Uthes et al. (2011) which analysed regional impacts of abolishing direct payments of the CAP. By combining participatory methods and farm-level modelling in four European regions located in Germany, Denmark, Italy and Poland, they found that the initial characteristics of the regions, such as the historical farm structure and regional site conditions, have strong impacts on direct support elimination and cause regionally different development trends. Uthes et al. (*ibid.*) argued that an explicitly regional focus is crucial for future policy analysis.

Some studies have also been done in Finland to analyse regional allocation of the CAP payments and complementary national payments. The Information Centre of the Finnish Ministry of Agriculture and Forestry (Tike, 2000) published the statistics on the agricultural and horticultural supports, subsidies and other forms of reimbursement paid and granted in the first five years of Finland's EU membership (1995–1999). Data on crop and livestock production quotas, as well as other than agricultural-based rural development measures were also included in the publication. As regards to the regional level, the money flows of support payments were presented mainly at

Employment and Economic Development Centre<sup>14</sup> level and at agricultural support area level in Finland.

Tiainen and Juntunen (2006) studied the regional impacts of agricultural policy in Finland. They analysed the allocation of the EU, the EU co-funded and national agricultural and rural development support in Finland in 1995–2005 mainly within the framework of the municipality-based Finnish Rural Typology (see more about the typology: Malinen et al., 2006 and Chapter 5.5). Tiainen and Juntunen (2006) stated that the CAP has led to regional concentration of farms in Finland. In addition, adopting the income support of the CAP led to a decrease of small holdings and an increase of larger holdings while the total number of farms has decreased. Furthermore, the number of livestock farms has decreased exceptionally strongly. As a result, in sparsely populated rural areas which are located especially in eastern and northern Finland—where the share of small farms and the one of livestock farms is higher than average—the decrease in the number of farms has been highest (Tiainen & Juntunen, 2006, p. 5). However, these regional trends in Finnish agriculture were already apparent since the strong structural change in Finnish agriculture taken place in 1960s and 1970s (see Niemi & Häkkinen, 1988; Häkkinen, 1991). In addition, one of the findings of the study by Tiainen and Juntunen (2006) was that compared with the national average, sparsely populated rural municipalities have received notably

less support per farm. In terms of total money flows, most support has been allocated to core rural municipalities.

Compared with a majority of the studies on the regional allocation of agricultural and rural development support, in the study by Tiainen and Juntunen (2006), the regional accuracy used was higher. In addition, national agricultural support payments were also analysed. On the other hand, the data of agricultural and rural development support available in the study was at aggregate level so that spatial allocation of different types of support payments (Pillar I and Pillar II of the CAP, for instance) could not be studied. This is a major shortage if the territorial impacts and allocations of different types of support payments are needed to be analysed in depth. Furthermore, the distribution of support per farm and according to main production lines was analysed but not in the light of farm size, for instance. There were also some shortcomings regarding the support data. The data did not include the structural and investment aids of farms. In addition, an essential part of the subsidies in Finland, i.e. the subsidies for milk production, were excluded from the analysis because these support payments did not exist in the farm-based support payment register. Excluding support for milk production remarkably affects the results on allocation of support and especially the support money flows of northern Finland seem then notably smaller than they actually are. Furthermore, the rural development measures, i.e. other than agricultural-based support payments, were excluded from the analysis by Tiainen and Juntunen (2006).

## Summary

The literature review concerning the relationship between agricultural and rural development shows that the dissociation of agriculture and rural areas has been

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<sup>14</sup> Since 1 January 2010, the tasks and services of the former Employment and Economic Centres, Regional Environmental Centres, Road Districts, and State Provincial Offices' departments for transport and communications and for education and culture have been pooled in the Centres for Economic Development, Transport and the Environment. The number of former Employment and Economic Centres (and current Centres for Economic Development, Transport and the Environment) is 16 (including the Åland Islands).

strengthened by the notion of territorial diversification. Agricultural and rural development trends in a given region are not necessarily parallel. Additionally, the importance of agriculture in the light of employment and income source brought to a region has decreased all over the developed countries. However, new roles of farms and agriculture, such as post-productivist functions of agriculture, can emerge. In Finland, based on the studies made, development of agriculture and development of other rural socioeconomic activities do not always interrelate. Furthermore, it seems that rural areas are diversifying and polarising both in the light of agricultural and other socioeconomic development.

To conclude, on the basis of the earlier studies on regional impacts of the CAP, a general and widely shared view is

that in aggregate, Pillar I of the CAP—which covers most of the CAP budget—works contrary to balanced territorial development across the EU. This is mainly because its distribution is not consistent with the economic and social cohesion objectives of the EU. Pillar II of the CAP is somewhat better regarding territorial cohesion, but by far not utilised completely in this respect. In short, it can be concluded that the CAP has not been by far an effective tool to promote regional cohesion. From the regional development point of view, a major problem in the CAP is still that most of the policy measures and types of support are restricted to farms and farmers only, while a great and growing proportion of rural inhabitants all across the EU are not engaged in farming. In addition, the regional impacts of the CAP can seem notably different depending on the regional scale used in the analysis.

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## 5 Focus, positioning and methodology

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This chapter presents the focus, positioning and methodology used in the thesis and reflects the discussions presented in the previous chapters. From a practical point of view, the methodological part of the chapter provides the background needed for the empirical part of the work. The aim of this chapter is also to structure the relationship between theoretical concepts and the empirical part of the thesis.

### 5.1 Positioning and making research questions operational

In Figure 5.1, the main elements of the thesis are presented. The elements

are divided into theoretical concepts, operational tools (research questions) and main theoretical and empirical conclusions. Theoretical concepts have already been discussed in Chapter 2, while operational tools and conclusions are yet to be discussed. Two main themes of the work, i.e. distribution of support and relationship between agricultural and rural development, are the main operational tools of this work and are linked to the discussion of key theoretical concepts. Finally, main theoretical and empirical conclusions relating to agricultural and rural development (in Finland) within the context of the CAP are drawn, which is achieved by examining the results of theoretical and empirical analysis in this

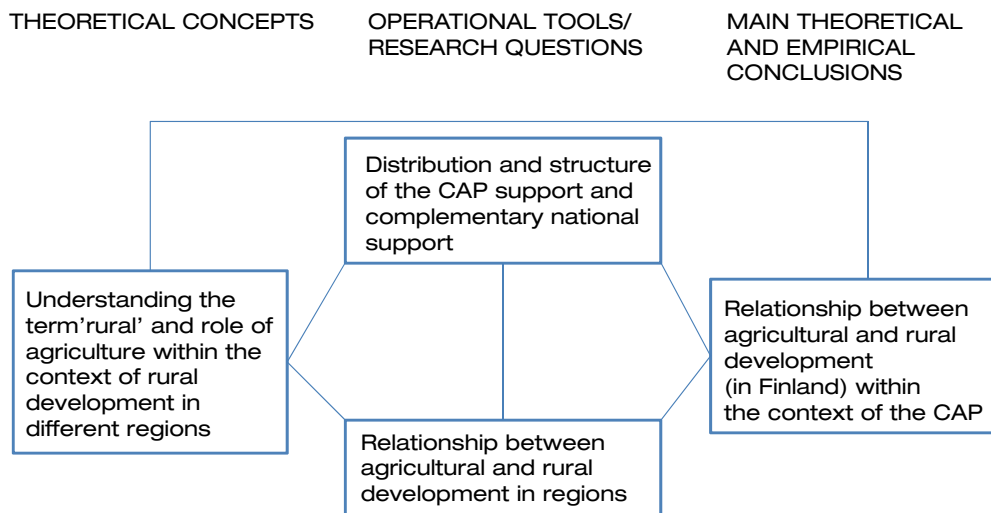


Figure 5.1 Positioning and main elements of the thesis

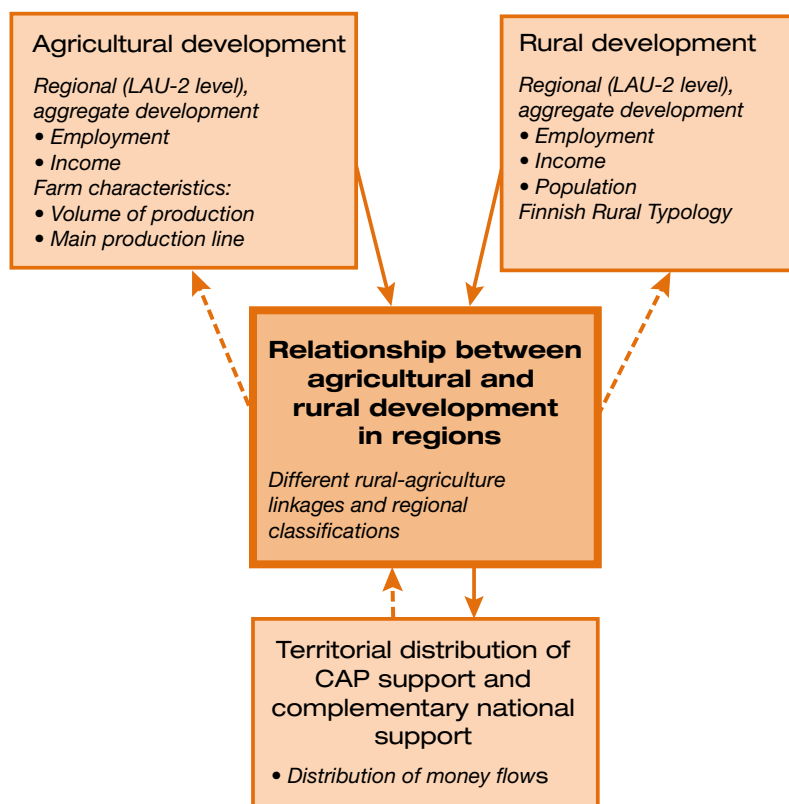


Figure 5.2 Making research questions operational

thesis, and by relating the theoretical concepts and empirical analysis to each other.

Figure 5.2 shows us how the research questions of the thesis are made operational and how the key concepts are understood in this work.

In this work, agricultural and rural development policy is defined as the policy measures under the CAP and national complementary policy measures. Hence, other policy measures, i.e. especially the measures of broad rural policy, are not in the focus of the thesis (for further information about the definition of broad rural policy: see Chapter 2.1.1). The impacts of the support is not analysed *per se*, but the money flows of support are related to the farm characteristics and the regional classifications of rural and agricultural development.

In the empirical analysis of the work, rural development is defined as *regional, aggregate socioeconomic* development. Rural development is analysed in the light of locational structures which can be defined as a region-based measurement. This is because the aim of this thesis is to analyse agricultural and rural dynamics from an aggregate, regional point of view. A human- or individual-based measuring, i.e. the analysis of the living conditions of the people living in the region, such as income per inhabitant, is excluded from the analysis.

Like rural development, agricultural development is defined as *regional, aggregate development* taken place in agriculture. The same confining of the regions is used as in the case of the analysis of rural development. Hence, the development of agriculture at farm level is not in the focus of the analysis, although the money flows of support and rural and agricultural developments are related to the farm characteristics.

In this thesis, what is 'rural' is understood on the basis of territorial, *descriptive* definition. This approach is grounded on the assumption that "a geographical distinction can be made between rural areas and urban areas on the basis of their socio-spatial characteristics, as measured through various statistical indicators" (Woods, 2005, p. 5). Confining of the regions in this thesis is described in Chapter 5.5.

Both ArcGis and MapInfo software were used in the map presentations of the thesis. In the statistical analyses, mainly SAS but also Excel software were utilised.

## 5.2 Material

In this work, regional-level data contain information about agricultural and other socioeconomic factors. As regards to the regional-level analysis, the most important information source is the Maaseutuindikaattorit (Rural indicators) database of Statistics Finland (c). The database brings together municipal-level information from many databases of Statistics Finland. In addition to administrative regions, information can be obtained from the Finnish Rural Typology and two other regional typologies. Municipal division is annually updated in the database which makes it difficult to get uniform data and, hence, to do coherent time-series analysis in the long run. In this work, the Maaseutuindikaattorit (Rural indicators) database is the information source regarding the regional-level data of income, jobs (including agricultural jobs) and population. In addition, farm income and tax statistics (Statistics Finland d) are utilised. Farm income and tax statistics contain municipal-level information about mean taxable income and mean income structures of farm households. All the numerical data by Statistics Finland used in this work are total samples.



Other farm-level data than support data used in the thesis is provided by the Information Centre of the Finnish Ministry of Agriculture and Forestry (Tike). Farm-level data is from the year 2005 and includes information about every single active farm in Finland. The farm-level data contains farm identification codes and location coordinates of the farm centres, the main production line, economic size and arable area of farms. The data can be connected to support by farm identification codes which are included in both databases. The location coordinates of the farm centres are utilised both in the map presentation of farm locations and in the map presentations regarding the allocation of agricultural income support in 10 km\*10 km regional level.

The data of support payments includes every single positive support decision of the CAP and complementary national support payments governed by the Finnish Ministry of Agriculture and Forestry in 2000–2006. Also other than farm-based payments, i.e. so-called rural development measures, are included in the data. The data of support are quite massive: data of agricultural income support alone includes

over four million support decisions. All the support data is provided by the Finnish Ministry of Agriculture and Forestry.

The sums of money flows rest on the financial frameworks of support decisions. In total, the actual support expenses of the measures are for some amount lower than the money sums based on the support decisions because a part of the measures have been interrupted or, compared with the original plans, the measures might have not fully been actualised. However, the difference is so marginal that it does not have any significance for this work. The ‘problem’ in question concerns mainly other than agricultural-based measures, i.e. rural development measures. The support data has been collected from three separate support registers of the Finnish Ministry of Agriculture and Forestry (see more in the list of references: Ministry of Agriculture and Forestry a; b; c).

A number of large statistics and register data are used in this work, and the empirical part of the thesis is strongly grounded on statistical and GIS (Geographic Information Systems) analysis of numerical data. The data can be divided into data

Table 5.1 Most important data and highest regional accuracy

	Farm level	Municipal (LAU-2) level	Employment and Economic Development Centre* level
<b>Information Centre of Ministry of Agriculture and Forestry</b> • Farm-level data: economic size, arable area, main production line	X		
<b>Ministry of Agriculture and Forestry</b> • Farm-based support • Rural development measures	X		X
<b>Statistics Finland</b> • Socioeconomic, regional information		X	

\* Since 1 January 2010, the tasks and services of the former Employment and Economic Centres, Regional Environmental Centres, Road Districts, and State Provincial Offices’ departments for transport and communications and for education and culture have been pooled in the Centres for Economic Development, Transport and the Environment. The number of former Employment and Economic Centres (and current Centres for Economic Development, Transport and the Environment) is 16 (including the Åland Islands).

Table 5.2 Number of observations in most important databases

Data	Number of observations
<b>Information Centre of Ministry of Agriculture and Forestry</b> • Farm-level data: economic size, arable area, main production line	69,517 farms
<b>Ministry of Agriculture and Forestry</b> • Direct aid of agriculture • Structural and investment support of farms • Rural development measures	4,023,517 support payment decisions 69,575 support payment decisions 22,069 support payment decisions
<b>Statistics Finland</b> • Socioeconomic, regional information	370 municipalities

of agricultural and rural development support, farm-level data (other than support payments) and municipal-level socioeconomic data regarding agricultural and rural development. The most important data and the highest regional accuracy of these data used in the thesis are presented in Table 5.1 while Table 5.2 shows numbers of observations existing in the data.

In the next parts of the work, numerous tables and maps regarding the characteristics of agriculture and allocation of support will be presented. All the data of these presentations are based on the raw data of the Finnish Ministry of Agriculture and Forestry and the Information Centre of Finnish Ministry of Agriculture and Forestry (Tike) if not mentioned otherwise. The numerical information used in the regional level analyses of agricultural and rural development stems from the data of Statistics Finland. The references of the data were presented earlier in this chapter.

### 5.3 Analysis of agricultural and rural development

#### 5.3.1 Indicators

In the first part of the analyses of agricultural and rural development, key socioeconomic characteristics and development trends within the framework of the Finnish Rural Typology are presented. In addition, within agriculture,

location of farms, size and production structure of farms, also from territorial point of view are briefly analysed. These descriptions provide background for the municipal-level analyses of agricultural and rural development which are the main focus in this work.

In this thesis, rural development of *each rural municipality* will be measured by the following indicators:

- number of jobs excluding agriculture,
- aggregate income (annual nominal prices) of employees and
- population.

Agricultural development of each rural municipality will be measured by

- number of jobs in agriculture and
- aggregate agricultural income (annual nominal prices) of the farms owned by natural persons.

When using the indicators describing regional development, it must be remembered that the results shown by certain indicators are often affected by a number of other socioeconomic and other factors as well. For example, development in both income and the number of jobs are strongly affected by development in population, age structure and employment situation (unemployment rate, for instance) among other things. In this work, the

reasons behind strong or weak agricultural or rural development are not deeply analysed. Instead, the socioeconomic and agricultural development of rural areas and the relationship between agricultural and rural development are analytically explored.

The indicators used in the analysis are aggregate level indicators. This means that regional development trends are analysed as a whole, not at individual level. This is because the aim of this thesis is to analyse agricultural and rural dynamics from an aggregate regional point of view. By means of the aggregate level indicators, conclusions regarding the individual level, for example the farm level, cannot be made. The OECD, for instance, has used aggregate-level employment data when classifying rural regions into leading and lagging rural regions (OECD, 1994). The same type of classification has also been used in a number of other studies (see e.g. Terluin, 2001; 2003; Shucksmith et al., 2005).

Here, the jobs in the certain region include all the jobs in a given region irrespective whether the job is held by a person living in the same municipality or in another municipality. Every employed person—also a part-time worker—constitutes one job (for further information: Statistics Finland b).

In this work, agricultural income includes earned income and capital income of agriculture under the Agricultural Income Tax Act. Other income sources of farm households are excluded from the analysis because, in the case of agricultural development, the aim of the thesis is to analyse only agricultural sector instead of the total farm household sector. Municipal-level data of mean income and mean income structure of farms and on the number of farms in the tax statistics were used to calculate aggregate, regional

agricultural income.<sup>15</sup> The annual data of farm household income is founded on the distribution of municipalities in force in each year in question. Therefore, because the municipal divisions differ from each other depending on the year, the annual data were modified to represent the distribution of municipalities in force in 2006.<sup>16</sup>

Aggregate income of employees includes also agricultural income because it was not possible to exclude agricultural income from the data in question. However, the importance of agricultural income in total regional income is generally rather modest. On average, the importance of other income sources than that of agriculture is more important among farm households as well.

Clear arguments for using the indicators chosen in this thesis can be found. First, income, jobs and population are all the factors which essentially affect the vitality of every single region. Also from the theoretical point of view, the jobs and income are the basic elements of regional economies (see e.g. Armstrong & Taylor, 2000; Terluin, 2003). Positive changes in these factors can bring about 'circle of positive development' (and this works in contrary, of course). Secondly, based on earlier studies (see e.g. Malinen et al., 2006), the regional polarisation in Finland seems to have taken place in the

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<sup>15</sup> The farms are included in the farm income statistics used in the study if owned by natural persons. In 2004, 89% of all the active farms were owned by natural persons in Finland. 96% of all farms owned by natural persons were included in the farm income statistics (Statistics Finland d).

<sup>16</sup> In 2001, the municipality of Temmes was merged mainly to the municipality of Tyrnävä but also partly to the municipalities of Liminka, Lumijoki and Rantsila. In the analysis of agricultural income in this work, all the agricultural income of Temmes is included in the agricultural income of Tyrnävä.

light of the development of population and jobs, in particular. Thirdly, the selection of these indicators can be argued by policy relevance of the indicators in question. From the viewpoint of agricultural and rural policy, these indicators are strongly included in the main objectives of the policy measures.

*Development in the number of jobs* is very generally used when describing rural development and dividing rural areas into 'leading' and 'lagging' regions (OECD, 1994; Terluin, 2001; Shucksmith et al., 2005). In simple terms, growth in the number of jobs increases regional tax income and the attractiveness of the area amongst new (and also old) residents and enterprises.

*Development in the aggregate income of region* is also a critical factor especially in many small rural municipalities. Growth in income usually leads to growth in spending which, in turn, can have positive impacts on production and finally on employment as well. As a result, the positive circle of development has been created (on the other hand, the negative circle is probable when the aggregate income level decreases). In addition, development of income has impacts on the economic development of a municipality through municipal tax income and thus also in the way the services can be arranged in the municipality.

*Development in population* is also a crucial factor in the development of Finnish rural areas. Rurality of Finland also means that Finland is a sparsely populated country. According to the municipal division in force in 2010, the rural municipalities defined by the Finnish Rural Typology covered 85% of total land surface in Finland in 2010. Only the sparsely populated rural municipalities covered 60% of the surface. On the basis of the division into rural vs. densely populated areas, in 2010 over four-fifths of the Finns lived in population centres with

at least 500 residents (dense population) and less than a fifth lived in population centres with less than 500 residents and in sparsely populated (rural) areas. Based on this division, the rural areas covered more than 98% and densely populated areas less than 2% of the total surface area (Statistics Finland c). The sparse population in the rural areas places great challenges for regional development because the regional economies are weak and the demand for both products and services is low. These factors increase the risk that peripheral areas become even totally deserted.

One of the most fundamental aims of rural policy is to create new jobs by diversifying economic activities (see also Terluin, 2001) and to ensure sufficient population base (and thus sufficient tax income level) in rural areas. Agricultural policy, in turn, aims at ensuring sufficient income level for farmers and hence ensuring a possibility to pursue agriculture and to preserve agricultural jobs in the rural areas.<sup>17</sup>

It is justifiable to simultaneously use the development of the number of jobs, income and population as the indicators when analysing socioeconomic development in rural areas. Especially in Finland, many rural areas, particularly urban-adjacent rural areas, can be described as 'areas of residence': people are living in rural areas and working in other areas. This also means that a self-sufficiency rate in employment can be rather low particularly in urban-adjacent rural municipalities although the development in the light of other socioeconomic indicators would be strong. In addition, in the same regions, for example the income per inhabitant and

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<sup>17</sup> However, according to O'Connor et al. (2006, p. 3), and as described already in Chapter 3.1.1.1, there has been continuous contradiction with the objectives of productivity and ensuring a fair standard of living in agriculture. The objectives of agricultural and rural development policy were described in Chapter 3.

the municipal tax income level *per capita* can be notably higher than on average. Furthermore, consumption of rural enterprises and rural households are partly channelled to the home region.

In the case of agricultural development, it is not necessarily clear what actually is stronger and what weaker development. If the development of agricultural income has been stronger than the development of agricultural jobs, then agricultural productivity might have increased. Stronger development in productivity can mean that production has become more effective and more capitalised in terms of machinery, for instance (see also Massey & Meegan, 1982), or that certain functions have been outsourced from farms. These are the factors which can lead to an exceptionally strong decrease in agricultural jobs. Outsourcing of activities can also lead to a decrease in agricultural income. When the analysis of agricultural development is based both on agricultural jobs and agricultural income, a more comprehensive picture of agricultural development is achieved.

It is generally recognised that the development in employment and gross domestic product or other indicators of production are not necessarily similar within the regions. Generally in this case, the question is about the impact of technology on regional development. The re-organising of capital can be divided into three classes:

1. intensification: increase in productivity of employment without new large investments or without essential change of production technology,
2. investments and technological change: decrease in employment is connected to investments allocated to production technology,
3. rationalisation: decrease in total capacity (Massey & Meegan, 1982, pp. 127–129; Peltola, 1997).

These factors can appear in notably different ways between regions and, in the case of agriculture, for instance, the regional differences in the structures of production lines have their impacts on this.

In the municipal-level analysis of this thesis, any indicators relating to volume of production such as gross domestic product or value added are not used. First, measures like this are associated with the problem of ‘rural as a place of residence’ (as is also the case in the indicator of employment): production is situated elsewhere from where people live and pay their income taxes. Consequently, gross domestic product or value added can be rather modest in vital urban-adjacent rural municipalities compared with other rural municipalities. In the case of agriculture, this type of a problem does not usually exist because production and settlements are usually situated in the same place. Secondly, the aim of rural development measures is primarily to create new jobs and ensure a sufficient population base in rural areas and that is why it is relevant to analyse the development of these factors. Thirdly, there was no information available on gross domestic product or value added at municipal level.

### 5.3.2 Time series analysis

According to Robinson (2009, p. 285),

*“[t]ime series is a sequence of data points for a variable, typically measured at successive times, usually at uniform time intervals. Time series analysis comprises methods to understand such time series and to make forecasts (predictions) of their future patterns.”*

In this work, when analysing agricultural and rural development at municipal level, the time period used is 1995–2004. Development is analysed as annual development during the time period in question. Development of agricultural

and rural development is measured by *proportional* annual developments because the volumes of indicators (e.g. amount of aggregate income, number of jobs and population) differ widely between the municipalities (and regions) (see also Kuhmonen, 2007, pp. 85–86).

Unless the two variables are perfectly correlated (i.e., fall on a straight line), there will be a degree of scatter between them. Subsequently, many different linear and non-linear mathematical equations can be fitted to the data (Kitchin & Tate, 2000, p. 129). When presenting a scatter plot, the values of the pair of variables are plotted in the diagram. A scatter plot is also called a scatter or dot diagram (Draper & Smith, 1966, p. 5). Drawing a scatter plot between two variables is a useful starting point for understanding the relationship between the two variables. The line of best fit (the regression line) is most commonly calculated using least-squares linear regression which minimises the squared deviation between the data points and the regression line along the y axis (Pearce, 2009, pp. 302–303). Since development in the regions can be sensitive to annual variations, the method of least squares is employed in this work when estimating the annual change of each indicator in each region.

The line of best fit (*b*) can be calculated using an equation where the numerator is the covariance of *x* and *y*, and the denominator is the variation of *x*:

$$b = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sum (x - \bar{x})^2}$$

where  $\bar{x}$  and  $\bar{y}$  refer to the mean of *x* and *y*, respectively.

Once the value of *b* has been calculated, the intercept (*a*) can be calculated:

$$a = \bar{y} - b\bar{x}$$

At the first stage of the municipal-level analysis, the method of least square is used when estimating the development trend of an ‘average region,’ and the development trends of the separate regions are compared with the equivalent trend in an ‘average region.’ The estimation can be expressed as:

$$\log_e(y_{ij}) = \mu + \alpha_i + \chi_j + \varepsilon_{ij}$$

where

$\mu$  is the intercept,  
 $\alpha_i$  is the effect of year *i*,  
 $\chi_j$  is the effect of municipality *j*, and  
 $\varepsilon_{ij}$  are the residuals.

The model produces the development trend of an ‘average municipality’ and the differences between the municipal developments.  $\varepsilon_{ij}$  are the residuals, i.e. the remainders between the values of the original observations and the estimated values. The method in question assumes homogeneity of residual variance while in reality huge differences between municipalities exist. Therefore,  $\log_e$  transformation was made before analysis. This is arguable because differences between years were not equal at low- and high-level municipality. Instead, relative differences were more constant. Using the absolute levels of the values would have led to the problems of heteroscedasticity, i.e. the variables could have had notably different variances (see e.g. Gujarati, 1978). However, by using a log transformation these problems can be effectively solved. Graphical methods were used to check potential outliers. Typical potential outliers are small municipalities.



The model described assumes that residuals are independent. Residuals of the municipality are correlated with a calendar year if the development trend of the municipality differs from the average trend. In the third stage of the analysis, the linear regression model is applied for the residuals of each municipality. Linear regression model measures the form of the relationship between two variables. In addition, one variable is considered to be dependent on the other and therefore controlled by it (Shaw & Wheeler, 1985, p. 168). The linear regression model used in this work finally takes the following form:

$$\varepsilon_{ij} = \mu + \beta_j \text{year} + \phi_{ij}$$

where  $\mu$  is the intercept,

estimate  $\hat{\beta}_j$  measures the difference between the development of municipality and the average development trend,

year refers to the calendar year, and

$\phi_{ij}$  is the mean square contingency coefficient between the year  $i$  and the municipality  $j$ .

The method applied in the analysis provides a slightly stronger weight for the starting year of the period than for the following years but still decreases the importance of the value of the starting point and takes all the years during the time period into account (Draper & Smith, 1966, see also Kuhmonen, 2007, p. 85–86).

In the last stage of the analysis, the municipalities are ranked using the rank order numbers defined by the values of the slopes, i.e. their annual developments as defined above. In addition, the Spearman rank order correlation coefficient is employed for analysing the relationship between agricultural and rural development and the separate components of these. The Spearman rank order correlation coefficient can be expressed as:

$$r_{rank} = 1 - \frac{6 \sum D^2}{N(N^2 - 1)}$$

where

$D$  refers to the remainders between the parallel ordinal numbers of  $X$  and  $Y$  and

$N$  is the number of observation pairs.

If the correlation between the variables is (positively or negatively) perfect, the value of the correlation coefficient is (+/-) 1. It must be remembered, however, that correlation does not tell us anything about the causal relationships between the variables.

The end point of the time period used in the municipal-level analysis is 2004. The municipal division in force in 2006 is the basis of the municipal-level analysis. It can be stated that during the period used in this thesis, i.e. 1995–2004, the most notable adoption of agriculture during the EU membership has taken place. Whilst the data used are provided at municipal level, the main problem regarding the more updated data (the years after 2004) are the numerous mergers of municipalities and, hence, the different municipal borders. In 2006, the number of municipalities in Finland was 431, while the equivalent number in 2010<sup>18</sup> was 342, and 336 in 2011 and 2012. This also means that the data were now much more aggregated from a spatial point of view. The time period 1995–2004 also notably overlaps with the data of support which covers the years 2000–2006. In the light of these factors, the period 1995–2004 can be argued to be suitable for using in the empirical analysis.

In general in Finland, the socioeconomic differences between regional values are

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<sup>18</sup> The municipal division in force in 2010 is used in the complementary analyses done within the framework of the Finnish Rural Typology.

often relatively regular and there are no strong, sudden changes in development trends between regions, at least when it comes to more aggregated regional levels than municipal (LAU-2 level) or sub-regional level (LAU-1 level in Finland) (see Malinen et al., 2006, for instance). However, in this thesis, updated numbers regarding agricultural and rural development are presented within the Finnish Rural Typology, which divides Finnish municipalities into four classes. The results and regional classifications made, on the basis of the municipal-level time-series analysis, are also related to other factors. The municipal-based Finnish Rural Typology is usable when the aim is to classify the municipalities on the basis of their socioeconomic situation (not on the basis of development). Then, agricultural and rural development in the regions with different socioeconomic circumstances and conditions can be studied and compared with each other. Additionally, the municipal-level development of agriculture is related to the characteristics of agriculture, especially to the farm size and production line.

### 5.3.3 Four-fold typology of agricultural and rural development

So-called four-fold typology is applied for the analysis of agricultural and rural development. The classification in question is grounded on the marginalisation typology launched by Breman and Pinto Correia (2004). According to the typology, a combination of the two components leads in practice to the distinction of four main group situations:

- areas where elevated levels of agricultural competitiveness go together with a high level of socioeconomic dynamics,
- areas with a high level of socioeconomic dynamics but a fragile agriculture,
- areas with a competitive agriculture but fragile socioeconomic dynamics, and
- areas with low levels of agricultural competitiveness and fragile socioeconomic circumstances (Breman et al., 2010, p. 370).

The municipalities are ranked based on the values of the slopes, i.e. based on their annual proportional developments as defined in Chapter 5.3.2. In the case of both agricultural development and rural development, each of the indicators (agricultural development: agricultural jobs and agricultural income; rural development: jobs excluding agriculture, income and population) has the same weight in the analysis when the separate indicators of agricultural and rural developments are conflated into one rank. As a result of the municipal analysis, every municipality can be classified, for instance, within the framework of the four-fold typology. The development of municipalities is compared with the equivalent development of other municipalities. Weaker development means here that the development has been weaker than the median municipal development. Correspondingly, stronger development means here that development has been stronger than the median municipal development.

Median development divides the municipalities into two groups of same size. Hence, the four fold-typology used for classifying agricultural and rural development includes:

- the same amounts of municipalities where *agricultural* development has been weaker than median and where agricultural development has been stronger than median, and
- the same amount of municipalities where *rural* development has been weaker than median and where rural development has been stronger than median (Figure 5.3).

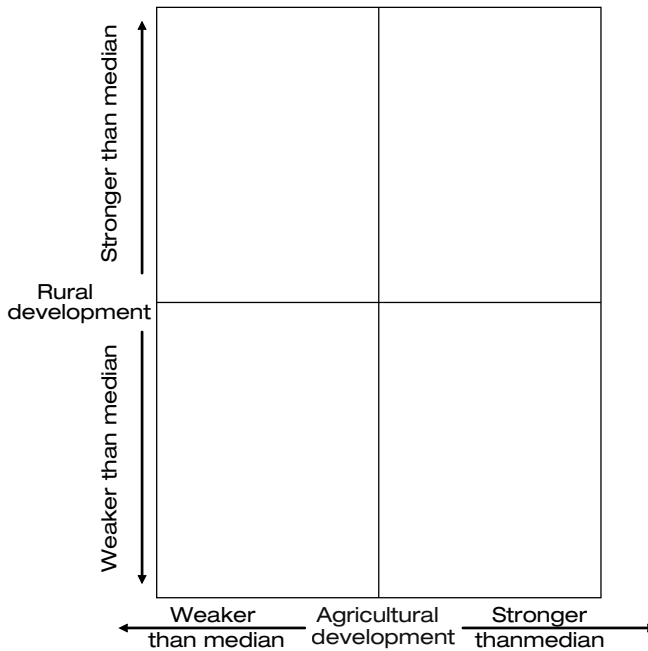


Figure 5.3 Dynamics of agricultural and rural development: four-fold typology used in this thesis (following the idea of Breman & Pinto Correia, 2004; Tapio-Biström et al., 2006; Breman et al., 2010)

Naturally, municipalities can also be classified into more than two groups. In this work, different numbers of ‘classes of developments’ (e.g. quartiles) are also used when analysing the municipal development trends.

The four-fold typology of agricultural and rural development, and in the case of agriculture also a more accurate classification, is exploited when analysing the distribution of agricultural and rural development support payments. It is possible to merge the municipal-level results into a less accurate regional level, for instance into sub-region or province level. In this case, the agricultural and rural developments of all the municipalities in a certain region are added together (e.g. the annual number of jobs in the municipalities in a certain region are added together) and, based on this, the ranks of the developments between the regions

are defined. In the sub-region level and province level analyses of this thesis, the border values of the *municipal-level* analysis has been used when classifying the regions within the framework of the four-fold typology.

In this work, the ‘original’ classification of four-fold typology is based on the municipal-level (i.e. LAU-2 level) data. The border values of the classes in the four-fold typology are defined by the border values of the municipal-level typology. When regionally less accurate level (e.g. NUTS 3 level) and ‘original’ municipal-level border values are used and particularly when the regions are divided into more than two groups,<sup>19</sup> it can mean that there is no or there are only a few regions in the border classes of the typology. However, analysis

<sup>19</sup> Into nine classes, for instance, when both agricultural development and rural development divides the regions into three groups.

can be undertaken so that the border values of the classes are defined on the basis of the developments of the regional level in question (e.g. NUTS 3 level). Then, the regions are distributed more evenly to different classes.

## 5.4 Analysis of distribution of support

### 5.4.1 Methodology

This thesis utilises farm-level data so that nearly every single farm support payment can be allocated to a single farm and support flows can be related to the farm characteristics. Each payment is thus geolocated at the farm level. The data makes it possible to use all types of spatial scales when analysing the distribution of payments. Using high-level spatial accuracy instead of generalised data makes it possible to use different spatial scales when analysing the distribution of payments. Traditionally, this kind of analysis has been carried out by units such as NUTS areas or municipalities. This approach has weaknesses, such as the modifiable areal unit problem (Longley et al., 2005), or ambiguity on how to treat changes in areal units during the time span of the analysis. In this work, the results are presented in a regular grid form. A grid size of 10 km\*10 km was selected as a compromise to reflect the fine-scale spatial structure yet maintaining confidentiality of the accurate farm data. In this respect, the analysis differs from many earlier studies.<sup>20</sup>

The classification of agricultural support into main types of support was not a simple task. The data of agricultural income support alone contained over one hundred and, even annually, tens of different types of support in total. In addition to farm-based support, the distribution of 'non-agricultural' payments,

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<sup>20</sup> Ms Hanna Huitu contributed notably to this paragraph.

i.e. rural development measures, are briefly analysed. As a result, compared with earlier studies, this thesis offers more detailed information about the spatial allocation of policy measures and about the effects of a crucial rural policy tool in Finland.

### *Agricultural income support*

In this work, not only the direct aids of agriculture but also agri-environmental support and support for less-favoured areas (LFA support) as well as their complementary national support are included in agricultural income support. Direct aids of agriculture are paid to practically every active farm in Finland on the basis of the arable area and the number of livestock. As in the case of direct aids, LFA support is paid to all cultivated area in Finland. Agri-environmental support is also paid to a majority of farms and cultivated area in Finland. Within agricultural income support, distribution of different types of support payments, i.e. direct aids, agri-environmental support, LFA support and national aid, are analysed separately as well. This is particularly because the direct aids are categorically under the CAP Pillar I while agri-environmental support and LFA support are under the CAP Pillar II.

When analysing the allocation of agricultural income support payments, all types of spatial scales can be used because of the location coordinates of farms and farm identification codes available. In this work, spatial allocation of agricultural income support is analysed according to 10 km\*10 km grids, the municipal-based Finnish Rural Typology, and Employment and Economic Development Centres which are relatively close to NUTS 3 level in Finland.<sup>21</sup>

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<sup>21</sup> The number of former Employment and Economic Centres (and current Centres for Economic Development, Transport and the Environment) is 16 (including the Åland Islands), while the number of provinces (NUTS 3 level in Finland) is 19 (including the Åland Islands).

The analysis of allocation of agricultural support is not limited to the administrative borders of the regions because the location coordinates of the farms from 2005 are available for this work. Because the surfaces and number of farms differ strongly between municipalities, it is appropriate also to use other than administrative borders. In this work, a 10 km\*10 km grid level is used in the map presentations when analysing the location of farms and allocation of support. In this way, the regional accuracy is higher than at municipal or other administrative level. On the other hand, results with a higher regional accuracy could not necessarily have been able to be presented because of a small number of observations in a grid and also because of data security.

Instead of analysing the allocation of support annually, the allocation of support in 2006 and in the whole programme period 2000–2006 is analysed. This is because only the support data from 2006 were almost totally farm-based in the support register.<sup>22</sup> Another reason for this is that the farm-level data other than support data were available only from 2005.

By analysing the allocation of support in 2006, the support flows were managed to relate to the farm characteristics.<sup>23</sup> The allocation of agricultural income support is analysed according to:

- the types of support payments,
- the main production line of farms,
- the economic size of farms, and
- by relating the support payments to the number of farms in a region, total economic size of farms and total arable area of farms in a region, and
- according to the regions in the table presentations and additionally in a higher regional accuracy in the map presentations.

Furthermore, the support payments are related to rural population in each Employment and Economic Development Centre.

In the support register, not every single agricultural income support is farm-based.<sup>24</sup> Clearly the largest subsidies which were not farm-based were the support payments for milk production admitted in 2000–2005. In the register, support for milk production is allocated to farm level only in 2006. Before this, the support was channelled via dairies. However, in this thesis, the support for milk production in 2000–2005 is calculated for each municipality based on the farm-level support for milk production in 2006. This is justifiable because the support for milk production is a notable part of the total expense of agricultural support. In addition, during 2000–2006, there have not been remarkable changes in the regional structure of milk production or the support system of milk production from a regional point of view. Thus, on the basis of annual total money flows for milk production support at country level and on the basis of the farm-level information

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<sup>22</sup> In the register, also the support for milk production admitted in 2006 is farm based (for further information: see later in this Chapter).

<sup>23</sup> Reflecting agricultural support from 2006 to farm level data from 2005 caused a lack of some preciseness and a decrease in the number of farms because the main production line of a farm or the size of a farm might have changed or a farm might have abandoned pursuing agriculture. However, this kind of non-preciseness of data has only a minor impact on the results.

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<sup>24</sup> In addition to certain types of support, the farm identification code can be missing in some other situations. This can be the case with concern-based farms, new farm holders or potential farm holders who, for instance, have applied for support for starting to practise agriculture.

on milk production support in 2006, the municipal support for milk production in 2000–2005 can be rather accurately estimated.

To have excluded the support for milk production in 2000–2005 would have affected remarkably the results of allocation of support. Especially the support money flows to northern Finland would have seemed notably smaller than they actually were. After the calculated, i.e. the estimated allocation of milk production support, the share of agricultural support payments without farm identification code in the total amount of agricultural support payments was low (0.6% of total money flows, see Table 10.1 in Chapter 10.1). Furthermore, not every single type of support payment is able to be appropriately allocated to the regions.

#### *Structural and investment support of farms*

The distribution of the structural and investment aids of farms are analysed at Employment and Economic Development Centre level. Compared with agricultural income support, the analysis of regional allocation of structural and investment aids is somehow more complicated because of the different characteristics of these payments. The structural and investment aids of farms are not annually paid to (all) farms. Furthermore, the duration of the aids varies a great deal and can also overlap two programme periods (2000–2006 and 2007–2013, for instance) as well. The interest supports of structural and investment aids makes the analysis even more challenging. In addition to support aids, structural and investment aids contain so-called interest supports which are meant to support the farmer in the matter of loan expenses. In this work, interest supports are included in the money flows of structural and investment support of farms.

Contrary to agricultural income support, the structural and investment support of farms are not ‘automatically’ annual paid support payments. Structural and investment aids have to be applied for the measures relating to certain aims defined in advance. In addition, these measures can include the applicant’s own funding. In this thesis, only the money flows of public sector, i.e. the actual (EU and national) support is taken into account when analysing the distribution of structural and investment aids to agriculture.

In this work, the regional allocation of structural and investment aid payments are analysed at Employment and Economic Development Centre level in the light of the full programming period 2000–2006. In addition, the allocation in 2005 is related to the municipal-level analysis of agricultural development made in this work. Furthermore, the allocation of structural and investment aids of farms is analysed in terms of economic size and main production line of farms, both in terms of total money flows, and per farm and per economic size.

#### *Rural development measures*

As with the structural and investment aids for farms, the spatial allocation of rural development measures are analysed at Employment and Economic Development Centre level. This is the smallest regional unit which can be used appropriately when analysing these measures as one group. The money flows of rural development measures are also related to the rural population in the regions because the rural development measures should be channelled to rural areas, emphasising particularly the core rural and sparsely populated rural areas (see e.g. Maa- ja metsätalousministeriö, 2008; Ministry of Agriculture and Forestry, 2008).



*Business aids* are the support payments which are allocated to individual enterprises for other than (primary) agricultural production. These types of support payments consist of investment aid, starting aid and enterprise development aid. With the data available in this thesis, the allocation of these subsidies can be analysed at municipal level. In the programming period 2000–2006, for getting business aid under the CAP and complementary national measures, usually there had to be a connection to a farm, i.e. primarily the diversified farms were eligible for business aid under agricultural policy. This has naturally an impact on the regional allocation of business aids as the allocation of support is based on the location of the farms. In the current programming period 2007–2013, there is no limit concerning a connection to a farm. Financial frameworks have been reserved both for diversified farms and for other enterprises.

The highest regional accuracy which can be used for analysing the allocation of rural development measures other than business aids, here expressed as *development projects*, is at Employment and Economic Development Centre level. The development projects are often allocated to more than one separate municipality. The support decision of each measure has been done by the former Economic and Development Centre, currently the Centre for Economic Development, Transport and the Environment and in the current programming period also by a local action group.<sup>25</sup> This also means that the money flows of development projects

can be clearly verified at Economic and Development Centre level (or current Centre for Economic Development, Transport and the Environment level).

In the case of rural development measures, the private sector share in total funding is notable. In this work, however, the focus is only on actual *support*, i.e. money flows from the public sector (EU, national and, in the case of rural development measures, also municipal funding).

#### 5.4.2 Classification of support payments

In this thesis, the CAP support payments and complementary national aid payments are classified in the following way:

1. Direct aids of agriculture
2. Less Favoured Area support (LFA support) and agri-environmental support
3. Structural and investments support of farms
4. Rural development measures
5. National agricultural aid (described already in Chapter 3.2.2).

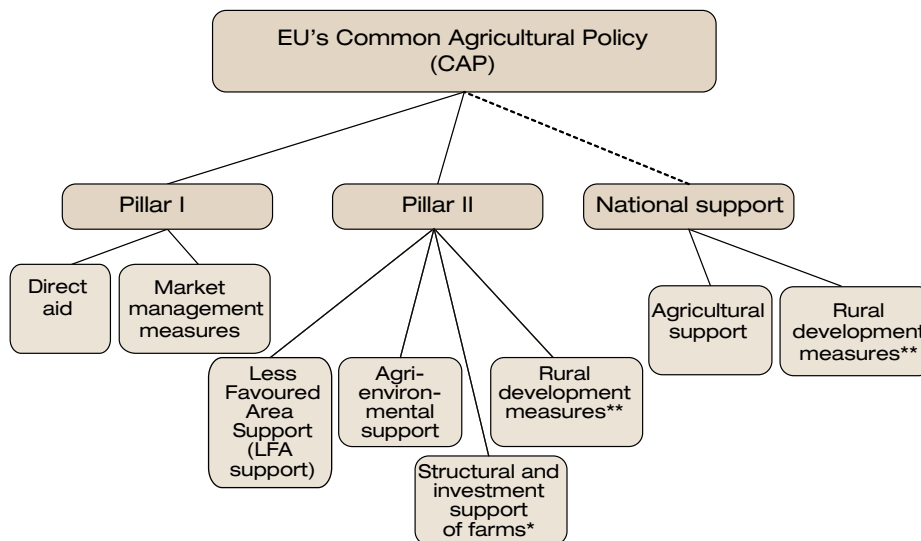
The classification of support payments is presented in Figure 5.4.

Direct aids of agriculture include support for arable crops and livestock and are paid on the basis of the arable area and the amount of livestock. Direct aids are an integral element of the common market organisations and they, contrary to the other payments, are funded in full from the EU budget.

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<sup>25</sup> The local action groups (LAG) are local-level area-based rural development associations characterised by specific features such as: bottom-up approach, partnership, innovation, multi-sectoral structure, networking, trans-national cooperation, decentralised management and financing. LAGs are

mainstreamed in Finnish rural development policy. In the programme period 2000–2006, there were 58 LAGs and in the current programme period there are 55 LAGs covering all Finnish rural areas. LAGs prepare, in a participatory process, development plans for their area for a programme period.



\* All structural and investment aids of farms irrespective of the money source (i.e. EU co-financed aids or totally nationally financed aids) are included here in this group of support.

\*\* In this thesis, the rural development measures are defined as the projects not directed to primary agriculture or forestry of the farms. Totally nationally funded rural development projects and business aids (i.e. rural development measures) are included in the rural development measures under the CAP Pillar II. These aids are nearly similar whether they are EU or nationally funded. In addition, nationally funded rural development measures complement the equivalent measures funded by the EU.

Figure 5.4 Classification of support payments in this thesis (Market management measures are excluded from the empirical analysis.)

Certain rural regions in the EU have been defined as Less Favoured Areas (LFAs). The purpose of Less Favoured Area support (later expressed as LFA support), is to ensure the continuation of farming in these regions and keep them populated. In Finland, LFA support is paid for the whole of the cultivated area (Niemi & Ahlstedt, 2008a, p. 51).

Agri-environmental support compensates the farmers for income losses resulting from the reduction in production and the increased costs as farmers give a commitment to undertake measures aimed at reducing environmental loading caused by agriculture. The most important goal of agri-environmental support is to produce in a way which causes less burden on the environment. Biodiversity of farming

environments and cultural landscapes must be preserved and conditions must be created for continuing the production in the long term (Niemi & Ahlstedt, 2008a, p. 51).

The aim of the structural and investment support of farms is to improve the competitiveness of agriculture and forestry by developing the profitability of the main production sectors, preventing the deterioration of the age structure of farmers by means of support for the structural development of family holdings, and promoting the diversification of agriculture and holdings (for further information: Maa- ja metsätalousministeriö, 2008; Ministry of Agriculture and Forestry, 2008).

In Finland, the EU funded and co-funded support payments of the CAP are supplemented by national aid, i.e. totally nationally financed support. A major part of this national aid is the so-called Pillar I type support, i.e. direct aid to farms on the basis of livestock production and arable area (see Table 10.1 in Chapter 10.1, see more about national aid: Chapter 3.2.2).

Rural development measures are not directed to primary agriculture or forestry of the farms. These supports are primarily aimed at keeping rural areas populated and advancing the diversification of economic activities. The measures used are the extension of economic activities outside agriculture, support for the setting up and development of enterprises; promoting tourism, basic services for industries and rural population, restoration and development of villages; preservation and promotion of rural heritage, and training and communication. These measures support especially the priority objectives of the EU regarding the creation of conditions for growth and improving employment (Niemi & Ahlstedt, 2007a, pp. 79–80).

*Market management measures: market price support and export subsidies<sup>26</sup>*

In this thesis, the allocation of market management measures is not analysed. Market price support (MPS) is an indicator developed by the OECD, used in the calculation of Producer and Consumer Subsidy Equivalents (PSE/CSE). According to the OECD (2010a, p. 92) MPS can be defined as

*“the annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, arising from policy measures that*

*create a gap between domestic market prices and border prices of a specific agricultural commodity measured at the farm gate level.”*

In calculating MPS, the OECD estimates the gap between domestic and world prices at each country’s border.

In the EU, the amount of MPS by countries and by regions can be calculated based on the total amount of MPS when the share of the country’s contribution in total production, value of production and the regional structure of amount of production in different agricultural products are known. The main idea behind MPS is that the decrease of the EU’s internal prices below a certain level is prevented by public intervention (and the prices of the import products are simultaneously raised by tariffs to the level of EU prices).

From the regional point of view, MPS money flows are allocated on the basis of the volume of production and on the basis of the production structure in each region. MPS can be calculated by multiplying the difference between domestic prices and world market prices to the volume of production. Being production-based, MPS favours intensive agricultural production. Roughly estimated, the annual share of MPS in total annual agricultural support is 20–25% on average in Finland.

Defining the amount of MPS is challenging because of the problems related to the definition of the ‘right’ level of the world market price. It has been stated, for instance, that actual world prices are not the appropriate benchmarks because they are distorted through production-enhancing policies, import barriers and export subsidies. Therefore, world prices which might prevail in the absence of all such policies should be used as the benchmarks. Because of these challenges, the absolute values of MPS *per se* might not be necessarily relevant.

<sup>26</sup> This paragraph is mainly grounded on an oral communication given by Professor Jyrki Niemi on the 5th of March 2010 (Niemi 2010). For further information about market price support: see e.g. OECD, 2010a, pp. 92–99.

On the other hand, MPS estimates are suitable for comparing the mutual importance of MPS between different countries and different products. If MPS were allocated (i.e. calculatory estimates) to the regions, this would not probably affect notably the regional distribution of total agricultural support. Also the direct budget based agricultural subsidies are emphasised in the regions with intensive agricultural production.

In addition, the export of the EU's agricultural products is advanced by export subsidies. Today, the importance of export subsidies is notably lower than the importance of MPS.

### **5.5 Confining regions in the analysis of agricultural and rural development**

In this thesis, what is 'rural' is understood on the basis of a territorial, descriptive definition. A critique towards the territorial based definition of rural is also presented. Woods (2005, pp. 6–7), for instance, identified three types of critique towards these territorial, descriptive definitions:

*“First, they are dichotomous, in that they set up rural areas in opposition to urban areas and recognize no in-between. Secondly, they are based on a very narrow set of indicators that reveal little about the social and economic processes that shape urban and rural localities. Thirdly, because rural areas are a residual category they are treated as homogenous with no acknowledgement of the diversity of rural areas.”*

However, the Finnish Rural Typology used in this work as a framework for defining the term 'rural' is a rather sophisticated descriptive classification method (see more: Malinen et al., 2006). Furthermore, a statistical analysis such as the analysis made in this thesis could have been impossible

to carry out—particularly because of data unavailability—if the territorial definition of rural were not used.

The regional level used in the analysis can have remarkable impacts on the results of regional development. In Finland, the importance of regional level used in the analysis is highlighted because the rural area in the country is heterogeneous even within the regions, for example within the provinces (NUTS 3 level). This is why it is often arguable to use a rather accurate regional level, e.g. municipal (LAU-2) level. The availability of the data often limits the regional accuracy. The rural areas defined by the OECD, for instance, are TL 3 regions (OECD, 1994; 2008) which are often similar with NUTS 3 regions. In the urban-rural typology created by Eurostat (b), NUTS 3 level regions are also used.

It is important to recognise in which kind of circumstances each region acts. In Finland, for instance, urban-adjacent rural municipalities are in many ways stronger under the influence by urban municipalities and regional centres than core rural municipalities, and in particular, sparsely populated rural municipalities. The self-sufficient rate of jobs is remarkably lower in urban-adjacent rural municipalities than in core rural and sparsely populated rural municipalities because of commuting from urban-adjacent municipalities to urban municipalities. At the end of 2004 according to the municipal division in force in 2006 (i.e. the municipal division used in the municipal-level empirical analysis), the self-sufficient rate of jobs was 91% in sparsely populated rural municipalities, 87% in core rural municipalities and 70% in urban-adjacent rural municipalities (Statistics Finland c). The sub-regional level (LAU-1 level in Finland) analysis can also be relevant because these regions are often functional commuting regions.

Generally in quantitative analysis, a rural area is defined on grounds of the geographical administrative borders of regions. While the GIS (Geographic Information Systems) methods and data have developed remarkably, using administrative regions is not always necessary. An example of the non-administrative definition of a rural area is the division into rural vs. densely populated areas in Finland. This classification divides Finnish regions into population centres with at least 500 residents (dense population), and population centres with less than 500 residents and sparsely populated regions (Statistics Finland c). When compared with this definition, even smaller units of regions have been used when classifying the regions or analysing the development of (rural) regions (see e.g. Pettersson, 2001; Ballas et al., 2006; see more about territorial definitions of rural areas e.g. Eurostat b; OECD, 1994; Saraceno, 1994; du Plessis et al., 2002; Shucksmith et al., 2005; Copus et al., 2008; OECD, 2008).

**In this thesis, rural areas are defined as rural municipalities (former NUTS 5 areas, present LAU-2 areas) according to the Finnish Rural Typology.** The typology is founded on a multi-variable analysis, using different parameters and variables concerning rural characteristics such as the degree of isolation and sparseness of population, rural employment structure, farm economies, and development problems (Breman et al., 2010, p. 373; for further information about the typology: Malinen et al., 2006). Hence, the Finnish Rural Typology is based on a range of factors and compared with many other descriptive definitions of the term 'rural', the methodology behind the definition of rural area(s) is more complex and multi-dimensional.<sup>27</sup> The municipalities of Brändö, Sottunga and Velkua were

excluded from the municipal-level analyses of agricultural and rural development. This is because of the low absolute volume of agriculture, which would lead to the lack and unreliability of data.

Finland has an extensive system of local self-government, in which the municipalities have the right of taxation, that is to say, the right to determine the rate of municipal income tax for individuals and enterprises. The Finnish welfare system has to a large extent been implemented through a fine-grained system of municipalities, as an alternative to giving the task to regional councils, or having a central point running decentralised offices. The choice of municipalities in the implementation process has in turn strengthened the societal role of the municipalities. The role of the municipality has become very crucial, especially in the periphery. This also means that it is relevant to analyse the regional development trends at municipal level in Finland.

In 2005 in the Finnish Rural Typology which is the last published typology, the 432 Finnish municipalities were categorised as follows: 58 urban municipalities (58% of total population in Finland in 2004), 89 urban-adjacent municipalities (16% of total population), 142 municipalities representing the core rural areas (15% of total population) and 143 municipalities in the sparsely populated rural areas (11% of total population). Most of the sparsely populated rural municipalities are located in eastern and northern Finland, as well as in some parts of central Finland and the south-west coast, where there are a lot of small archipelago municipalities. The majority of core rural municipalities are in southern and western Finland, while urban-adjacent rural areas are the most common in southern Finland (Figure 5.5, Malinen et al., 2006, p. 35). In this thesis, the municipal-level analysis of agricultural and rural development is based on the municipal division in force

<sup>27</sup> Territorial definition of the term 'rural' by the OECD (2008, pp. 35–36), for instance, is mainly based on population density.

in 2006. However, the additional Finnish Rural Typology level analysis uses the municipal division in force in 2010. While the number of municipalities was 431 in 2006, the equivalent number was 342 in 2010. The municipalities classified as urban municipalities in the Finnish Rural Typology are excluded from the analysis. This is because these municipalities are 'less rural' and the average importance of agriculture is marginal there. In addition, rural development measures are not—at least directly—meant to be targeted on urban regions.

In connection with municipal mergers, the typology is generally updated so that the type of rural area in which the new municipality is placed is the category to which the most population-rich of the former municipalities belonged. Municipal mergers weaken the regional accuracy of the typology because an individual municipality cannot belong to more

than one type of rural area. Furthermore, the structural change and mergers of municipalities make it more difficult to get uniform statistics and to deal with time series analysis.

In the municipal-level analysis of agricultural and rural development, the municipal division in force in 2006 is used. Because the municipal division of farm-level data is not perfectly coherent with the municipal division in force in 2006, approximately 5% of the farms are excluded from most of the analyses which utilise farm-level data. However, this has no notable impact on the results. For example, when using the data including all the farms, the production structure of the farms is nearly identical with the results based on the data used in this work. However, the results on the distribution of the farms between different types of rural municipalities are slightly different between these two data. In 2005, based

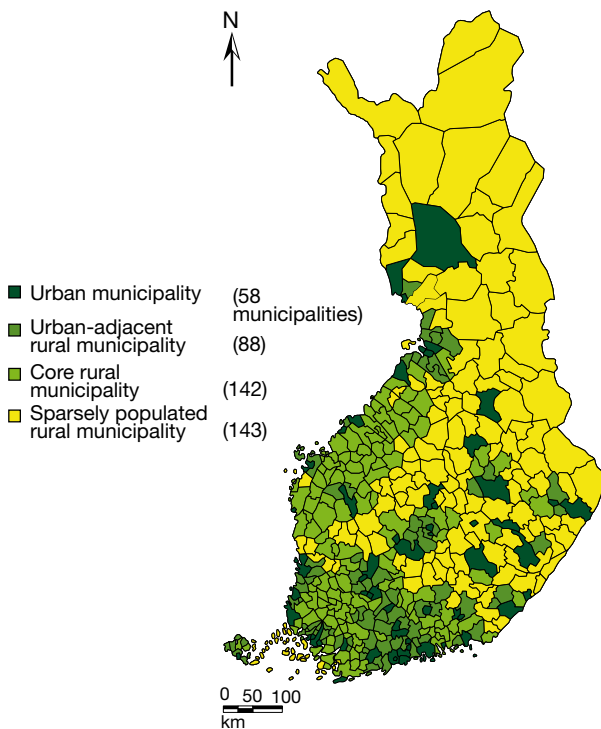


Figure 5.5 Finnish Rural Typology in 2005. Source: Malinen et al., 2006



on the total data, 52% of the farms were situated in core rural municipalities, 22% in sparsely populated rural municipalities, 17% in urban-adjacent rural municipalities and 9% in urban municipalities. Based on the data used primarily in this work, the equivalent shares were 47%, 28%, 19%, and 7%.

## Summary

The main theoretical concepts of this thesis are linked to the understanding and definition of the term 'rural' and rural development particularly within the context of rural development policy, and to different approaches to making operational and understanding regional development. Two main empirical themes of the work are the relationship between agricultural and rural development in Finland and territorial distribution of CAP and national complementary support in Finland. These are also the main operational tools of the work and are linked to the discussion of key theoretical concepts. Main theoretical and empirical conclusions concern the relationship between agricultural and rural development (in Finland) within the context of the CAP.

In this work, rural areas are defined as rural municipalities (former NUTS 5 areas, present LAU-2 areas) according to the Finnish Rural Typology. Hence, what is 'rural' is understood on the basis of territorial, descriptive definition. This approach is grounded on the assumption that a geographical distinction can be made between rural areas and urban areas on the basis of their socio-spatial characteristics.

In this work, agricultural and rural development is measured by aggregate, regional-level socioeconomic indicators. In the municipal-level analysis of agricultural and rural development, the indicators of jobs and income are used. In addition, development of population is included

in the municipal-level analysis of rural development. The linear regression model is employed to measure proportional agricultural and rural development at municipal level. The municipal-level development is analysed by annual development between 1995 and 2004. Based on the annual developments, the municipalities are ranked using the rank order numbers defined by the values of the slopes. Hence, different regional classifications of agricultural and rural development can be made. In addition, the Spearman rank order correlation coefficient is employed for analysing the relationship between the components of agricultural and rural development. The municipal-level analyses are supplemented by more updated Finnish Rural Typology level analyses.

The impacts of the CAP and national complementary support are analysed in terms of distribution of support money flows. As regards to the analysis of allocation of the CAP support and national complementary support, data on every single admitted support payment is available. In addition, farm-level data includes information about the sizes and production structures of farms. Based on the identification codes and the location coordinates of the farms, the separate data sets—i.e. the support data and other farm-level data—are managed to connect and also be presented on the maps. The data also includes other than farm-based support, i.e. the so-called rural development measures. The support payments are divided into different types of supports. The programming period 2000–2006 and particularly the year 2006 are explored. The money flows of farm-level support are related to the farm characteristics (especially the farm size and production line) and in the regional classifications of agricultural and rural development while the distribution of rural development measures is also briefly analysed.

## PART II: EMPIRICAL ANALYSIS

### 6 Characteristics and development of agriculture

This chapter starts the empirical analysis being made in this thesis. Here, focus is on the analysis of the relationship between farm characteristics and regional agricultural development.

#### 6.1 Characteristics of farms

Based on the farm-level data used in the empirical analysis of this work, approximately one half of the farms are situated in the core rural municipalities defined by the Finnish Rural Typology. In addition, the farms are larger than average in core rural municipalities (Table 6.1). For comparison, according to the Finnish Rural Typology, a bit over one third of the rural inhabitants live in core rural municipalities (see also Table 8.1 in Chapter 8).

#### *Location of farms*

The location of farms tells us not only about the spatial distribution of agriculture but also about the relationship between agriculture and rural development from a spatial point of view. Most of the farms are situated in southern and western Finland. Furthermore, the concentration of farms to fewer and fewer regions is continuing. In recent decades, the number of farms has decreased most in sparsely populated rural areas, i.e. especially in eastern and northern Finland. Sparsely populated eastern and northern Finland are the most seriously affected by structural change because, in these areas, agriculture can still be an important source of employment and the consequences of the changes are particularly severe.

Table 6.1 Distribution and volume of agriculture in 2005 within the Finnish Rural Typology (based on the farm-level data used in the empirical analysis of this work)

Type of municipality*	Share of all farms**, %	Economic size*** per farm, €	Arable area per farm, ha
Urban	6.6	25,950	32.9
Urban-adjacent rural	18.7	27,886	36.2
Core rural	47.1	31,743	34.6
Sparsely populated rural	27.6	27,611	27.0
<b>Total/mean</b>	<b>100</b>	<b>30,166</b>	<b>33.4</b>

\*According to the Finnish Rural Typology (Malinen et al., 2006) and the municipal division in force in 2006

\*\*The farms which received agricultural income support in 2006 are included in the data.

\*\*\*The term economic size is defined later in this chapter.

In this thesis, the farms were managed as to their place on the map based on the location coordinates of the farm centres. The map presentation clearly shows that a major part of the Finnish farms are located in southern and western Finland while a clearly smaller number of farms are located in sparsely populated areas of eastern and northern Finland (Figure 6.1). The result supports the general knowledge about the regional distribution of farms.

It is clear that the location of the farms affects the regional distribution of agricultural income and jobs in agriculture. The location map of the farms is an illustrative way to describe the relationship between agriculture and rural areas from a spatial point of view. In the thesis, the location coordinates of the farms are further utilised in the analysis of allocation of support payments. Most

of the CAP subsidies and complementary national aids are channelled to individual farms. In this way, the map relating to the location of farms gives a picture of the relationship between agricultural and rural development policy.

#### *Production line*

In this work, the production structures of agriculture are analysed in the light of the main production line of each farm. Naturally, the single farm can pursue more than one production line. Hence, a grain farm, for instance, means here that grain production is the main production line of the farm in question although other production lines might be pursued by the same farm as well.

The notable differences in the production lines between regions can be seen. When

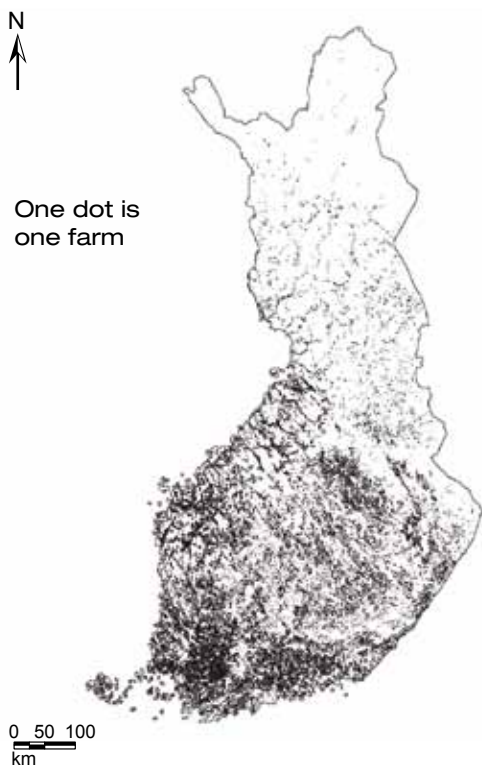


Figure 6.1 Location of active farms in Finland in 2005 (Earlier version of this map has been presented in Voutilainen et al., 2009, p. 59.)

examining the two most important main production lines in Finland, the share of crop farms is the highest in southern and western Finland but the share of dairy farms is the highest in eastern and northern Finland. At country level, crop production as a main activity is the most common production line. Since Finland joined the EU in 1995, the production structure of Finnish farms has changed considerably measured by the number of farms. In 1995–2010, the number of dairy farms fell by more than 21,000 farms, at a rate of 6.8% per year. Instead, the number of crop farms rose by almost 3,900 farms between 1995–2010. While the share of livestock farms was 52% and that of crop farms was

39% in 1995, in 2010 the shares were 28% for livestock farms and 66% for crop farms (Niemi & Ahlstedt, 2011a, pp. 16–17). Even between the years 2005 and 2010, a notable change in production structures can be seen (Figure 6.2).

As measured by the economic size and arable area of farms, the farms specialising in pig production are largest. Dairy farms are also clearly larger than average. On the other hand, the farms pursuing grain production or other crop production as their main activity are notably smaller than average, measured both by economic size and by arable area (Table 6.2).

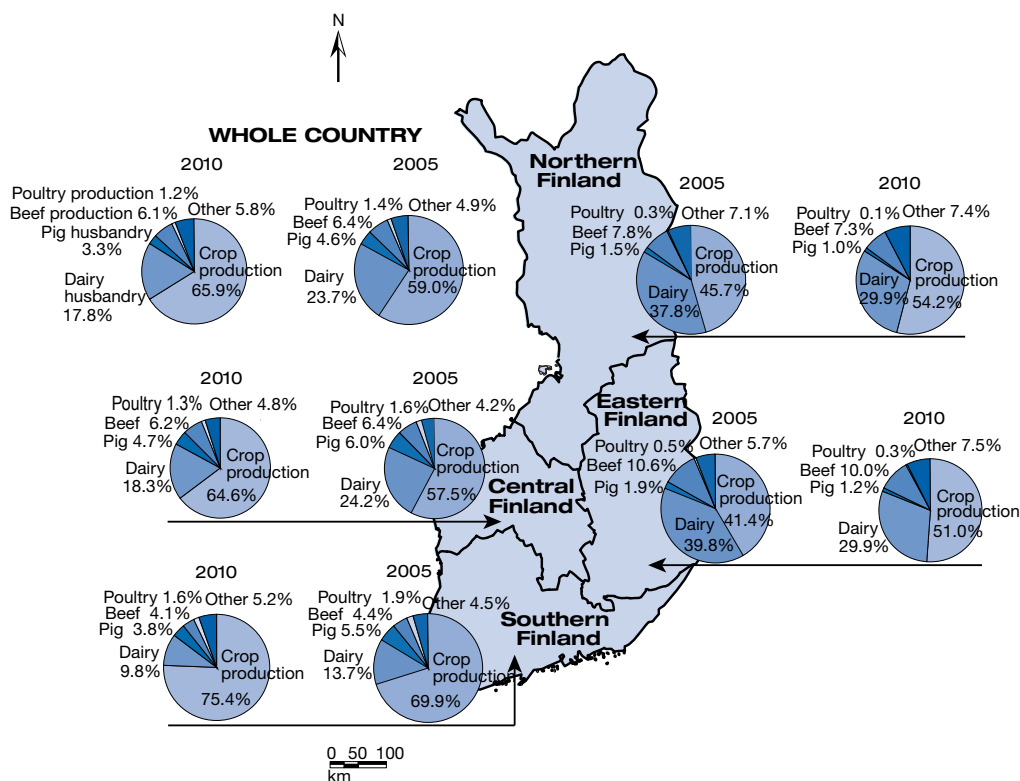


Figure 6.2 Distribution of farms receiving agricultural support according to production line in 2005 and in 2010. Source: Niemi & Ahlstedt, 2006a, p. 21; Niemi & Ahlstedt, 2011a, p. 17

Table 6.2 Distribution and volume of agriculture according to main production lines in 2005 (This table is based on the table presented in Voutilainen et al., 2009, p. 73.)

Main production line	Share of all farms, %	Economic size* per farm, €	Arable area per farm, ha
Grain production	41.2	14,201	31.4
Other crop production	17.5	23,563	23.9
Dairy husbandry	24.2	55,786	40.6
Other cattle husbandry	6.4	33,152	39.4
Pig husbandry	4.6	68,181	54.2
Poultry production	1.4	53,641	46.1
Other production lines	4.6	9,753	14.1
<b>Total/mean</b>	<b>100</b>	<b>29,962</b>	<b>33.3</b>

\*The term economic size is defined below.

### *Economic size*

The economic size of a farm illustrates well the volume of the economic activity in farms. The concept of Standard Gross Margin (SGM) is used to determine the economic size of farms, which is expressed in terms of European Size Units (ESU). The SGM of a crop or livestock item is defined as the value of output from one hectare or from one animal less the cost of variable inputs required to produce the output (European Commission d). Economic size takes the differences between production lines into account and is therefore a uniform measure for describing the size of economic size in farms (MTT a).

Measured by economic size, the number of the farms in the lowest size classes is high while the number of the farms in highest size classes is rather low (Table 6.3). The average size of the farms has continuously grown. From 1995 to 2007 in Finland, for instance, the average economic size of farms rose by over 50% (Eurostat a). This also means that the share of the farms in lowest size classes has decreased. During the same period, the average size of farms measured by hectares rose proportionally even more, from 21.7 hectares to 34.4 hectares (Niemi & Ahlstedt, 2011a, p. 87).

## **6.2 Socioeconomic role of agriculture in Finnish rural areas**

The relative importance of agriculture is clearly higher in the light of employment rather than in the light of value added. In 2007, 3% of all jobs in Finland were in agriculture. The equivalent share of rural areas defined by the Finnish Rural Typology was 9%.<sup>28</sup> However, the socioeconomic role of agriculture varies a great deal between the types of rural areas. In urban-adjacent rural municipalities, agriculture employs much fewer people than in the other types of rural municipalities. The significance of agriculture as an employer continues to diminish in all the rural types (Table 6.4).

The socioeconomic role of agriculture varies also in terms of value added. In 2007, the share of agriculture in total value added was under 1% in whole Finland.<sup>29</sup> When considering the rural municipalities defined by the Finnish Rural Typology, the share was highest in core rural municipalities (3.8%) and lowest in urban-

<sup>28</sup> Based on the municipal division in force in 2010

<sup>29</sup> Value added does not include the production subsidies of agriculture.

Table 6.3 Distribution of agriculture in Finland in 2005 according to economic size of farms

Economic size of farm*	Share of farms in all farms, %	Arable area, ha per farm
0–4	35.7	11.5
5	10.8	24.6
6	13.1	32.4
7	13.5	39.7
8	11.9	48.2
9	11.9	66.5
10	2.1	95.6
11	1.0	129.3
<b>Total/mean</b>	<b>100</b>	<b>33.3</b>

\*Standard Gross Margin (SGM) of a crop or livestock item is defined as the value of output from one hectare or from one animal less the cost of variable inputs required to produce the output (European Commission d). Classes of economic size in 2005 according to the bookkeeping system of MTT (MTT a) and following the farm typology of the EU:

Standard Gross Margin (SGM) is

0–4) below €9,600

5) €9,600–€14,399

6) €14,400–€23,999

7) €24,000–€38,399

8) €38,400–€57,599

9) €57,600–€115,199

10) €115,200–€172,799

11) above €172,799.

Table 6.4 Socioeconomic roles of agriculture and farms in different rural types of Finland

Indicator	Year/Years	Urban-adjacent rural municipalities*	Core rural municipalities*	Sparsely populated rural municipalities*
Share of agriculture in all jobs, %	1995	8.7	18.6	19.5
	2004	5.1	12.4	12.9
	2007	4.6	11.4	12.0
Mean annual development in the number of agricultural jobs, %	1995–2007	-3.4	-3.3	-4.2
Mean annual development in the number of farms, %	1995–2009	-3.3	-3.2	-3.6
Share of farm income in total income of farm households, %, according to annual nominal prices	2008	36.2	41.1	48.4
Mean annual development in aggregate farm income in the region, %, at the annual nominal prices	2000–2008	0.8	1.2	2.1
Value added** in agriculture, share of all line of businesses, %, at the annual nominal prices	1995	4.4	10.4	6.6
	2004	2.0	5.5	4.4
	2007	1.5	3.8	3.2

\*According to the Finnish Rural Typology (Malinen et al., 2006) and the municipal division in force in 2010

\*\*Value added is the difference between the total sales revenue of an industry and the total cost of components, materials, and services purchased from other firms within a given reporting period (usually one year). This is the industry's contribution to the gross domestic product. Value added does not include the production subsidies of agriculture.



adjacent rural municipalities (1.5%) (Table 6.4). The share of agriculture in total value added has clearly decreased because the increase in production in other economic activities has been faster.

A notable part of total income of farms comes from outside the farm. In 2008 in Finland at country level, the average share of farm income in the total income of farms was 41%.<sup>30</sup> The share of farm income in the total income of farms is highest in sparsely populated rural municipalities and lowest in urban-adjacent rural municipalities. In 2000–2008, the amount of farm income in aggregate level increased most in sparsely populated rural areas. However, the number of agricultural jobs decreased most strongly also in sparsely populated rural areas in 1995–2007 (Table 6.4). Therefore, it can be said that the development trends between income and jobs are not necessarily consistent within the regions.

### **6.3 Agricultural development at municipal level measured by chosen indicators**

Next, agricultural development is explored at municipal level. The analysis rests on the material and methodology described in Chapters 5.2 and 5.3.

When taking a closer look at the separate indicators of agricultural development,

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<sup>30</sup> It has to be noted that in the agricultural income and tax statistics the business activities connected to agriculture under the Act on the Taxation of Farm Income, i.e. other business activities of diversified farms, as well as farm forestry income, are also included in the farm income. About two-thirds of the other business activities of diversified farms take place under the Act on the Taxation of Farm Income and one third under the Act on the Taxation of Business Income. Business activities under the Act on the Taxation of Business Income are not included in the farm income.

i.e. jobs in agriculture and agricultural income, regional developments of these indicators clearly differ from each other.<sup>31</sup> The development of agricultural jobs has been the weakest especially in many regions of eastern Finland and the strongest particularly along the southern coast and in western Finland (Figure 6.3). In 1995–2004, the mean annual change in the number of jobs in agriculture was positive only in three municipalities. The mean annual change of the number of agricultural jobs at municipal level amongst the rural municipalities (i.e. the municipalities which are included in the analysis) was –4.6%.

The development of agricultural income has also been stronger in many areas along the southern and western coasts, but also in parts of eastern and northern Finland. The development in terms of agricultural income has been the weakest in southern Finland except for the coastal areas (Figure 6.3). During 1995–2004, the mean annual change of agricultural income in the rural municipalities was positive in 120 municipalities and negative in 250 municipalities. The mean annual change of agricultural income amongst the rural municipalities was 1.3%.

The areas where both the development of agricultural income and agricultural jobs have been relatively strong can be found especially along the southern and western coasts and in parts of northern Finland, while the areas described by relatively weak agricultural development measured by both indicators are located particularly in eastern Finland and in parts of central Finland (Figure 6.3).

In this thesis, agricultural development consists of two components: agricultural

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<sup>31</sup> However, in a certain point in time, i.e. in a static situation, correlation exists. In aggregate level, a higher amount of income usually also means a higher number of jobs (and vice versa).

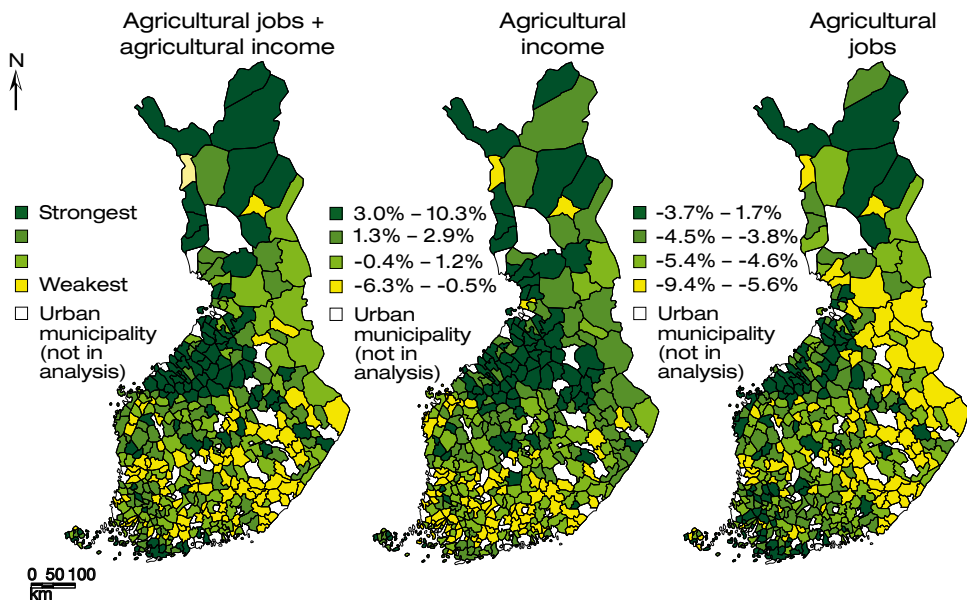


Figure 6.3 Mean annual proportional agricultural development (jobs in agriculture and agricultural income) at municipal level according to quartiles: total development and development of each indicator, period 1995–2004 (Earlier versions of these maps have been presented in Voutilainen et al., 2009, pp. 40–41.)

income and jobs in agriculture. Agricultural income refers to, at least to some amount, the productivity of agriculture. Jobs in agriculture, in turn, refer to development in agriculture in terms of amount of human labour. In principle, agricultural (or other) production can be strengthened by using more labour, by using more capital (for instance machines) or by using more of both.

In the municipal-level analysis made in this work, in 1995–2004, both the development of jobs in agriculture and the development of agricultural income accounted for around 60% of total agricultural development (jobs in agriculture and agricultural income). However, the correlation between these two components is low (Table 6.5). Consequently, agricultural development is clearly twofold. Relatively strong development can be grounded either on

Table 6.5 Spearman rank order correlation coefficients between components of agricultural development in rural municipalities of Finland\*, period 1995–2004

	Agricultural income	Jobs in agriculture	Agricultural development (jobs in agriculture and agricultural income)
Jobs in agriculture	0.23		0.78
Agricultural income		0.23	0.78

\*According to the Finnish Rural Typology (Malinen et al., 2006) and the municipal division in force in 2010

agricultural jobs or agricultural income, but on average, strong development is based only on either one of these components. The result supports the fact that development in jobs is not necessarily similar with other production indicators, such as gross domestic product, value added or aggregate income (see more about this argument in Chapter 5.3.1).

#### 6.4 Relationship between municipal-level agricultural development and characteristics of farms

Next, municipal development trends in agriculture (combined development of agricultural income and jobs in agriculture) are divided into three groups with the same number of municipalities in each group. These groups of regions, in turn, are related to regional characteristics of agriculture and farms.

##### *Agricultural development and economic size of farms*

Measured by economic size, the average size of a farm is clearly the largest in the group of regions with strongest agricultural development and clearly the lowest in the group of regions with weakest agricultural development (Table 6.6). The result is coherent with the structural change of

agriculture in Finland. The size of farms has continuously grown. The smallest farms have often been the losers in this development and the share of the smallest farms has decreased. Also, the arable area per farm is the largest in the regions with strongest agricultural development and lowest in the regions with weakest agricultural development, although the differences are not as large as in the case of economic size (Table 6.6).

##### *Agricultural development and production structure of farms*

When agricultural development is divided into three groups of the same size, i.e. the same number of municipalities in each group, the clear differences between the main production lines can be noticed. In the regions with strongest agricultural development, the total share of grain farms and other crop production farms (48%) is notably lower than in the regions with median agricultural development (61%) and weakest agricultural development (63%). Instead, the shares of dairy farms are in the equivalent order 34%, 21% and 21% (Table 6.7). The result supports the argument—based on the empirical analysis made in this work—that grain farming is related to the regions with median or weaker agricultural development. Instead, dairy production as a main production line is more common in the municipalities

Table 6.6 Volume of agriculture in 2005 according to the tri-partition of municipal agricultural development (period 1995–2004, including development of jobs in agriculture and agricultural income) (Earlier version of the table has been presented in Voutilainen et al., 2009, p. 61.)

Class of agricultural development*	Number of farms, share of all farms (%)	Economic size per farm, €	Arable area per farm, ha
Strongest	22	35,560	34.1
Median	53	29,166	32.7
Weakest	25	24,580	31.1
<b>Total/mean</b>	<b>100</b>	<b>30,419</b>	<b>33.3</b>

\*Based on the municipal-level analysis made in the thesis: see Chapters 5.3 and 6.3

Table 6.7 Main production lines of farms in 2005 according to the tri-partition of municipal agricultural development (period 1995–2004, including development of jobs in agriculture and agricultural income) (This table is based on the table presented in Voutilainen et al., 2009, p. 61.)

Class of agricultural development*	Grain, %	Other crop, %	Dairy, %	Other cattle, %	Pig, %	Poultry, %	Other production lines, %	Total, %
Strongest	29	19	34	8	4	1	5	100
Median	44	17	21	6	5	2	4	100
Weakest	46	17	21	6	4	1	5	100
<b>Mean</b>	<b>41</b>	<b>18</b>	<b>24</b>	<b>7</b>	<b>5</b>	<b>1</b>	<b>5</b>	<b>100</b>

\*Based on the municipal-level analysis made in this thesis: see Chapters 5.3 and 6.3

where agricultural development has been stronger than median.

Over time, grain farming and other crop production as the main production line of farms have become more common while the share of dairy farms has decreased. In this way, the result related to the connections between the main production line and agricultural development might appear to be unexpected. The result can be explained by at least two factors. First, the strongest structural change of agriculture has taken place already before 1995 which is the starting point of the empirical analysis in this thesis. This also means that the farms which have survived are averagely the most vital ones. Secondly, compared with dairy farms, the share of income from outside agriculture in total income of farm households is higher among the farms pursuing grain production and other crop production rather than other production as their main production line.

#### *Agricultural development and share of diversified farms*

The diversified farms are the farms which pursue other economic activities beside agriculture and farm forestry. At country level in Finland, the share of diversified farms differs clearly from each other according to the main production line of

farms and in terms of farm size measured by arable area. The share of diversified farms is remarkably lower among the dairy farms (approximately one fifth of the farms) than among the grain farms (over one third of the farms). Additionally, the larger the arable area of farms, the higher the share of diversified farms (Voutilainen, 2007, p. 41).

On the basis of the description above, the share of diversified farms in urban-adjacent rural municipalities (dominated by grain farms) differs perhaps surprisingly little from the equivalent shares of other rural types (Table 6.8). The small difference compared with other rural types can be partly explained by the fact that the possibilities to work outside the farms are the best in urban-adjacent rural municipalities, and this in turn can decrease the necessity or willingness of diversifying the farming activity.

On average, the share of diversified farms is a bit lower in the group of municipalities with strongest agricultural development than in the municipalities with weakest agricultural development (Table 6.9). The difference is not notable. In the regions with strongest agricultural development the share of the farms specialised in grain farming is notably lower and the share of dairy farms is notably higher than

Table 6.8 Share of diversified farms in 2005 within Finnish Rural Typology (This table is based on the table presented in Voutilainen et al., 2009, p. 62.)

Type of municipality*	Share of diversified farms in all farms, %
Urban-adjacent	31
Core rural	27
Sparsely populated	30
<b>Mean</b>	<b>29</b>

\*According to the Finnish Rural Typology (Malinen et al., 2006) and the municipal division in force in 2010

Table 6.9 Share of diversified farms in border classes of the tri-partition of agricultural development (period 1995–2004, including development of jobs in agriculture and agricultural income) (This table is based on the table presented in Voutilainen et al., 2009, p. 62.)

Class of agricultural development*	Diversified farms, share of all farms in region, %
Weakest agricultural development	29.9
Strongest agricultural development	27.6
<b>Mean, whole Finland</b>	<b>29.0</b>

\*Based on the municipal-level analysis made in this thesis: see chapters 5.3 and 6.3

in the regions with weakest agricultural development. Additionally, the farms are larger than average—measured both by arable area and especially by economic size in the regions with strongest agricultural development. Because the production structure affects in a way decreasingly and farm size affects increasingly the share of diversified farms (and in the opposite way in the regions with weakest agricultural development), the differences between the shares of diversified farms are not notable.

#### *Agricultural development and profitability of farms*

The data of profitability ratio stems from the Finnish bookkeeping data of farms maintained by MTT Economic Research (MTT c). According to MTT (b),

*“the profitability ratio is calculated by dividing Family Farm Income (FFI) by the sum of costs for family factors, i.e. the wage*

*claim and the interest claim of agriculture (opportunity costs of family labour and equity). When the profitability ratio is 1.0 all production costs including costs of family factors (opportunity costs) have been covered and the entrepreneur’s profit is zero. As a relative concept profitability ratio is well suited for comparisons between different years as well as farms representing different size classes and production sectors.”*

The time period used here is 1998–2004. The year 1998 is the first year in the current information system of bookkeeping data and the end point of the municipal-level analysis of agricultural development is 2004. Agricultural development is now divided into three groups of the same size (measured by the number of municipalities in each group) and the group of median agricultural development is excluded from the analysis. Based on the results of the bookkeeping system, the mean profitability ratio per farm has

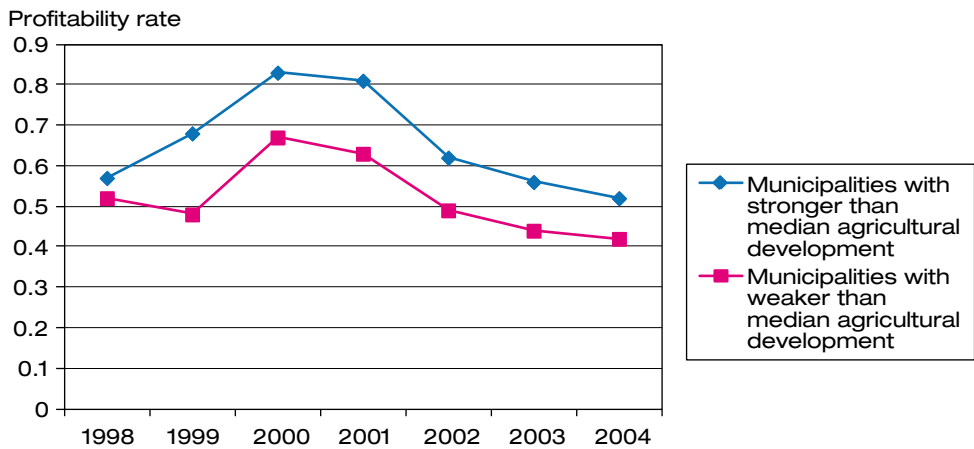


Figure 6.4 Development of profitability ratio in municipalities with stronger than median agricultural development and in municipalities with weaker than median agricultural development according to tri-partition of agricultural development, period 1998–2004 (MTT c) (Based on the municipal-level analysis made in this work: see Chapters 5.3 and 6.3. This figure is based on the figure presented in Voutilainen et al., 2009, p. 63.)

usually been clearly higher in the group of municipalities with stronger than median agricultural development than in the group of municipalities with weaker than median agricultural development (Figure 6.4). In this way, the results relating to profitability are comparable with the results of municipal-level agricultural development in this work.

However, as can be seen in Figure 6.4, the profitability ratio in both groups of regions has been remarkable below 1.0 every year, i.e. Family Farm Income has not covered the costs of family factors. This is one argument why agricultural support is a crucially important source of income for Finnish farms.

## Summary

The characteristics and socioeconomic role of agriculture and farms vary notably between Finnish regions in terms of the role of agriculture as a source of employment,

income, value of production, production structure of agriculture and size of farms. In Finland, nearly a half of the farms are situated in core rural municipalities. In addition, compared with average, the farms are larger in core rural municipalities. In urban-adjacent rural areas, agriculture employs much fewer people than in the other types of rural areas. The economic significance of agriculture continues to diminish in all the rural types.

Based on the municipal-level analysis done in this thesis, the annual development of agricultural jobs in 1995–2004 has been the weakest especially in many regions of eastern Finland and the strongest particularly along the southern coast and in western Finland. In 1995–2004, the mean annual change in the number of jobs was positive only in three municipalities. The development of agricultural income has also been stronger in many areas along the southern and western coasts, but also in parts of eastern and northern Finland. The development in terms of agricultural



income has been the weakest in southern Finland except for the coastal areas. The areas where both the development of agricultural income and agricultural jobs have been relatively strong can be found especially along the southern and western coasts and in parts of northern Finland, while the areas described by relatively weak agricultural development measured by both indicators are located particularly in eastern Finland and in parts of central Finland.

However, the municipal-level analysis showed that agricultural development

and its separate components—jobs and income—varied a great deal between municipalities in 1995–2004. Generally, agricultural development is clearly twofold. Relatively strong development can be grounded either on jobs in agriculture or agricultural income but, on average, strong development is grounded on only either one of these components. The differences between the developments may be explained by regional differences in production structures, structural changes in agriculture taken place over decades and by different socioeconomic circumstances of each region.

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## 7 Role of support within agricultural context

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This chapter analyses distribution of agricultural support within the context of agriculture. Based on the classification of agricultural support payments described in Chapter 5.4.2, the distribution of agricultural income support (here direct aids of agriculture, agri-environmental support, LFA support and complementary national aid) and structural and investment support of farms are analysed separately.

### 7.1 Agricultural income support

The regional differences in the production line structures affect the amount of support due to each production line having its own support system and due to differences in the volumes of production between production lines. Although the number of grain farms is notably bigger than that of dairy farms, grain farms get clearly less support in total. The gap is even bigger when analysing the allocated support per

farm. On the other hand, the support per economic size of farm is clearly bigger in grain farms than in dairy farms (Table 7.1).

When support is proportioned to arable area, support is clearly the lowest on grain farms and on other crop production farms (Table 7.1). This is naturally because, compared with the farms pursuing grain or other crop production as their main production line, the importance of grain and other crop production is lower among other farms and therefore larger part of support is not paid on the basis of arable area. Many production lines are often pursued in the same farm and, hence, the amount of farm support is the sum of support payments in each production line.

When the allocation of agricultural income is analysed in terms of different types of support between different production lines (see the description about the types of support in Chapter 5.4.2), the clear differences can be noticed as well. The role

Table 7.1 Distribution of agricultural income support (direct aid, LFA support, agri-environmental support and complementary national aid) in 2006 according to main production line of farm (This table is based on the table presented in Voutilainen et al., 2009, p. 73.)

Main production line*	Share of all farms, %	Share of all support, %**	Support per farm, €**	Support per economic size, €**	Support per arable hectare, €**
Grain production	41.2	27.5	16,735	1.18	534
Other crop production	17.5	10.2	14,597	0.62	609
Dairy husbandry	24.2	38.5	39,863	0.71	983
Other cattle husbandry	6.4	9.8	37,997	1.15	965
Pig husbandry	4.6	9.3	50,752	0.74	936
Poultry production	1.4	2.8	49,463	0.92	1,073
Other production lines	4.6	4.6	10,376	1.06	735
<b>Total/mean</b>	<b>100</b>	<b>100</b>	<b>25,068</b>	<b>0.84</b>	<b>753</b>

\*Main production line in 2005

\*\*Includes the farms which have received agricultural income support in 2006

of national aid is notably higher among livestock farms than among grain farms and other crop production farms. A major part of national aid is the CAP Pillar I type support which is paid on the basis of arable area and volume of livestock (Table 7.2).

Larger holdings get more support because the support is mainly connected to the

volume of agriculture (arable area and production). In 2006, the largest 15% of farms received over 40% of total support. However, the smaller—measured by economic size—the farm, the bigger is support per Standard Gross Margin (i.e. economic size). When the support money flows are proportioned to arable area of a farm, the farms with the lowest economic

Table 7.2 Distribution of different types of agricultural income support\* in 2006 according to main production line of farm (Earlier version of this table has been presented in Voutilainen et al., 2009, p. 74.)

Main production line*	Pillar I**, %	Pillar II: LFA support, %	Pillar II: agri-environmental support, %	Pillar I and Pillar II in total***, %	National aid, %	Total support, %
Grain	38	34	22	95	5	100
Other crop	35	31	24	90	10	100
Dairy	27	20	14	61	39	100
Other cattle	28	20	17	64	36	100
Pig	22	21	14	57	43	100
Poultry	20	17	13	50	50	100
Other production lines	27	25	24	75	25	100
<b>Mean</b>	<b>30</b>	<b>25</b>	<b>18</b>	<b>73</b>	<b>27</b>	<b>100</b>

\*Main production line in 2005

\*\*Does not include market management measures

\*\*\*Here, Pillar II includes only agri-environmental support and LFA support.

size get least support and the farms with the highest economic size get the most support (Table 7.3). This is because the grain farms and other crop farms—which get their support mainly based on the arable area—are on average clearly smaller than the farms specialised in other production lines. Hence, as presented already earlier, the grain farms and other crop farms are emphasised in the lowest economic size classes while the farms specialised in other production lines are emphasised more in the biggest size classes.

When analysing the allocation of support in terms of different size classes and types of support, clear differences can be noticed again. The importance of national agricultural support is the lowest for the smallest farms (measured by economic size) while the importance of national

aid is the highest for the biggest farms (Table 7.4). This can mainly be explained by the differences of farm sizes between different production lines. Grain farms and other crop production farms—which are smaller than average—are concentrated in southern and western Finland. Dairy farms—which are larger than average—are concentrated in eastern and northern parts of Finland. Because national aid is concentrated more on farms pursuing livestock production, the differences regarding the proportional weights of different types of support are clear between the farms of different sizes. The bigger the farm (measured by economic size), the more important is the proportional role of national aid. On the other hand, the bigger the farm, the less important are the relative roles of other types of support than national aid. A particularly strong decrease

Table 7.3 Volume of agriculture and distribution of agricultural income support in 2006 in terms of Economic Size Unit (ESU) of farm (This table is based on the table presented in Voutilainen et al., 2009, p. 75.)

Economic Size Unit (ESU) of farm*	Share of all farms, %	Arable area per farm, ha	Share of total support**, %	Support per economic size, €**	Support per arable hectare, €**
0–4	35.7	11.5	8.8	1.26	536
5	10.8	24.6	5.9	1.16	559
6	13.1	32.4	10.3	1.05	609
7	13.5	39.7	15.0	0.90	702
8	11.9	48.2	18.5	0.82	807
9	11.9	66.5	28.6	0.77	904
10	2.1	95.6	7.7	0.68	976
11	1.0	129.3	5.1	0.51	1,038
<b>Total/mean</b>	<b>100</b>	<b>33.3</b>	<b>100</b>	<b>0.84</b>	<b>753</b>

\*Standard Gross Margin (SGM) of a crop or livestock item is defined as the value of output from one hectare or from one animal less the cost of variable inputs required to produce the output (European Commission d). Classes of economic size in 2005 according to the bookkeeping system of MTT (MTT a) and following the farm typology of the EU:

Standard Gross Margin (SGM) is

- 0–4) below €9,600
- 5) €9,600–€14,399
- 6) €14,400–€23,999
- 7) €24,000–€38,399
- 8) €38,400–€57,599
- 9) €57,600–€115,199
- 10) €115,200–€172,799
- 11) above €172,799.

\*\*Includes the farms which have received agricultural income support in 2006

Table 7.4 Distribution of different types of agricultural income support payments in 2006 according to Economic Size Unit (ESU) of farm (This table is based on the table presented in Voutilainen et al., 2009, p. 76.)

Economic Size Unit (ESU) of farm*	Pillar I**, %	Pillar II: LFA support, %	Pillar II: agri-environmental support, %	Pillar I and Pillar II in total***, %	National aid, %	Total support, %
0–4	35	35	22	92	8	100
5	35	34	23	91	9	100
6	34	31	21	86	14	100
7	32	27	19	78	22	100
8	30	24	17	70	30	100
9	28	21	16	65	35	100
10	27	20	15	61	39	100
11	25	18	15	58	42	100
<b>Mean</b>	<b>30</b>	<b>25</b>	<b>18</b>	<b>73</b>	<b>27</b>	<b>100</b>

\*Standard Gross Margin (SGM) of a crop or livestock item is defined as the value of output from one hectare or from one animal less the cost of variable inputs required to produce the output (European Commission d). Classes of economic size in 2005 according to the bookkeeping system of MTT (MTT a) and following the farm typology of the EU:

Standard Gross Margin (SGM) is

0–4) below €9,600

5) €9,600–€14,399

6) €14,400–€23,999

7) €24,000–€38,399

8) €38,400–€57,599

9) €57,600–€115,199

10) €115,200–€172,799

11) above €172,799.

\*\*Does not include market management measures

\*\*\*Here, Pillar II includes only agri-environmental support and LFA support.

connected to the increase of farm size can be seen in the proportional importance of LFA support. In other words, compared with other farms, the relative importance of LFA support is remarkably higher among the smallest farms (Table 7.4).

Compared with other municipalities, those municipalities where the development of agriculture (based on the municipal-level analysis made in this work, see Chapters 5.3 and 6.3) has been the strongest get most agricultural income support per farm

Table 7.5 Distribution of agricultural income support in 2006 according to the tri-partition of municipal agricultural development

Class of agricultural development*	Support, € per farm**	Support, € per economic size**
Strongest	29,409	0.81
Median	24,905	0.84
Weakest	21,711	0.86
<b>Total/mean</b>	<b>25,334</b>	<b>0.83</b>

\*Based on the municipal-level analysis made in this thesis: see Chapters 5.3 and 6.3

\*\*Includes the farms which have received agricultural income support in 2006

but least support per economic size. The result is opposite to that of municipalities where agricultural development has been the weakest (Table 7.5). The result is logical in a way that a farm size is bigger than average in the municipalities with stronger agricultural development which, in turn, means that support per farm, is higher. On the other hand, for the farms with the smallest size, whose share is higher in the municipalities with weaker agricultural development, the relative importance of support measured by support per economic size is higher.

## 7.2 Structural and investment support of farms

The largest farms, in the light of economic size, get more structural and investment aid both per farm and per economic size (Table 7.6). Consequently, this result

can indicate that larger farms do more structural reforms and invest more than smaller farms. Furthermore, in the regions with stronger agricultural development—according to the municipal-level analysis made in this thesis (see Chapters 5.3 and 6.3)—the support per farm and per economic size is higher in the areas with stronger agricultural development (Table 7.7).

In the light of main production lines, clearly the highest structural and investment support flows per farm are allocated to poultry production farms and the second highest support flows per farm are allocated to dairy husbandry farms. Compared with these production lines, the structural and investment support payments per farm are remarkably low among the farms specialised in crop production and, especially, in grain production. When studying the total

Table 7.6 Structural and investment support of farms in 2005 according to Economic Size Unit (ESU) of farm (This table is based on the table presented in Voutilainen et al., 2009, p. 79.)

Economic Size Unit (ESU) of farm*	Share of all farms, %**	Share of total support, %**	Support, € per farm**	Support, € per economic size **
0–4	35.7	2.3	185	0.04
5	10.8	2.7	717	0.06
6	13.1	5.7	1,264	0.07
7	13.5	10.1	2,184	0.07
8	11.9	17.7	4,310	0.09
9	11.9	39.6	9,665	0.12
10	2.1	12.0	16,854	0.12
11	1.0	9.9	29,989	0.11
<b>Total/mean</b>	<b>100</b>	<b>100</b>	<b>2,906</b>	<b>0.10</b>

\*Standard Gross Margin (SGM) of a crop or livestock item is defined as the value of output from one hectare or from one animal less the cost of variable inputs required to produce the output (European Commission d). Classes of economic size in 2005 according to the bookkeeping system of MTT (MTT a) and following the farm typology of the EU: Standard Gross Margin (SGM) is

- 0–4) below €9,600
- 5) €9,600–€14,399
- 6) €14,400–€23,999
- 7) €24,000–€38,399
- 8) €38,400–€57,599
- 9) €57,600–€115,199
- 10) €115,200–€172,799
- 11) above €172,799.

\*\*Includes the farms which have received agricultural income support in 2006

Table 7.7 Distribution of structural and investment aids of farms in 2005 according to the tri-partition of municipal agricultural development (in 2000–2006 in brackets) (This table is based on the table presented in Voutilainen et al., 2009, p. 77.)

Class of agricultural development*	Share of total support in 2005 (2000–2006), %	Support, € per farm**	Support, € per economic size **
Strongest	25 (31)	4,665	0.13
Median	53 (54)	3,293	0.11
Weakest	22 (15)	2,260	0.09
<b>Total/mean</b>	<b>100</b>	<b>3,411</b>	<b>0.11</b>

\*Based on the municipal-level analysis made in this thesis: see Chapters 5.3 and 6.3

\*\*Includes the farms which have received agricultural income support in 2006

Table 7.8 Structural and investment support of farms in 2005 according to main production lines of farms (This table is based on the table presented in Voutilainen et al., 2009, p. 79.)

Main production line*	Share of all farms, %	Share of total support, %	Support, € per farm**	Support, € per economic size **
Grain production	41.2	16.3	487	0.03
Other crop production	17.5	10.2	912	0.04
Dairy husbandry	24.2	48.0	4,692	0.08
Other cattle husbandry	6.4	10.6	3,984	0.12
Pig husbandry	4.6	8.9	3,065	0.04
Poultry production	1.4	5.0	6,609	0.12
Other production lines	4.6	1.0	536	0.05
<b>Total/mean</b>	<b>100</b>	<b>100</b>	<b>2,906</b>	<b>0.10</b>

\*Main production line in 2005

\*\*Includes the farms which have received agricultural income support in 2006

money flows of support, the dairy farms get nearly one half of the total structural and investment support. The amount of structural and investment support of grain and other crop production farms in total is approximately one half of that paid to dairy husbandry farms (Table 7.8).

## Summary

Regional differences in production line structures affect the amount of support due to each production line having its own support system and due to differences in the volumes of production between production lines. When the allocation of agricultural support is analysed in terms

of different types of support between different production lines and economic sizes of farms, clear differences can be noticed as well. Furthermore, larger holdings get more support in total because the support is mainly connected to the volume of agriculture (arable area and production). The largest 15% of farms receives over 40% of total agricultural income support. However, the smaller the farm—measured by economic size—the bigger is agricultural support per economic size. On the other hand, the larger farms and the regions with strongest agricultural development—where the average farm size is bigger than average—get more structural and investment support per farm and also proportioned to the economic size of farm.



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## 8 Rural development

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In this chapter, socioeconomic development trends and characteristics of different types of rural areas within the framework of the Finnish Rural Typology are first analysed. Secondly, municipal-level time series analysis is employed by using a linear-regression model and aggregate-level indicators of income, jobs and population.

### 8.1 Different types of rural areas in Finland

In Finnish rural policy, rural municipalities are usually divided into three types based on the multi-stage method: urban-adjacent rural areas, core rural areas and sparsely populated rural areas (see more: Chapter 5.5, Malinen et al., 2006). Based on the socioeconomic situation and development, the challenges for regional development are obviously the greatest in the sparsely populated rural areas. In the urban-adjacent rural areas, the situation and development is far more positive, especially because of their location adjacent to cities and thus better possibilities for commuting to the centres. Thus, perceiving the whole countryside as a homogenous area may give a rather misleading picture of the opportunities available and of the challenges for rural development.

Measured by socioeconomic indicators, urban-adjacent rural municipalities are more similar to urban municipalities than to core rural municipalities or sparsely populated rural municipalities. The differences in the trends between different types of rural areas are very clear, and are still growing (Table 8.1). This, for instance, means that the population of the core rural areas and sparsely populated rural areas will continue to decrease as especially young and working-age people move to

population centres. The share of urban-adjacent and sparsely populated rural municipalities has grown, while the share of core rural municipalities has decreased (Malinen et al., 2006). As a result, there is an ever increasing number of ‘winners and losers’ in Finnish rural areas.

Finland can still be described as a country which is remarkably rural and where agriculture has many roles depending on the type of rural area. From the viewpoint of rural development, the need and argument for policy differentiation is dependent on the differences between rural types and the developments of these differences. If the starting point of the policy is to decrease regional differences, weaker regions should be emphasised in the policy implementation (Malinen et al., 2006, p. 9).

#### *Change in economic structure<sup>32</sup>*

Finnish agriculture has gone through numerous notable changes over the last decades. Structural change in agriculture has been strong. Productivity in agriculture has grown and the number of agricultural jobs and farms has decreased rapidly. All this has meant that a role of primary production is marginal also in many rural areas. Instead, the importance of other activities has grown. Because of net migration, many rural areas have been losing population and growth centres, in turn, have experienced population growth.

Amongst the rural municipalities, the urban-adjacent rural areas have faced the

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<sup>32</sup> In this chapter, the Standard Industrial Classification 2002 is utilised for classifying the main production lines. For further details concerning the classification: see Appendix 1.

Table 8.1 Socioeconomic development in different rural types of Finland

Indicator	Urban municipalities*	Urban-adjacent rural municipalities*	Core rural municipalities*	Sparsely populated rural municipalities*	Whole Finland
Population in 2009 (1995 in brackets), share of whole Finland, %	63.9 (61.4)	13.7 (12.6)	13.1 (14.4)	9.3 (11.7)	100 (100)
Mean annual change of population between 1995 and 2007, %	0.58	0.98	-0.39	-1.33	0.29
Population density, inhabitants per km <sup>2</sup> (land surface) in 2005 (1995 in brackets)	74.6 (70.5)	28.2 (25.7)	13.3 (13.9)	2.9 (3.3)	17.3 (16.8)
Unemployment rate in 2007 (1995 in brackets), %**	8.5 (19.6)	6.5 (17.9)	7.4 (18.2)	12.8 (25.4)	8.5 (19.8)
Mean annual change of the number of jobs between 1995 and 2007, %**	2.1	1.7	0.7	-0.3	1.7
Mean annual change of employees' aggregate income between 1995 and 2007, %, at the annual nominal prices	5.0	5.8	4.2	3.2	4.8
Mean annual change of value added*** in the region between 1995 and 2007, %, at the annual nominal prices	5.7	5.1	4.6	3.8	5.4

\*According to the Finnish Rural Typology (Malinen et al., 2006) and the municipal division in force in 2010

\*\*Finland faced a severe economic depression in the early 1990s which caused a strong decrease of jobs and an exceptionally high unemployment rate all over the country. This partly explains the notably strong total development in the number of jobs as well as in the change in income and value added in Finland between 1995 and 2007.

\*\*\*Value added is the difference between the total sales revenue of an industry and the total cost of components, materials, and services purchased from other firms within a given reporting period (usually one year). This is the industry's contribution to the gross domestic product. Value added does not include the production subsidies of agriculture.

challenges of societal structural changes most successfully. There the decrease of jobs in the primary sector has been compensated by the jobs in the refinement sector and especially in the service sector better than in other rural types. The

regional division of labour and structural change has led to a strong diversification and polarisation of regions as a whole as well as between different types of rural areas.

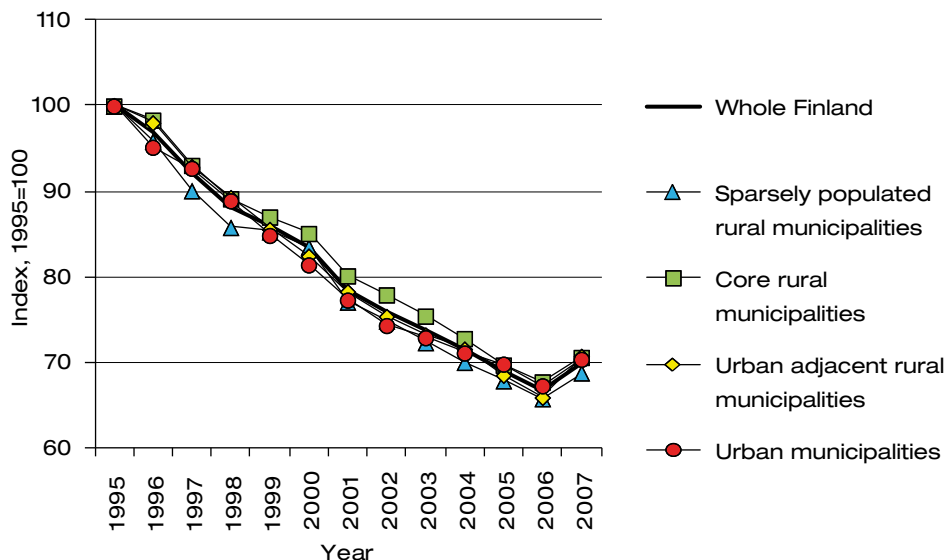


Figure 8.1 Development of number of jobs in primary sector 1995–2007

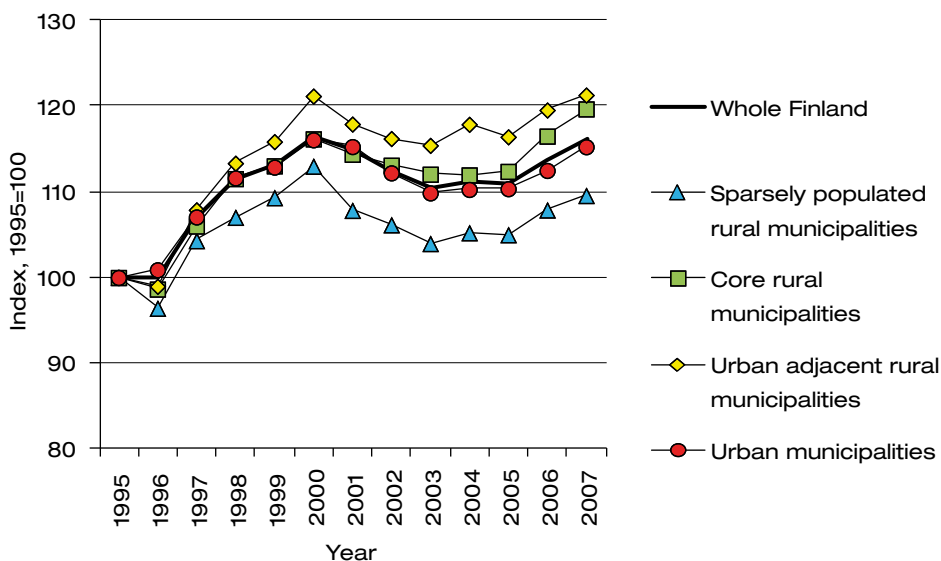


Figure 8.2 Development of number of jobs in refinement sector 1995–2007

In Figures 8.1 to 8.5, the development in the number of jobs according to main production lines and, in total since 1995, are presented using the municipal division in force in 2010. The main message is that the number of jobs in primary production has decreased approximately equally

strongly in all the rural types of Finland. However, the development of jobs in the refinement sector and particularly in the service sector has been more positive in urban-adjacent rural areas than in core rural areas and especially in sparsely populated rural areas.

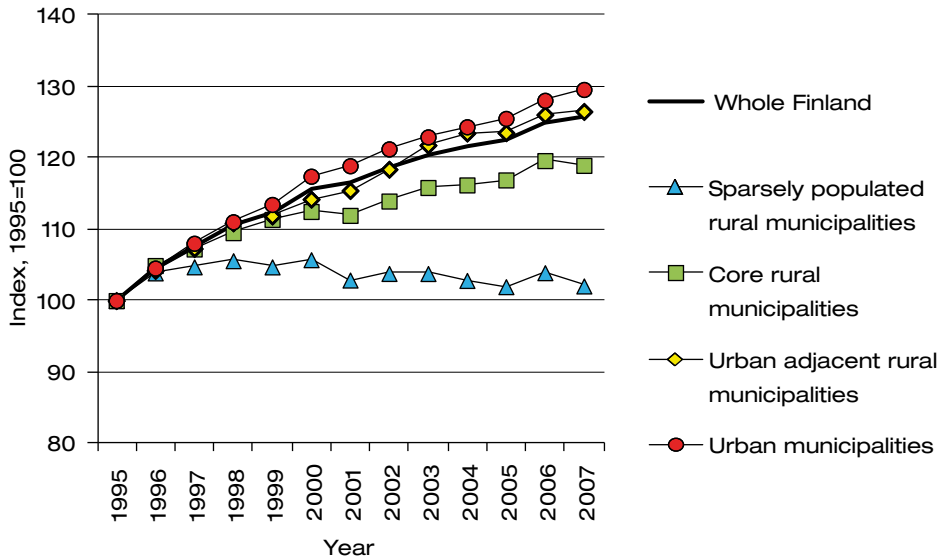


Figure 8.3 Development of number of jobs in public services 1995–2007

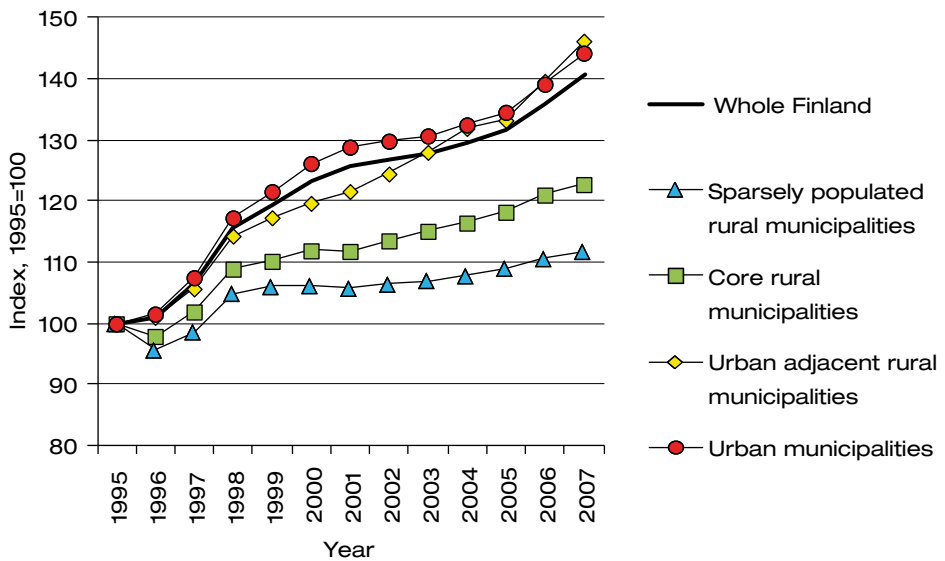


Figure 8.4 Development of number of jobs in private services 1995–2007

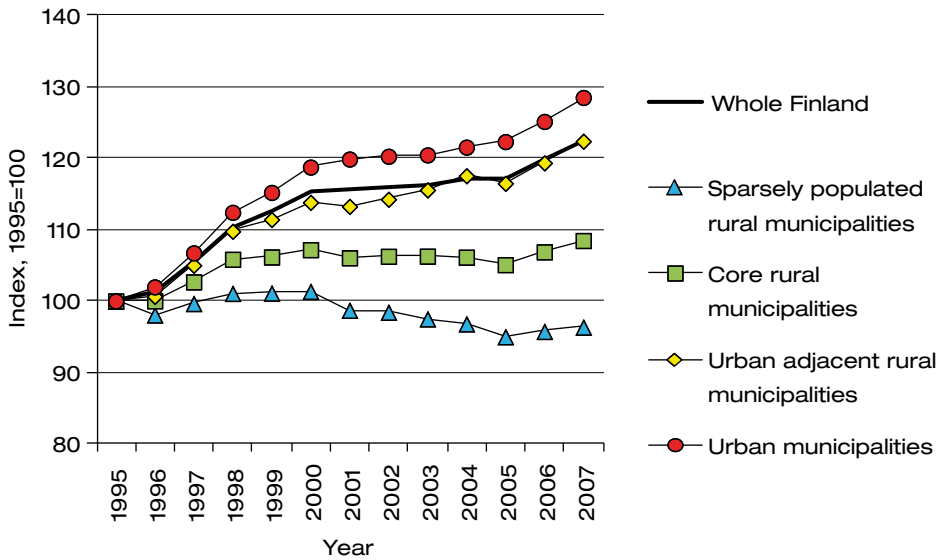


Figure 8.5 Development of number of all jobs in 1995–2007<sup>33</sup>

In addition, the differences between the rural types in the economic structures as measured by the shares of each main production line in total employment are clear. Although the structural change has

led to the dominant role of the service sector in every rural type, the differences in economic structures are still clear. When compared with other rural types, the share of primary production in total employment

Table 8.2 Economic structure in 2007 as measured by number of jobs and within Finnish Rural Typology (in 1995 in brackets)\*. Source: Statistics Finland c

Type of municipality	Primary production	Refinement	Public services	Private services	Unknown	Total
Urban	1.2 (2.2)	23.4 (26.0)	32.5 (32.3)	42.1 (37.5)	0.9 (2.1)	100 (100)
Urban-adjacent rural	5.5 (9.5)	32.9 (33.2)	30.3 (29.3)	29.7 (24.9)	1.5 (3.1)	100 (100)
Core rural	12.9 (19.8)	30.8 (28.0)	30.0 (27.4)	24.9 (22.0)	1.3 (2.8)	100 (100)
Sparsely populated rural	16.5 (23.1)	23.5 (20.6)	31.8 (30.0)	26.6 (22.9)	1.7 (3.4)	100 (100)
<b>Whole Finland</b>	<b>3.9 (6.9)</b>	<b>25.1 (26.5)</b>	<b>32.0 (31.2)</b>	<b>37.9 (33.1)</b>	<b>1.0 (2.4)</b>	<b>100 (100)</b>

\*According to the Finnish Rural Typology by Malinen et al. (2006) and the municipal division in force in 2010

<sup>33</sup> Finland faced a severe economic depression in the early 1990s which caused a strong decrease of jobs and an exceptionally high unemployment rate all over the country. This partly explains the notably strong total development in the number of jobs as well as in the change of income and value added in Finland between 1995 and 2007.

is the lowest and the share of the refinement and service sector are the highest in urban-adjacent rural municipalities while the share of primary production is clearly more dominant in core rural and sparsely populated rural municipalities (Table 8.2).

## 8.2 Rural development at municipal level measured by chosen indicators

As in the case of agricultural development (Chapter 6.3), rural development is now analysed at municipal level based on the material and methodology described in Chapters 5.2 and 5.3.

The strongest rural development in the period 1995–2004 has taken place in southern and western parts of Finland and in the municipalities adjacent to major cities (Figure 8.6). The regional

developments between the separate socioeconomic indicators used in this thesis—jobs, income and population—are parallel (Figure 8.7). In addition, the correlations between the separate components of rural development and total rural development are quite high (Table 8.3). The development has been the most favourable in urban-adjacent areas and the weakest in sparsely populated areas (Table 8.4).

As regards to the change in jobs excluding agriculture, the mean municipal annual change was 1.5% and, in 311 out of 370 municipalities, the development was positive. The equivalent numbers are in the case of income 4.2% and 370 out of 370, and in the case of population –0.6% and 85 out of 370. Finland faced a severe economic depression in the early 1990s which caused a strong decrease of jobs and an exceptionally high unemployment

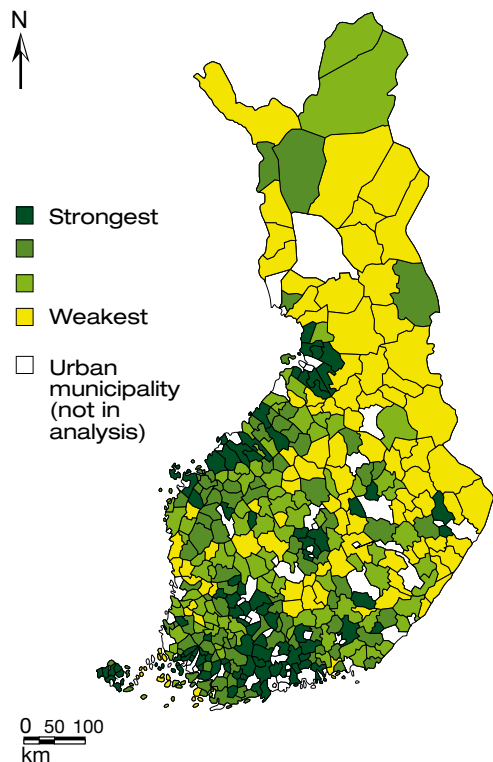


Figure 8.6 Mean annual proportional rural development (population, income and jobs) at municipal level according to quartiles, period 1995–2004 (Earlier version of the map has been presented in Voutilainen et al., 2009, p. 39.)



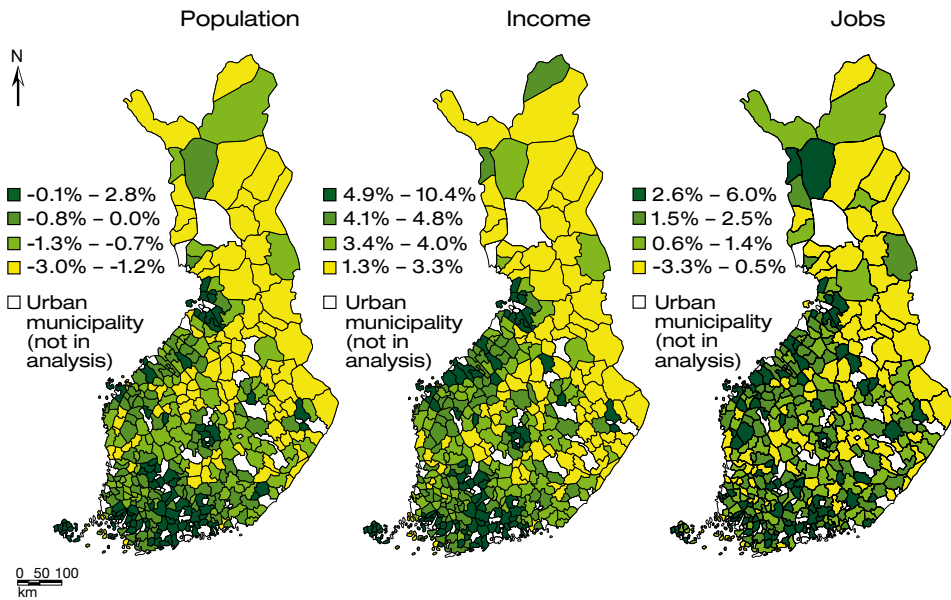


Figure 8.7 Mean annual proportional development in population, income and jobs (excluding agricultural jobs) at municipal level according to quartiles, period 1995–2004

Table 8.3 Spearman rank order correlation coefficients between components of rural development in rural municipalities of Finland\*, period 1995–2004

	Jobs excluding agriculture	Income	Population	Rural development (jobs excluding agriculture, income and population)
Jobs excluding agriculture		0.87	0.59	0.83
Income	0.87		0.66	0.94
Population	0.59	0.66		0.91

\*According to the Finnish Rural Typology (see Malinen et al., 2006) and the municipal division in force in 2006

Table 8.4 Mean annual proportional rural development within Finnish Rural Typology and measured by mean municipal rank order numbers, period 1995–2004. The higher the rank order number, the stronger development.

Type of municipality*	Rural development (jobs excluding agriculture, income and population)	Jobs (excluding agriculture)	Income	Population
Urban-adjacent	284	258	292	303
Core rural	205	204	206	204
Sparsely populated rural	104	121	98	93

\*According to the Finnish Rural Typology (see Malinen et al., 2006) and the municipal division in force in 2006

rate all over the country. This also partly explains notable strong total development in the number of jobs as well as in the development of income. Instead, mean annual development in population was positive only in 23% of the rural municipalities. This is one indication of the polarisation trend in Finnish rural areas.

## Summary

Finnish rural areas are polarising. Furthermore, the development trends

indicate that regional concentration trend has taken place in Finnish rural areas. From the general socioeconomic point of view, the most favourable rural areas are located and the strongest rural development has taken place in southern and western parts of the country and in the rural areas adjacent to major cities. Rural development were the weakest in sparsely populated areas, i.e. particularly in eastern and northern Finland. The developments in separate factors—income, jobs and population—were regionally quite similar.

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## 9 Relationship between agricultural and rural development

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This chapter presents the empirical analyses on the relationship between agricultural and rural development. Municipal-level rank order numbers of agricultural and rural development are utilised when calculating the correlations between agricultural and rural development and the separate components of these. Based on agricultural and rural development in each municipality, a four-fold typology of agricultural and rural development is created. This typology, based on agricultural and rural development of each region and the relationship between these developments in each region, divides Finnish rural municipalities into four groups. Furthermore, the Finnish Rural Typology is used as a framework in empirical analyses. In the last part of the chapter, some potential reasons behind and explanations for the empirical results of regional agricultural and rural development trends are presented.

### 9.1 Country level

At country level in 1995–2004, there was no significant correlation between municipal agricultural and municipal rural development as a whole. Furthermore, the correlations between agricultural and rural development in terms of separate indicators of these were low. The development of agricultural jobs correlated weakly negatively with rural development and all of the components of rural development (i.e. jobs excluding agriculture, income and population), while development of agricultural income had a weak positive correlation with rural development and all of its components. Agricultural development as a whole correlated weakly negatively with rural development as a whole, jobs excluding agriculture and population. Very weak positive correlation was found between agricultural development as a whole and development of income (Table 9.1).

Table 9.1 Spearman rank order correlation coefficients between components of agricultural and rural development in rural municipalities of Finland\*, period 1995–2004

	Jobs (excluding agriculture)	Income	Population	Rural development (jobs excluding agriculture, income and population)
Jobs in agriculture	-0.16	-0.16	-0.32	-0.24
Agricultural income	0.07	0.21	0.17	0.16
Agricultural development (agricultural jobs and agricultural income)	-0.06	0.02	-0.10	-0.05

\*According to the Finnish Rural Typology (see Malinen et al., 2006) and the municipal division in force in 2006

## 9.2 Finnish Rural Typology

In this work, the relationship between agriculture and rural areas are analysed in the light of agricultural and rural developments. On the other hand, it is also convenient to explore how agricultural and rural development has been in the areas of different socioeconomic circumstances and conditions at a certain point of time. The Finnish Rural Typology is a good framework for this type of analysis. The municipal-based typology classifies the municipalities into groups which differ strongly from each other in the light of their socioeconomic conditions. As stated above, the challenges of regional development are obviously the highest in sparsely populated rural areas while the situation is remarkable more positive in urban-adjacent rural areas.

The analysis made in this thesis indicates that, on average, rural development has been clearly the strongest in urban-adjacent rural municipalities and clearly the weakest in sparsely populated rural

municipalities. When compared with rural development, agricultural development within different rural types is regionally much more diverse. While, in the case of agricultural development, the mean value of the municipal rank order does not strongly vary between the three rural types, the equivalent differences in rural development are notable (Figure 9.1, Table 9.2).

As can be seen in Table 9.2, there was no significant correlation between agricultural development (jobs in agriculture and agricultural income) and rural development (jobs excluding agriculture, income and population) at municipal level in 1995–2004. When examining the relationship between agricultural and rural development within rural types, the correlation has been slightly positive in urban-adjacent rural municipalities while the correlation has been slightly negative in core rural and sparsely populated rural municipalities. However, all the correlations are low.

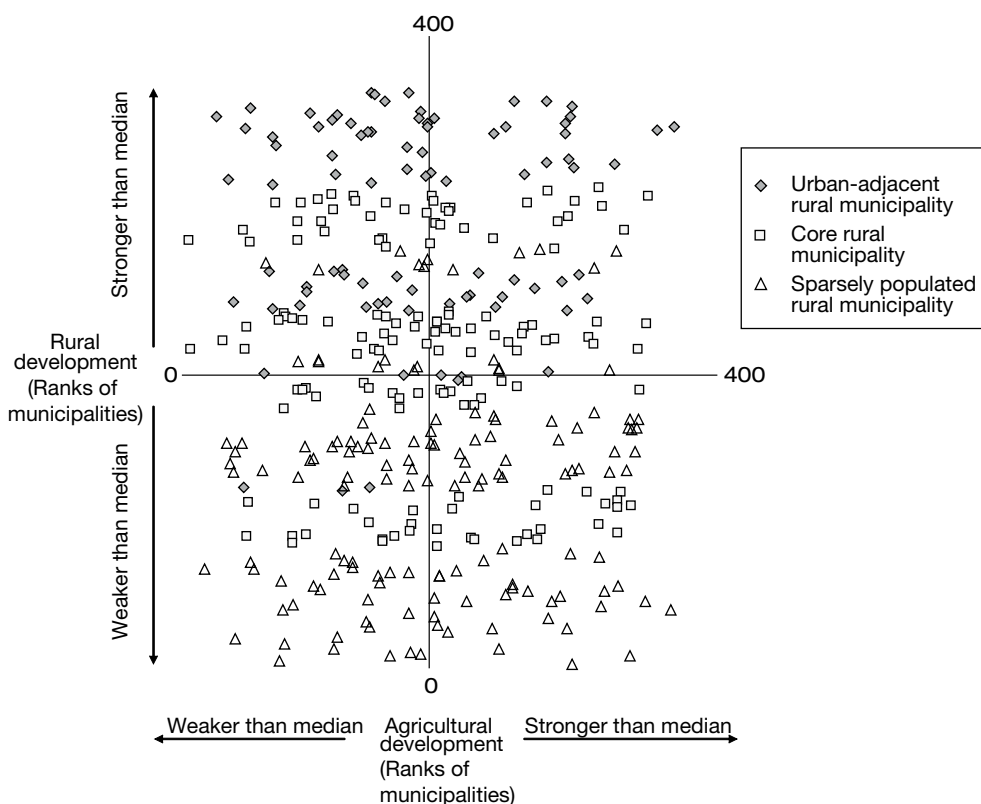


Figure 9.1 Relationship between mean annual proportional agricultural development (jobs in agriculture and agricultural income) and rural development (jobs excluding agriculture, income and population) in different rural types of Finland measured by municipal rank order numbers of developments, period 1995–2004 (This figure is based on the figures presented in Voutilainen et al., 2009, pp. 50–51.)

Table 9.2 Relationship between mean annual proportional agricultural development (jobs in agriculture and agricultural income) and rural development (jobs excluding agriculture, income and population) in different rural types of Finland measured by municipal rank order numbers of developments, period 1995–2004

Type of municipality*	Agricultural development (jobs in agriculture and agricultural income), mean municipal rank order	Rural development (jobs excluding agriculture, income and population), mean municipal rank order	Correlation between agricultural and rural development, Spearman rank order correlation coefficient
Urban-adjacent rural	165	284	0.15
Core rural	198	205	-0.09
Sparsely populated rural	185	104	-0.04
<b>Mean/total</b>	<b>186</b>	<b>186</b>	<b>-0.05</b>

\*According to the Finnish Rural Typology (Malinen et al., 2006) and the municipal division in force in 2006

### 9.3 Connecting agricultural and rural development

The numbers of municipalities within the four-fold and nine-fold typologies of agricultural and rural development are presented in Figures 9.2 and 9.3. In the four-fold typology, the numbers of municipalities are quite similar between each class. When the classification is transferred to nine-fold, there is notably more variation in the number of municipalities between each class. In the nine-fold typology, a half of the municipalities are situated in the middle group of agricultural development, i.e. in the group where agricultural development is closest to the median. When considering rural development, the number of municipalities situated in the middle group is lower (42% of all the municipalities). This partly demonstrates that rural development separates the municipalities

from each other more than agricultural development.

In Figure 9.4, the map presentation of the four-fold typology and the border classes of nine-fold typologies are shown. When agricultural and rural development is explored at municipal level, the municipalities with relatively weaker agricultural development and stronger rural development can be found particularly in southern Finland (except coastal areas and the Åland Islands). The areas where both agricultural and rural development has been stronger than median are situated mainly in coastal areas of south west and western Finland. The areas where both agricultural and rural development has been weaker than the median can be found especially in the eastern parts of central Finland and eastern Finland. The regions with stronger agricultural development and weaker rural development are located

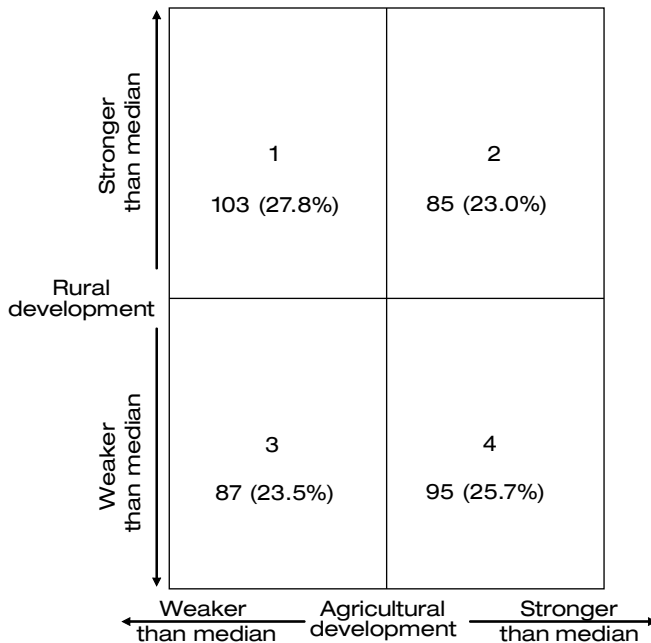


Figure 9.2 Number and share of municipalities within four-fold typology of agricultural and rural development (This figure is based on the figure presented in Voutilainen et al., 2009, p. 44.)

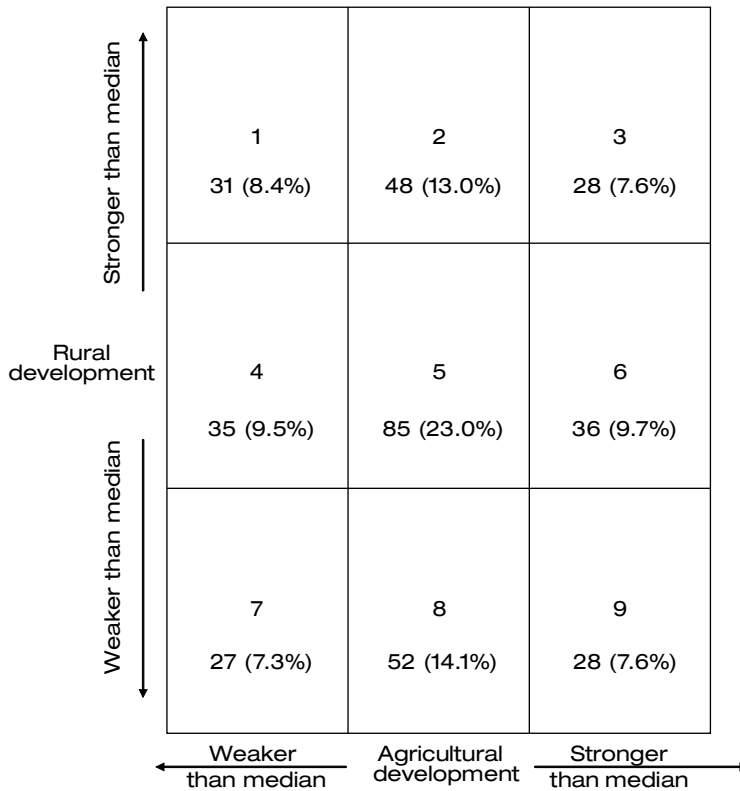


Figure 9.3 Number and share of municipalities within nine-fold typology of agricultural and rural development (This figure is based on the figure presented in Voutilainen et al., 2009, p. 45.)

mainly in the western parts of central Finland and northern Finland.

The results are quite similar, of course, when the developments are explored by four-fold and nine-fold typologies, although the number of municipalities where the development has been either weaker or stronger than median is lower in the nine-fold typology. This is because the nine-fold typology divides the municipalities into a higher number of groups and is therefore more accurate than the four-fold typology.

On the basis of the municipal-level results, it is possible to classify regions at other regional levels, for instance at sub-region (LAU-1) or province (NUTS 3) levels.

In these cases, the agricultural and rural developments of all the municipalities in a certain region are added together (e.g. the annual number of jobs in the municipalities in a certain region are added together) and, based on this, the ranks of the developments between the regions are defined. In the next sub-region level and province-level analyses presented here, the original border values of the municipal-level analysis are used when classifying the regions within the four-fold typology.

When the sub-regions (LAU-1 regions) are classified within the four-fold typology, the regional classes of the typology are situated parallel with the municipal-level four-fold typology. Compared with the municipal-level typology, the less accurate regional



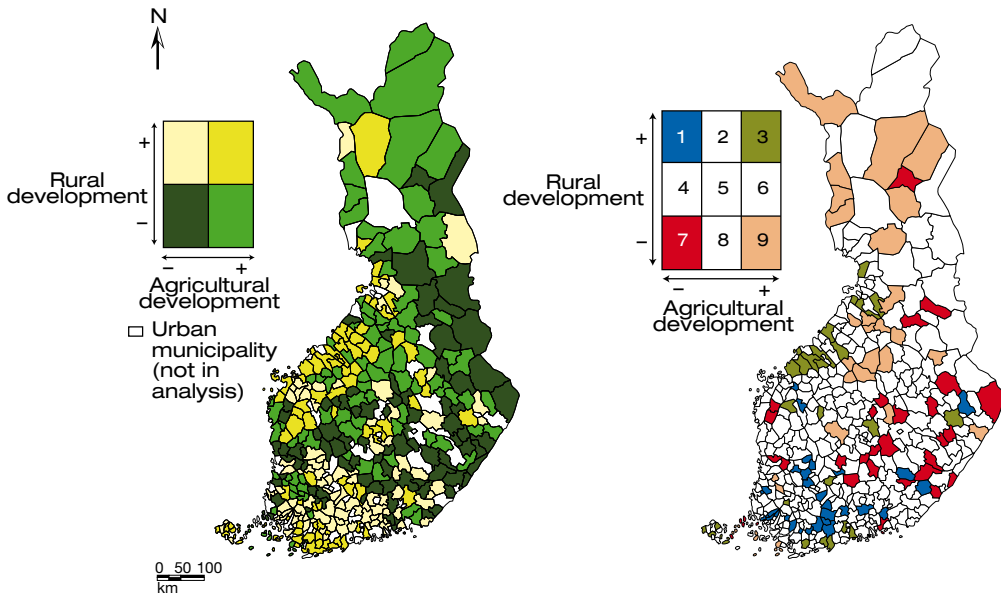


Figure 9.4 Four-fold typology of agricultural and rural development (1995–2004) and border classes in nine-fold typology at municipal (LAU-2) level (Earlier versions of these maps have been presented in Voutilainen et al., 2009, pp. 45–46.)

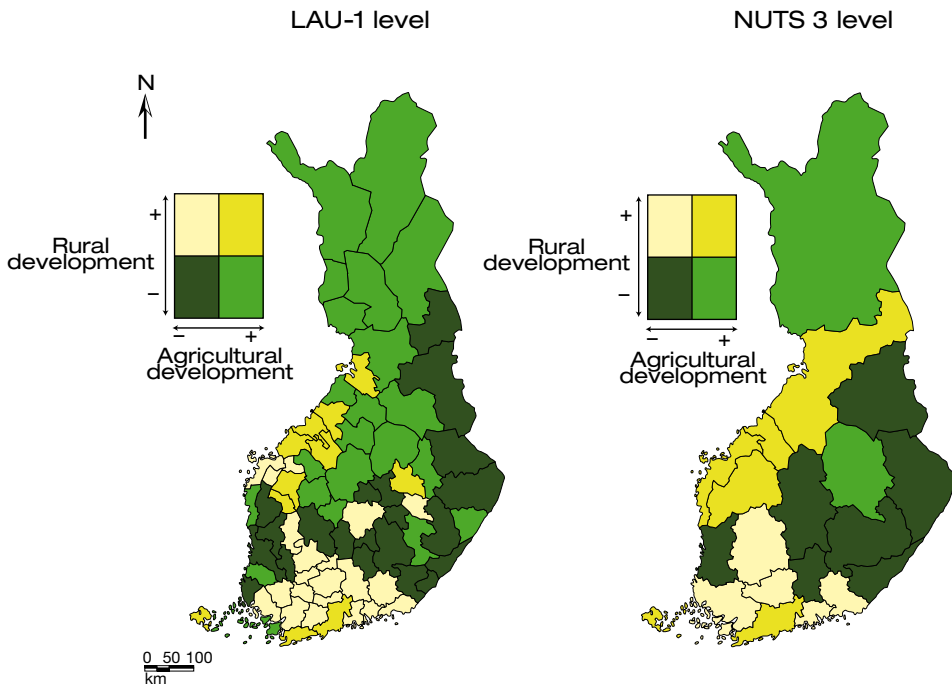


Figure 9.5 Four-fold typology of agricultural and rural development (1995–2004) at LAU-1 level and at NUTS 3 level (Earlier versions of these maps have been presented in Voutilainen et al., 2009, p. 47.)

level brings about more regional regularity, i.e. each class of the four-fold typology is more dominant in a certain region or certain regions. The result is similar in the case of NUTS 3 level analysis (Figure 9.5). This is obvious because less accurate regional level eliminates the heterogeneity within the regions.

Figure 9.6 demonstrates how large the differences between the provinces (NUTS 3 regions) within each class of four-fold typology can be. More accurate classifications eliminate this ‘problem’ but at the same time the clear and simple interpretation of the results becomes more difficult.

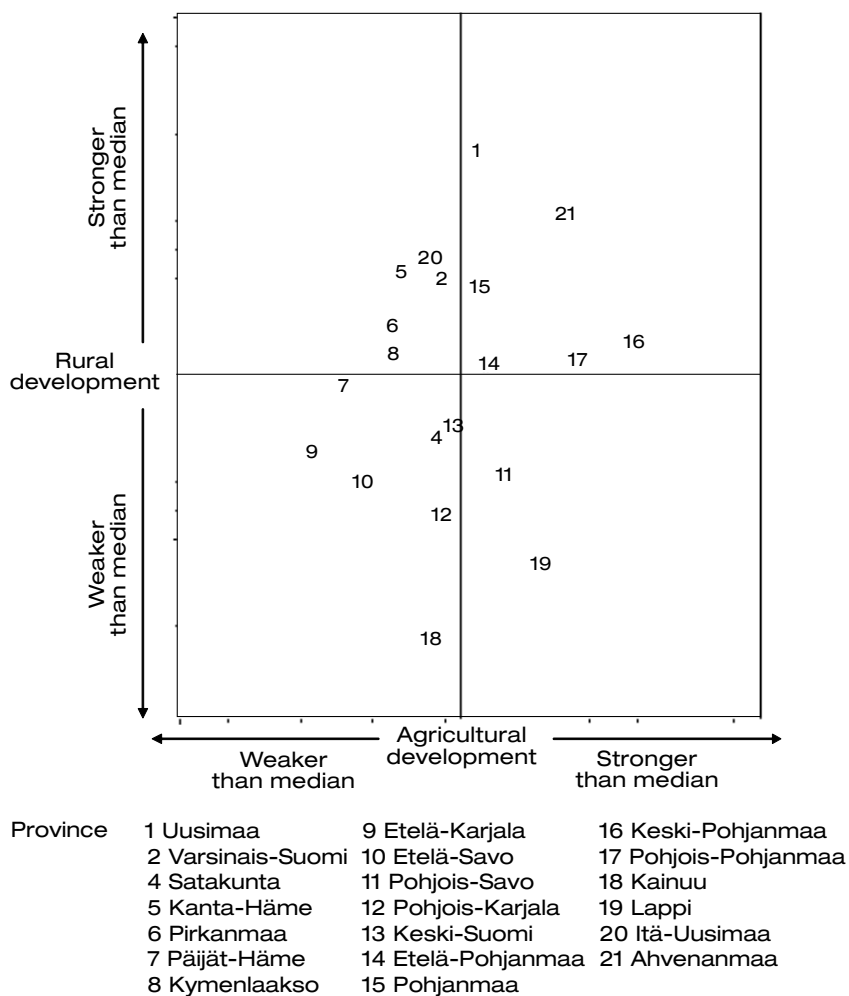


Figure 9.6 Four-fold typology of agricultural and rural development at NUTS 3 level: results within typology (This figure is based on the figure presented in Voutilainen et al., 2009, p. 48.)

## 9.4 Agricultural development within context of four-fold typology and Finnish Rural Typology

Next, municipal-level agricultural and rural development and the components of these are simultaneously related to the four-fold typology of agricultural and rural development and to the Finnish Rural Typology.

When examining the mean agricultural development (agricultural income and jobs in agriculture) of municipalities within the framework of the Finnish Rural Typology and the four-fold typology of agricultural and rural development, agricultural development was the strongest in core rural municipalities and the weakest in urban-adjacent rural municipalities. The more accurate nine-fold typology of agricultural and rural development highlights more clearly the differences between different rural types. The share of the municipalities within the ‘median agricultural development’ is approximately one half of the all municipalities in every rural type. Instead, when examining the ‘strongest’ and ‘weakest’ classes of development, the clear differences between rural types can be noticed. The share of the municipalities with ‘strongest agricultural development’ is clearly the lowest among urban-adjacent rural municipalities and the highest among core rural municipalities while the share of

the municipalities in ‘weakest agricultural development’ is the lowest among core rural municipalities and the highest among urban-adjacent rural municipalities (Table 9.3).

The mean municipal rank order numbers of developments indicate that the mean municipal development of agricultural income has been strongest in sparsely populated rural municipalities and weakest in urban-adjacent rural municipalities. The development of jobs in agriculture, in turn, has been weakest in sparsely populated municipalities irrespective whether total agricultural development (agricultural income + jobs in agriculture) was weaker or stronger than median. The development of jobs in agriculture has been strongest in core rural municipalities. Consequently, agricultural income and agricultural jobs clearly represent two different dimensions in agricultural development (Table 9.4).

Agricultural development might have been (or might not have been) stronger both in the regions where rural development has been stronger and in the regions where rural development has been weaker. Both components of agricultural development, i.e. jobs in agriculture and agricultural income, get the highest values in the groups of municipalities where total agricultural development has been stronger than median (Table 9.4).

Table 9.3 Agricultural development within Finnish Rural Typology (This table is based on the table presented in Voutilainen et al., 2009, p. 51.)

Type of municipality*	Strongest agricultural development, % of municipalities**	Median agricultural development, % of municipalities**	Weakest agricultural development, % of municipalities**	Total, %
Urban-adjacent rural	17	49	34	100
Core rural	30	52	19	100
Sparsely populated rural	25	48	27	100
<b>Total</b>	<b>26</b>	<b>50</b>	<b>25</b>	<b>100</b>

\*According to the Finnish Rural Typology (Malinen et al., 2006)

\*\*Based on the municipal-level analysis made in this thesis: see Chapters 5.3 and 6.3

Table 9.4 Development of agriculture within Finnish Rural Typology and four-fold typology of agricultural and rural development. Mean municipal rank order numbers, period 1995–2004. The higher the value of rank order number, the stronger development.

Four-fold typology*	Type of municipality**	N***	Development of agricultural income	Development of jobs in agriculture	Agricultural development (income + jobs)
Rural development + Agricultural development –	Urban-adjacent rural	51	93	145	119
	Core rural	41	95	148	122
	Sparsely populated rural	11	137	90	114
	Total/mean	103	98	140	119
Rural development + Agricultural development +	Urban-adjacent rural	28	227	280	253
	Core rural	46	248	263	256
	Sparsely populated rural	11	290	211	250
	Total/mean	85	246	262	254
Rural development – Agricultural development –	Urban-adjacent rural	6	68	123	96
	Core rural	21	113	141	127
	Sparsely populated rural	60	164	68	116
	Total/mean	87	145	90	117
Rural development – Agricultural development +	Urban-adjacent rural	3	228	286	257
	Core rural	34	231	287	259
	Sparsely populated rural	58	283	233	258
	Total/mean	95	263	254	258
<b>Total</b>	<b>Urban-adjacent rural</b>	<b>88</b>	<b>138</b>	<b>191</b>	<b>165</b>
	<b>Core rural</b>	<b>142</b>	<b>180</b>	<b>218</b>	<b>199</b>
	<b>Sparsely populated rural</b>	<b>140</b>	<b>221</b>	<b>149</b>	<b>185</b>
	<b>Total/mean</b>	<b>370</b>	<b>186</b>	<b>186</b>	<b>186</b>

\*See more about the typology: Chapter 9.3.

\*\*According to the Finnish Rural Typology (Malinen et al., 2006) and the municipal division in force in 2006

\*\*\*N is the number of observations.

Based on the mean municipal rank order numbers of developments, rural development was stronger in urban-adjacent rural municipalities irrespective of whether agricultural development was stronger or weaker. In sparsely populated rural municipalities, rural development has often been weak but agricultural development has been weaker than median

or stronger than median approximately in the same number of municipalities (Tables 9.5 and 9.6).

When interpreting the results, it must be remembered that the four-fold typology forces the municipalities—also the ‘average’ ones—into a ‘group of strong or a ‘group of weak.’ Therefore, the picture

Table 9.5 Distribution of municipalities within Finnish Rural Typology and four-fold typology of agricultural and rural development (This table is based on the table presented in Voutilainen et al., 2009, p. 51.)

Four-fold typology*		Type of municipality**			Total
		Urban-adjacent rural	Core rural	Sparsely populated rural	
Rural development + Agricultural development –	Observations	51	41	11	103
	Share, %	50	40	10	100
Rural development + Agricultural development +	Observations	28	46	11	85
	Share, %	33	54	13	100
Rural development – Agricultural development –	Observations	6	21	60	87
	Share, %	7	24	69	100
Rural development – Agricultural development +	Observations	3	34	58	95
	Share, %	3	36	61	100
<b>Total</b>	<b>Observations</b>	<b>88</b>	<b>142</b>	<b>140</b>	<b>370</b>
	<b>Share, %</b>	<b>24</b>	<b>38</b>	<b>38</b>	<b>100</b>

\*See more about the typology: Chapter 9.3.

\*\*According to the Finnish Rural Typology (Malinen et al., 2006) and the municipal division in force in 2006

Table 9.6 Means of municipal rank order numbers in agricultural and rural development within four-fold typology of agricultural and rural development and within Finnish Rural Typology, period 1995–2004. The higher the value of rank order number, the stronger development. (This table is based on the table presented in Voutilainen et al., 2009, p. 52.)

Four-fold typology*	Type of municipality**	N***	Rural development	Agricultural development
Rural development + Agricultural development –	Urban-adjacent rural	51	300	119
	Core rural	41	244	122
	Sparsely populated rural	11	220	114
	Total/mean	103	269	119
Rural development + Agricultural development +	Urban-adjacent rural	28	299	253
	Core rural	46	245	256
	Sparsely populated rural	11	228	250
	Total/mean	85	261	254
Rural development – Agricultural development –	Urban-adjacent rural	6	144	96
	Core rural	21	138	127
	Sparsely populated rural	60	84	116
	Total/mean	87	101	117
Rural development – Agricultural development +	Urban-adjacent rural	3	161	257
	Core rural	34	144	259
	Sparsely populated rural	58	79	258
	Total/mean	95	105	258
<b>Total</b>	<b>Urban-adjacent rural</b>	<b>88</b>	<b>284</b>	<b>165</b>
	<b>Core rural</b>	<b>142</b>	<b>205</b>	<b>199</b>
	<b>Sparsely populated rural</b>	<b>140</b>	<b>104</b>	<b>185</b>
	<b>Total/mean</b>	<b>370</b>	<b>186</b>	<b>186</b>

\*See more about the typology: Chapter 9.3.

\*\*According to the Finnish Rural Typology (Malinen et al., 2006) and the municipal division in force in 2006

\*\*\*N is the number of observations.

of development is not as accurate as in the case when the municipalities are divided into more groups. Furthermore, there is a variation in the development trends within rural types, particularly in agricultural development.

### 9.5 Relationship between agricultural and rural development and characteristics of agriculture

#### *Four-fold typology of agricultural and rural development*

Next, the characteristics of farms are related to the results of the four-fold analysis of agricultural and rural development. Measured by economic size, the farms are larger in the municipalities where agricultural development has been stronger than median. On the other hand, measured by average arable area per farm, the farms are larger in the areas where rural development has been stronger than median (Table 9.7).

Strong rural development appears to be connected to higher than average share of grain farms and weaker than median agricultural development in a region.

Strong agricultural development, in turn, seems to be connected to the areas where the share of dairy husbandry farms is higher than median and where rural development has been weaker than median (Table 9.8). The differences in the production line structures between the regions and therefore the regional differences between farm size in terms of arable area and economic size explains also the results presented in Table 9.7 (see more about the differences between production lines: Chapter 6.1).

#### *Relationship between share of agricultural jobs and agricultural and rural development*

Generally, there is no significant correlation between the share of agricultural jobs in a region and rural development. Compared with the year 1995, correlation between these was slightly more negative in 2004. The share of agricultural jobs in 1995 does not correlate with agricultural development. However, the share of agricultural jobs in 2004 had a weak positive correlation with agricultural development. Although these correlations are weak, the results support the earlier conclusion on the diversification of rural and agricultural development (Table 9.9).

Table 9.7 Distribution and volume of agriculture in 2005 within four-fold typology of agricultural and rural development (This table is based on the table presented in Voutilainen et al., 2009, p. 60.)

Four-fold typology*	Share of all farms, %	Economic size per farm, €	Arable area per farm, ha
Rural development + Agricultural development –	28	26,754	35.5
Rural development + Agricultural development +	26	32,615	34.2
Rural development – Agricultural development –	21	26,783	28.8
Rural development – Agricultural development +	25	32,633	31.3
<b>Total/mean</b>	<b>100</b>	<b>30,419</b>	<b>33.3</b>

\*See more about the typology: Chapter 9.3.



Table 9.8 Structure of main production lines in 2005 within four-fold typology of agricultural and rural development (This table is based on the table presented in Voutilainen et al., 2009, p. 61.)

<b>Four-fold typology*</b>	<b>Grain, %</b>	<b>Other crop, %</b>	<b>Dairy, %</b>	<b>Other cattle, %</b>	<b>Pig, %</b>	<b>Poultry, %</b>	<b>Other production lines, %</b>	<b>Total, %</b>
Rural development + Agricultural development –	52	16	16	5	5	1	5	100
Rural development + Agricultural development +	41	17	25	6	5	1	5	100
Rural development – Agricultural development –	37	18	27	7	4	1	5	100
Rural development – Agricultural development +	31	20	31	8	5	1	4	100
<b>Mean</b>	<b>41</b>	<b>18</b>	<b>24</b>	<b>7</b>	<b>5</b>	<b>1</b>	<b>5</b>	<b>100</b>

\* See more about the typology: Chapter 9.3.

Table 9.9 Relationship between share of agricultural jobs in total employment and rural and agricultural development\* measured by municipal Spearman rank order correlation coefficients (This table is based on the table presented in Voutilainen et al., 2009, p. 57.)

	Rural development	Agricultural development
Rural development	1.00	-0.05
Agricultural development	-0.05	1.00
Change in the number of agricultural jobs between 1995 and 2004, %	0.07	0.15
Share of jobs in agriculture in 1995, %	-0.11	0.06
Share of jobs in agriculture in 2004, %	-0.22	0.22

\*Based on the municipal-level analysis made in this thesis (see Chapters 5.3, 6.3 and 8.2)

In Table 9.10, the municipalities have been divided into four groups based on the share of agricultural jobs in all jobs in the municipalities. Agricultural development (agricultural jobs and agricultural income) has been clearly the strongest in the municipalities where the share of agricultural jobs in all jobs is the highest. On the other hand, rural development

(jobs excluding agriculture, income and population) has been clearly the strongest in the municipalities where the share of agricultural jobs in all jobs has been the lowest. However, the ranks of agricultural and rural developments are not fully dependent on the shares of agricultural jobs in total employment.

Table 9.10 Relationship between share of agriculture in total employment\* and different indicators of agricultural and rural development\*\*. The higher the rank order number, the stronger the development. (This table is based on the table presented in Voutilainen et al., 2009, p. 58.)

Indicator	Share of jobs in agriculture: <10 % (100 municipalities)	Share of jobs in agriculture: 10–19.9 % (154 municipalities)	Share of jobs in agriculture 20–29.9 % (101 municipalities)	Share of jobs in agriculture: >29.9 % (37 municipalities)
Jobs in agriculture	197	168	187	229
Income in agriculture	165	180	197	222
Agricultural development (jobs and income)	181	174	192	226
Jobs excluding agriculture	188	187	185	173
All income	208	195	155	181
Population	228	198	147	150
Rural development (jobs excluding agriculture, income and population)	208	193	162	168

\*Mean share of jobs in agriculture in 1995–2004

\*\*Based on the municipal-level analysis made in this thesis (see Chapters 5.3, 6.3 and 8.2)

## 9.6 Remarks on understanding regional agriculture-rural linkages

The empirical results of the thesis have shown that Finnish rural areas are polarising. Furthermore, the development trends indicate that a regional concentration trend both in agriculture and in other socioeconomic activities is taking place in Finnish rural areas. The regional concentration trend supports the so-called New Economic Geography paradigm, i.e. economic activities are concentrating (see e.g. Krugman, 1991; Venables, 1996; Krugman, 1998; Fujita et al., 1999; Tohmo & Littunen, 2002; Tohmo 2007; Krugman, 2011). According to the paradigm, concentration and specialisation processes have been indicated to promote well-being of population and competitiveness due to so-called cumulative causative process (see more: Myrdal, 1957), although the impacts of these processes are not the same between the single regions, naturally.

The results presented in the work also show territorial diversification, and regional complexity and heterogeneity of the relationships between agricultural and rural development. The empirical results of the study support the results and theoretical ideas concerning the divergent territorial rural-agriculture linkages made in earlier studies. As Breman et al. (2010, p. 368) expressed it,

*“the destinies of agriculture, rural society and space have been separating because of the regional differences between the conditions for function and potential and the way they are exploited.”*

For a long time, agriculture was a dominant sector in Finnish society. After the dominance of agriculture, the strong industrialisation process and later the transition towards the dominance of the service sector have taken place. However, at regional level, the picture is not that simple or homogenous. From a historical point of view, in Finland, the more profitable production line has pushed the earlier main

production line further away from coastal areas (see e.g. Ajo, 1944; Katajamäki, 1988). Today, agriculture has various kinds of socioeconomic roles depending on the type and location of a given rural area. In southern and western Finland, where most of the urban-adjacent and the majority of the core rural municipalities are located, the natural preconditions for farming are the best and most diverse (Finnish Meteorological Institute a; b; Varjo, 1977; 1980; Rosenqvist, 1997; Ministry of Agriculture and Forestry, 2002). In urban-adjacent rural municipalities local markets also function better than in other types of rural municipalities. In addition, the opportunities to work outside the farms are more abundant because of availability of other jobs and shorter distances (Breman et al., 2010). This partly explains a modest development of agriculture in urban-adjacent rural municipalities, measured by the indicators chosen in this work.

Furthermore, the circumstances for other economic activities are notably better in urban-adjacent rural areas compared to other rural areas. This means that the comparative advantage to pursue other economic activities than agriculture is often the biggest in urban-adjacent rural areas, which in turn can marginalise agriculture in these areas. Although the conditions for pursuing agriculture would have been better than in other areas, the comparative advantage of pursuing other economic activities can be higher (see more about regional comparative advantage in general: Armstrong & Taylor, 2000, pp. 119–139). The same phenomenon also affects the other rural types but usually not as strongly as urban-adjacent rural areas. In addition, agricultural subsidies are lower and less secure in southern Finland than in the more northern areas, which in turn can affect the receding role of agriculture (Breman et al., 2010, p. 377).

In core rural areas, major centres are rather distant but the distances to medium-sized

centres are not very long, which means that the situation for agriculture in terms of demand for products and services and working outside the farm is also reasonable. However, as the results showed, the share of farm income in the total farm household income is bigger in core rural areas than in urban-adjacent rural areas. This is surely because of different production structures, but also because the possibilities of working outside the farms are averagely smaller.

Most of eastern and northern Finland is sparsely populated rural area, where the natural conditions restrict agriculture and other economic opportunities the most (Finnish Meteorological Institute a; b; Varjo, 1977; 1980; Rosenqvist, 1997; Ministry of Agriculture and Forestry, 2002). Both working outside the farm and local marketing of agricultural products and services is more challenging than in other rural areas on average. The production structures of farms differ strongly from those in other areas: dairy husbandry is a more common line of production (see e.g. Niemi & Ahlstedt, 2011a, p. 17). In addition to natural and socioeconomic conditions, the production structure of farms also affects the income structure of farm households. In 2008, for instance, the average share of farm income in total income of farm households was a bit over 80% amongst farms specialised in dairy production, while the equivalent share was a bit over a quarter amongst farms specialised in crop production (Statistics Finland b). In Eastern and Northern Finland, the role of farm and agricultural income in farm household's total income is bigger than in other rural areas.

The differences between the regional developments of agricultural jobs and agricultural income may partly be explained by regional differences in production structures of agriculture and structural changes of agriculture taken place over decades. If the development

of agricultural income has been stronger than the development of agricultural jobs, then agricultural productivity might have increased. Stronger development in productivity can mean that production has become more effective and more capitalised in terms of machinery, for instance (see also Massey & Meegan, 1982), or that certain functions have been outsourced from farms. These are the factors which can lead to an exceptionally strong decrease in agricultural jobs. Outsourcing of activities can also lead to a decrease in agricultural income. Socioeconomic circumstances of rural areas affect these results, too. Furthermore, the annual changes of natural conditions and the regional differences between them must not be forgotten.

On the basis of the results presented above, the relatively strong development in agriculture has been based more on labour-intensive agriculture in urban-adjacent rural areas than in remote rural areas where the share of agricultural income is bigger than the average. The logical reason for this might be that, compared to urban-adjacent rural areas, the stronger structural changes in agriculture have taken place in remote rural areas. Over the last decades, structural change in agriculture has been especially difficult for eastern and northern Finland and for dairy husbandry farms in particular: the share of dairy husbandry farms has decreased while the share of grain farms has increased. However, the strongest structural changes have already occurred before the time period covered in the empirical analysis of this thesis (see Niemi & Häkkinen, 1988; Häkkinen, 1991; Kuhmonen, 1996b). Especially in urban-adjacent rural areas, it has been easier to find other income sources outside agriculture. This also means that the pressures for intensification of agricultural production have not been as obvious as in more remote rural regions.

## Summary

In the period 1995–2004, based on the empirical analysis made in this work, there was no significant correlation between agricultural and rural development at municipal level in Finland. Furthermore, the correlations between agricultural development and rural development in terms of separate indicators of these were low. The most challenging areas seem to be sparsely populated eastern Finland and parts of central Finland, where both the agricultural and socioeconomic development of rural areas were relatively poor. On the other hand, the relatively strong development measured by both agricultural and rural development could be found especially along the southern and western coasts of Finland. Compared with rural development, agricultural development within different rural types is much more diverse.

In general, the empirical results indicate that Finnish rural areas are polarising and, therefore, a regional concentration trend in socioeconomic activities in general as well as in agriculture is taking place in Finnish rural areas. The results presented in the thesis also show the regional complexity and heterogeneity of the relationships between agricultural and rural development, and within agricultural development. Reasons behind different regional trajectories can partly be found in historical structures of regional division of labour. Regionally divergent natural, socioeconomic, societal and political circumstances for pursuing agriculture and other economic activities certainly also affect different development trends and agriculture-rural relationships.

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## 10 Role of support from rural and regional points of view

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The last chapter of the empirical analysis concentrates on the distribution of support from the rural and regional points of view. Again, the classification of support payments made and used earlier in this work is utilised. In addition, the four-fold typology of agricultural and rural development and the Finnish Rural Typology are used when analysing the regional distribution of support payments.

In the case of structural and investment support of farms and rural development measures, the Employment and Economic Development Centre of Ahvenanmaa (Åland Islands) has been excluded from the analysis. This is because these payments did not exist in the support register available for this work.

### 10.1 Distribution between different types of support

Table 10.1 presents the data of agricultural and rural development support payments used in the thesis and the money flows of different types of support admitted over 2000–2006. In this work, support payments are divided into different categories. The analysis of support money flows shows that the share of the CAP Pillar I support (here excluding market management measures) is 23% of the total support. The share of the CAP Pillar II support is approximately one half of the total support. As described earlier, a major part of Pillar II support is channelled through Less Favoured Area support (LFA support) and through agri-environmental support. A minor share of Pillar II support is channelled through structural and

investment support of farms and through rural development measures, i.e. the non-agricultural measures. Opposite to the CAP payments allocated in Finland, most of the national aids are Pillar I type support.

In the programming period for 2007–2013, the measures under the CAP Pillar II are divided into four axes:

- 1) improving the competitiveness of the agricultural and forestry sector;
- 2) improving the environment and the countryside;
- 3) improving quality of life in the rural areas and diversification of the rural economy, and
- 4) Leader approach (European Commission b).

In summary, Axis 1 consists of structural and investment support of farms, Axis 2 consists of LFA support and agri-environmental support, the rural development measures are under Axis 3 and Leader approach (Axis 4) is implemented by local action groups mainly through the measures under Axis 3 (see more: European Commission b). When comparing the financial structure of support payments between these axes between the programming periods 2000–2006 and 2007–2013 in Finland, the proportional weights of each axis are quite similar (Table 10.2).

Table 10.3 shows the proportional shares of agricultural income support, structural and investment support of farms and rural development measures within each Employment and Economic Development Centre. In western Finland, measured

Table 10.1 Money flows of CAP and complementary national aid payments in 2000–2006 by type of support (public sector’s payments) in Finland based on data used in thesis<sup>34</sup> (This table with minor corrections is based on the table presented in Voutilainen et al., 2009, p. 67.)

Type of support	Support payments in 2000–2006, €	Share of total support, %
<b>Pillar I:</b>	<b>3,063,646,558</b>	<b>23.3</b>
Direct aids	3,063,646,558	23.3
<b>Pillar II:</b>	<b>6,453,135,250</b>	<b>49.1</b>
Less Favoured Area Support (LFA support)	2,823,012,964	21.5
Agri-environmental support	1,897,393,645	14.4
Structural and investment support of farms*	922,458,321	7.0
Rural development measures**	781,667,953	5.9
<b>National agricultural aid:</b>	<b>3,566,015,395</b>	<b>27.1</b>
Pillar I type support***	3,069,090,656	23.4
Pillar II type support***	419,864,033	3.2
Other national aid	77,060,706	0.6
<b>Support payments without farm identification code****</b>	<b>79,744,918</b>	<b>0.6</b>
<b>Total support</b>	<b>€13,140,189,397</b>	<b>100</b>

\*Includes the interest subsidies. All the structural and investment aids of farms irrespective of the money source (i.e. EU co-financed aids or totally nationally financed aids) are included here in this group of support. In the case of structural and investment support of farms, Employment and Economic Development Centre of Ahvenanmaa (Åland Islands) has been excluded. This is because these payments were not governed by the Finnish Ministry of Agriculture and Forestry and therefore did not exist in the support register available in this work.

\*\*Nationally funded rural development measures are included in the rural development measures under the CAP Pillar II. In the case of rural development measures, Employment and Economic Development Centre of Ahvenanmaa (Åland Islands) has been excluded. This is because these payments were not governed by the Finnish Ministry of Agriculture and Forestry and therefore did not exist in the support register available in this work.

\*\*\*Here the national aid payments are divided into Pillar I and Pillar II type payments. All the payments could not be classified in this way. In addition, it must be remembered that this kind of classification is at some amount artificial. National Pillar I type support consisted of national direct aids of farms. National Pillar II type support consisted mainly of national supplements of agri-environmental support and LFA support.

\*\*\*\*Support payments with no farm identification code do not include support for milk production given over 2000–2005 (although these supports did not have the farm identification code in the register). These payments are allocated to the regions based on the actual spatial allocation in 2006. This method gives us quite a correct result since the regional structure of milk production has not notably been changed during 2000–2006 (see more in Chapter 5.4.1).

<sup>34</sup> Based on the support registers, the total public support was €13,997,817,310 which is 6.5% higher than the total support presented in Table 10.1. The main reason behind the difference is that in this thesis, only the farm-based support payments from 2000–2006 which could be connected to other farm level data from 2005 (i.e. farm characteristics such as production line) were included in the analyses of distribution of support. Because the number of farms has continuously decreased, not all the farms existing in the support registers are included in the other farm register from 2005. In addition, the support of rural development projects without regional identification code (a part of technical assistance and governing money, in particular) totalling €11,7 million were excluded from the analysis.



Table 10.2 Distribution of axes under CAP Pillar II (Rural Development Programmes) in programming periods 2000–2006 and 2007–2013 according to financial frameworks of programmes. Source: Ministry of Agriculture and Forestry<sup>35</sup>

Axis*	Programme period 2000–2006	Programme period 2007–2013
1	10.4%	7.8%
2	80.1%	81.7%
3	8.3%	8.9%
4	3.3%	3.7%
<b>Total</b>	<b>100%</b>	<b>100%</b>

\*Axis 1 = improving the competitiveness of the agricultural and forestry sector

Axis 2 = improving the environment and the countryside

Axis 3 = improving the quality of life in the rural areas and diversification of the rural economy

Axis 4 = applying the Leader approach

Table 10.3 Distribution of agricultural and rural development support within Employment and Economic Development Centres (excluding Åland Islands) in programming period 2000–2006 (money flows of public sector) (This table with minor corrections is based on the table presented in Voutilainen et al., 2009, p. 68.)

Employment and Economic Development Centre	Agricultural income support, % of total support in region	Structural and investment support of farms, % of total support in region	Rural development support, % of total support in region	Regional shares of total support in whole Finland, %
Uusimaa	89	5	7	6.0
Varsinais-Suomi	86	7	7	1.8
Satakunta	84	6	10	6.3
Häme	87	6	7	7.2
Pirkanmaa	82	6	12	6.9
Kaakkois-Suomi	86	5	9	5.1
Etelä-Savo	75	9	16	3.5
Pohjois-Savo	84	7	9	7.6
Pohjois-Karjala	77	6	16	4.7
Keski-Suomi	79	7	14	4.7
Etelä-Pohjanmaa	80	9	11	11.2
Pohjanmaa	82	10	8	10.5
Pohjois-Pohjanmaa	85	7	8	10.4
Kainuu	76	5	19	2.0
Lappi	78	6	17	3.2
<b>Mean/total</b>	<b>83</b>	<b>7</b>	<b>10</b>	<b>100</b>

<sup>35</sup> The information presented in Table 10.2 is based on the unpublished information provided by the (Finnish) Ministry of Agriculture and Forestry.

by money flows, the relative importance of structural and investment support of farms seems to be higher than average. In southern parts of Finland, the role of agricultural income support is higher than on average while, compared with other parts of Finland, the role of rural development measures is higher in eastern and northern Finland. However, roughly, the relative weights of different types of support are quite similar between the regions. Agricultural income support has clearly the most dominant role in the total money flows of support in every region ranging from 75% in Etelä-Savo to 89% in Uusimaa. The homogeneity of the proportional weights of different types of support is a clear argument of exogenous development in agricultural policy. As stated in Chapter 3.2.2, in Finland in

the programming period for 2000–2006 as well as in the programming period for 2007–2013, the share of the ‘regional money’ (including the money admitted to local action groups) in total support of the measures under the CAP Pillar II was just over 10%.

Next, regional allocation of support is analysed in a detail. Furthermore, some explanations for and reasons behind the actual regional allocation of support are presented.

## 10.2 Agricultural income support

Roughly, agricultural income support as a whole is allocated parallel with the location of farms in Finland (Figure 10.1). The

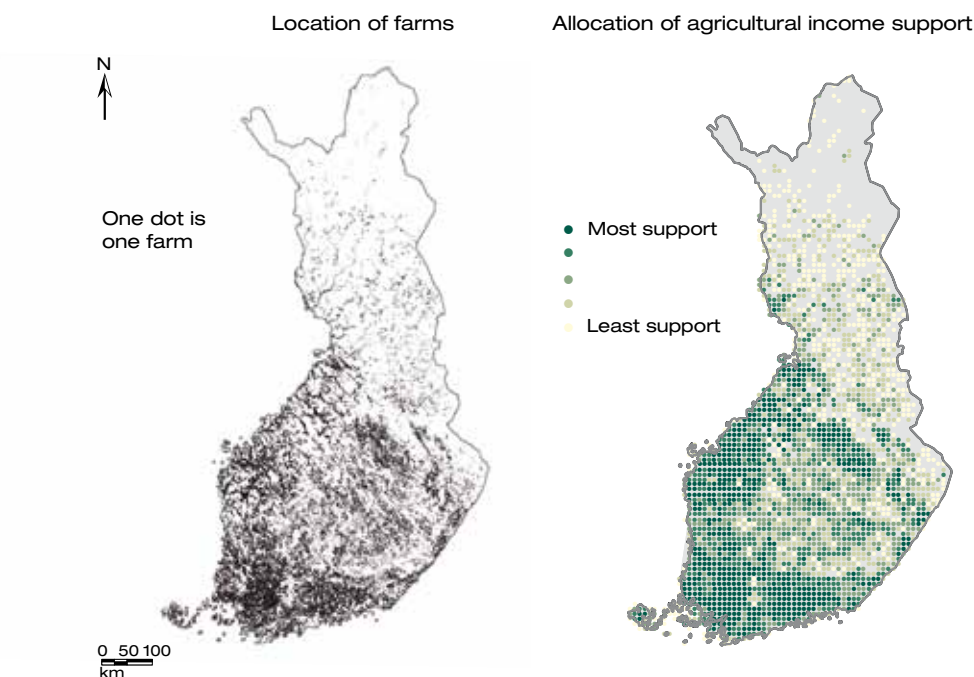


Figure 10.1 Location of active farms in Finland in 2005 (one dot is one farm) and total allocation of agricultural income support (direct aid, LFA support, agri-environmental support and complementary national aid) in 10 km\*10 km spatial scale in 2000–2006 (Earlier versions of these maps have been presented in Voutilainen et al., 2009, pp. 59 and 69.)

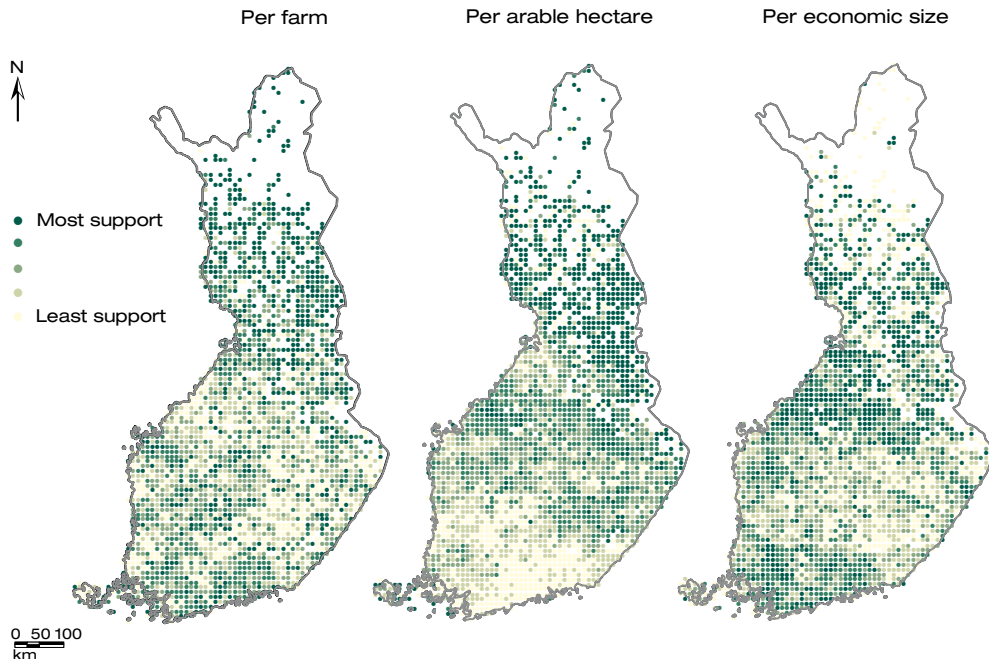


Figure 10.2 Allocation of agricultural income support (direct aid, LFA support, agri-environmental support and complementary national aid) per farm, per arable hectare and per economic size in 10 km\*10 km spatial scale in Finland in 2000–2006 (Earlier versions of these maps have been presented in Voutilainen et al., 2009, pp. 70–71.)

result is different when income support is related to the number of farms in regions, arable area in regions and economic size of farms (Figure 10.2). Then, when compared with total money flows, agricultural income support is allocated more to the northern parts of Finland. Different regional allocations of agricultural income support are affected by different regional production structures of agriculture, different average size of farms between regions and different support levels in each agricultural support area. However, from the viewpoint of balancing regional development, the essential thing is that a major part of Finnish farms are located in southern and western Finland while the most challenging regions in the light of regional development are situated in the sparsely populated rural areas of eastern and northern Finland. The Employment

and Economic Development Centres of Etelä-Pohjanmaa, Pohjanmaa and Pohjois-Pohjanmaa (i.e. 3 Employment and Economic Development Centres out of 16) alone received one third of total agricultural income support in 2000–2006 (Table 10.3).

When relating the agricultural income support payments to the rural population in the regions, notable regional differences can be seen. Compared with the average, more support per rural inhabitant is channelled to the western parts of Finland. On the other hand, many regions in eastern and northern Finland faced by a weaker socioeconomic situation get less support per rural inhabitant (Figure 10.3). These results tell us that particularly in many western parts of Finland the role of agriculture as an employer is bigger

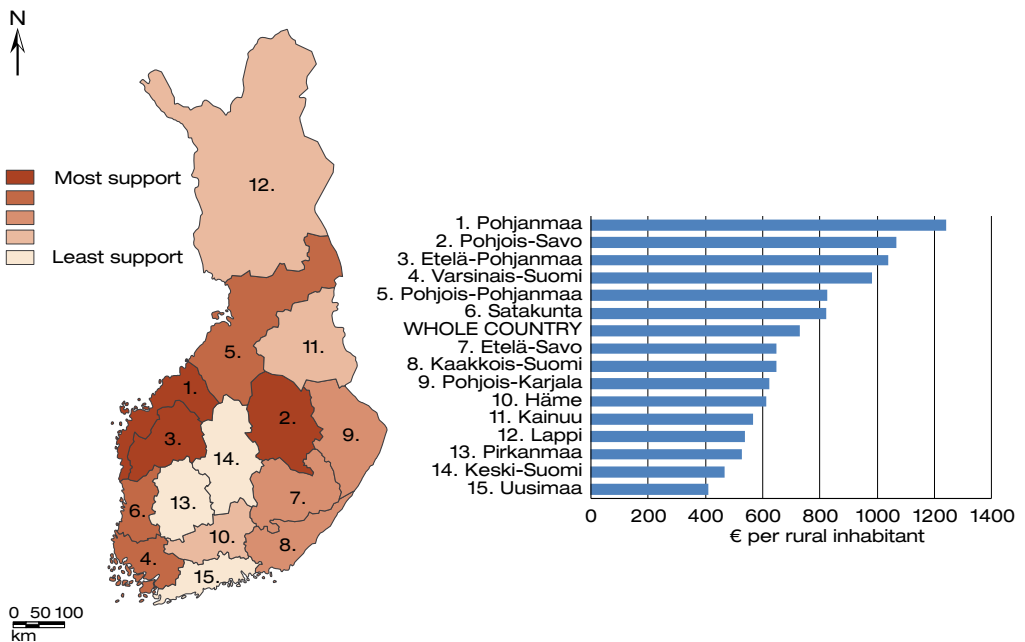


Figure 10.3 Allocation of agricultural income support (direct aid, LFA support, agri-environmental support and complementary national aid) per rural inhabitant<sup>36</sup> by Employment and Economic Development Centres in 2006

than average. In addition, the volume of production, measured by the number of farms and the economic size of farms, is higher in these same areas.

When considering the agricultural income support types by dividing the payments into Pillar I (which includes here direct aid for livestock and arable area) and Pillar II (which includes here agri-environmental support and LFA support), the distribution of these payments has been remarkably

similar between the rural types defined by the Finnish Rural Typology. However, the national agricultural support payments are allocated notably more strongly to sparsely populated rural municipalities (Table 10.4). This is because sparsely populated rural municipalities are concentrated in eastern and northern Finland, and especially in northern Finland the national aid is paid remarkably more than in Finland on average. The share of livestock farms, especially dairy farms, is clearly higher in eastern and northern Finland than in southern and western Finland dominated by core rural and urban-adjacent rural municipalities. The livestock farms, in turn, get notably more national aid. In addition, because of the agricultural support areas the support level in terms of support per arable hectare and support per livestock unit is higher in sparsely populated northern parts of Finland.

<sup>36</sup> Rural population includes here the population of urban-adjacent rural municipalities, core rural municipalities and sparsely populated rural municipalities (for more details of this classification, see Chapter 5.5 and Malinen et al., 2006). Based on this criterion, in 2005, the share of rural population was 41% of the total population. The amount of rural population is defined here as the mean of the regional rural populations in 2000–2004.

Table 10.4 Allocation of different types of agricultural income support payments in 2000–2006 within Finnish Rural Typology (This table is based on the table presented in Voutilainen et al., 2009, p. 70.)

Type of municipality*	Pillar I**, %	Pillar II***, %	CAP in total, %	National aid, %	Support in total, %
Urban	32	47	79	21	100
Urban-adjacent rural	35	47	82	18	100
Core rural	31	43	74	26	100
Sparsely populated rural	26	39	65	35	100
<b>Whole Finland</b>	<b>30</b>	<b>44</b>	<b>73</b>	<b>27</b>	<b>100</b>

\*According to the Finnish Rural Typology (Malinen et al. 2006) and the municipal division in force in 2006

\*\*Does not include market management measures.

\*\*\*Here, Pillar II includes only agri-environmental support and LFA support.

As a whole, the money flows of agricultural income support are distributed comparable with the distribution of farms between different rural types. The farms situated in core municipalities get most support per farm but least support per economic size (Table 10.5). This partly indicates that the farms situated in core rural areas are bigger than average.

When analysing the allocation of support within the four-fold typology of agricultural and rural development, the support payments are allocated between these four types of regions comparable with the distribution of farms between

these regions. However, the regions with stronger agricultural development—according to the municipal-level analysis of this thesis—get more support than other regions in terms of support per farm and total support. Average support per economic size is clearly highest in the farms situated in the municipalities where agricultural development has been weaker than median and rural development has been stronger than median (Table 10.6). These regions can be found particularly in southern Finland except for the most southern part around the capital city, Helsinki. In these regions, the share of the farms pursuing grain production and other

Table 10.5 Allocation of agricultural income support (direct aid, LFA support, agri-environmental support and complementary national aid) in 2000–2006 within Finnish Rural Typology (Earlier version of this table has been presented in Voutilainen et al., 2009, p. 71.)

Type of municipality*	Share of farms in 2005, %	Share of total support (in terms of €), %	Support, € per farm**	Support, € per economic size**	Support, € per arable area**
Urban	7	6	22,961	0.86	682
Urban-adjacent rural	19	18	24,516	0.86	663
Core rural	47	49	26,308	0.81	747
Sparsely populated rural	28	26	24,206	0.86	877
<b>Whole Finland</b>	<b>100</b>	<b>100</b>	<b>25,175</b>	<b>0.83</b>	<b>755</b>

\*According to the Finnish Rural Typology (Malinen et al. 2006) and the municipal division in force in 2006

\*\*Includes the farms which have received agricultural income support in 2006

Table 10.6 Allocation of agricultural income support (direct aid, LFA support, agri-environmental support and complementary national aid) in 2006 within framework of four-fold typology of agricultural and rural development (This table is based on the table presented in Voutilainen et al., 2009, p. 72.)

Four-fold typology*	Share of farms in 2005, %	Share of total support (in terms of €), %	Support, € per farm**	Support, € per economic size**	Support, € per arable area**
Rural development + Agricultural development –	28	26	24,138	0.88	667
Rural development + Agricultural development +	26	28	26,991	0.81	774
Rural development – Agricultural development –	21	19	22,518	0.82	766
Rural development – Agricultural development +	25	27	27,299	0.82	855
<b>Total/mean</b>	<b>100</b>	<b>100</b>	<b>25,334</b>	<b>0.83</b>	<b>760</b>

\*See more about the typology: Chapter 9.3.

\*\*Includes the farms which have received agricultural income support in 2006

crop production as the main production line is higher than on average which, in turn, raises the amount of support per economic size and lowers the amount of support per arable area. Furthermore, the farms are notably larger in the regions where agricultural development has been stronger than in the regions where agricultural development has been weaker than median. This, in turn, raises the amount of total support and the amount of support per farm.

### 10.3 Structural and investment support of farms

Contrary to agricultural income support, the structural and investment support payments of farms are not 'automatically' paid annual support payments. Structural and investment support has to be applied for the measures defined in advance. In addition, these measures can include the applicator's own funding. It is challenging to analyse the allocation of structural and investment support because the duration of these measures varies strongly and

the measure can be implemented during two different programmatic periods, for instance.

Pyykkönen (2001, p. 17) states that it is important to take the investments of farms into account when analysing structural change of agriculture because the investment can indicate the future of agriculture. It can be asked:

- Has the structural and investment support affected positively agricultural development in a region?
- Do the farms with better performance apply for more actively the structural and investment support?
- Do the farms situated in the areas with stronger agricultural development apply for more aids and hence do more structural changes than the farms situated in the areas with weaker agricultural development because the farms in the regions with stronger agricultural development are more dynamic and/or trust more their future, and



– In terms of farm size and main production line of farm, are there differences in the exploitation of structural and investment support?

Based on the analysis made in this work, more structural and investment support is allocated to the farms situated in the areas with stronger agricultural development, both in absolute terms and in terms of support per farm and support per economic size (Table 10.7). When analysing the allocation of structural and

investment support within the rural types of the Finnish Rural Typology, the aids are distributed rather equally between the shares of farms in each rural type. However, on average, the highest support has been allocated to core rural municipalities (Table 10.8).

Overall, the spatial allocation of structural and investment support reflects the location of farms in Finland. In absolute terms, most of the support is allocated to western and southwestern Finland near

Table 10.7 Allocation of structural and investment support of farms in 2005 (2000–2006 in brackets) within four-fold typology of agricultural and rural development (This table is based on the table presented in Voutilainen et al., 2009, p. 77.)

Four fold typology*	Share of farms in 2005, %	Share of total support (in terms of €), %	Support, € per farm**	Support, € per economic size**
Rural development + Agricultural development –	28	20 (21)	2,466	0.09
Rural development + Agricultural development +	26	30 (30)	3,987	0.12
Rural development – Agricultural development –	21	17 (17)	2,816	0.10
Rural development – Agricultural development +	25	32 (32)	4,357	0.13
<b>Total/mean</b>	<b>100</b>	<b>100</b>	<b>3,411</b>	<b>0.11</b>

\*See more about the typology: Chapter 9.3.

\*\*Includes the farms which have received agricultural income support in 2006

Table 10.8 Allocation of structural and investment support of farms within Finnish Rural Typology in 2005 (2000–2006 in brackets) (This table is based on the table presented in Voutilainen et al., 2009, p. 78.)

Type of municipality*	Share of farms in 2005, %	Share of total support in 2005 (2000–2006) (in terms of €), %	Support, € per farm**	Support, € per economic size**
Urban	7	6 (6)	2,942	0.11
Urban-adjacent rural	19	14 (14)	2,561	0.09
Core rural	47	53 (55)	3,798	0.12
Sparsely populated rural	28	27 (26)	3,314	0.12
<b>Whole Finland</b>	<b>100</b>	<b>100</b>	<b>3,378</b>	<b>0.11</b>

\*According to the Finnish Rural Typology (Malinen et al. 2006) and the municipal division in force in 2006

\*\*Includes the farms which have received agricultural income support in 2006

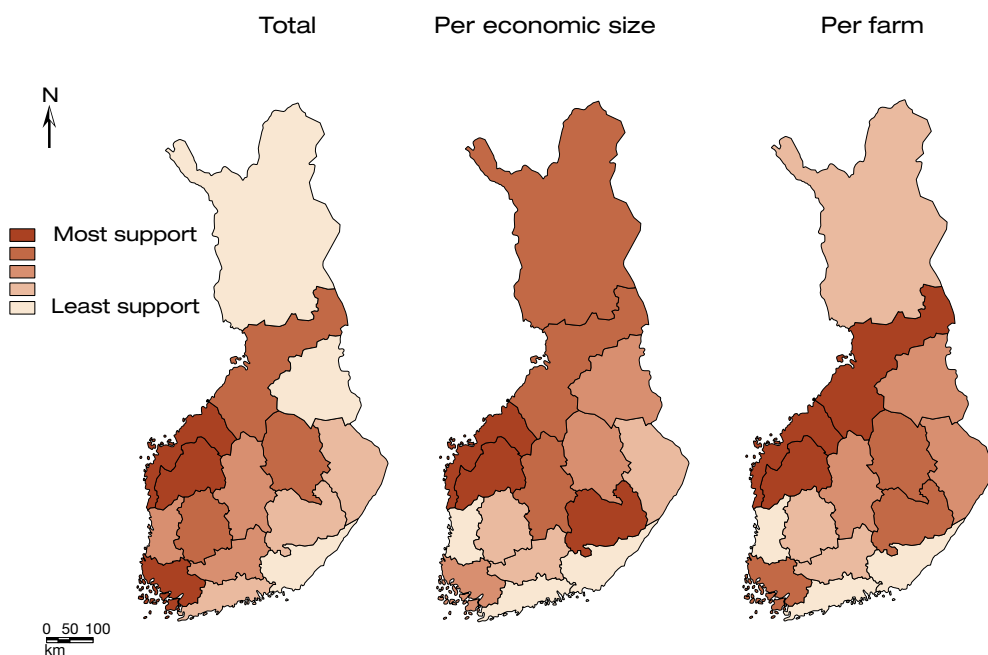


Figure 10.4 Allocation of structural and investment support of farms by Employment and Economic Development Centres according to quintiles in 2000–2006, in total, per economic size of farms and per farm (Earlier version of the first map in the left has been presented in Voutilainen et al., 2009, p. 78).

the coast. Especially the western parts of Finland get more support than on average in terms of support per economic size and support per farm (Figure 10.4).

#### 10.4 Rural development measures

As described in Chapter 5.4.1, the highest regional level for analysing appropriately the allocation of business aids is municipal level (LAU-2 level) and, in the case of other rural development measures, the highest regional level is the Employment and Economic Development Centre level. When the regional allocation of rural development measures for 2000–2006 are compared with the regional allocation of agricultural support, clear differences between these can be noticed (Figure

10.5). Compared with the average in Finland, the relative importance of rural development measures is higher especially in eastern and northern Finland, while the relative importance of agricultural support is higher in southern and western Finland. The result is expected because a major part of the farms are situated in southern and western Finland. Furthermore, particularly sparsely populated rural areas are preferred in the allocation of rural development measures.

Notable regional differences can also be noticed when exploring the money flows of rural development measures per rural inhabitant (according to the Finnish Rural Typology). The smallest amount of support per rural inhabitant is allocated to Uusimaa while most support per rural inhabitant is

allocated to Kainuu and Lappi. Generally, it can be said that, compared with other parts of Finland, the money flows of rural development measures per rural inhabitant are higher than average in eastern and northern Finland (Figure 10.5).

That is, rural development support is allocated regionally in a different way than agricultural support. When proportioned to number of rural inhabitants (according to the Finnish Rural Typology), eastern and northern Finland receive more support

than other parts of the country. The total money flows of rural development measures are also allocated in the favour of eastern and northern Finland. However, this has only a minor impact on the total money flows of the CAP support and complementary national aid because the share of rural development measures in the total money flows of support is low (on the basis of the data used in this thesis the share is approximately 6% of total support in 2000–2006).

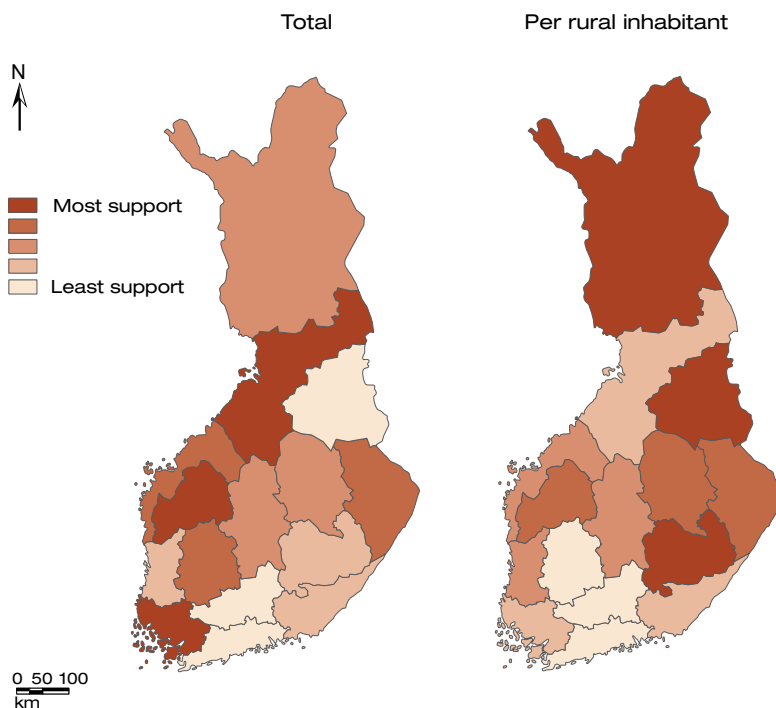


Figure 10.5 Allocation of rural business aid and development projects (public sector’s payments) by Employment and Economic Development Centres according to quintiles in 2000–2006, in total and per rural inhabitant<sup>37</sup> (Earlier versions of the maps have been presented in Voutilainen et al., 2009, pp. 80–81.)

<sup>37</sup> Rural population includes here the population of urban-adjacent rural municipalities, core rural municipalities and sparsely populated rural municipalities (for more details of this classification, see Chapter 5.5 and Malinen et al., 2006). Based on this criterion, in 2005, the share of rural population was 41% of the total population. The amount of rural population is defined here as the mean of the regional rural populations in 2000–2004.

## Summary

Because a major part of agricultural and rural development support is channelled to individual farms, the largest part of total support is allocated to southern and western Finland where most farms are located. Furthermore, in total, the money flows of *agricultural income support* (here direct aids, LFA support, agri-environmental support and complementary national aid) were distributed in rather the same way between the rural types as the farms are distributed between different rural types of the Finnish Rural Typology. The farms situated in core rural municipalities received most support per farm but least support per economic size. This is partly because the farms situated in core rural areas are larger than average. In addition, the regional differences in production line structures and agricultural support areas affect the amount of support allocated to regions.

In contrast with the EU on average, most of the CAP subsidies paid in Finland are Pillar II payments which should have, compared with Pillar I, a more territorial dimension. However, in Finland, the spatial distributions of Pillar I—here direct aid for arable crop and livestock—and Pillar II payments—here LFA support and agri-environmental support—are quite similar. Nevertheless, because of different agricultural support areas in Finland, the national aid was allocated stronger to sparsely populated northern Finland.

The regions with stronger agricultural development—based on the municipal-level analysis of this thesis—received more support than other regions in terms of support per farm and total support. Average support per economic size was clearly the highest in the farms situated in the municipalities where agricultural development was weaker than median and rural development was stronger than

median. The lower the size of the farm measured by economic size, the higher was support per Standard Gross Margin (i.e. economic size) and *vice versa*.

Overall, as in the case of agricultural income support (here direct aids of agriculture, LFA support, agri-environmental support and complementary national aid)—which constitutes a major part of agricultural and rural development support in Finland—the spatial allocation of *structural and investment support of farms* also reflected the location of farms in Finland. The larger farms measured by economic size received more structural and investment aid. The regions with stronger agricultural development received the most of the total structural and investment aids of agriculture. Additionally, the support per farm was also higher in the areas with stronger agricultural development. Consequently, it can be stated that the bigger farms do more structural reforms and invest more than smaller farms. This might indicate that the strongest agricultural areas situated particularly in core rural areas are the strongest also in future and the role of agriculture will be weakened in the areas with weakest agricultural development.

Compared with national average in terms of support money flows, the role of *rural business aid and development projects* (here *rural development measures*) in relation to agricultural support was higher in eastern and northern parts of Finland, i.e. in the areas where socioeconomic challenges are the greatest. Hence, compared with the agricultural support payments, the spatial allocation of rural development measures is totally different. However, this has only a minor impact on the total money flows of the CAP support and complementary national aid because the share of rural development measures in the total money flows of support is low.

## PART III

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### 11 Key findings and conclusions

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This last chapter presents key findings and conclusions. First, background and a summary table of research questions and key research findings are presented. Then, key results of the empirical analysis are described and related to earlier studies. After that, empirical analysis and results are related to the key theoretical concepts discussed in the work. Then, based on the results of the work, conclusions on agricultural and rural development within the context of the CAP are made. Finally, some conclusions on the methods used in the analysis, the limitations of the thesis and ideas relating to potential new studies on this subject are presented.

#### *Background and summary of key research findings*

The CAP and complementary national aid provide the basis for agricultural and narrow rural policy in Finland. With the integration of rural development policies

into the CAP, the legitimacy of the CAP is also seen in the light of regional impacts and for the impacts of rural vitality. The spatial effect of policies is of particular interest for a still remarkably rural country such as Finland with a large area and remarkable regional development differences. For policy planning and implementation, it is also easier to deal with agriculture if the regional dimensions of agriculture and agricultural and rural development support can be identified and if the relationship between agriculture and rural areas can be structured analytically. The aim of this thesis was to answer to that challenge. By using comprehensive and detailed regional statistics, farm-level data and data on every single support decision, the work also brings about new value added and goes beyond many earlier studies on the subject.

Table 11.1 presents the research questions of the thesis, and based on these, summarises the key research findings.

Table 11.1 Research questions and key research findings of thesis

Research questions	Key research findings
<p>1. Based on the earlier studies and key theoretical concepts, which is the relationship between agricultural and rural development and what is the role of the CAP in the development of rural areas?</p>	<p>1. Clear territorial dissociation and diversification of agricultural and rural development has been identified. In general, rural development is now understood in a more integrated way than earlier. However, while the CAP has now many territorial dimensions, a major part of support payments are still farm-based. It is generally acknowledged that the CAP has not been by far an effective tool to promote regional cohesion.</p>
<p>2. Which is the relationship between agricultural and rural development in Finland since 1995 from the regional and socioeconomic point of view?</p>	<p>2. Agricultural and socioeconomic development in rural areas and the relationship between them remarkably varied between Finnish regions. In addition, the regional structures and developments of agriculture and their links to rural development are multidimensional. In general, there was no significant correlation between agricultural and rural development at municipal level in Finland.</p>
<p>3. How are the CAP support payments and national complementary payments in Finland allocated in the EU's programming period 2000–2006, especially from the regional point of view?</p>	<p>3. Because a major part of agricultural and rural development support in terms of money is channelled into individual farms and almost every active farm in Finland, the largest part of support is allocated to southern and western Finland where most farms are located. However, the greatest challenges of regional development occur in the sparsely populated rural areas of eastern and northern Finland.</p>

### *Empirical analysis and results*

In this work, agricultural and rural development was measured by aggregate, regional-level socioeconomic indicators. Territorial approach was utilised in defining the term 'rural': rural was defined as rural municipalities according to the Finnish Rural Typology which divides Finnish municipalities into urban municipalities, urban-adjacent rural municipalities, core rural municipalities and sparsely populated rural municipalities. In the municipal-level (LAU-2 level) analysis of agricultural and rural development, the indicators of jobs and income were used. In addition, development of population was included

in the municipal-level analysis of rural development. A linear regression model was employed to measure proportional agricultural and rural development at municipal level. The municipal-level development was analysed by annual development between 1995 and 2004. The municipal-level analyses were supplemented by more updated analyses done within the framework of the Finnish Rural Typology. Compared with a majority of earlier studies, this thesis offers regionally more detailed analysis and, therefore, goes beyond many earlier studies on the subject.

While, according to the Finnish Rural Typology, a bit over one third of the

rural inhabitants live in core rural municipalities, approximately one half of the farms are situated in these areas. In addition, compared to average, the farms are larger in core rural municipalities. In urban-adjacent rural areas, agriculture employs much fewer people than in the other types of rural areas. The significance of agriculture as an employer as well as its relative share in the value of production, for instance, continues to diminish in all the rural types.

Based on the municipal-level analysis done in the thesis, the annual development of agricultural jobs in 1995–2004 has been the weakest especially in many regions of eastern Finland and the strongest particularly along the southern coast and in western Finland. In 1995–2004, the mean annual change in the number of jobs in agriculture was positive only in three municipalities. The development of agricultural income has also been stronger in many areas along the southern and western coasts, but also in parts of eastern and northern Finland. The development in terms of agricultural income has been the weakest in southern Finland except for the coastal areas. The areas where both the development of agricultural income and agricultural jobs have been relatively strong can be found especially along the southern and western coasts and in parts of northern Finland, while the areas described by relatively weak agricultural development measured by both indicators are located particularly in eastern Finland and in parts of central Finland.

The municipal-level analysis showed that agricultural development and its separate components—jobs and income—varied a great deal between municipalities in 1995–2004. Generally, agricultural development is clearly twofold. Relatively strong development can be grounded either on agricultural jobs or agricultural income, but on average, strong development is based on only either one of these components.

The differences between the developments may be explained by regional differences in production structures, structural changes in agriculture having taken place over the past decades and by different socioeconomic circumstances of each region, for example the possibilities for farm families to work outside the farm. If the development of agricultural income has been stronger than the development of agricultural jobs, then agricultural productivity might have increased. Socioeconomic circumstances of rural areas also affect these results. Furthermore, the annual changes of natural conditions and the regional differences between them must not be forgotten.

From the socioeconomic point of view, the most favourable rural areas are located and the strongest rural development has taken place in southern and western parts of the country and in the rural areas adjacent to major cities. Rural development was the weakest in sparsely populated areas, i.e. particularly in eastern and northern Finland. The developments in separate factors—income, jobs and population—were regionally comparable. In general, the empirical results indicate that Finnish rural areas are polarising and, therefore, a regional concentration trend in socioeconomic activities in general as well as in agriculture is taking place in Finnish rural areas.

In the period 1995–2004 in general, there was no significant correlation between agricultural and rural development at municipal level in Finland. However, the most challenging areas seem to be eastern Finland and parts of central Finland, where both the agricultural and socioeconomic development of rural areas were relatively poor. On the other hand, the relatively strong development measured by both agricultural and rural development took place especially along the southern and western coasts of Finland. Compared to rural development, agricultural development within different rural types



of the Finnish Rural Typology, for instance, is regionally much more diverse.

The results presented in the thesis show the territorial diversification and regional complexity and heterogeneity of the relationships between agricultural and rural development, and within agricultural development. The empirical results support the results and theoretical ideas of earlier studies concerning the divergent territorial rural-agriculture linkages. Additionally, the results of this work show polarisation development in Finnish rural areas both in the light of agricultural and other socioeconomic development factors as has been also indicated in earlier studies in Finland. Reasons behind different regional trajectories can partly be found in the historical structures of regional division of labour. Regionally divergent natural, socioeconomic, societal and political circumstances for pursuing agriculture and other economic activities also certainly affect different development trends and agriculture-rural relationships.

As regards to the analysis of allocation of the CAP support and national complementary support, data on every single admitted support payment were available. In addition, farm-level data included information about the size and production structure of the farms, for instance. Based on the identification codes and location coordinates of the farms available in the thesis, the separate data sets—i.e. the support data and other farm data—were managed to connect and presented on the maps of this work. The data also included other than farm-based data, i.e. so-called rural development measures. The programming period 2000–2006 and particularly the year 2006 were explored. The money flows of farm-level support were related to farm characteristics (especially farm size and main production line) and the regional classifications of agricultural and rural development, and the Finnish Rural Typology. Because of

the fine scale and comprehensive farm and support data, the thesis brings about new value added compared to earlier studies.

In the programming period for 2000–2006, most of the CAP support and complementary national aid was allocated to individual farms. The most important factor affecting the spatial allocation of agricultural and rural development support payments is the location of farms. In addition, the regional production structures of the farms, the regional differences in the size of farms and the agricultural support areas affect the spatial allocation of payments. Because of these factors, money flows of support payments between regions, in total and as related to farm characteristics, vary strongly. Within agriculture in Finland and also generally in the EU, the largest farms get most of total support. For example in 2006 in Finland, over 40% of agricultural income support (*here direct aids of agriculture, LFA support, agri-environmental support and complementary national aid*) was channelled to largest 15% of farms.

Contrary to the EU on average, most of the *agricultural income subsidies* paid in Finland are the CAP Pillar II payments which should have, compared to Pillar I, more territorial dimension. However in Finland, the spatial distribution of Pillar I—here direct aid for arable crop and livestock—and Pillar II payments—here LFA support and agri-environmental support—are quite comparable. Nevertheless, because of different agricultural support areas in Finland, the national subsidies were allocated stronger to sparsely populated northern Finland.

In total, the money flows of *agricultural income support* were distributed in the same way between different rural types of the Finnish Rural Typology as the farms are distributed between different rural types. However, the farms situated in core rural municipalities received most support per

farm but least support per economic size. This is partly because the farms situated in core rural areas are larger than average. Generally, the smaller the size of the farm measured by Economic Size Unit, the higher is support per Standard Gross Margin (i.e. economic size) and *vice versa*. In addition, the regional differences in production line structures affect the amount of support allocated to regions.

The regions with stronger agricultural development—based on the municipal-level analysis of this work—received more support than other regions in terms of total support and support per farm. This is particularly because the farms situated in the regions with stronger agricultural development are larger than average. On the other hand, average support per economic size was clearly the highest in the farms situated in the municipalities where agricultural development was weaker than median and rural development was stronger than median.

Overall, as in the case of agricultural income support (here direct aids of agriculture, LFA support, agri-environmental support and complementary national aid) described above, the spatial allocation of *structural and investment support of farms* also reflected the location of farms in Finland. The larger farms measured by economic size received more structural and investment aid. The regions with stronger agricultural development received most of the total structural and investment aids of agriculture. In addition, the support per farm was also higher in the areas with stronger agricultural development. Consequently, it can be stated that the bigger farms do more structural reforms and invest more than smaller farms. This might indicate that the strongest agricultural areas situated particularly in core rural areas are the strongest also in the future and the role of agriculture will be weakened in the areas with weakest agricultural development.

Compared with national average, the role of rural business aid and development projects—here called *rural development measures*—in relation to agricultural support was higher in eastern and northern parts of Finland. In Finnish rural development policy, particularly sparsely populated rural municipalities are prioritised when allocating rural business aid and development projects. Hence, compared to the agricultural support payments the spatial allocation of rural business aid and development projects is totally different. The result is excepted because a major part of the farms are situated in southern and western Finland. However, the different allocation of these subsidies has only a minor impact on total money flows of the CAP support and complementary national aid because the share of rural development measures in the total money flows of support is low.

Because a major part of agricultural and rural development support is channelled into individual farms, the largest part of support is allocated to southern and western Finland, where most farms are located. However, the greatest challenges of regional development occur in the sparsely populated rural areas of eastern and northern Finland. The results presented in this thesis support the results and conclusions of the earlier studies relating to the allocation of agricultural and rural development support payments especially from a regional or rural development point of view. The CAP and complementary national support has not been an effective tool for promoting regional cohesion. From the standpoint of regional development, the major problem in the CAP is still that most of the policy measures and types of support are restricted to farms and farmers only, while a great and growing proportion on rural inhabitants all across the EU are not engaged in farming.

The research hypotheses of the thesis were the following:

- Agricultural development and rural development are not the same phenomena nor are these developments necessarily parallel within the regions.
- From the viewpoint of a balanced regional development and achieving an integrated rural development, agricultural and rural development support is not allocated in an optimal way.

Based on the analyses of this thesis and the conclusions presented in this chapter, it is clear that both of the hypotheses are valid.

*Connections between theoretical discussion and empirical results: CAP as a tool in developing rural areas*

Regarding the research position of this work, it is challenging to achieve a dialogue between theoretical discussion and empirical results. At least two reasons behind this can be identified. First, the empirical part of the thesis is grounded only on quantitative register and statistical data. Secondly, based on the earlier studies on the subject, strong theoretical frameworks regarding the research position of this thesis are difficult to identify. However, by presenting theoretical concepts and background of the subject quite comprehensively in the first part of the work, linkages between empirical analysis (and results) and theoretical concepts were identified in this work. In general terms, theoretical framework of the thesis was related to the understanding of the term ‘rural’ and the role of agriculture within the context of rural development in different regions. Theoretical framework was related to the main questions of the empirical analysis, i.e. the relationship between agricultural and rural development and territorial distribution of agricultural and rural development support. Finally, some concluding remarks on the CAP as a

tool in developing rural areas—both from theoretical and empirical point of view—can be presented in this last chapter.

Different approaches to rurality reflect the implementation of rural development policy. In different approaches, the role and importance of agriculture, region-based approach and the range of different actors and dimensions in rural development vary. The idea of the dissociation of agriculture and rural areas has been strengthened by the notion of territorial diversification. Furthermore, in very general terms, rural development is now understood in a more integrated way than earlier, being more than sectoral, agricultural development alone.

In spatial approach of the rural, traditional regional core-periphery dichotomy is emphasised, and a rural area is primarily associated with periphery and agriculture in terms of land use. This also means that the policy guidance and the related exercise of power also take place through agriculture. As the empirical analysis of this work indicates, spatial approach of the rural is still dominating in the implementation of the CAP and national complementary policy, i.e. the essential element of narrow rural policy, in Finland. The regional homogeneity of the proportional weights of different types of support in Finland, in turn, is an indication of the exogenous development paradigm in agricultural policy, i.e. the regions have limited possibilities to affect the implementation of rural development policy.

For the adaptation of the EU membership and the CAP, two measures of the CAP—Less Favoured Area support (LFA support) and agri-environmental support—were adopted as the central instrument in Finnish agricultural policy. Hence, in contrast to the EU on average, most of the subsidies paid in Finland come from Pillar II of the CAP, and they are legitimised by their contribution to the

viability of rural areas. The dominant role of the CAP Pillar II has diminished the difference between Pillar I and Pillar II in Finland. This is because in Finland, LFA support is paid to every active farm and agri-environmental support is paid to a major part of the farms. Furthermore, agri-environmental support is paid practically on the basis of surface area. Therefore, it can be said that, in Finland, agri-environmental support and support for less-favoured areas are also one type of income support. Thus, a potential transition from the productivist to post-productivist agricultural development paradigm (or from the agricultural modernisation paradigm towards rural development paradigm) has been at least partly rhetoric in Finland.

As a result of productivist agricultural regime, agriculture has experienced a crisis displayed by overproduction, environmental damages and concentration of agriculture. In agricultural policies generally and also in the CAP, there has been a substantial shift towards post-productivist thinking characterised by extensification of agriculture, farm diversification, environmental and landscape values. From the viewpoint of agriculture and rural areas, a transition from productivist to post-productivist and multifunctional agriculture is surely an essential and perhaps the only possible pathway to go. This might be the case particularly in the countries such as Finland where the natural conditions restrict agricultural production more than on average which, in turn, means that it is difficult to compete with productivity of agriculture.

However, only agricultural-based rural development is not enough for keeping the Finnish rural areas vital, where the role of agriculture varies a great deal between regions and agriculture is only one amongst numerous economic activities. One option would be to separate the agricultural

oriented policy measures which do not have positive impacts on the regionally balancing rural development from rural development policy because the aim of the rural development policy is to improve the vitality of rural areas as a whole and to keep rural areas inhabited.

The results of this thesis support the requirement of endogenous and tailor-made as well as integrated rural development policy for different regions of Finland. Also the other than farm or agriculture-based supports, here called rural development measures, are crucial as a tool in comprehensive rural development. In conclusion, the development of rural areas has to be understood as an integrated development of different types of rural areas, where agriculture has a particular but varying role. These all are the factors which are—more or less and by different emphases—identified in the ‘new rural development paradigms’ discussed also in this work.

#### *Limitations of thesis and needs for new research*

In this thesis, agricultural and rural development and the relationship between them has been analysed in a multidimensional, statistical way. Based on the analysis made, quite a comprehensive picture of the socioeconomic role of agriculture and the relationship between regional agricultural development and rural development in different types of regions has been given. However, new analyses are needed if we want to clarify in more depth *why* the relationship between agricultural and rural development differs between regions. In addition to quantitative, statistical analyses, suitable methods for new studies might be case analyses and qualitative methods such as questionnaires and interviews. Furthermore, agricultural development within the production lines could be analysed and compared between regions, although the availability of data

certainly puts some limits for these types of analyses.

Agricultural and rural development might also be analysed by using a longer time period than the period used in this work. Interesting point of view would be to compare the development trends before the EU membership to the development trends since Finland joined the EU. In addition, the studies aiming to respond to such questions as 'when and how polarisation of agricultural and rural development has taken place' would be of high relevance from the scientific and policy point of view.

The analysis and methods used in this thesis bring out many challenges when analysing agricultural development in particular. The choice of the indicators can strongly affect the results. It must be clear what is to be studied: single farms

or agriculture in a region as a whole; agriculture of farms or all activities of farm households; or development of agriculture in terms of jobs, productivity or other aspects, for instance. Essential questions are what the prime objectives of different policy measures are and what 'positive' or 'negative' development actually is.

Also the spatial allocation of agricultural and rural development support has been presented rather comprehensively in this work, both from the standpoint of farms and regions. However, there is still a wide area of research to be undertaken on this theme. From the standpoint of future policy planning and implementation, for instance, the crucial question is which the actual impacts of the support payments (i.e. other impacts than the impacts in terms of money flows) are and whether there are regional differences regarding these impacts.

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## Appendix

### Standard Industrial Classification 2002 (Source: Statistics Finland a)

Primary production in total = A + B

A Agriculture, hunting and forestry

01 Agriculture, hunting and related service activities

02 Forestry, logging and related service activities

B Fishing

Refinement in total = C + D + E + F

C Mining and quarrying

D Manufacturing

E Electricity, gas and water supply

F Construction

Private services in total = G + H + I + J + K

G Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods

H Hotels and restaurants

I Transport, storage and communication

J Financial intermediation

K Real estate, renting and business activities

Public services in total = L + M + N + O + P + Q

L Public administration and defence; compulsory social security

M Education

N Health and social work

O Other community, social and personal service activities

P Private households employing domestic staff and undifferentiated production activities of households for own use

Q Extra-territorial organizations and bodies

X Industry unknown

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