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ONDERZOEKVERSLAG 81

AGRICULTURE IN THE LESS FAVOURED AREAS OF THE EC-10

August, 1991

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The Hague

ABSTRACT

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Tamminga, G.F., H. von Meyer, D. Strijker and F.E. Godeschalk
The Hague, Agricultural Economics Research Institute (LEI-DLO), 1991
Onderzoekverslag 81
ISBN 90-5242-128-5
184 p., tab., fig., annex

In this research report an analysis is given of the economic situation of farms in the Less Favoured Areas of the EC-10. The main data source that has been used is the Farm Accountancy Data Network.

Generally, income is lower in Less Favoured Areas than in normal areas. The magnitude of these income differences varies widely between countries and sometimes also within countries.

There are several reasons for these income differences. There is a clear relationship between agricultural income and the regional economic situation. For Less Favoured Areas however, other factors seem to be more important in explaining the lower agricultural income. Two important factors are a lower margin per hectare and a higher share of "low income" farming types in Less Favoured Areas.

Part of the income differences between normal and Less Favoured Areas are narrowed by direct subsidies. It appears however, that the extra amount of subsidies from the Orientation part of the EOGGF for Less Favoured Areas is relatively small in relation to differences between normal and Less Favoured Areas in the field of market and price policy.

A detailed description of the economic situation of agricultural holdings per farming type in the Less Favoured Areas is offered in Internal Report no. 390, which is available at LEI-DLO.

Agriculture/Less Favoured Areas/Europe/Income/CAP

CIP-GEGEVENS KONINKLIJKE BIBLIOTHEEK, DEN HAAG

Agriculture

Agriculture in the Less Favoured Areas of the EC-10 /
G.F. Tamminga ... [et al.]. - The Hague : Agricultural
Economics Research Institute (LEI-DLO). - Fig., tab. -
(Onderzoekverslag / Landbouw-Economisch Instituut ; 81)
ISBN 90-5242-128-5
NUGI 835
Trefw.: landbouw ; Europese Gemeenschappen.

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Preface

This study aims to analyse the economic situation of agricultural holdings in Less Favoured and Mountainous Areas. It was commissioned by the Commission of the European Communities, within the framework of the Farm Accountancy Data Network (FADN) programme. A second objective of this study is to utilise the data from the FADN.

The results of this study are published in two separate volumes. This volume presents the main results. The results of chapter four of this volume are based on a more extensive study, which is described in the second volume, which gives a detailed description of the economic situation of agricultural holdings by farming types in the Less Favoured Areas. This volume is available at LEI-DLO as part of the series Internal Reports (Godeschalk, 1991).

The main data source that has been used is the Farm Accountancy Data Network (FADN) for the financial years 1984, 1985 and 1986. Because data for Spain and Portugal are only available for 1986, results for these countries have not been included in this study.

The study has been carried out in 1989 and 1990 by the Dutch Agricultural Economics Research Institute, the Institut für ländliche Strukturforschung (Frankfurt a.M.) and the Economic Department of the State University of Groningen. The project was conducted by J.H. Post (LEI-DLO), who also wrote the conclusions abou the economic situation of farms in the Less Favoured Areas (7.2). K.J. Poppe (LEI-DLO) advised us in using the data of the FADN and wrote the conclusions about the usefulness of FADN (7.3). The authors wish to thank T. Deinum (State University of Groningen) for his assistance in the production of chapter two and K.H. Knickel (Institut für ländliche Strukturforschung) for chapter three.

Summary

This study, commissioned by the Commision of the European Communities (FADN programme), aims to provide insight in the income position of farms in Less Favoured Areas and, secondly, to see if data from the Farm Accountancy Data Networksystem (FADN) can be used for that purpose.

In order to support agriculture in areas with difficult production circumstances and low farm incomes, specific instruments have been developed by the EC. In 1975 the Less Favoured Area directive (75/268) has been introduced, comprising compensatory allowances per unit of land or livestock unit and investment premiums for farmers. For each country the execution of the Less Favoured Areas directive was carried out by the national government, under the condition that these areas had to satisfy specifically defined criteria. Two types of Less Favoured Areas can be distinguished:

- Mountain (and hill) areas, in terms of altitude and slope, or
- Other Less Favoured Areas with for instance lack of water, bad climate or tendencies of depopulation.

In this study a comparison was made between agriculture in Less Favoured Areas with the 'normal' areas in the EC-10 (in 1985). The backgrounds of income differences are specifically looked for. Lower farm income may be caused by low development of the total regional economy, but it may also be a purely agricultural development problem. And if this last proves to be the case, it may be because of a backward agricultural structure (e.g. small scale farming) or by difficult natural production circumstances. Furthermore, it has been looked for to what extent the LFA policies have given support to farmers in Less Favoured Areas.

The main data source that was used is the FADN, which presents information about the economic position of farms in the EC. Beside the fact that it gives a lot of information on a regional scale, it also distinguishes farms in normal, Mountain and other Less Favoured Areas. A disadvantage is that the FADN does not include farms below a certain size level. Consequently, the FADN represents only half the number of farms that are included in the Farm Structure Survey. So especially in countries with a high share of small farms (Italy, West-Germany and Greece) representativeness of FADN will be lower. This in fact means, that whenever results are presented in this report, they only concern the bigger farms. Furthermore, in FADN only income from farm activities is recorded. So whenever off-farm employment is an important source of additional income, FADN does not take that situation into account.

Agriculture and regional development

Agriculture is not an isolated economic activity, so in order to explain the agricultural economic situation, the general state of regional economic development must be considered. In chapter two it appears that, compared with the EC-10 average, regions with a high percentage of Less Favoured Areas (LFA regions), have a lower gross value added per worker, especially for agriculture but also for other sectors 1). Furthermore, the sectoral structure is dominated by agriculture in LFA regions and the relative position of agriculture compared with other sectors is poor.

Yet, these conclusions do not hold for each region separately. Therefore, the same analyses have been done, but using another yardstick. Apart from a comparison with the EC-10 average, comparisons were made with the national average and moreover on the basis of the level of perceived welfare in a region. Each element appeared to explain to some extent the difference between LFA and non-LFA regions. However, there remain some regions which do not meet any of these criteria, which implies that other elements were part of the decision making process (see chapter two).

In chapter three, the relation between agricultural income and regional development is considered anew, in this case however using FADN data. It appears that with a higher state of regional economic development (GVA per inhabitant), agricultural income (Farm Net Value Added per work unit) is also higher. But the higher the economic development the weaker this relation becomes, which might be explained by the fact that with a higher economic development differences in farm income between normal and Less Favoured Areas become larger.

Geographical division

Combining agricultural and regional development, there appears another regularity. A geographical division of the EC-10 into three main areas can be made, each area having its 'core' regions and 'peripheral' regions (figure 1).

In the North-Western part, GVA per inhabitant is slightly lower than the EC-10 average, whereas farm income (FNVA/AWU) is remarkably higher. Within the North-West, general economic conditions are only slightly less favourable in the Periphery, but agricultural income is far lower than in the Centre of North-West.

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1) In chapter two, only data from the databank REGIO (part of Eurostat CRONOS) and the Farm Structure Survey were used. Because it is not possible to distinguish Less Favoured Areas separately, regions have been classified according to the percentage of farms in Less Favoured Areas.

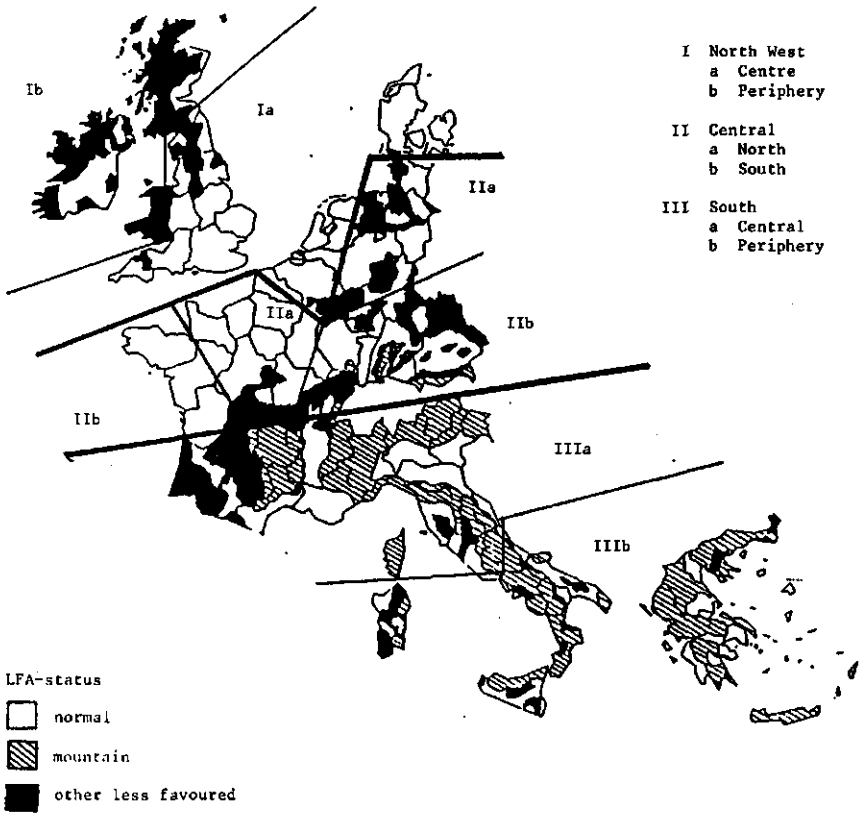

Figure 1 'Main geographical areas' and Less Favoured Areas (LFA) in the EC-10

In the Central regions both general economic development and agricultural income are higher than the EC-10 average. Differences between core (North) and periphery (South) are less accentuated here.

In the Southern part of the EC-10, both economic development and agricultural income are clearly below average. In these parts, differences between core and periphery are high in respect of the general economic development and relatively low for agriculture.

In the North-Western and Central parts of the EC-10, livestock production is the dominant type of farming, whereas in the South crop production is dominating. Within the North-West and, to a lesser extent, in Central, the division of farms over farming types differs considerably between Less Favoured and normal areas, with a high percentage of drystock farms in Less Favoured Areas. So with a better agricultural income situation, differences in the division of farms over farming types between normal and Less Favoured Areas become larger.

Farming types

A more detailed analysis of the income situation per farming type and possible reasons for income differences between farms in normal and Less Favoured Areas are the main issues of chapter 4 1). As reasons for income differences are considered: direct subsidies, farm size, productivity and prices. It appears that FADN data have some shortcomings for this kind of analysis. Information on input prices is lacking whereas information on output prices and costs and volumes per product is scarce.

Per country a review is given of the average family farm income per LFA class and per farming type. It turns out that in southern countries, agricultural income is generally low, and income differences between normal and Less Favoured Areas are relatively small. In North-Western and Central regions of the EC-10, these income differences are more evident. This is even more pronounced if the influence of direct subsidies is excluded. In the South subsidies are low in Less Favoured Areas, which has to do with the low degree of implementation of the LFA regulation. In other parts of the EC-10 subsidies in Less Favoured Areas are considerably higher.

The large income differences in North-Western and Central parts of the EC-10, can partly be explained by a higher occurrence of "low-income" farming types. Within farming types however, income is generally lower in Less Favoured Areas for all parts of the EC-10, due to a smaller farm size (indicated by Farm Net Value Added). In quite some regions this smaller farm size is

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1) The results are based on a more extensive study, that is available at LEI-DLO as part of the series Internal Reports (Godeschalk, 1991).

related to a lower gross margin per hectare. This might indicate that in Less Favoured Areas production circumstances are inferior, possibly caused by unfavourable circumstances. With respect to another productivity indicator, acreage per labour unit, there appears to be no clear relationship with the level of income. Finally, as far as could be analysed, there were no significant differences in the price level between normal and Less Favoured Areas.

Integration

Agricultural income level is clearly related to the general state of regional development and production circumstances. Chapter 5 characterizes the regions on the basis of these topics, as per main geographical area. In the South differences in agricultural income between normal and Less Favoured Areas are low on the average, whereas a high variation in income level exists between regions. More evident is the difference between the 'core' and the 'peripheral' regions: in the second group of regions economic development is less advanced.

In Central again the difference between core and peripheral regions is striking, but in this case in regard to agricultural income. Whereas differences in regional economic development are low, family farm income appears to be lower in the peripheral part.

In the North-West of the EC-10 finally, differences in family farm income are strongly related to the 'LFA-status'. In Less Favoured Areas family farm income is relatively low.

These are quite general conclusions. They do not hold for all regions, however. There are quite some regions where income in Less Favoured Areas is relatively high (Belgium, Luxemburg, Schleswig-Holstein, Nordrhein-Westfalen, Niedersachsen, Languedoc-Roussillon, Provence-Alpes-Cote d'Azur, Friuli-V.G., Trentino-Alto Adige, Veneto, Lombardia, Emilia-Romagna, Puglia, Molise and Sardegna), whereas there are also normal areas with very low incomes (Denmark, Hessen, Bayern, Baden-Wuerttemberg, Rheinland-Pfalz, Basse- and Haute Normandie, Franche-Comte, Poitou-Charentes, Pays de la Loire, Lorraine, Auvergne, Umbria, Ligura, Marche, Toscana, Abruzzi, Clabria, Greece).

The Common Agricultural Policy and LFA

Apart from the LFA directive and other policies financed by the Orientation Fund, agriculture is heavily supported by the market and price policy of the EC. In chapter 6 the question is being raised in how far disbursements from the Guarantee Funds of EAGGF, are benefiting farms in Less Favoured Areas. Two methods have been followed to find an answer to this question: viz. on the one hand by using production figures from Eurostat-CRONOS, and on the other hand by using data from FADN. The advantage of

using data from FADN is that it is possible to relate EAGGF money directly to Less Favoured and normal areas respectively. Furthermore, this enables it to relate these disbursements to farm income.

The main conclusions are that when support from EAGGF Guarantee is related to Farm Net Value Added, there are only slight differences between normal and Less Favoured Areas. Guarantee disbursements per hectare and per worker (or farm) however, are significantly lower in Less Favoured Areas than in normal areas.

Comparing these disbursements from the Guarantee Fund with the direct subsidies (including support from the LFA directive), it is clear that the LFA policies cannot compensate the differences in support per hectare and per worker from EC market regulations.

Conclusions

In general, farm income is lower in Less Favoured Areas as compared to normal areas within the EC-10. In the South these income differences are low on the average, whereas they are high in the North-West. However, considering the regions separately, there are wide variations. In some Less Favoured Areas farm income is above the average of normal areas, but the opposite with a low farm income in normal areas also occurs.

A lower income in Less Favoured Areas is often related to a lower land productivity and, except in the South, with a relative high percentage of 'low income' farming types. Subsidies from the LFA directive compensate these income differences only partially. Compared with the EAGGF Guarantee disbursements, direct subsidies (Compensatory Allowances and other subsidies from the EC and national governments) per hectare and worker are very low.

Evaluating the usefulness of FADN data, the outcome is basically positive. There are no other data sources on an EC scale, which provide information on farm income broken down to farming type, farm size and normal and Less Favoured Areas.

There are some drawbacks, however:

- There is hardly information on off-farm income;
- Small farms are not represented;
- There is a lack of data on volumes and prices of production and on costs per product;
- Regarding Less Favoured Areas, it is not possible to analyse the influence of Compensatory Allowances, because information on this item is included in direct subsidies.

1. Introduction

1.1 A study of the agricultural income situation in Less Favoured Areas

The object of this study is to provide information on the situation of agriculture in the mountain areas and other Less Favoured Areas of the European Community (EC). The central issue of research concerns the farm income situation in these areas and, more in particular, why farm income is generally lower than in other areas. Second objective is to look if data from the Farm Accountancy Data Networksystem (FADN) can be used for this type of study. The study was commissioned by the Commission of the European Communities, within the framework of the FADN programme.

Agricultural income problems have always served as a legitimation for agricultural support policies. Nevertheless, there often is no clear consensus on what the agricultural income problem really is. In fact there is a multitude of income disparities, the causes of which are quite distinct. Not all of them justify state intervention. But whatever the justification, intervention always will have to rely on diverse policy approaches and specific sets of measures.

For a long time the main instruments of the Common Agricultural Policy (CAP) to reduce income disparities were the support of agricultural prices and farm improvement plans. However, these instruments proved unable to solve the income problem in Less Favoured Areas. Therefore in 1975 a specific measure to support agriculture in these areas was introduced (dir. no. 75/268). Two categories of Less Favoured Areas have been defined:

- mountain and hill areas, defined in terms of altitude and slope;
- less-favoured areas, defined as having natural handicaps (lack of water, climate, short season and tendencies of depopulation).

Later on, directive 75/268 has been replaced by other directives, with the effect that more regions were accepted as being less favoured.

However, the subsidies established by these directives stay the same:

- obtaining Compensatory Allowances (CA) per unit of agricultural land and/or per livestock unit;
- special facilities for farmers who want to use EC investment-premiums.

These payments are provided by the member states and partly reimbursed by the EC (25% in the north of the EC and parts of Spain

and 50% in the southern parts of the EC and Ireland). The national government designates the Less Favoured Areas and has to implement the scheme. The concept of the Less Favoured Areas may therefore be considered as an essentially national one.

This statement is supported by the fact that in 1985 only 27% of all farms in Less Favoured Areas were subsidized, varying from only a few percent in Italy to nearly a hundred percent in the United Kingdom and Ireland (Hulot, 1989). Furthermore, the level of the compensatory allowances is only limited by an EC-maximum, whereby actual payments differ per country.

1.2 Definition of the problem

The aim of this study is to give more insight into the economic situation of farms in Less Favoured Areas. Central issues are the farm income situation in the regions of the EC-10, and the reasons for differences in the level of farm income between Less Favoured Areas and normal areas.

The origins of income problems in agriculture are often very pervasive and can be rather diverse. In a broader sense the socio-economic situation in a region or group of regions has to be considered. Two situations are being distinguished:

- Regional backwardness
  There can be differences in the state of development of the regional economy. There are regions with relatively low incomes in agriculture and also low incomes outside agriculture. In those cases there is an economic development problem and not purely an agricultural problem. These kind of problems should be tackled with regional policy measures, aiming at higher regional development and income growth.
- Agricultural backwardness
  On the other hand there will be regions with relatively low agricultural incomes, but with high income levels outside agriculture. In these cases natural conditions will often play an important role, whereby for instance farmers in mountain areas have to cope with difficult production circumstances. Here, support for agriculture would be necessary if, for instance, trends of depopulation lead to a situation where land is left idle. The objective of the agricultural policies will often be the maintenance of a minimum amount of economic activity, with agriculture playing an important role in the preservation of the countryside and the environment.

So while agricultural income problems might have the same origins (i.e. difficult production circumstances), the necessary policies to improve the regional situation will also depend on the situation of the regional economy as such. This is an impor-

tant argument to start with the investigation of the socio-economic situation of a region.

In addition, a more detailed study of the agricultural situation remains necessary. Several factors can lead to lower incomes in agriculture. Natural handicaps can be a reason for the income difference between two regions having the same level of economic development. These differences in production circumstances might be manifested in a different production structure and other types of farming in such regions. This hypothesis is being supported by the fact that in Less Favoured Areas the percentage of grazing activities tends to be larger than in normal areas, whereas the share of crop growing activities tends to be lower (Hulot, 1989).

However, the FADN does not give information about natural conditions for agriculture. Therefore it is only possible to make assumptions on this item by interpreting information on such farm characteristics as:

- Size
  Structure (size distribution) of farms differs between and also within countries. A study by Overeijnder (1986) shows that regional income differences are correlated with differences in farm size. Policies aimed at an increase of the size of farms could in principle lead to a reduction of income differences.
- Productivity
  Income differences in agriculture are also related to differences in productivity on farms. Not only in terms of farm efficiency, but also as a result of agronomic potentials. These differences can be decreased by means of extension and reallotment programmes.
- Agri-business
  Furthermore, market structure can differ resulting in a situation, whereby farmers pay and receive different prices. These prices give an indication of differences in efficiency (transport and processing) and market power in terms of delivery and sales.

Finally, it is important to keep in mind, that there will often be interlinkages between some of these factors. The situation of agriculture in the regions will be a resultant of all mentioned relationships. These relationships are hard to quantify and will also vary per region. Still, in order to develop the right policies for a specific region it will be necessary to have this kind of information.

Apart from the causes for differences in agricultural income, agricultural income problems also have to be defined. Comparing agricultural income with an EC-average for instance is not a good yardstick for judging the income situation, simply because there often are wide disparities in general standards of

living between member states. Moreover, the concept of Less Favoured Areas already has been described as a more or less national one. More relevant therefore are comparisons within more homogeneous entities. Thus, comparisons will be made as far as possible within the same region or a cluster of regions in one ore more countries.

1.3 Outline of the contents

1.3.1 Introduction

In the seventies and eighties quite some research on the agricultural situation in the regions of the EC has been done. A great part of the data used in these studies is taken from the Yearbook of Regional Statistics (CEC) and the Farm Structure Survey (i.e. CEC, 1987a). In the RICAP study (CEC, 1981) an analysis is made of the influence of the common agricultural policy on regional agricultural development. Other studies on this field are published by, among others, Rainelli and Bonnieux (1978), Jacobs and Strijker (1981), van Hecke (1983), Molle and Cappelin (1988), the "Third periodic report" (CEC, 1987b) and Molle (1990).

A more detailed analysis of the situation of agriculture in Less Favoured Areas is hampered by the fact, that its borders do not coincide with regions of Eurostat statistics. However, the FADN does make this distinction between normal and Less Favoured Areas and can therefore be helpful in giving additional information.

Some research projects already used the FADN for these kind of studies; Overeijnder (1986) and Bertrand and Hulot (1989) have already been mentioned. As in the underlying study, Hulot distinguished Less Favoured Areas and other 'normal' areas. He concluded that the economic situation of agriculture was worse in Less Favoured Areas of all EC-10 countries compared with differently classified areas, but that, at the same time, there were also wide differences between Less Favoured Areas. Most of the results from this study were presented on a national level, with no subdivisions in results per farming type. This study will go deeper into the regional situation and also consider separate farming types. Furthermore, within Less Favoured Areas a subdivision into Mountain and other Less Favoured Areas will be used.

1.3.2 Outline of the report

In describing the economic situation of agriculture in the Less Favoured Areas, first a picture will be presented of the agricultural development of a region in relation with its general state of economic development (chapter two and three). In chapter two this will be done without using the FADN, whereas in chapter

three FADN data will be used. After that, a more detailed description of agriculture in the Less Favoured Areas will be given (chapter three and four). An integration of the results of chapter 2, 3 and 4 is given in chapter five. Chapter six gives an impression of the regional division of disbursements from both the Guarantee and Guidance Fund of the EC. The main conclusions are presented in chapter seven. In the following sections a short summary of the contents of the chapters will be given.

- Chapter 2

As has been mentioned, the study starts with an analysis of the general socio-economic state of the EC-regions. A comparison is made between the main sectors within one region: agriculture, industry and services. The first question to be dealt with is whether the Less Favoured Areas are also backward in their overall economic development. The relevant questions are:

- Do absolute or relative income differences between agriculture and other sectors depend on the state of regional development, and if so to what extent?
- Do normal areas differ in this respect from Less Favoured Areas?

The main indicators that will be used are the Gross Value Added per worker and the share of agriculture in total Gross Value Added and employment. The results are expected to indicate whether agricultural income problems can and should be tackled with regional policy measures aimed at higher levels of regional employment and income growth.

Most data that have been used in this chapter are from the databank REGIO (part of the EUROSTAT databank CRONOS) and the Yearbook of Regional Statistics. Unfortunately, the geographical boundaries of the Less Favoured Areas do not coincide with the boundaries of the regions from Eurostat-CRONOS. In most cases it is therefore impossible to call a region one hundred percent "Less Favoured" or "normal". Therefore classes of regions have been defined with the percentage of farms in Less Favoured Areas as a yardstick; for instance "LFA-region" means that 60-100% of all farms are located in Less Favoured Areas.

- Chapter 3

While in chapter two only data from Eurostat-CRONOS have been used, chapter three and four will make use of FADN data. The investigation will show whether these data can provide additional information on the income situation on farms in Less Favoured Areas.

The FADN data only give information about agricultural income and not about the off-farm income. In 1985, 30% of all farmers in the EC-10 had other gainful activities (Peat, Marwick and Mitchell, 1986; Hill, 1989). So for those cases the income situation cannot be properly assessed. It is therefore necessary to at least show the relative importance of off-farm income for

the different regions and areas. Data from the Farm Structure 1985 Survey (FSS) have been used to get some more information on the significance of part-time farming in the different countries and regions.

As in chapter two, it will be analysed to what extent regional disparities in agricultural income can be related to differences in the general state of regional economic development. Now however, with the advantage that we do have information about 100 percent Less Favoured Areas from FADN.

In this chapter it will also be analysed, to what extent there are differences in the division of farms over farming types between regions and normal and Less Favoured Areas. If there are differences in this division, income differences between normal and Less Favoured Areas with similar levels of economic development could then be explained by the predominance of certain farming types which in turn reflect the (natural) production circumstances of an area. If this is the case, this would provide an argument for maintaining and strengthening the LFA-policy. This, at least under the general assumption, that agriculture plays a relatively important role in a sustainable development of these rural areas.

- Chapter 4

Agricultural income disparities can be the result of differences in the type of farming, the division over size classes, the performance of farms or in the competitiveness of the marketing system. In chapter four, FADN data will be used to make a detailed analysis on this subject. The results in this chapter are based on a detailed analysis of the income situation per farming type in Less Favoured Areas, compared to normal areas. Furthermore an analysis is given of possible reasons for income disparities between normal and Less Favoured Areas. Volume II of this study provides this analysis, of which the main conclusions are presented in chapter 4. Per country a review will be presented of income in normal areas, Mountain areas and other Less Favoured Areas, as well as reasons for income disparities. The main reasons will be differences in:

- Farm size;
- Productivity;
- Prices;
- Division of farms over farming types.

Income disparities between normal and Less Favoured Areas will be influenced by the level of subsidies derived from the LFA policies. Per region and country, the direct effects of these policies on income disparities will be shown.

- Chapter 5

On the basis of the results from chapter 2, 3 and 4, conclusions will be drawn, giving an integrated view of the agricultural incomes problem in the different regions.

- Chapter 6
  In the next chapter a review will be given of the level of subsidies from the Guarantee and the Orientation Funds (EAGGF) and its distribution over normal and Less Favoured Areas. FADN data will be used to make such a division possible.

- Chapter 7
  This report ends with conclusions on two issues:
- the income situation of farms in Less Favoured Areas and its causes;
- the usefulness of the Farm Accountancy Data Network for this research.

1.4 Data and sources

1.4.1 Data sources

As already mentioned one of the goals of this study is to utilize data from the FADN. The FADN aims to collect data on income and on the economic position of farms in the EC. It provides information on the structure of the farm (labour input, herd and crops grown), a balance-sheet account and a profit and loss account.

For that purpose, bookkeeping results of a sample of farms in the EC are collected. The smallest farms are not represented in this sample. Small is a relative term however: a small farm in The Netherlands might not be a small farm in Greece. The lowest level varies therefore between 2 and 16 European Size Units (ESU). In section 1.4.3 a comparison of the FADN and data from the FSS (1985) will be made, to give an impression of the representativeness of the FADN.

Whenever data from the FADN are presented in this report, these data represent a three year average based on data from the financial years 1984/85, 1985/86 and 1986/87. Two countries, Spain and Portugal are left out of the analysis, due to the fact that there are only data available for one financial year (1986/87). Yearly fluctuations in agricultural prices and production would have too big an influence on the outcome, when taking the results of only one year.

In addition to the FADN, two major other data sources have been used. The FSS 1985 (on magnetic tape) has been used to test the representativeness of the FADN and is also used in chapter 6. Databank REGIO (Eurostat-CRONOS) has been used to get additional regional data, mainly about the regional socio-economic situation.

In the next section, definitions and descriptions of some of the variables will be elaborated. Furthermore, the representativeness of the data of FADN will be looked at.

1.4.2 Data and definitions

1.4.2.1 Regions

When combining data from the three data bases some problems arise. A specific problem is the fact that they do no not use the same division of the EC into regions.

In Eurostat CRONOS, the division into regions is based on the Nomenclature of Statistical Territorial Units (NUTS). This nomenclature is broken down into three interrelated levels. Level I includes 64 european community regions (RCA), level II covers the basic administrative units (UAB) and level III encloses subdivisions of the UAB (SUAB). Most data are available on NUTS I and II level.

The FSS 1985 (CEC, 1987a) mainly uses the same division of regions in NUTS I and NUTS II. With respect to the regional subdivision of Greece however, there appear to be remarkable differences with the definitions of regions in CRONOS. Only by grouping the regions into North, West, East and South the main differences are faded out.

This last division of Greece is also used by the FADN. Also for some other countries the FADN has a somewhat different regional subdivision. For France and Italy NUTS II regions are used, with the exception of one region in Italy (Trentino-Alto Adige) which is split into two. For West-Germany NUTS I regions are used, while for The Netherlands, Belgium and Denmark only data per country are given. The United Kingdom finally, is divided into six regions (North, East, West, Wales, Scotland and Northern-Ireland) enclosing eleven NUTS II regions. Figure 1.1 gives a survey of these FADN regions.

Summarizing, this means that the subdivision into regions goes furthest in databank CRONOS (118 regions), while the FADN counts only 69 regions for the EC-10.

On the other hand the FADN and the FSS give more information per region, because one of the variables is the characterization of the area where the farm is located. This makes it possible to divide farms from one region into:

- normal;
- Mountain, and
- other Less Favoured Areas

This typology cannot be made for data from CRONOS. Still, in order to give some kind of characterization of these regions in being "less favoured" or "normal", these regions have been classified as being "non-LFA", "partly-LFA" or "LFA" regions, according to percentage of the number of farms that are located in Less Favoured Areas. A region is called "non-LFA" if less than 30% of all farms are located in Less Favoured Areas. If more than 60% of all farms are located in Less Favoured Areas, it is described as an "LFA" region. Is this percentage of farms in bet-

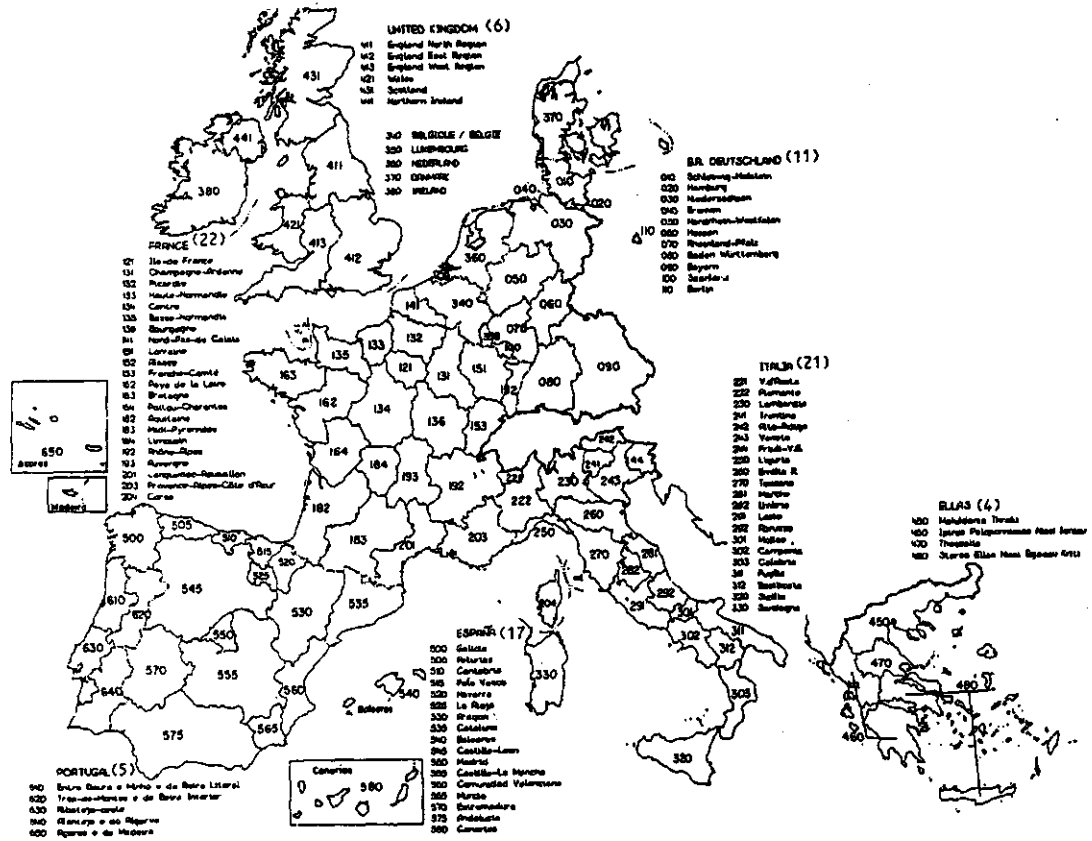

Figure 1.1 Regional division of the EC-12 into FADN regions
Source: Eurostat-DG VI

ween these numbers, the region is "partly-LFA". Table 1.1 gives a survey of this regional classification and the percentage of the number of farms.

Table 1.1 Regional classification of regions in non-LFA, partly-LFA and LFA according to the percentage of farms in Less Favoured Areas

Non-LFA		Partly-LFA		LFA	
Region:	%	Region	%	Region	%
Bremen	0	Centre (Fr)	30	Ipeiros	60
Hamburg	0	Piemonte	30	Wales	60
Basse-Normandie	0	Emilia-Romagna	32	Sardegna	60
Nord-Pas-de-Calais	0	Baden-Wuerttemb.	32	Ireland	60
Picardie	0	Thessalia	32	Thraki	65
Ile-de-France	0	Niedersachsen	33	Calabria	67
Haute-Normandie	0	Rheinland-Pfalz	33	Umbria	69
Brabant	0	Friuli-Venezia	33	Northern Irel.	70
Limburg	0	Lombardia	35	Corse	73
Antwerpen	0	Kentr. Ellas Kai	37	Scotland	74
West-Vlaanderen	0	Sicilia	39	Ionioi Nissoi	76
Oost-Vlaanderen	0	Peloponnissos	39	Basilicata	81
Nederland	0	Namur	39	Liguria	83
Danmark	0	Makedonia	40	Auvergne	86
East Anglia	0	Marche	44	Molise	86
South-East (UK)	0	Aquitaine	46	Midi-Pyrenees	86
Bretagne	1	Toscana	49	Franche-Comte	87
Pays de la Loire	1	Liege	49	Nissoi Aigaiou	99
East Midlands	8	Campania	50	Limousin	100
Champagne	8	Bayern	50	Luxembourg (B)	100
Hainaut	9	Lazio	54	Trento	100
Alsace	10	North (UK)	54	Valle d'Aosta	100
West Midlands	12	Saarland	55	Bolzano Bozen	100
South-West (UK)	13	Abruzzi	55	Luxembourg	100
Lorraine	15	Kriti	56		
Poitou-Charentes	17	Bourgogne	56		
Nordrhein-Westf.	17	Rhone-Alpes	58		
W-Berlin	19				
North-West (UK)	19				
Provence-C.d'Azur	23				
Yorksh./Humberside	24				
Schlesw.-Holstein	25				
Languedoc-Rouss.	25				
Puglia	26				
Veneto	27				
Hessen	29				

Source: Own calculations based on FSS-1985.

1.4.2.2 Farming types

As has been mentioned before, the income situation might differ according to the type of farming. There is a standardized classification leading to a subdivision into 17 main types of farming (CEC, 1986:180). Following a former study (Hulot, 1989), these types are compressed into nine classes according to their technical and economic characteristics.

The nine farming types are:

(1) Cereal farms	=	OTE 11
(2) General cropping farms	=	OTE 12 (general field cropping)
		+ 60 (mixed cropping)
(3) Horticultural holdings	=	OTE 21
(4) Vineyards	=	OTE 31
(5) Permanent crop holdings	=	OTE 32 (fruit and citrus fruit)
		+ 33 (olives)
		+ 34 (various permanent crops)
(6) Dairy farms	=	OTE 41
(7) Drystock farms	=	OTE 42 (rearing and fattening)
		+ 43 (combined dairying + rearing and fattening)
		+ 44 (sheep, goats and other grazing livestock)
(8) Granivore farms	=	OTE 50 (granivores)
(9) Mixed farms	=	OTE 71 (mixed livestock, grazing)
		+ 72 (mixed livestock, granivores)
		+ 81 (field crops + grazing)
		+ 82 (various crops + livestock)

1.4.2.3 European Size Units (ESU)

In the FSS and FADN, farm size is defined in European Size Units (ESU). An ESU is computed on the basis of the so called Standard Gross Margin (SGM).

The SGM is defined as the difference between the value of the production expressed in monetary units and the value of the direct costs for that production. Per region, standardized coefficients are calculated for every item of production in that area. They are expressed per hectare or per livestock unit. By computing both the number of livestock and the number of hectares with these standardized gross margins the size of the farm is characterized. Farm size is expressed in a Community unit (ESU) which stands for an amount of 1100 ECU of gross margin (in 1985).

From region to region there are differences in the standardized gross margin per activity (CEC, 1986a). For instance, in

backward agricultural regions the SGM for one hectare of cereals will be generally lower than in areas with a highly developed agriculture. This is because the difference between the output of one hectare or livestock unit minus the direct cost will be on average lower in Less Favoured Areas.

For this study, the ESU as a size indicator has one big disadvantage. In some regions part of the area is Less Favoured, while the rest has normal production circumstances. But there is only one SGM defined for the whole region. This means that when data of the FADN are used and farms in normal and Less Favoured Areas are compared, the size of the farms in the normal areas will be underestimated and those in Less Favoured Areas overestimated. This problem exists in all countries but Italy. In that country a subdivision is made within regions, into 'mountain', 'hilly' and 'normal'.

So if farm results of farms in normal and Less Favoured Areas are compared within one region, the use of the ESU as yardstick for size is not correct. Therefore another indicator for size will be used. Instead of the ESU, Farm Net Value Added will be used as an indicator for size. In section 4.2 this will be elucidated.

1.4.2.4 Income indicators

In this study some concepts of income will be used. The choice for a certain indicator mainly depends on the data source that has been used and on the context in which it is used.

In chapter two and three the same type of analysis has been carried out. The main difference is that in chapter two only data from EUROSTAT-REGIO have been used. This source only provides information about the average Gross Value Added (GVA) per worker per sector in a region. In chapter three data from the FADN have been used additionally. The use of the FADN makes it possible to distinguish farms between normal and Less Favoured Areas within a certain region. Moreover the FADN contains data about the Farm Net Value Added (FNVA) per worker which is a better indicator for income.

In chapter four again another indicator for income has been used. Instead of the Farm Net Value Added per worker, the Family Farm Income (FFI) per worker is used. The reason for doing so is that chapter four intents to give relevant information about the possibilities of permanency of the farm. For that purpose the Farm Family Income per worker seems to be a better indicator, whereas the Farm Net Value Added per worker is a better measure for the economic performance of a farm.

1.4.3 Representativeness of FADN data

As has been mentioned, farms in the FADN cover some 90% of all agricultural production. Regarding the number of farms repre-

sentativeness is much smaller, because many small farms are not included in the FADN. In this section it will be investigated if there is a bias in representativeness between normal and Less Favoured Areas. This will be done by comparing the population of farms represented by the FADN and the FSS.

In the period 1984-1986 there were 3.1 million agricultural holdings in EC-10 represented in FADN, 44000 of which are in the sample. These 3.1 million match 49% of the number of farms in the FSS (1985) (table 1.2). However, the FSS also does not cover all agricultural holdings. Farms below a certain limit, which differs among the member states, are not included. Nevertheless, the representativeness of FADN is related to FSS, because of the fact that FSS gives the most complete picture of the structure of agriculture.

While on EC-10 level the representativeness of the number of farms is nearly 50%, there are large differences between the member states. In Denmark, The Netherlands and Ireland more than 60% of the number of farms in FSS is represented in FADN, whereas in Italy representation is only 40%.

For the EC-10 differences between the Less Favoured Areas and the normal production areas are small. In the Less Favoured Areas, 47% of the farms is represented in the FADN, while this is 50% in the normal areas (table 1.2 and table A.1 (annex)). But in the member states these differences are larger. In two countries, Belgium and Greece, the representation is clearly higher in the Less Favoured Areas, compared with the normal areas. In the other countries, except for Italy, the situation is the opposite.

In all member states of EC-10 the representation of the smaller farms in FADN is much lower than of the larger ones. The 2.3 million farms which are smaller than 2 ESU, are hardly represented in FADN. This is one of the explanations of the low representativeness of the Italian sample in the FADN.

But apart from the fact that the representation of the farms in the small size classes is very small, it is also possible that the representation within the size classes diverges from the FSS.

The average farm size per holding (in ESU) in FADN is twice as high as the average holding in the FSS. Only in Denmark and France the differences are smaller. The situation for normal areas and Less Favoured Areas does not show a different picture. The tables do not disclose the representativeness in the field of observation of the FADN. In some cases the average farm in the FADN is also larger than the average farm in the field of observation according to the FSS. A possible reason can be the fact that the situation at the moment of the survey is not representative for the average situation during the years. Sometimes the lack of representativeness is due to the fact that the FADN weighing does not take into account the historical chance of inserting the farm in the sample.

Table 1.2 Percentage of farms represented by FADN and average farm size according to type of area in FADN and FSS in EC-10, by country

	Total			Normal			LFA		
	number of farms	farm size		number of farms	farm size		number of farms	farm size	
	FADN/FSS (%)	FADN (ESU)	FSS (ESU)	FADN/FSS (%)	FADN (ESU)	FSS (ESU)	FADN/FSS (%)	FADN (ESU)	FSS (ESU)
Denmark	92	37	31	.	37	.	.	.	.
Netherlands	71	70	44	.	70	.	.	.	.
Ireland	66	15	9	83	20	14	55	9	5
United Kingdom	58	78	42	68	88	50	40	46	25
Belgium	57	42	24	56	44	25	64	35	18
France	55	32	21	58	36	23	49	24	15
Luxembourg	54	35	19	.	28	.	49	36	19
Greece	53	8	4	44	10	5	62	7	4
West Germany	49	34	17	54	37	20	39	27	13
Italy	40	14	7	39	17	9	41	11	5
EC-10	49	25	13	50	31	16	47	15	8

Source: Own computations based on FADN and FSS-1985.

Table 1.3 Percentage of farms represented by FADN and average farm size in FADN and FSS in EC-10, by farming type

	Total			Normal			LFA		
	number of farms	farm size		number of farms	farm size		number of farms	farm size	
	FADN/FSS (%)	FADN (ESU)	FSS (ESU)	FADN/FSS (%)	FADN (ESU)	FSS (ESU)	FADN/FSS (%)	FADN (ESU)	FSS (ESU)
Mixed	89	23	16	97	29	22	79	14	9
Dairy	79	32	23	85	38	28	69	20	15
Horticulture	61	59	47	58	67	45	73	36	56
Gen. cropping	55	23	13	55	29	17	55	11	5
Granivores	47	55	32	54	57	36	24	37	17
Drystock	43	20	10	41	24	10	44	18	9
Cereals	36	26	10	35	32	12	39	12	5
Vineyards	35	20	8	34	24	10	37	11	4
Permanent crops	34	12	6	34	16	7	34	9	4
Total	49	25	13	50	31	16	47	15	8

Source: Own computations based on FADN and FSS-1985.

So three conclusions have been arrived at:

- Whereas in terms of phusical production rpresentativeness of the FADN is high, a substantial number of small farms are not represented in the FADN, especially in Italy, West-Germany and Greece.
- For the EC-10 the share of farms represented by the FADN does not differ much between normal and Less Favoured Areas, but for most countries it does.
- Within a size class, FADN does not always represent the average farm size (if the FSS is assumed to be correct).

There appears to be a strong relationship between farm size and farm income. So whenever income figures based on FADN are used in this report, one should be very careful in interpreting them. First of all, only the bigger farms are taken into account. And secondly, it is not sure whether the sample of FADN within a size class gives a correct representation of the total population.

Differences in representativeness between farming types are larger than between countries. The farming types mixed farming, dairying and horticulture are represented for more than 60% (table 1.3 and table A.1 (annex)). For mixed farming the representation is overestimated, because of a statistical error: in Italy other types of farming are - incorrectly - included in the category "mixed farms". Cereals, vineyards and permanent crops are represented for less than 40%.

Between normal areas and Less Favoured Areas there also are large differences. Mixed farming, dairying and granivores are better represented in normal production areas, while horticulture and, to a lesser degree, drystock, cereals and vineyards are better represented in Less Favoured Areas.

Because in chapter 4 these farming types are analysed separately, it should again be stated that these results are not representing the whole population of farms!

2. The socio-economic situation in the regions

2.1 Introduction

Agriculture, in regions with adverse production circumstances, as well as in well endowed regions, is not an isolated activity, but is intertwined with other sectors of the economy in many ways. In order to properly evaluate the results of agriculture in Less Favoured Areas, as presented in the following chapters, it will be useful to gather some information on the general economic position of the regions. In this chapter no use is made of data from the FADN. It is therefore impossible to distinguish farms between normal and Less Favoured Areas within a region. Therefore, as has been described in section 1.4.2.1, the regions have been distinguished in three groups which will be treated separately: (1) non-LFA, (2) partly LFA and (3) mainly LFA (see also figure 2.1).

First a summary description of each of the three groups will be given, taking into account income, area, population and sector structure. Next, we will try to find out, using various criteria, to what extent a certain region can be labelled as a problem region. First a simple yardstick will be used: the regional gross value added per worker as compared to the EC-average, taking into account both the situation in the agricultural sector and in other sectors. This procedure will yield information about the nature of problems in regions with a per capita income below average.

A next and more sophisticated step is also to take into account the income per capita in neighbouring regions. This can be done in two ways: comparison of the regional indicator with the average of the respective member-state, or comparison of the regional indicator with the total of all EC-regions, taking into account distances between regions.

2.2 General features of the three groups of regions

2.2.1 Introduction

In this heading a brief statistical description of the situation in the three groups of regions is given. The next step will be to identify developments in recent years.

2.2.2 Static characteristics of the groups of regions

As stated in the first chapter it is quite a crude step to combine Less Favoured Areas in regions. For regions solely con-

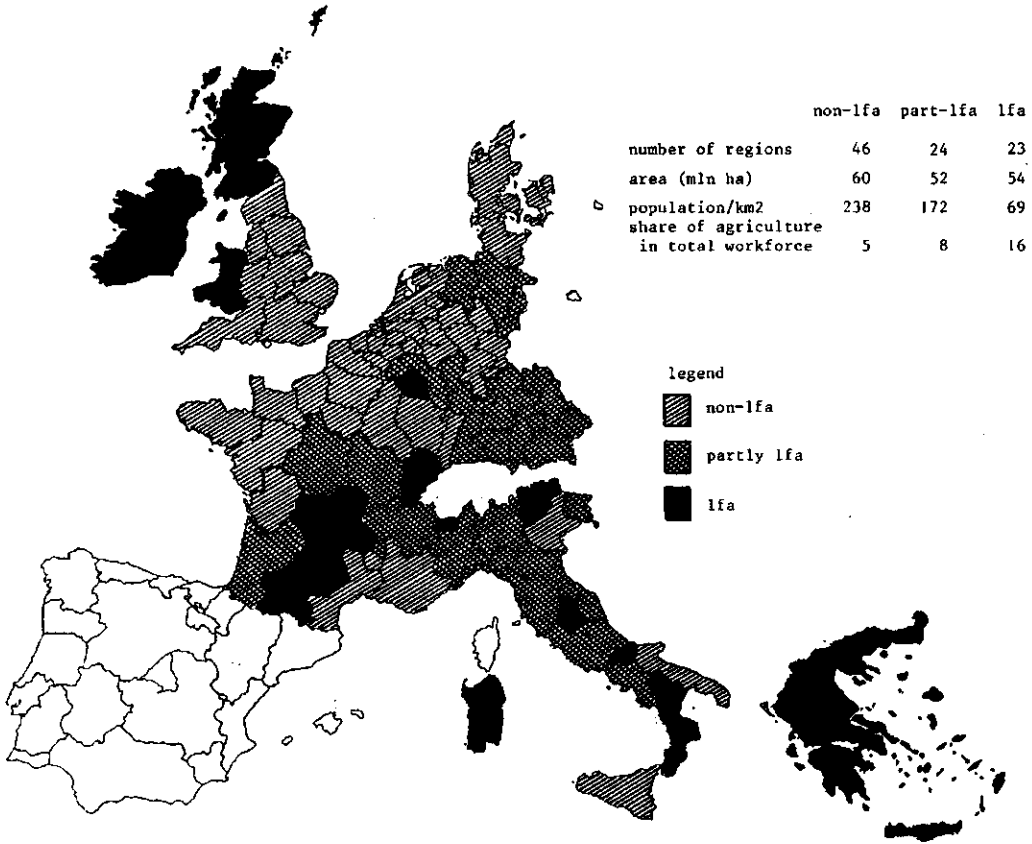

Figure 2.1 Classification of regions, according to their share of Less Favoured Areas
Source: Own computations based on Eurostat-CRONOS

sisting of Less Favoured Areas or regions without any, there is no problem. However, for regions consisting of both Less Favoured Area and non-Less Favoured area the situation in the Less Favoured Area may be neutralized by the normal part. In fact the step that has been taken is a realistic one only if the situation in the normal area of a region is more or less determined by the

Table 2.1 Some socio-economic characteristics of three groups and the EC-10 in 1985

	Group 1 non LFA	Group 2 partly LFA	Group 3 LFA	EC-10
Number of regions	46	24	23	93
Total area (1000 ha)	60,123	52,327	53,654	166,105
Total agric.area (1000 ha)	36,788	27,559	30,752	95,099
Share of agric. area in total area (%)	61	53	57	57
Population (million)	143	90	37	271
Population/km2	238	172	69	163
Total work force (million)	64	39	15	118
Activity rate (workforce/ population) (%)	45	43	41	44
Share of agriculture in total workforce (%)	5	8	16	7
Share of industry in total workforce (%)	32	37	29	33
Share of services in total workforce (%)	64	55	56	60
Unempl. in % of workforce	10	8	12	10
GVA/inhabitant in ECU	10,841	10,123	6,744	10,038
GVA/inhabitant in PPS	10,274	9,775	7,159	9,679
GVA/worker in ECU	26,643	25,365	18,404	25,174
GVA/worker in PPS	25,250	24,493	19,537	24,274
GVA/worker in agric. (ECU)	16,437	11,105	8,299	12,150
GVA/worker in agric. (PPS)	15,582	11,011	9,397	12,126
GVA/worker in ind. (ECU)	30,782	28,893	23,153	29,244
GVA/worker in ind. (PPS)	29,219	27,920	24,376	28,206
GVA/worker in serv. (ECU)	27,193	27,503	20,170	26,460
GVA/worker in serv. (PPS)	25,761	26,516	21,276	25,464
Ratio of GVA/worker in agriculture and total (%)	62	44	45	48
Ratio of GVA/worker in industry and total (%)	116	114	126	116
Ratio of GVA/worker in services and total (%)	102	108	110	105

Source: Own calculations based. on Eurostat-CRONOS data.

Less Favoured part. From the available statistics the correctness of this step cannot be proved. In table 2.1 some characteristics of the three groups of regions are given.

This table shows that the population density in the group of LFA-regions is low (69 inhabitants/km2, compared to 238 in non-LFA-regions and 163 in the EC-10 as a whole). In the group of LFA-regions a relatively high percentage of the work force is working in agriculture. Unemployment figures, however, are not very different for the three groups of regions. The unemployment figures are gathered on the basis of sample surveys. As a result there is no reason to expect that the unemployment figures are influenced by unregistered hidden unemployment.

In some respects the differences between the groups are striking. Gross Value Added (GVA) per worker in LFA-regions is much lower than in non-LFA regions. This goes for all sectors of the economy, but especially for agriculture, where GVA per worker in LFA-regions is less than half of GVA per worker in agriculture in non-LFA-regions. If calculated in Purchasing Power parity Standards (PPS) the differences between the regions are somewhat smaller, but remain remarkable. It also appears that in LFA-regions income in agriculture is much lower than in the other two sectors; in non-LFA-regions the situation is both absolutely and relatively better than in other groups of regions.

2.2.3 Developments in the groups of regions between 1975 and 1985

In table A.2 (annex) most elements of table 2.1 are repeated for 1975. The developments between 1975 and 1985 are summarized in table 2.2.

The table shows that both population and work force remained more or less constant with the exception of the LFA-regions, where population increased slightly. This means that given the division in groups as practiced, there has not been a general tendency towards depopulation.

The development of the work force per sector diverges; in the service-sector it increased quite fast in all three groups of regions, while the work force in agriculture and industry declined. However, in agriculture the decline is relatively smaller in the LFA-regions, whereas industry shows a smaller decline in the partly-LFA group.

The nominal GVA per worker for all sectors and all groups more than doubled and in some cases almost tripled. For reference, Gross Domestic Product (GDP) data in ECU and PPS are added.

The ECU/PPS ratio indicates that an apparently advantageous development of GVA in favour of the LFA regions (Group 3), and to a lesser extent of partly-LFA regions (Group 2), only occurred in nominal terms, and not in real terms.

Table 2.2 Development of some variables of table 1, between 1975 and 1985 (1975 = 100) a)

	Group 1 non LFA	Group 2 partly LFA	Group 3 LFA	EC-10
Total area	101	100	100	100
Total agricultural area	95	97	99	97
Population	101	101	103	101
Population/km2	100	100	103	101
Total workforce	100	101	100	100
Workforce in agriculture	83	84	90	85
Workforce in industry	85	91	88	88
Workforce in services	111	112	111	112
GVA/inhabitant	251	260	254	254
GVA/worker	254	259	262	257
GDP/worker in ECU b)	205	211	235	210
GDP/worker in PPS	240	245	248	243
GVA/worker (agr.) in ECU	235	225	233	229
GVA/worker (ind.) in ECU	266	262	280	265
GVA/worker (serv.) in ECU	254	260	276	258

a) Employment figures refer to 1977; b) GDP at current prices.
Source: Own computations based on Eurostat-CRONOS.

So far an overall picture has been sketched. The deviation around the average is such that the nature of differences between the groups only can be analysed when the characteristics of the individual regions are not taken into account. The standard deviations of some of the elements of table 2.1 are summarized in table A.3 (annex).

2.3 The nature of low regional incomes

2.3.1 Introduction

From section 2.2 it appears that in Group 3 (LFA-regions), both in agriculture and in general, income per capita is lower than in other regions and that agriculture dominates the sector structure. The standard deviation, however, is high (table A.3 (annex)), so this group of regions cannot be treated as a homogeneous one. Therefore we will return to the individual regions within the three groups.

2.3.2 Income in agriculture and income in other sectors

In order to analyse the position of agriculture somewhat further, we will now concentrate upon income per capita, both in

agriculture and for the economy as a whole, and use the EC-average as a - crude - criterion for being prosperous or backward. What we are looking for is a first indication of the background of income problems in agriculture.

A general feature is that in the EC, as in fact in nearly all economies in the world, the average income per worker in agriculture is lower than the average income per worker in other sectors. This is due to the fact that agriculture is a relatively declining sector and constitutes a labour reservoir with hidden unemployment.

Taking the EC-average of GVA per worker for both agriculture and industry 1) in 1985 the regions can be classified into four groups:

1) GVA agr,reg < GVA agr,eur & GVA ind,reg < GVA ind,eur
2) GVA agr,reg < GVA agr,eur & GVA ind,reg > GVA ind,eur
3) GVA agr,reg > GVA agr,eur & GVA ind,reg < GVA ind,eur
4) GVA agr,reg > GVA agr,eur & GVA ind,reg > GVA ind,eur

with

GVA agr,reg = GVA per worker in agricultural in region r
GVA agr,eur = EC-average GVA per worker in agriculture (= 14720 ECU)
GVA ind,reg = GVA per worker in industry in region r
GVA ind,eur = EC-average of GVA per worker in industry (= 28410 ECU)

The results are summarized in the figures 2.2 - 2.5 (vide also table A.4 (annex)).

In the non-LFA-regions (Group 1) most regions (52%) have both in agriculture and in industry a GVA per worker above the EC-average. However, 20% of those regions have below EC-average incomes in both sectors. In only two regions (Hessen and the North-West (UK)) agricultural income is below the EC average while industrial income is above the EC average.

In Group 2 (partly LFA) the distribution is more even, although the majority of the regions has a GVA per worker in agriculture which is below the EC-average.

In the LFA-regions 16 out of 21 regions have below average incomes both in agriculture and in industry. The other regions have a GVA per worker in agriculture which is above average, two of them even with an above-average income in industry (Wales and Luxemburg).

Especially for these two regions it is - at least on the basis of this analysis - not clear why they have been classified as LFA. Nevertheless, in general the results are satisfactory: most regions with relatively low GVA per worker are classified as LFA (or partly LFA) and vice versa. Another feature of the

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1) Comparable figures about the service sector are lacking.

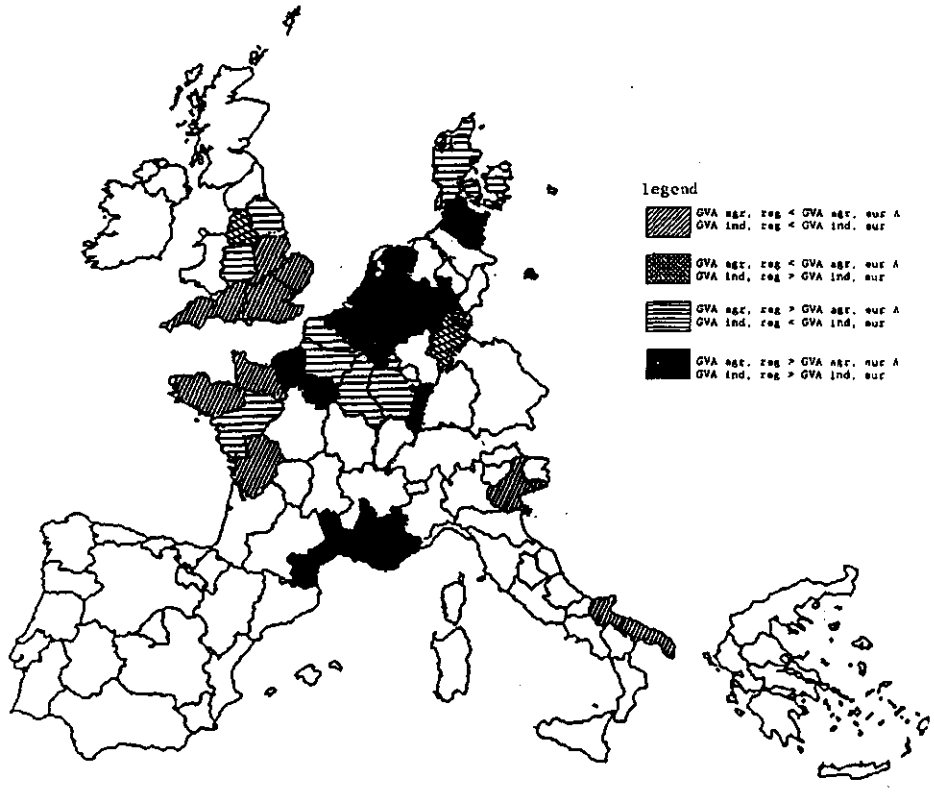

Figure 2.2 Classification of non-LFA regions according to regional GVA in agriculture and industry compared to EC average, in 1985

Source: Own computations based on Eurostat-CRONOS

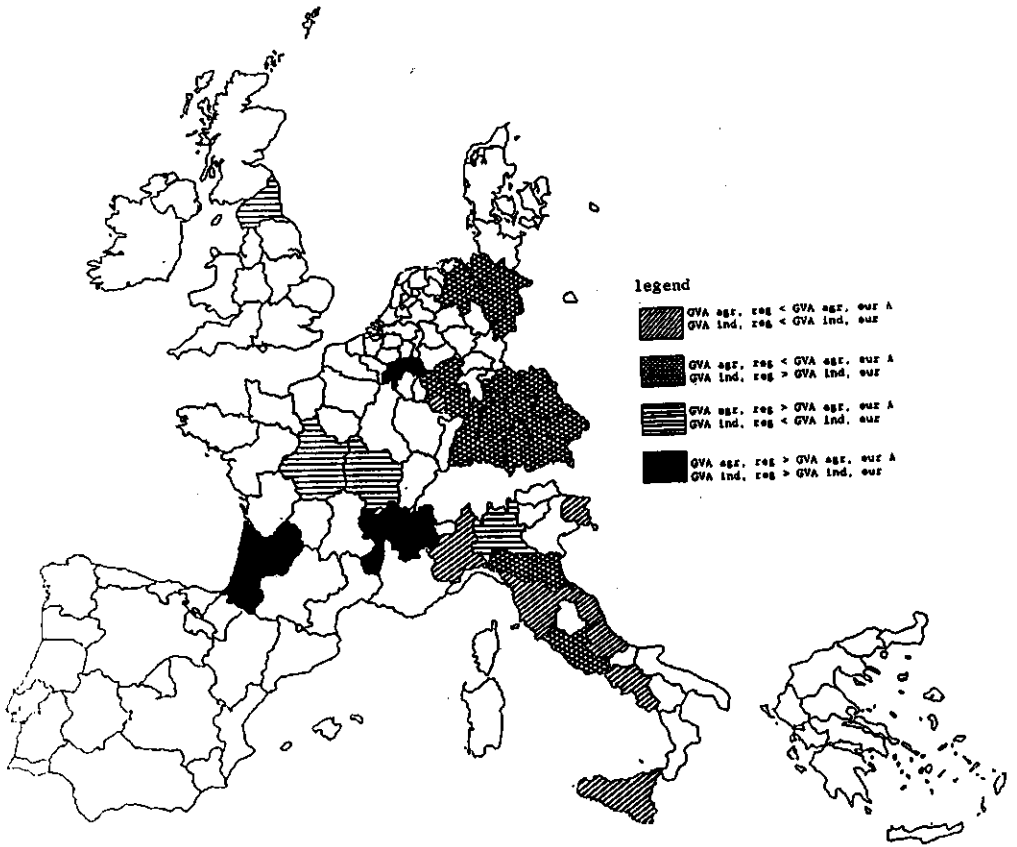

Figure 2.3 Classification of partly-LFA regions according to regional GVA in agriculture and industry compared to EC average, in 1985

Source: Own computations based on Eurostat-CRONOS

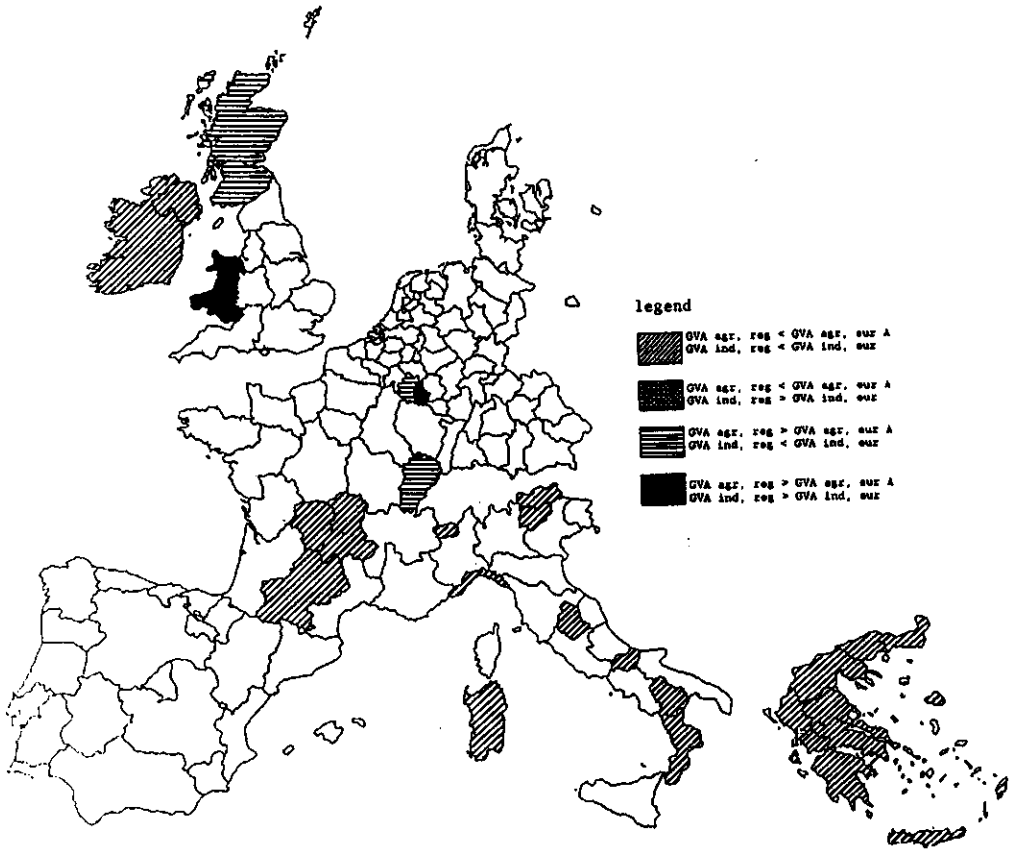

Figure 2.4 Classification of LFA-regions according to regional GVA in agriculture and industry compared to EC average, in 1985

Source: Own computations based on Eurostat-CRONOS

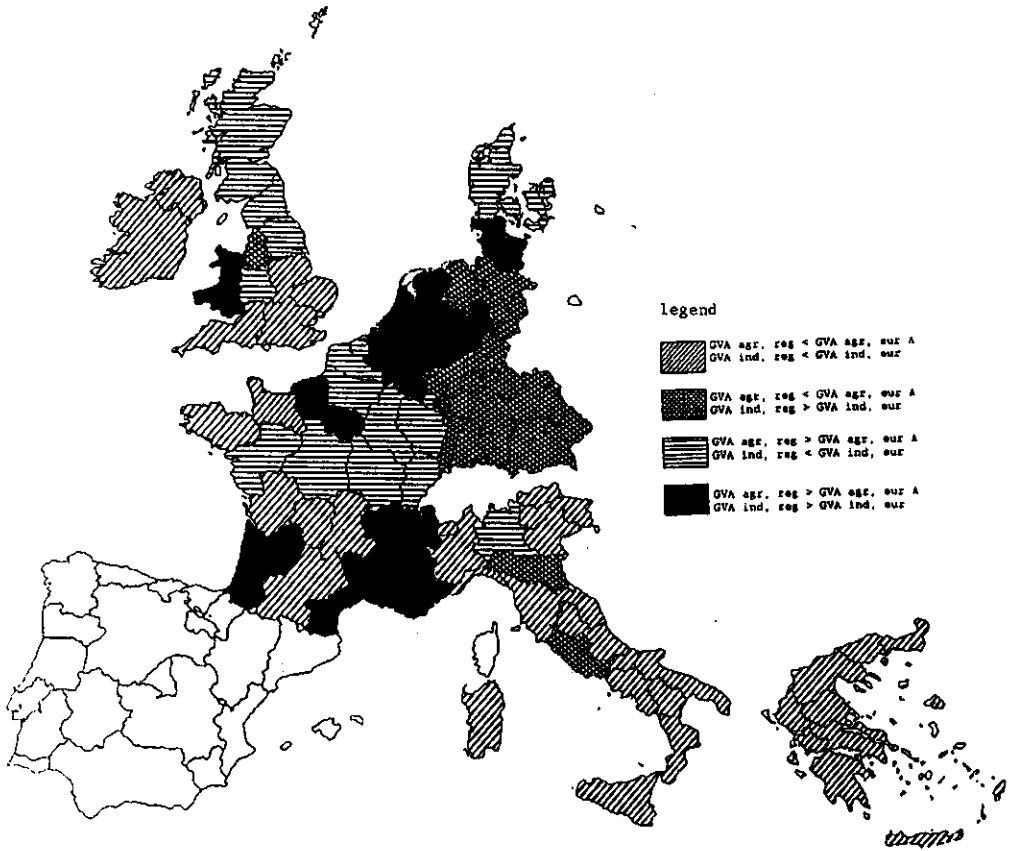

Figure 2.5 Classification of all regions according to regional GVA in agriculture and industry compared to EC average, in 1985

Source: Own computations based on Eurostat-CRONOS

classification is that, in 70% of all regions, GVA per worker in agriculture as well as in industry are either both below or both above the EC-average. In 10% of the regions agriculture is below the EC average, while industry is above the EC-average, whereas in 20% it is the other way around. So, in general there is some relation between income level both in agriculture and industry, but the relation is far from strong (vide section 2.4).

In fact in Group I (non-LFA-regions) one would not expect to find regions with below-average incomes in agriculture, whereas in Group 3 the same counts for regions above the EC-average.

A somewhat different analysis can elucidate these findings. For each region the ratio of GVA per worker in agriculture to the GVA per worker in the region as a whole has bee calculated. Subsequently the same has been done for industry. In formulae:

$$\text{ratio agr,reg} = \frac{\text{GVA per worker in agriculture in the region}}{\text{GVA per worker in all sectors in the region}}$$

$$\text{ratio ind,reg} = \frac{\text{GVA per worker in industry in the region}}{\text{GVA per worker in all sectors in the region}}$$

A low score for this ratio for agriculture could be a reason to classify a region as LFA. "Low" or "high" of course are related to the EC-average for this ratio; the score for the EC-10 is 0.61 for agriculture and 1.17 for industry, both for 1985. The results are summarized in figure 2.6 (vide also table A.5 (annex)).

We will concentrate upon the above mentioned regions of Group 1 and Group 3. In the foregoing it appeared that in Group 1 (non LFA) 24% of the regions have a GVA per worker in agriculture below the EC-average, of which the large majority also with a low GVA per worker in industry. When the ratio between agriculture and total is considered (figure 2.6 and table A.5 (annex)), about half of the before mentioned 24% have a ratio - of GVA in agriculture to GVA in the region - which is above the EC-average (Veneto, South-West (UK), East-Anglia, East-Midlands, North-West (UK)). The other half (Poitou-Charentes, Bretagne, Basse-Normandie, Hessen, South-East (UK) and Puglia) are below the EC-average, both for their GVA in agriculture and for the ratio. If the designation of the Less Favoured Areas would be based on these two criteria one would expect these regions to be labelled LFA or partly LFA, but they are not.

For Group 3 (LFA regions) there appeared to be five regions having a GVA in agriculture above the EC-average, which constitutes 24%. On the basis of our ratio only one of them (France-Comte) could be classified as having truly

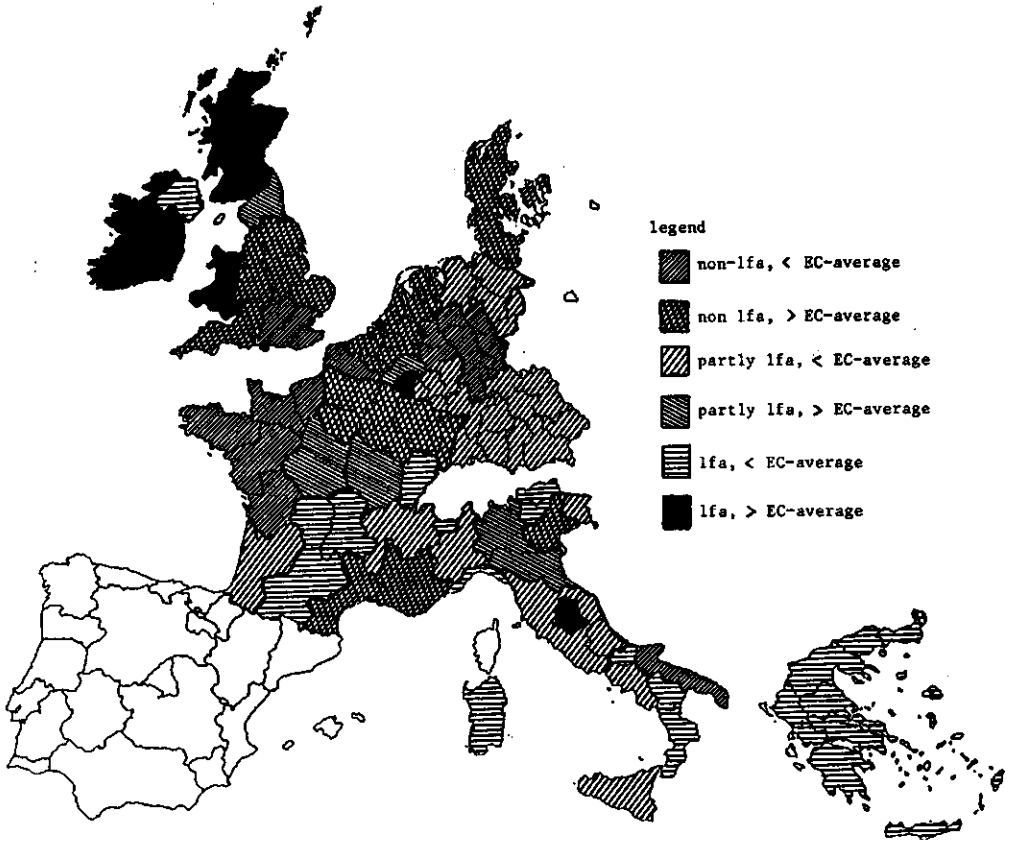

Figure 2.6 Regions classified according to: a) LFA-group, b) ratio between GVA per worker in agriculture and in the economy as a whole

Source: Own computations based on Eurostat-CRONOS

LFA-characteristics. The other four (Luxembourg, Scotland, Wales and Luxembourg (B)) do not meet these criteria.

Summarizing this criterion, one can say that most regions (78%) of Group 1 (non-LFA) have a score above the EC-average for agriculture, and that in Group 2 and 3 most regions are below the average. So, in general, the groups meet the criteria reasonably, but nevertheless some regions notably do not.

2.4 Regional differences and space

2.4.1 General ideas

Although it is useful to know to what extent the regional income is below or above the EC-average, this criterion only makes sense in certain respects. Regions in the EC are economically and socially much more influenced by the level of development of the member state in which they are situated, than by 'the EC-average'.

This consideration has two different backgrounds. On the one hand the economic and social development of member states is far from completely integrated with other member states. This as such is a good reason to compare the situation of a region primarily with the national average. On the other hand the before mentioned feature is caused by the fact that regions are more sensitive to developments in regions nearby than to regions far away. Differences in income and unemployment between neighbouring regions can have important consequences for in- and out migration, and locational choice of new industries, but also for the financial possibilities of the regional government to invest in infrastructure.

2.4.2 Gross Value Added of the regions corrected for the national average

In section 2.3.2 incomes both in agriculture and in industry of the regions are compared with the EC-average. The conclusion was that in general non-LFA-regions are above the EC-average and LFA-regions are below. However, in quite a number of cases sectoral incomes of a region were relatively high, nevertheless the region is labelled as LFA. In figure 2.7 the sectoral incomes of the regions are compared with their national average (vide also table A.6 (annex)). This is done to find out to what extent the position of a region in a national context is an explanation for the classification of regions as LFA or non-LFA.

This procedure is only possible in countries with many regions. Hence, only the regions of West-Germany, France, Italy, Belgium and United Kingdom could be included.

In table A.6 (annex), the regions are ranked within the country according to their LFA-class. It could be expected that

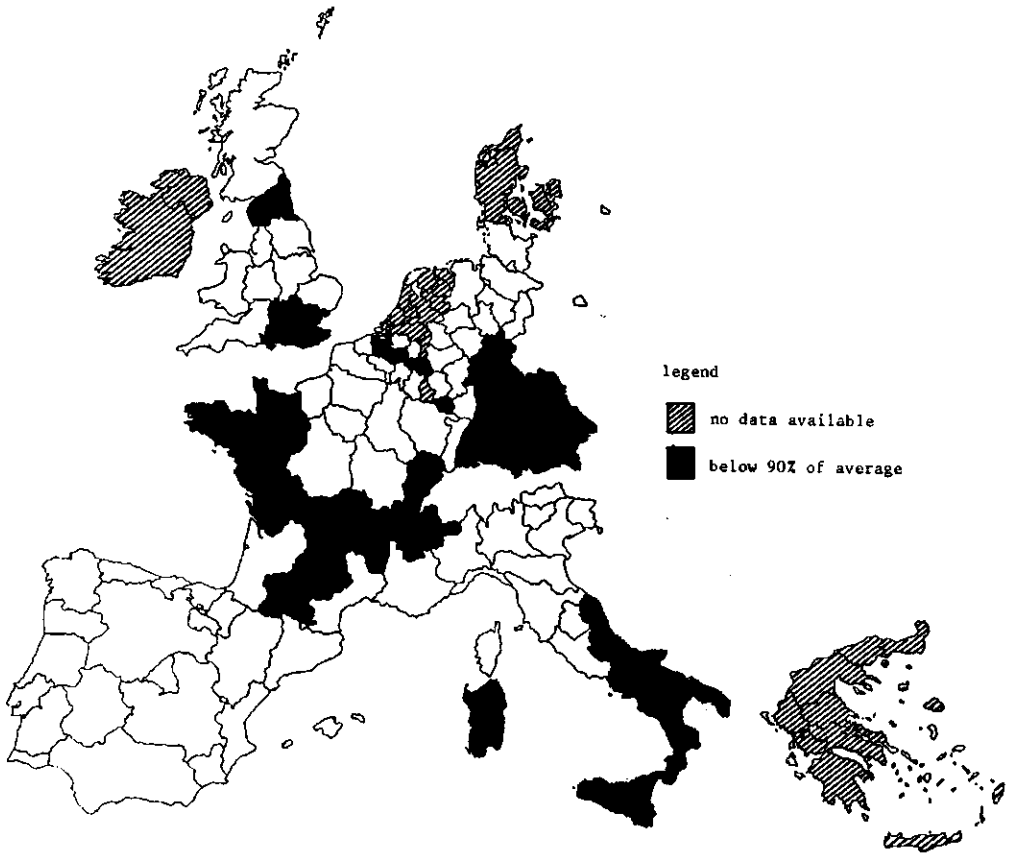

Figure 2.7 GVA per worker in agriculture below 90% of the national average
Source: Own computations based on Eurostat-CRONOS

within the countries the non-LFA regions (class 1) have a relatively high agricultural income and/or industrial income (figures for the service sector are lacking due to an inadequate regional breakdown). This, however, is not the case, as there are quite a lot of regions in this group with low GVA per worker (Hessen, Nord-Pas-de-Calais, Pays de la Loire, Bretagne, Puglia, Brabant and West-Midlands, to mention some). In group 3 (the LFA-regions) regions with quite high incomes are found (Umbria, Luxemburg (B), Wales, Scotland). In group 2 (partly LFA), also an unclear picture appears: both high- and low-income regions. Also has been tried, by means of regression-analysis, to find a relation between agricultural income, industrial income (both corrected for the national average) and percentage LFA in the regions. The results were, as could be expected on the basis of table A.6 (annex), very poor (insignificant relations or hardly any explanatory power).

We can conclude that this way of reasoning (regions are LFA, because they have low incomes compared to the national average) is not really fruitful.

2.4.3 Social distance

In the foregoing paragraphs the EC and the national average GVA per capita has been used to identify the level of development of a region. Those yardsticks do not take into account that the perceived level of well-being, apart from an absolute component, also has a relative component. This relative component has to do with the comparison of the region's private income with the income of other regions. In a recent article 1) this concept was elaborated for the EC. The basic idea is that the difference between own income and income of other people, corrected for the distance to these other people, determines the perceived level of welfare. For a region i, the perceived level of welfare can be defined as:

$$W_{R}i = \sum_{j} \left[\frac{(W_i - W_j)}{W_i} * P_j \; / \; d_{ij}^{\alpha} \right]$$

with:
$W_{R}i$: the perceived level of welfare of region i
W_i : the income per capita in region i
W_j : the income per capita in region j
P_j : the number of inhabitants of region j
d_{ij}: the distance between region i and j (in km)
α : the distance-coefficient.

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1) Strijker and Deinum, 1990. In that article both the concept and the shortcomings of the concept are elaborated.

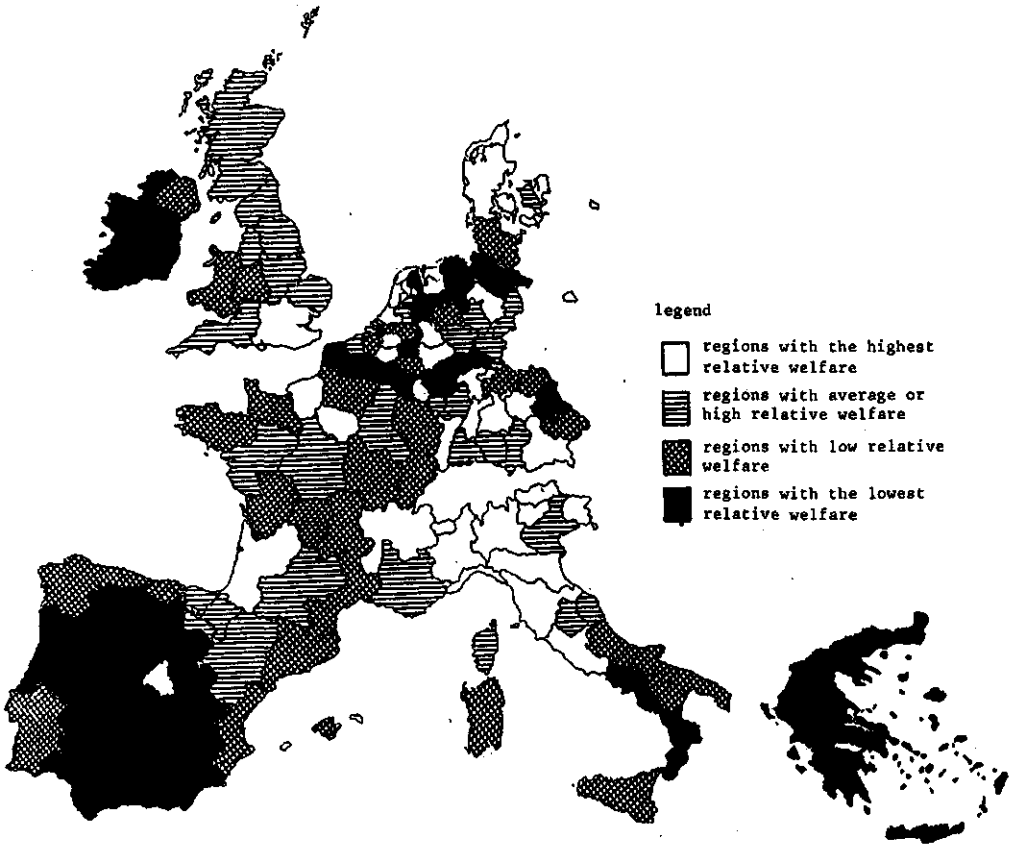

Figure 2.8 Relative welfare based on GDP, PPS, 1985, α = 1
Source: Own computations based on Eurostat-CRONOS

In the calculations GDP per capita with some adaptations was used, because figures on disposable income are lacking (vide Strijker and Deinum, 1990).

This W_{Ri} can be calculated for all regions of the EC. In figure 2.8 the results for $\alpha = 1$ are summarized. In the EC-10 the regions with a low perceived welfare are found, globally, in Greece, Ireland, South-Italy, Wallonia, North-Germany and The Netherlands. But also Wales and many regions in France and Germany have quite a low score.

When these results are compared with the map with Less Favoured Areas in the EC (figure 3.3) quite a lot of similarities appear. The main differences concern parts of northern France, Wallonia and The Netherlands, which have a low perceived welfare, but are no Less Favoured Areas, and Luxemburg, where the opposite is the case.

2.5 Conclusions

The conclusion of this chapter is that LFA-regions have relatively low incomes in agriculture and in general, and a sector structure which is dominated by agriculture. Several factors play a role in the classification of an area as LFA. The following factors were taken into account:

- the level of GVA per worker in agriculture and in industry in a region, compared with the respective EC-average,
- the level of the ratio between GVA per worker in agriculture and in industry in the region and GVA per worker in all sectors in the region, compared with the EC-average,
- the level of GVA per worker in agriculture compared with the national average,
- the level of perceived welfare in the region, compared with other regions.

Each element appeared to explain to some extent the difference between LFA- and non-LFA-regions. So it can be concluded that LFA-regions are not just identified on the basis of one single criterion, but that many criteria play a role. Apart from that, some LFA-regions did not meet any of the four criteria used, which implies that other elements were part of the decision making process.

3. Agricultural income in the regions of the EC

3.1 Introduction

A main task of this study is to find out, how data from the Farm Accountancy Data Network (FADN) of the European Community (EC) can be used in an analysis of the economic situation of farms in Less Favoured Areas.

In chapter 2 EC regions have been analysed and categorized by means of general Eurostat-CRONOS data. Based on these results, this chapter will show, to what extent FADN-data can provide additional information on:

- agricultural income in different EC-regions;
- potential causes for regional disparities in agricultural income;
- the degree of regional specialization and polarization of farming;
- typologies to group EC-regions, according to their state of general economic and agricultural development.

While the focus of chapter 2 was on the general socio-economic situation of the EC-regions, classified according to their share of farms in Less Favoured Areas, the central aim of this chapter is to focus on agricultural income and to analyse, to what extent regional disparities in agricultural income may be related to regional differences

- in the general state of regional economic development and/or
- in agricultural production conditions, as reflected in the LFA-status of an area.

How the relative importance of both regional and agricultural conditions might change in the course of regional and agricultural development will be investigated.

In this chapter, in accordance with the original philosophy of the LFA-policy, the LFA-status of an area ('normal', 'Mountain' 'other Less Favoured') will mainly be interpreted as an indicator for its 'natural' production conditions. To a certain extent, however, differences in 'natural' conditions will always be reflected in different farm characteristics.

The following chapter (4) will therefore have a closer look at these 'structural' differences - in farm size, productivity etc. - and in how far they may determine agricultural income in areas of different LFA-status.

For the purpose of this chapter, data sets from three different statistical sources had to be combined (For the representativeness and shortcomings of these data see chapter 1.4.3).

- FADN-data:
  FADN-data from the EC bookkeeping network (FADN/RICA) are available for most EC-regions - NUTS II as analysed in chapter 2. In addition, however, within these regions a clear distinction can be made between areas of different LFA-status (normal, Mountain, other Less Favoured Areas). For the purpose of this chapter distinction was made only between 'normal' and (total) Less Favoured Area. Farm Net Value Added per Annual Work Unit (FNVA/AWU) (three years average '1985') was chosen as main indicator for the regional analysis of agricultural incomes. Relative shares of different types of farming have been used to identify differences in regional specialization and polarization between normal and Less Favoured Areas of the various regions or groups of regions.

- REGIO-data:
  From the Eurostat CRONOS data bank, regional figures for the Gross Value Added per Inhabitant (GVA/INH) have been used. GVA/INH is almost identical with the Gross Domestic Product per Inhabitant (GDP/INH). It is interpreted not only as an income figure but as an indicator for the general state of economic development in a region.

- FSS-data:
  Data from the Farm Structure Survey (FSS) 1985 are used to give an impression of the importance of part-time farming and pluriactivity and thereby to highlight problems of representativeness of the FADN-data.

3.2 Part-time farming and pluriactivity

The statistical analysis in this chapter is mainly based on data from the FADN-network. It is, however, important to realize that the 44000 farms, whose bookkeeping results are collected and processed in this network, only represent about 3 million farms in EC-10. These farms produce 90% of the total agricultural production, but regarding the number of farms less than 50% of the total number is represented. In Denmark (more than 90%) and in The Netherlands (more than 70%) representativeness is relatively high. In Italy only about 40% of all farms are represented by FADN (see table 1.2).

In the EC-10 representativeness in Less Favoured Areas is a bit lower than in 'normal' areas. On average only 47% of the LFA farms are covered by FADN. In particular, the economic situation of the smaller, low income farms, which are often run on a part-time basis, can not be assessed by using FADN-data.

As the results of the 1985 Farm Structure Survey show (table 3.1), on 54% of all farms in EC-10 the farmer spends less than

Table 3.1 Part-time farming and pluriactivity in the member states of EC-10 (1985)

Member states	Total number of farms (*1000)	Distribution of holdings by work time of farmer (AWU)			Proportion of farmers with other gainfull activ. (%)	Farms repres. by FADN (%)
		0-50%	50-100%	100%		
West Germany	740	48	8	44	42	49
France	1057	29	15	56	32	55
Italy	2801	70	17	13	26	40
Belgium	98	29	9	62	32	57
Luxembourg	4	19	14	66	20	54
Netherlands	136	11	14	75	20	71
Denmark	92	27	27	45	31	92
Ireland	220	30	26	44	33	66
United Kingdom	258	26	13	61	21	56
Greece	952	64	25	11	34	52
EC-10	6359	54	17	29	30	48

Source: based on FSS-1985 and FADN.

50% of an annual work unit (AWU). The share of part-time farms is particularly high in the southern member states (Italy and Greece), but also in Germany almost 50% of all farms are managed by farmer with less than 0.5 AWU.

The economic situation of farm families running such part-time farms is of course strongly dependent on their ability to find additional off-farm employment. In EC-10 about 30% of all farmers have such an additional gainful activity. The share is highest in Germany with more than 40%. Compared with the relative high percentages of part-time farmers in Italy and Greece the proportion of farmers with other gainful activities is rather low. This can be interpreted as an indication for 'hidden unemployment'. Partly, however, also 'hidden employment' - i.e. unregistered gainful activities (informal economy) - may be responsible for this discrepancy.

In the context of this study, it is of particular interest to know, if there are major differences in the share of part-time or pluriactive farmers between normal and Less Favoured Areas (LFA). Table 3.2 shows that on the average the share of farmers spending less than 1 AWU on their farm is bigger than 75% in Less Favoured Areas compared with only 66% in normal areas. In all member states - except Greece - Less Favoured Areas have a higher percentage of part-time farmers. Major differences - of 10 to 12 percentage points - can however only be observed in Germany and Ireland.

Table 3.2 Part-time farming and pluriactivity in normal and Less Favoured Areas (LFA) of EC-10 (1985)

	Total number of farms (* 1000)	LFA as a % of total		Distribution of farms by work time of farmer (AWU):						Farmers with other gainful activity (%):	
		number of farms	agricultural area	0-50%		50-100%		100%			
				normal	LFA	normal	LFA	normal	LFA	normal	LFA
W-Germany	740	36	32	45	53	8	9	48	38	39	49
France	1057	33	35	30	27	14	17	57	55	33	32
Italy	2801	45	51	69	71	16	18	15	11	26	26
Belgium	98	14	20	29	33	8	12	64	56	31	35
Luxembourg	4	100	100	-	19	-	14	-	64	-	20
Netherlands	136	0	0	11	-	14	-	74	-	20	-
Denmark	92	0	0	28	-	28	-	45	-	31	-
Ireland	220	60	48	29	30	20	30	51	40	31	35
U. Kingdom	258	35	47	28	21	12	13	58	58	22	21
Greece	952	48	58	66	62	25	25	9	13	38	31
EC-10	6359	41	39	52	58	16	18	33	23	30	31

Source: Own computations based on FSS-1985.

Despite the higher share of part-time farms in Less Favoured Areas the percentages of farmers with off-farm activities do not differ as such between Less Favoured and normal areas. Only in Germany, where the importance of pluriactivity is high anyhow, the share of farmers with other gainful activities is significantly higher in Less Favoured Areas (49%) than in normal areas (39%).

For a proper assessment of the economic and social situation of farm families the analysis should, however, not only focus on the activities of the farmer, but rather on those of all members of the farm household (Arkleton Research, 1989; Schmitt, 1990). Consequently the relevant income indicator to be looked at should be the total (disposable) income of the farm family.

FADN-data do not allow such a kind of analysis. The focus of FADN is on ('viable') farms rather than on households. Thus, if in the following sections regional differences in Farm Net Value Added per Annual Work Unit (FNVA/AWU) are analysed, these figures should not be interpreted as indicators for the social situation of farm families but rather as a yardstick for farm productivity.

To use this indicator seems appropriate in an analysis of regional conditions for agricultural production. The income situation of farm families, however, is influenced by a large number of additional factors. These are not only agricultural ones, such as the degree to which production factors (land, labour, capital) not owned by the family have to be remunerated from the FNVA or as the way in which farm incomes are taxed.

As the high percentage of pluriactivity shows, in many cases the final disposable income of farm families is also dependent on additional income from outside agriculture. The agricultural income, quite often, is even of minor importance.

Regional income comparisons based on FADN-data therefore tend to

- underestimate regional disparities in agricultural income, because a great number of part-time farms are excluded, but
- overestimate regional disparities in total incomes of farm families, because off-farm incomes are excluded.

Despite these and other deficiencies the following analysis will show that making proper use of FADN-data can provide interesting results and additional insights in potential causes for regional disparities in agricultural income and could thereby also help to improve the efficiency of agricultural and regional policy measures.

3.3 Agricultural income and regional development

It is well known that there are major differences in the state of economic development between the various parts of the European Community (EC) (see for example CEC, 1987b). This can

already be seen from national figures for the 10 member states (EC-10) analysed in this study. For West-Germany (DEU) or for France (FRA) GVA/INH is about 20% higher than the EC average, whereas countries like Ireland (IRE) or Greece (ELL) only reach 60% or even 40% of the EC average (see table A.7 (annex)) 1)

National figures for farm income (FNVA/AWU) show, that in agriculture differences are even more accentuated. In countries like The Netherlands (NED) or Denmark (DAN) FNVA/AWU is more than twice as high as the EC-average, whereas farms in Greece only reach 50%. Calculated on the basis of national averages the coefficient of variation, is 28% for GVA/INH, but 42% for FNVA/AWU. Two first observations can already be made by looking at these national averages:

(1) If member states are ranked according to their general state of economic development (GVA/INH) as in figure 3.1a), it can be seen that
   - there is a certain tendency, but no strict correlation, so that agricultural incomes (FNVA/AWU) increase with rising GVA/INH.

   It is obvious that agricultural incomes in countries which historically had a more liberal approach to agricultural policy (The Netherlands, Denmark, Belgium and the United Kingdom) are considerably higher than those in countries with a rather high GVA/INH, but a more protectionist tradition in agricultural policy (Luxemburg, France and West-Germany). Nevertheless agricultural incomes here are better than in the poorer countries of the EC, be it in the south (Italy and Greece) or at the north-western periphery (Ireland).

(2) A second tendency can be observed more clearly, if member states are ranked according to their agricultural performance (figure 3.1 b):
   - The relationship between agricultural income (FNVA/AWU) and the general state of economic development (GVA/INH) becomes weaker with increasing agricultural performance.

   This leads to the hypothesis that in the course of regional and agricultural development, factors other than the prosperity of the regional economy become more and more important in determining the level of agricultural income. Such factors which could help to explain the emergence and

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1) In this chapter all income comparisons are based on ECU values. This seems to be reasonable as it is the productivity aspect rather than the purchasing power aspect of income figures that is of interest here. Using Purchasing Power Standards (PPS) would reduce disparities in magnitude. It would, however, not generate any results that would make it necessary to change the main conclusions of this chapter.

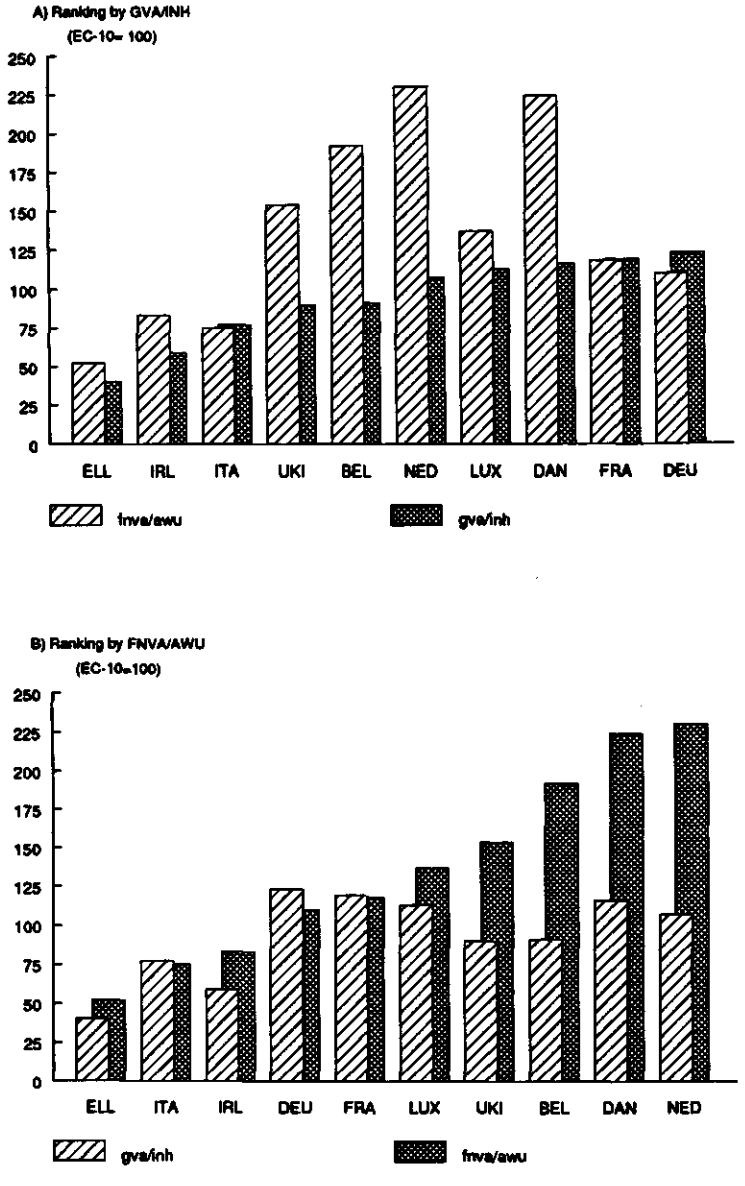


Figure 3.1 State of the economic development (GVA/INH) and agricultural incomes (FNVA/AWU) in the member states of the EC-10 (1985)

Source: Own computations based on Eurostat-CRONOS and FADN

persistence of regional income disparities in agriculture might for example be regional differences in the natural and/or structural conditions of agricultural production.

In order to back up this hypothesis with additional arguments a more detailed analysis of the interrelationship between FNVA/AWU and GVA/INH will be made on the basis of regional data. In figure 3.2 data for 62 European regions are plotted according to their relative position compared with the EC-average (EC-10 = 100). Identification numbers and the original data for the various regions can be found in table A.8 (annex).

The diagram shows that the regional data form a rather clearcut triangle. The alignment of this triangle supports the general statement that there is a tendency that together with the improvement of regional developments agricultural income also improves. However, variation in regional FNVA/AWU is not only high but is even increasing with increased GVA/INH.

At first sight, one could suspect that the triangle only reflects the fact that, with growing absolute levels of GVA/INH and FNVA/AWU, variation - in absolute terms - will increase too. In relative terms regional disparities could nevertheless be decreasing.

In order to neutralize this 'level effect' in regression analysis, variables for FNVA/AWU and GVA/INH - expressed as percentages of the EC-10 averages - were transformed into logarithmic scale. As expected, correlation between the general state of economic development and the agricultural income of the various regions was highly significant, but not strong.

$$\ln (FNVA/AWU)_{rtot} = 1.41 + 0.71 * \ln (GVA/INH)_{rtot} \quad (3.1)$$

SE:	(0.71)	(0.16)
T:	1.99	4.52

R^2 = 0.25
Cases: 62 F = 20.4

Even in logarithmic scale the residuals - calculated as differences between the actually observed $FNVA/AWU_{rtot}$ (rtot: total region) and the one predicted by function (3.1) - still form a clear triangle. This supports the observation, that the relation between FNVA/AWU and GVA/INH becomes less and less stringent the more a region is developed, be it in terms of general economic or of agricultural performance.

3.4 Towards a typology of rural areas in the EC

A more detailed analysis of the diagram in figure 3.2 reveals a rather astonishing regularity: The regions are not at

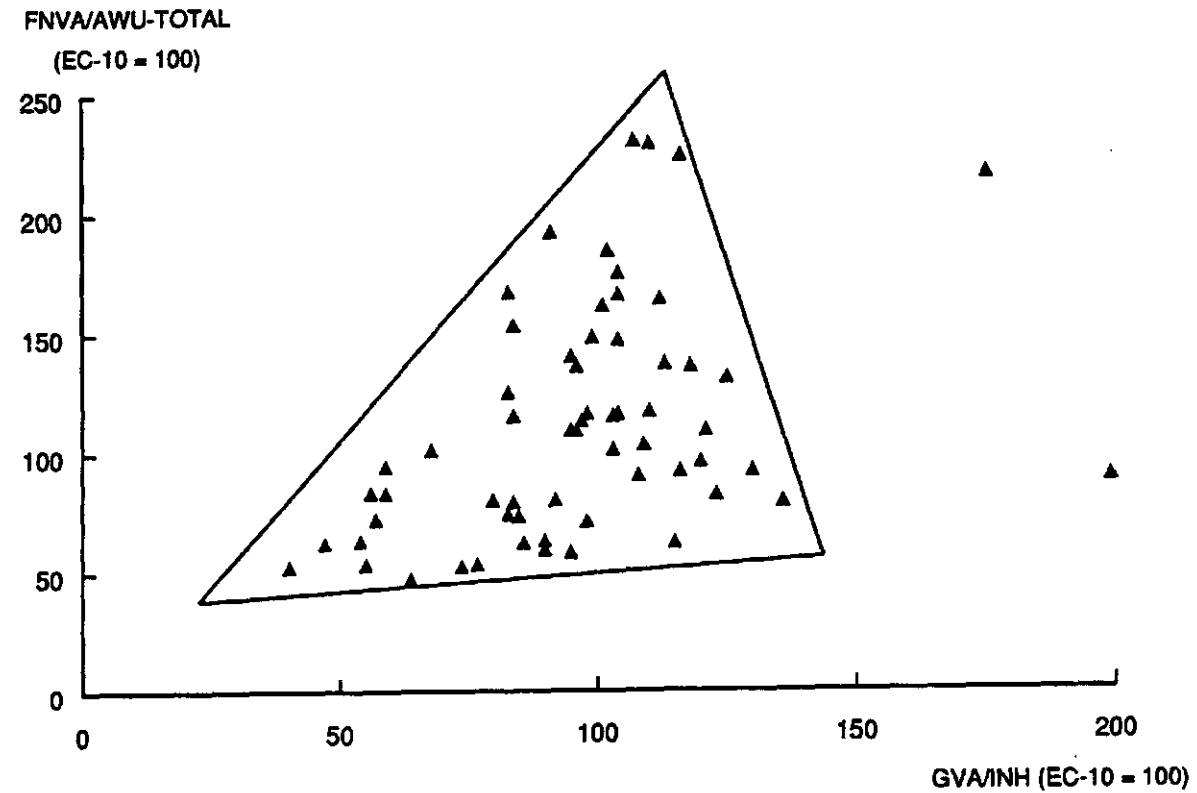


Figure 3.2 State of the regional development (GVA/INH) and agricultural income (FNVA/AWU) in the regions of the EC-10 (1985)

Source: Own computations based on Eurostat-CRONOS and FADN

all dispersed in a 'chaotic', random way over the whole triangle, but are clearly concentrated in certain sectors, according to geographical location criteria.

Three main geographical areas of the EC can be distinguished:
- 'North-Western' regions (NO-WE)
- 'Central' regions (CENTR)
- 'Southern' regions (SOUTH).

Each of these three main areas can be further divided into two parts. Either as in the case of North-West or South into:
- 'centre' (CE)
- 'periphery' (PE)

or as in the case of Central into:
- 'north' (NO)
- 'south' (SO).

From table A.8 (annex) and figure 3.3 it can be seen, how the regions are grouped and aggregated to these six areas, each of them containing regions of more than one EC member state (minimum 2, maximum 4). All member states with more than one FADN-region, having regions in at least two types of areas.

As can be seen from figure 3.4(a-d) and figures A.1 to A.3 (annex) all regions belonging to one of these six main geographical areas of the EC are to be found in a clearly determined sector of the triangle. With the exception of some relatively better off southern regions - like e.g. Lombardia or Languedoc-Roussillon - there is no overlapping of these sectors.

In the lower left corner of the triangle there are concentrated all the so called 'objective 1' -regions, which get special support from the Structural Funds of the EC.

Based on the aggregated figures (table 3.3), the main results of the analysis can be summarised as follows:

North-Western regions:

For the total of the North-Western regions:
- GVA/INH (93%) is slightly lower,
- FNVA/AWU (162%) is remarkably higher than the respective EC-10 average (100%).

The differences between the Centre and the Periphery of North-West - expressed as percentage points of the EC average - are:
- 21 for GVA/INH
- 114 for FNVA/AWU.

Despite general economic conditions close to the EC average agricultural income shows great disparities between core regions and peripheral regions of the North-West. FNVA/AWU in the Centre part is by far the best in the Community (205%), whereas in the Periphery part it does not even reach the EC-10 average (91%).

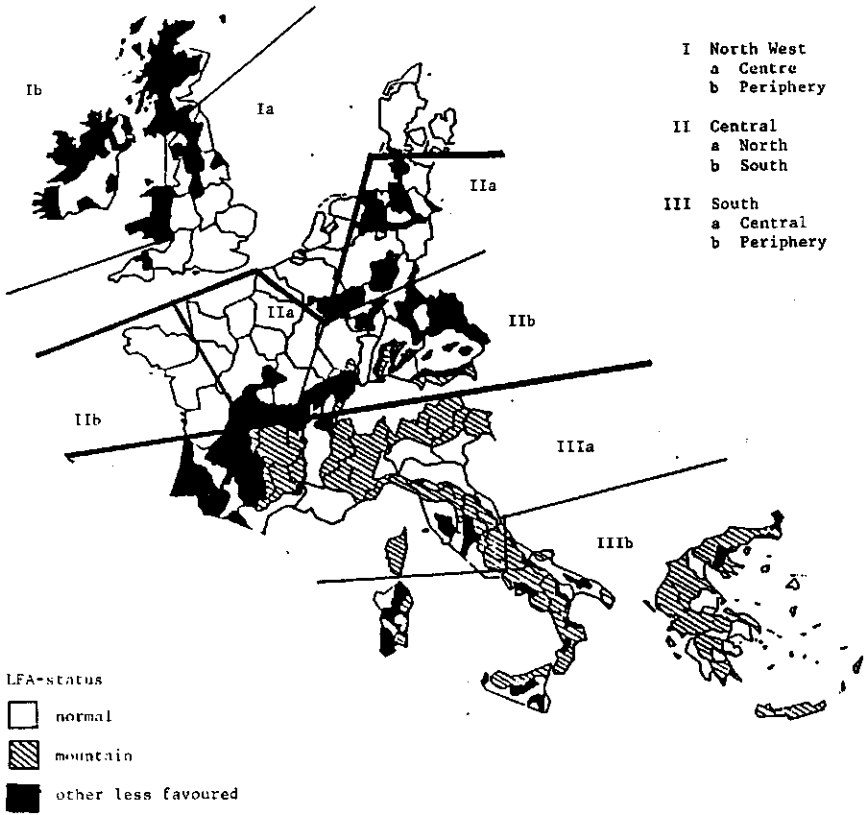
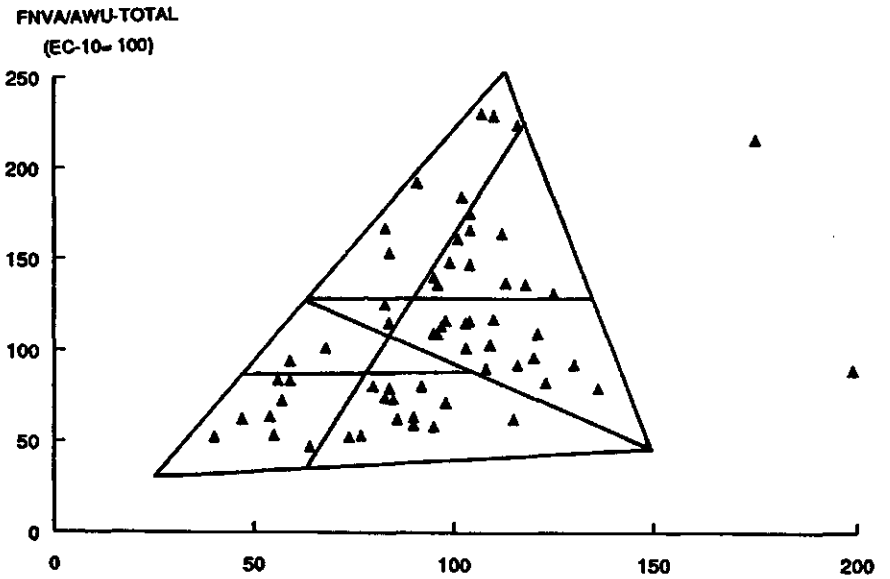
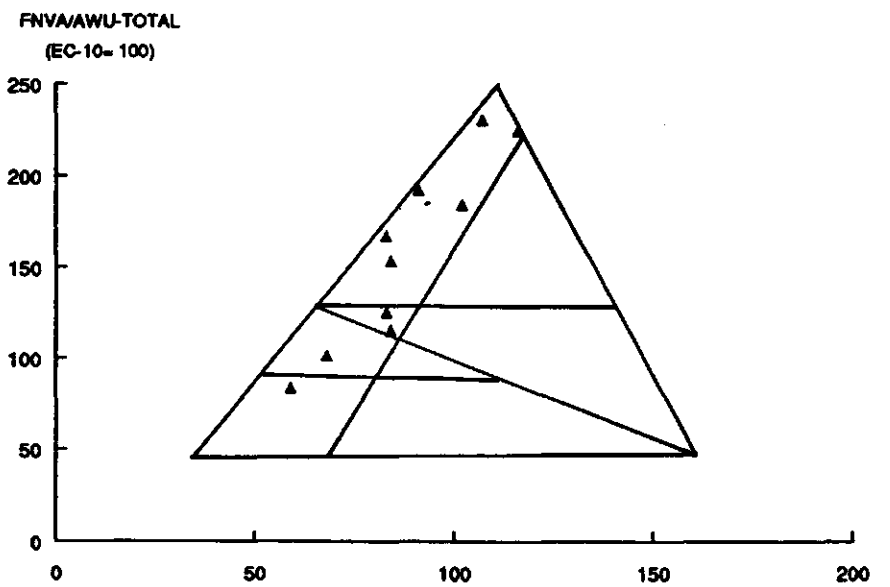


Figure 3.3 'Main geographical areas' and Less Favoured Areas (LFA) in EC-10
Source: Own computations based on Eurostat-CRONOS and FADN



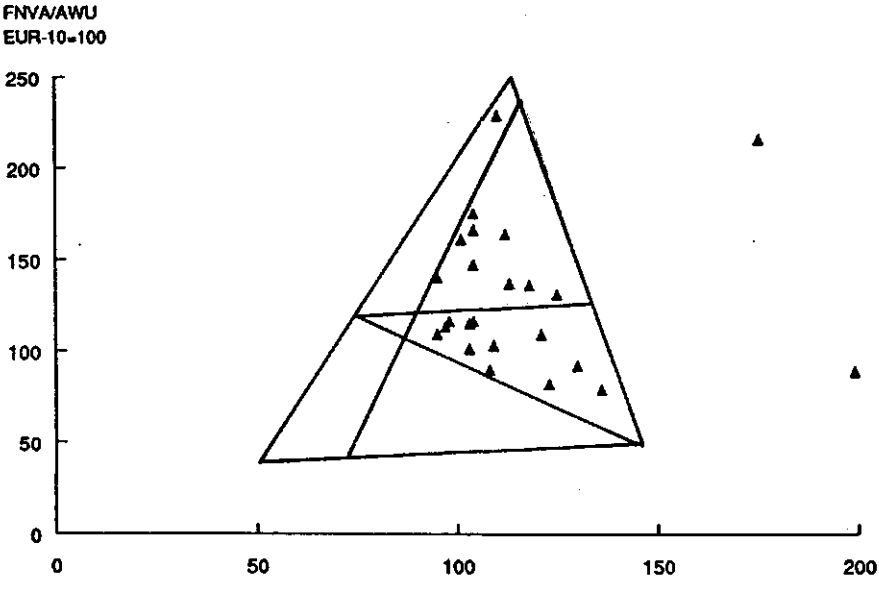
a) 'EC-10' regions



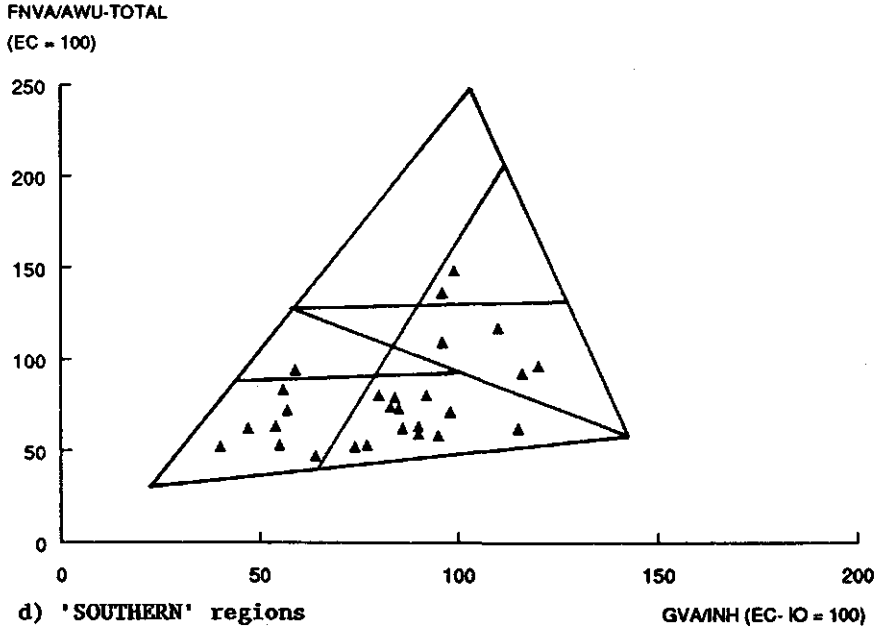
b) 'NORTH-WESTERN' regions

Figure 3.4 State of the regional development (GVA/INH) and agricultural incomes (FNVA/AWU) in the 'Main Geographical Areas' of the EC-10 (1985)

Source: Own computations based on FADN



c) 'CENTRAL' regions



d) 'SOUTHERN' regions

Figure 3.4 (continued)

Table 3.3 State of regional development (GVA/INH) and agricultural incomes (FNVA/AWU) in the 'main geographical areas' of EC-10 (1985) (EC-10 = 100)

Region	GVA/ INH	FNVA/AWU			Agr.area LFA in % of total
		total	normal	LFA	
North-West	93	162	153	127	38
North-West Centre	96	205	173	223	12
North-West Periphery	75	91	91	107	69
Denmark	116	224	186	0	0
Netherlands	107	230	191	0	0
Belgium	91	192	162	267	20
UK (England)	92	168	144	187	17
UK (Scotl.,Wales,N-Ireland)	81	113	101	155	83
Ireland	59	83	87	92	48
Central	123	122	108	142	22
Central-North	126	155	133	191	19
Central-South	120	98	87	121	26
France (north and central)	135	162	142	171	17
W.Germ.(north)	119	145	122	214	23
France (east)	106	109	102	139	34
France (west)	99	113	95	133	7
Luxemburg	113	137	104	214	100
W.Germ.(south)	127	86	76	115	40
South	80	70	69	93	58
South-Centre	96	84	84	105	59
South-Periphery	50	59	55	84	58
France (south)	109	92	102	103	71
Lombardia/Emilia-Romagna	98	125	117	146	27
Italy (N.E./N.W.)	87	71	65	91	47
Italy centre	83	64	60	101	54
Italy south	55	66	59	98	58
Greece	40	52	49	72	58
EC-10 (ECU)	9.862	10.108	12.165	6.526	39

Source: Own calculations based on Eurostat-CRONOS, FSS-1985 and FADN.

Central regions:

For the total of the Central regions:

- GVA/INH (123%)
- FNVA/AWU (122%)

both are clearly higher than the EC average.

The differences between the two parts of Central (North and South) - expressed as percentage points of the EC average - are:

- 6 for GVA/INH
- 57 for FNVA/AWU.

Thus, disparities in the Central regions are less accentuated than in the North-West. However, even under relatively good general economic conditions agricultural income in Central-North (155%) does not reach the same level as in the Centre part of North-West (205%). In Central-South (98%) agricultural income is lower than the EC average and not much better than in the Periphery part of North-West (91%).

Southern Regions:

In the Southern regions

- GVA/INH (80%)
- FNVA/AWU (70%)

both do not reach the respective EC averages.

Differences between the Centre and the Periphery part of South - expressed as percentage points of the EC average - are:

- 46 for GVA/INH
- 25 for FNVA/AWU.

Thus, for the Southern regions disparities in general economic development are extreme, whereas differences in agricultural income - at least for those farms represented by FADN - are on the average lower than in the rest of the Community.

In total, this cross-sectional analysis of aggregated figures for the main geographical areas of the EC lead to the conclusion that: With better performance

- in general economic terms (GVA/INH), regional disparities decrease;

whereas

- in agriculture (FNVA/AWU), regional disparities increase.

Whether this conclusion holds as a general rule and if it could be interpreted in a dynamic perspective - development over time - or if it is an incidental result generated by the specific data-sets and regional dimensions underlying this analysis, has to remain open here. In the context of the present design of rural development strategies in the EC, this could be an important question for further research.

3.5 Agricultural income and LFA-status

The fact that the residuals, not 'explained' by the regression function (3.1), still form a clear triangle, leads to the question, which factors, other than the state of regional development, could help to explain regional disparities in agricultural income, and which factors even grow in importance.

One hypothesis could be, that 'natural' handicaps play an important role in this context. In order to test this, the differences in agricultural income between the normal (NOR) and the Less Favoured part (LFA) of the various EC regions will be analysed. Thus, as a first step, it is taken as given that in fact Less Favoured Areas are characterized by certain 'natural' handicaps for agricultural production.

As will be shown in chapter 4, there are of course other 'structural' elements - like farm size, labour productivity etc. - that are of crucial importance for the explanation of income differentials between normal and Less Favoured Areas. To what extent such 'structural' deficiencies are again a function of 'natural' handicaps, and if they could or should be overcome by structural adjustment, are other important policy questions which have to remain open here.

As can be seen from figure 3.5 and table A.7 (annex) for the EC as a whole, agricultural income in Less Favoured Areas is on the average about 46% lower than in normal areas. However, FNVA/AWU in the Less Favoured Areas of Belgium, Luxembourg and the United Kingdom is not only higher than the average agricultural income in EC-10. It is even much higher than the FNVA/AWU in normal areas of Ireland, Italy and Greece. FNVA/AWU in Belgium Less Favoured Areas is more than 17000 ECU, compared with less than 6000 ECU in normal areas of Greece.

By means of regression analysis it was tested, how two separate sets of regional data on agricultural income (FNVA/AWU) - one for the normal areas ($_r$nor), the other one for the LFA part of the regions (rlfa) - correlate with the state of general economic development of the whole region (GVA/INH). Again, as for the total regional averages ($_r$tot) correlation was significant but far from strong (normal: $R^2 = 0.31$, LFA: $R^2 = 0.17$).

As can be seen from the diagram in figure 3.6 the slopes of the two regression lines differ considerably. (In logarithmic scale b is 0,78 for normal areas (NOR) and 0,55 for Less Favoured Areas). A possible conclusion, drawn from these calculations, could be that with improved state of regional development (GVA/INH):

- Agricultural income (FNVA/AWU) in the LFA part of a region does not increase at the same rate as in its 'normal' part.

Or, what amounts to the same:

- The gap between agricultural income in normal and Less Favoured Areas is getting wider.

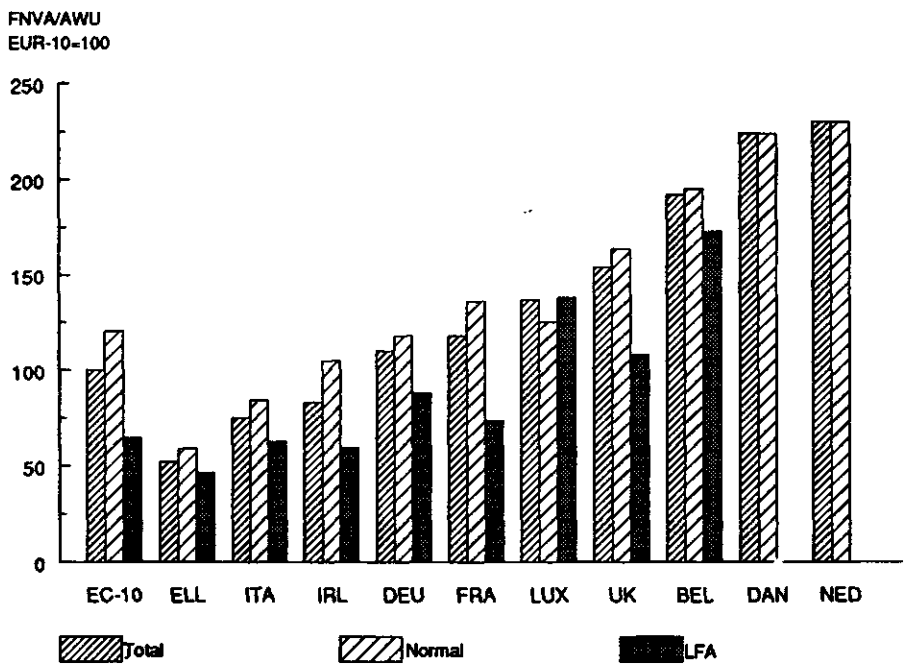


Figure 3.5 Agricultural income (FNVA/AWU) in normal (NOR) and Less Favoured Areas (LFA) of the member states of the EC-10 (1985)

Source: Own computations based on Eurostat-CRONOS and FADN

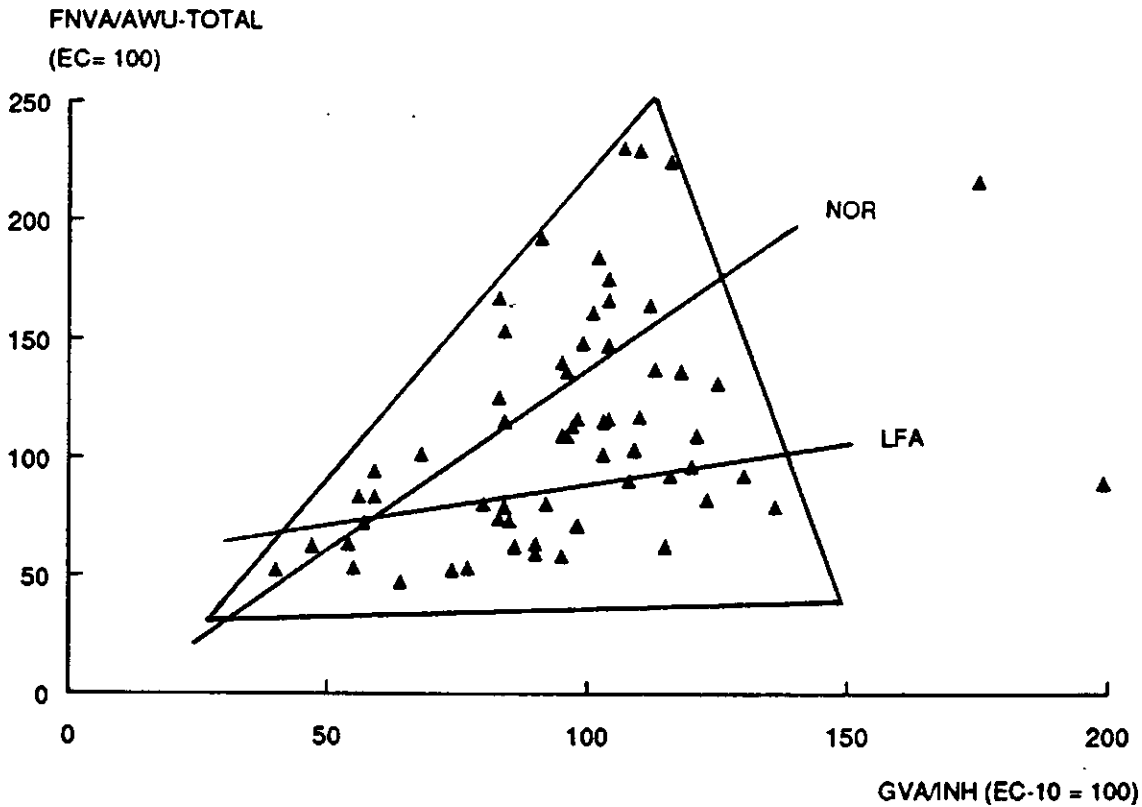


Figure 3.6 State of the regional development (GVA/INH) and agricultural income (FNVA/AWU) in 'normal' (NOR) and Less Favoured Areas (LFA) of the regions in EC-10 (1985)

Source: Own computations based on Eurostat-CRONOS and FADN

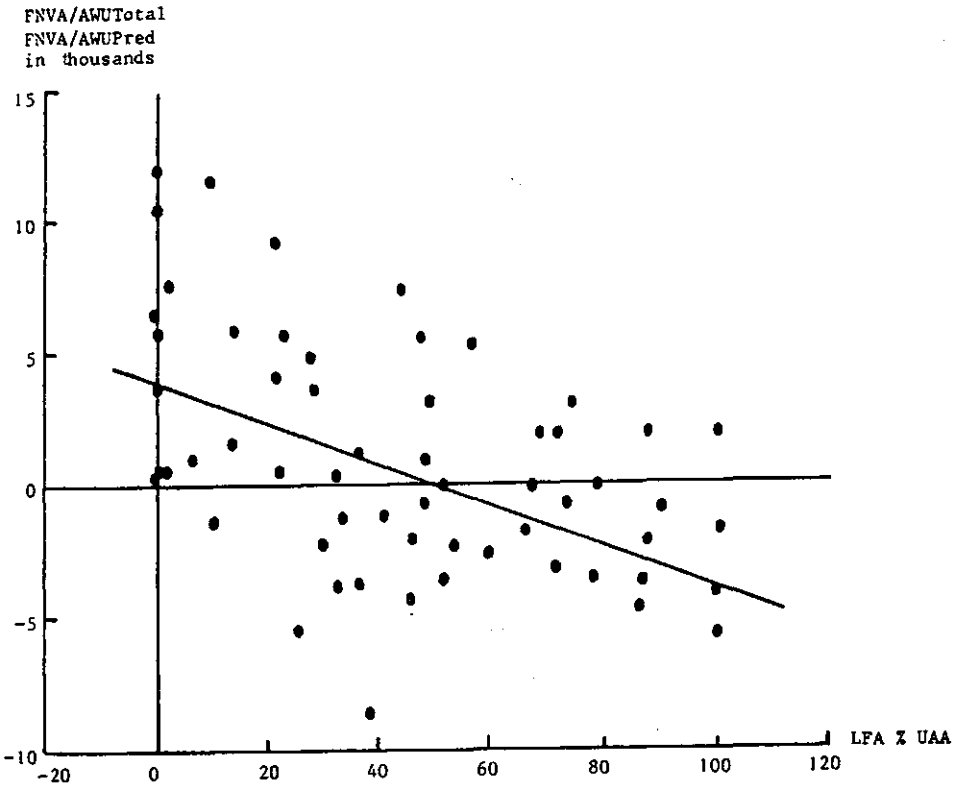


Figure 3.7 Residuals of FNVA/AWUrtot not 'explained' by GVA/INHr$_{tot}$ and the regional LFA share in UAA (62 regions of the EC-10)

Source: Own computations based on Eurostat-CRONOS and FADN

Another way to test how the LFA-status of an area can help to 'explain' regional disparities in agricultural income, is to look for a correlation between the regional share of Less Favoured Areas - expressed as a percentage of the total Utilized Agricultural Area (UAA) - and the differences between the actual FNVA/AWU and the predicted values calculated on the basis of the regression function (3.1).

In figure 3.7 these regional residuals - RES (FNVA/AWU) in ECU - 'not explained' by the regression function (3.1) are plotted against the respective percentages of LFA/UAA. It can easily be seen, that with increasing LFA/UAA positive residuals decrease whereas negative residuals increase. All regions having no Less Favoured Areas have positive residuals. Their actual agricultural income is higher than would be expected from the regression function (3.1). With two exceptions all regions with LFA/UAA of more than 80% have negative residuals. The two exceptions are in fact special cases: Luxemburg and Scotland.

3.6 Agricultural income, regional development and LFA-status (multiple regression)

The results of the analyses in the previous sections suggest, that a multiple regression analysis, correlating agricultural income with regional indicators for the general state of economic development and for their LFA-status could be meaningful and render additional information. In this way the unexplained part of regression function (3.1) is correlated with the share of Less Favoured Areas in the total UAA per region. In fact, adding LFA/UAA as additional 'explanatory' variable increased the degree of determination (R^2) from 0.25 in (3.1) to 0.66 in (3.2):

$$\ln(\text{FNVA/AWU})_{rtot} = 5.8 + 0.41\ \ln(\text{GVA/INH})_{rtot} - 0.067\ \text{LFA/UAA} \quad (3.2)$$

SE:	(1.5)	(0.16)	(0.014)
T:	4.0	2.6	-4.8

R^2 = 0.66
Cases: 62 F = 23.0

3.7 LFA-status and regional specialization

The policy concept of Less Favoured Areas has always stressed the importance of 'natural' handicaps in agricultural production. They are seen as being responsible for income disparities in agriculture, which cannot easily be overcome by structural adjustment.

If, in fact, the distinction between normal and Less Favoured Areas is one of natural conditions, one would expect

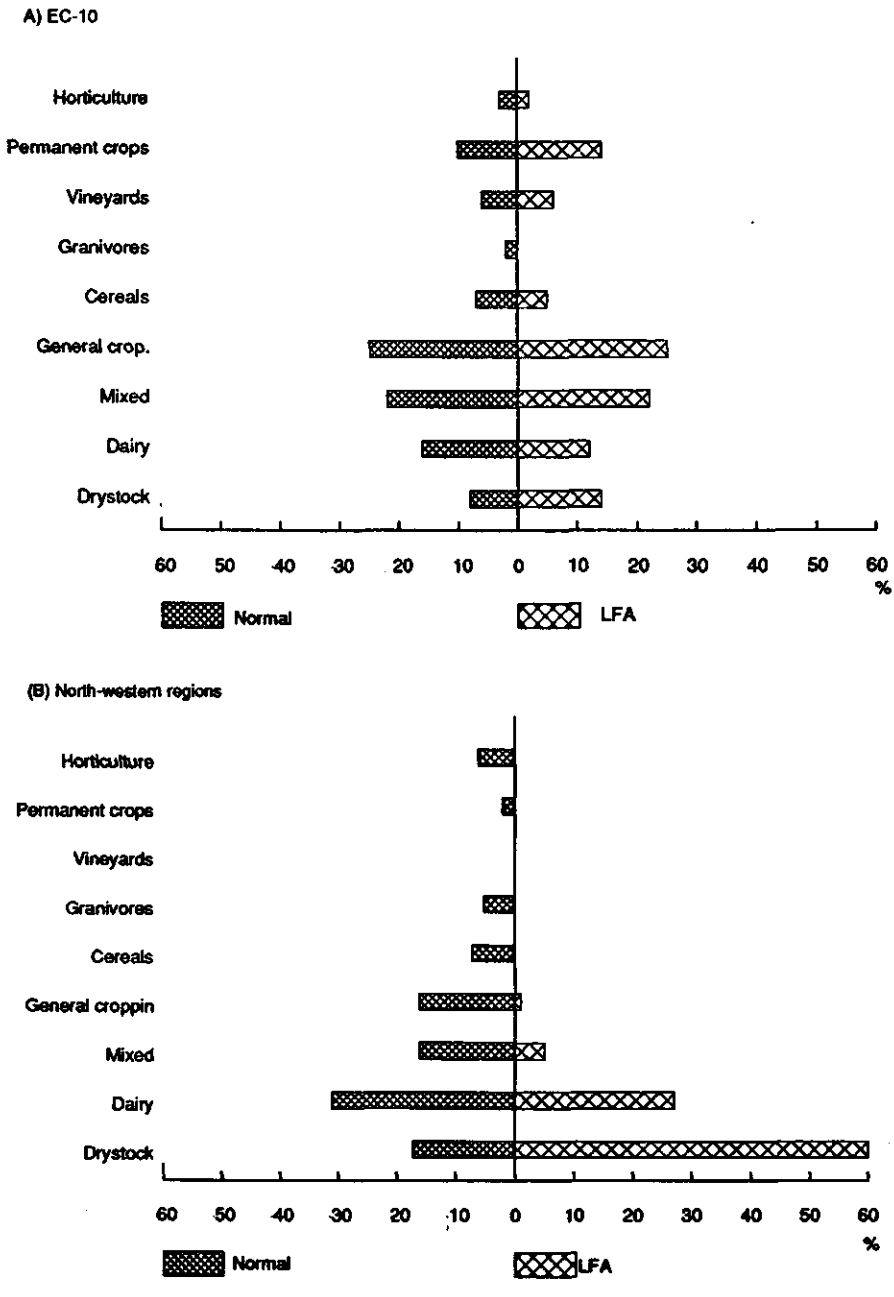


Figure 3.8 Distribution of farms (%) by type of farming in the 'Main Geographical Areas' of EC-10 (1985)

Source: Own computations based on FADN

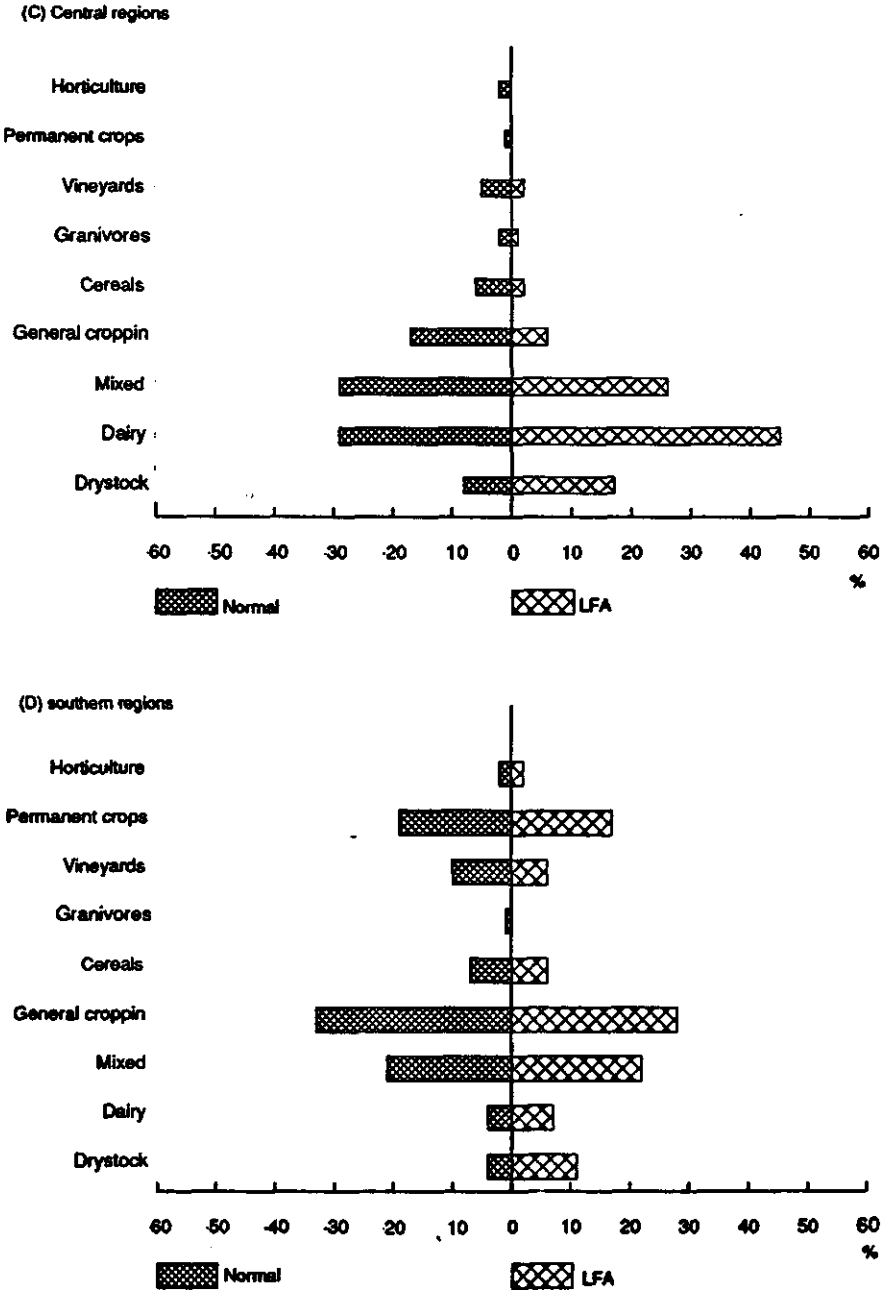


Figure 3.8 (continued)

Table 3.4 Distribution of farms (%) by type of farming in normal and Less Favoured Areas (LFA) of the 'main geographical areas' of EC-10 (1985)

Region name:	LFA	Cer-eals	Oth. arabl	Horti cult.	Vine yard	Perm. crops	Dairy	Dry-stock	Grani vores	Mixed
North-West	normal	7	16	6	0	2	31	17	5	16
	LFA	0	1	0	0	0	27	66	0	5
Centre	normal	9	20	9	0	2	28	6	6	20
	LFA	0	0	0	0	0	37	58	0	3
Periphery	normal	2	3	0	0	0	38	50	0	6
	LFA	1	1	0	0	0	18	73	0	7
Danmark	normal	17	27	2	0	1	20	0	4	28
Netherlands	normal	0	15	16	0	4	43	4	9	9
Belgium	normal	0	17	12	0	3	18	8	7	34
	LFA	0	1	0	0	0	52	41	0	6
UK-England	normal	16	21	5	0	2	25	13	3	16
	LFA	0	0	0	0	0	26	72	0	1
UK-Scotl,Wales N-Ireland	normal	6	11	0	0	0	33	35	1	13
	LFA	1	1	0	0	0	18	73	0	7
Ireland	normal	5	4	0	0	0	43	38	1	10
	LFA	1	0	0	0	0	40	57	0	3
Central	normal	6	17	2	5	1	29	8	2	29
	LFA	2	6	0	2	0	45	17	1	26
North	normal	11	22	2	4	1	24	5	2	28
	LFA	4	7	1	1	1	29	31	1	26
South	normal	2	13	2	6	1	33	12	3	29
	LFA	2	6	0	2	0	52	12	1	26
France (north central)	normal	18	26	1	8	1	23	5	0	19
	LFA	7	10	0	2	1	3	52	0	24
W.Germ.(north)	normal	2	19	4	0	2	25	4	4	40
	LFA	0	4	2	0	0	56	8	2	27
France (east)	normal	10	12	0	10	0	33	7	0	28
	LFA	2	2	0	1	0	79	10	0	6
France (west)	normal	1	12	1	4	0	39	16	4	22
	LFA	4	15	2	6	0	9	44	0	21
Luxemburg	normal	0	0	0	100	0	0	0	0	0
	LFA	0	1	0	1	0	46	32	0	20
W.Germ.(south)	normal	2	16	2	8	1	27	8	1	35
	LFA	2	6	0	2	0	51	9	1	29
South	normal	7	33	2	10	19	4	4	1	21
	LFA	6	28	2	6	17	7	11	0	22
Centre	normal	10	26	3	12	11	7	5	1	24
	LFA	8	22	3	3	9	15	15	1	23
Periphery	normal	4	39	2	7	26	1	3	0	18
	LFA	5	32	1	8	22	1	9	0	21
France south	normal	6	17	6	30	9	6	7	1	18
	LFA	5	18	0	3	2	19	29	1	23
Lombardia + Emillia Rom.	normal	9	33	0	5	15	13	6	2	16
	LFA	10	20	0	3	12	27	8	3	18
Italy (N.W./N)	normal	13	23	3	10	7	8	5	1	31
	LFA	9	16	8	4	17	18	10	0	19
Italy centre	normal	10	35	2	5	16	2	3	0	27
	LFA	9	33	4	3	11	4	6	0	29
Italy south	normal	3	32	1	11	30	1	3	0	18
	LFA	5	30	1	12	23	1	6	0	23
Greece	normal	6	46	3	3	20	0	4	0	18
	LFA	4	36	1	5	22	1	12	0	19
EC-10	normal	7	25	3	6	10	16	8	2	22
	LFA	5	25	2	6	14	12	14	0	22

Source: Own calculations based on FADN.

that this is reflected in different specialization patterns of farming in these areas. The following analysis tries to identify such differences in specialization by comparing the shares of farms of a certain farming-type in the total number of farms.

Table 3.5 Distribution of farms by farming type in normal and Less Favoured Areas in the EC-10

	Normal	LFA
Permanent crops and horticulture	19	20
Arable crops and granivores	34	28
Mixed farming	23	21
Dairy and drystock	23	31

Looking only at average results for the EC as a whole (figure 3.7a and table 3.5) the difference in specialization within and in polarization between normal and Less Favoured Areas seems to be rather insignificant. The four main types of farming, all have a share of about 20 to 35%, both in normal (NOR) and Less Favoured Areas (LFA).

At national and regional level, however, patterns look rather different (see tables 3.4 and table A.9 (annex)). Whereas in northern member states livestock production is the dominant type of farming (normal: 40%, LFA: 70%), in Italy and Greece only about 10% of all farms are specialised in this kind of activity. Here, permanent and special crops play a much more important role than in the north. Compared to this north/south division the differences between normal and Less Favoured Areas are of minor importance.

Taking into consideration the results of section 3.4, it would seem adequate to compare the results for the three main geographical areas of the Community (figure 3.7 b-d):

North-Western Regions:

This more differentiated analysis shows, that most North-Western regions of the EC are characterized by a high degree of specialization and a strongly pronounced polarization of farming between normal and Less Favoured Areas (LFA).

More than 90% of all farms in the LFA part of North-West are specialised in livestock production. 66% of all holdings in Less Favoured Areas are grazing farms, compared with only 17% in normal areas. The share of mixed farms in Less Favoured Areas of North-West is very small (5%).

Table 3.6 Distribution of farms by farming type in normal and Less Favoured Areas in North-West

	Normal		LFA	
Permanent crops and horticulture	8		0	
Arable crops and granivores	28		1	
Mixed farming	16		5	
Dairy and drystock	48		93	
of which: Dairy		(31)		(27)
Drystock		(17)		(66)

Central regions:

In the Central regions of the EC-10 specialization and polarization are not as extreme as in the North-West. Nevertheless farming patterns are clearly distinct between normal and Less Favoured Areas (LFA).

Table 3.7 Distribution of farms by farming type in normal and Less Favoured Areas in Central

	Normal		LFA	
Permanent crops and horticulture	8		2	
Arable crops and granivores	25		9	
Mixed farming	29		26	
Dairy and drystock	37		62	
of which: Dairy		(29)		(45)
Drystock		(8)		(17)

Again, livestock production is the main type of farming, especially in the LFA part. Dairy farms are the dominant group, whereas grazing is of minor importance. More than 25% of all farms - in normal areas as well as in Less Favoured Areas - are managed as mixed farms. Arable farms, intensive livestock units and farms with horticulture, wine or permanent crops are much more important in the normal areas (33%) than in the LFA part of Central (11%).

Southern regions:

In Southern regions of the EC specialization is completely different from North-West or Central. Mixed farms have a share of about 20%. The kind of mix, however, is different from that in the rest of the EC.

Permanent and special crops are much more important. Also the share of arable production is higher than in other parts of

the EC. On the other hand the share of livestock farms is less than 20%, in the Periphery of South even less than 10%.

Regional polarization between the normal and the Less Favoured Areas (LFA) of the South is only modest:

Table 3.8 Distribution of farms by farming type in normal and Less Favoured Areas in South

	Normal	LFA
Permanent crops and horticulture	31	25
of which fruit	(19)	(17)
Arable cropping and granivores	41	34
Mixed farming	21	22
Dairy and drystock	8	18

In total, the analysis of (intra- and inter-) regional differences in farming patterns leads to the following conclusions:

- The better the agricultural income situation in a region, the higher the degree of specialization and polarization is. It is rather low for the Southern regions, more strongly marked for the Central regions and most expressed for the North-Western regions of the EC.
- The type of specialization and polarization is completely different for the main geographical areas of the EC. Thus 'natural handicaps' and consequently Less Favoured Areas cannot be defined in a uniform way for the EC as a whole.

Within an EC-framework, LFA-policies should, therefore, be designed at a national or even at a regional level, rather than for the EC as a whole.

4. Analysis of the different farming types

4.1 Introduction

In the previous chapters the economic situation of the regions, relations between agricultural and regional development and the division of farming types in Less Favoured and normal areas have been described and analyzed. In this chapter it will be seen, if farm results for the same farming types differ between farms in Less Favoured Areas and in normal areas. Moreover, reasons for these differences will be investigated.

As in chapter 3, FADN data are used. As the sample of the FADN represents the farms only partly (see 1.4.2), the results should be considered carefully.

Only farming types with a significant number of farms in Less Favoured Areas will be analyzed:

- Cereal
- General cropping
- Horticulture
- Vineyards
- Permanent crops (excluding vineyards)
- Dairy
- Drystock
- Mixed

Furthermore, only those countries and regions that have an important share of these farming types in Less Favoured Areas, will be taken into account (see annex table A.9). It is a forgone conclusion that, due to the almost complete absence of Less Favoured Areas, Denmark and The Netherlands will not appear in this analysis.

We assume that major factors influencing the level of farm income are differences in: subsidies, farm size, productivity and prices. There may be interdependencies between the last two factors and the size of the farm, due to economies of scale. Perhaps bigger farms will be able to get a discount on purchase of a large quantity of inputs and get higher prices for their final products for the same reason. Also they may be able to use their labour and equipment more efficiently. But there will also be other factors, which will influence productivity and prices. Productivity also will depend on for instance the quality of the soil, the climate and managerial abilities. Prices may depend on the distance between the farm and related industries.

We will start this chapter with a description of definitions of variables used (4.2.1). Next, the method of investigation will be presented (4.2.2). Finally, the main results will be presented (4.3).

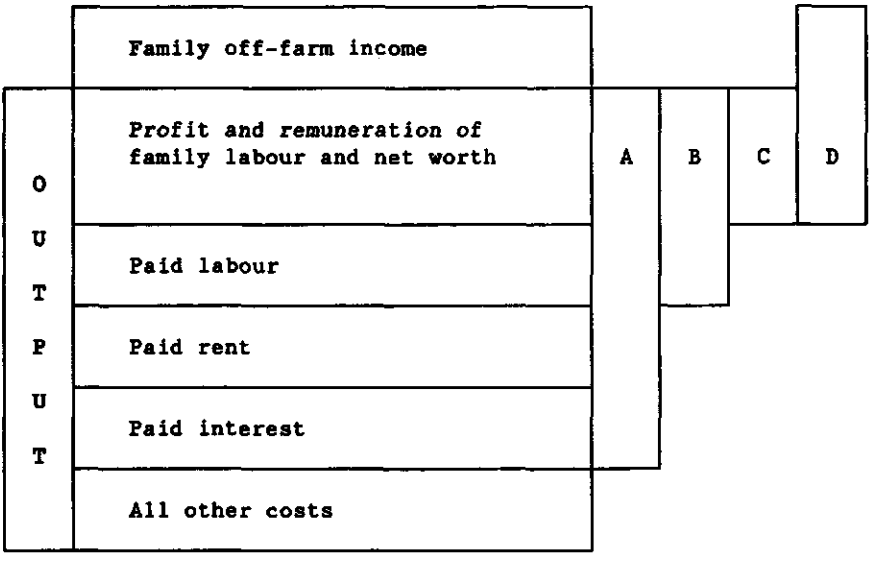
4.2 Definitions and methodology

4.2.1 Defining the indicators

Relationships between income, size, productivity and prices are quite complex. With the use of the data from the FADN these factors will be described, and as far as possible analyse relationships between them. Before describing the methodology however, first the data which have been used will be described. Reason for doing so is, that the kind of data available from FADN, will put restrictions on the kind of analysis to be carried out.

In the introduction there appeared to be five items to be studied: a) income, b) subsidies, c) farm size, d) productivity, and e) prices. Several indicators can be used to represent these items. A short description will be given of the indicators used in this chapter.

a) Income
There are several concepts of income (figure 4.1), some of which have already been used in this study.



A = Net value added
B = Farm income
C = Family farm income
D = Total family income

Figure 4.1 Composition of different concepts of income

The income indicator to be chosen, has to give relevant information about the possibilities of permanency of the farm. In this respect the value added per farm or per worker gives no adequate information. The value added indicates the size of the farm and the importance of the farm in generating income, which is more useful to asses the role of agriculture for the regional or national economy. Here, total family income of the farm household should be looked at. However, the FADN contains no data on off-farm income so only family farm income can be considered. Given the fact that the amount of family labour differs from farm to farm, the family farm income per family work unit will be used as the main income indicator.
In the analysis one should keep in mind, that low family farm income does not necessarily have to mean low income! In regions with part-time farming there may be other sources of income.

b) Subsidies

The level of farm income will partly depend from the amount of subsidies. In this study only the direct subsidies are taken into consideration.
Yet, one should bear in mind that apart from these directly paid subsidies, other forms of indirect subsidization will influence level of income. Firstly, an important share of indirect subsidization arises from the CAP's price support. In chapter 6 we will go into this matter. Secondly, subsidization by means of special tax regulations or social security regulations is not taken into account. Information on these items is hard to obtain.
An evaluation of the effects of (direct) subsidization in diminishing income differences between farms in Less Favoured Areas and in normal areas will also be made. These direct subsidies arise from different policies. Apart from the LFA regulations, there are other programs from the EC-Guidance section, premiums from the Guarantee section and several national policies.
If the disbursements from the Guidance Fund are looked at, it appears that in 1985 some 400 million ECU were spent. Almost 60% of this budget was directed towards action for Less Favoured Areas. Half of this 60% is spent on Compensatory Allowances, while the rest is used for specific actions in certain areas. The rest of the budget of the Orientation fund is divided in general socio-structural actions (25% of the budget, mainly for investment plans) and disbursements related to market regulations (14% of the budget).
Regarding the Guarantee fund, most disbursements are directed towards price support. Yet, one specific measure has to be mentioned. For sheep and goat, support is given by

means of the 'ewe premium'. Moreover, there is a special market regime in the United Kingdom. Prices for sheep are lower here than in the rest of the EC. By means of a so called 'variable slaughter premium' farmers are compensated. All of these premiums are included in the subsidies category from the FADN, and are - especially for the United Kingdom - quite high.
This group of policies will lead to interregional differences in the level of subsidization. However, as has been noted in chapter 1 already, in 1985 only 27% of all farms in Less Favoured Areas received subsidies on the basis of the LFA directive. So in some regions or even countries, there hardly may be expected any significant differences with farms in normal areas.

c) Farm size
In the FADN network farms are classified by the European Size Unit (ESU), of which the shortcomings for this study already have been mentioned in chapter 1 (1.4.2). Instead Farm Net Value Added (subsidies excluded) will be used, defined as the value of the difference between total output on the one hand and (crop or livestock) specific costs, overhead costs and depreciation costs on the other hand.

d) Productivity
Differences in Family Farm Income (excluding subsidies) per Family Work Unit, may be caused by differences in productivity. Theoretically, net productivity defined as net production per unit of factor costs should be used. However, that would necessitate a great number of data on a number of items such as prices and volumes per unit of production and of input. Because these data are only partly available from the FADN network, other indicators to indicate productivity have to be used.
The choice of a certain indicator will also depend on the kind of farming type. When only one main product is produced (e.g. milk for dairy farming), it is easier to give productivity figures for a farm than for farming types with many different final products and production methods (e.g. permanent crops).
Therefore our aspirations have to be lowered and different indicators for productivity will be used, partly depending on the farming type. In general terms the following indicators will be used.

- Indicators for land productivity:
  . gross margins per hectare;
  . physical yields per hectare or animal;
  . production plan.
  The first indicator, gross margin per hectare, is defined

as the differences between the total production minus the specific costs per hectare. It is used to reflect productivity per hectare for the whole set of farm activities. This is helpful if a comparison must be made between for instance, a farm in a normal area which produces mainly potatoes and a farm in a Less Favoured area cultivating oilseeds and cereals.
If there are differences in gross margins, there may be two reasons. Firstly, yields per hectare may differ for a crop. Secondly, it may be possible that the production plan differs.

- Indicators for labour productivity:
  . net value added per work unit and
  . acreage per work unit.
  The level of the first indicator depends on various factors such as soil productivity, climate, economies of scale, management qualities and regional prices. Acreage per work unit will give additional information about labour productivity.

e) Differences in prices
Differences in income may also be caused by differences in price-level for inputs and for final products. Cheaper input prices can be caused by several factors such as an advantage in geographical location, a bigger farm size, a better developed infrastructure and/or a well developed agri-industry. Differences in the proceeds are due to the same factors and also to the relations with the consumers market.
The FADN network is very chary in giving information on prices. With respect to prices for inputs there is no information at all, while only for some final products unit values can be computed. It is therefore possible to analyse the differences in unit values for some final products and some farming types only. Still, the unit value is not identical to the price, because the production will not always consist of homogeneous products.

4.2.2 Method

In Volume II a complete analysis of income differences per farming type and per region between farms in normal and Less Favoured Areas is presented. The results in this chapter are completely based that such information, and should be regarded as a summary of the main results.

- Family farm income
  Firstly, Family Farm Income (excluding subsidies) per Family Work Unit per country between farms in Less Favoured Areas and in normal areas will be compared.

- Causes of income differences from agricultural production
  Farm size will generally be positively correlated with farm income. However, with that knowledge the underlying reasons for these size differences are still unknown. It may be caused by differences in scale, but it can also be an expression of worse production circumstances or a combination of both. Some indicators will be used to shed some light on this question.
  Characteristics giving an indication of physical productivity per hectare will be considered first. Our assumption is that a lower productivity reflects the existence of unfavourable production circumstances (natural handicaps, but also educational, infrastructural etc.).
  In addition, labour productivity is regarded. Whereas productivity per hectare focuses on soil productivity, indicators of labour productivity will be used to gain insight in the scale of farming operations. The assumption is that, given an equal soil productivity, a lower labour productivity is mainly a problem of scale.
  Furthermore, locational aspects might differ, which causes differences in prices for inputs and/or final products due to variations in regional circumstances such as the distance to the market, the infra-structure and the development of the agri-industry. As data on unit values of final products can be computed from FADN only for a limited number of products - which even do not have to be homogeneous -, this analysis will be possible in a few cases only.

- Subsidies
  Finally, it will be considered if - the assumed - lower income in Less Favoured Areas is compensated by higher direct subsidies. This gives some insight in the effectiveness of the LFA regulations.

4.3 Income analysis of farming types: main results

4.3.1 Introduction

In the next sections per country a survey will be presented of the family farm income (excluding subsidies!) per family work unit. From these figures it will be tried to get an idea of income differences within and between farming types and the share of different farming types in normal and Less Favoured Areas. Data about subsidies per family work unit indicate the effect of LFA (and some other) policies. Finally, a short summary of possible reasons for income differences will be given, based on the analysis in Volume II of this study. The chapter will end with some more general conclusions (4.4).

Table 4.1 Income characteristics of all farming types in West-Germany (average 1984-1986)

Farming type:	Indicator FFI/FWU (total normal=100)				Indicator subsidy (total normal=100)				Share in number of farms (in %)	
	normal	LFA	Mountain	other LFA	normal	LFA	Mountain	other LFA	normal	LFA
Cereals	76	0	.	0	118	90	.	90	2	2
General cropping	122	34	-26	35	132	140	280	138	18	4
Horticulture	132	164	.	164	19	1	.	1	3	0
Vineyards	86	82	.	82	49	109	.	109	5	2
Permanent crops	133	158	154	161	43	93	142	65	2	0
Dairy	105	76	42	85	88	175	179	173	27	55
Drystock	70	46	-23	53	140	194	325	181	7	9
Granivores	131	99	.	99	80	122	.	122	2	1
Mixed	87	58	119	57	107	180	1568	158	39	30
Total	100	68	40	72	100	173	232	164	100	100
(absolute)	8200	5500	3300	5900	700	1200	1700	1200	258800	104700

Source: own computations based on FADN.

4.3.2 West-Germany

In 1985, about 30% of all represented farms were located in Less Favoured Areas, which are mainly to be found in southern regions (Bayern and Baden-Wuerttemberg). Of all farms in Less Favoured Areas, only 13% are located in Mountain areas.

Table 4.1 shows that dairy farming (50% of all farms) and mixed farming (34%) are the main farming types in Less Favoured Areas. For the rest, a small number of farms comes under the category of drystock farms, general cropping, cereals and vineyards 1). Comparing this division of farming types with that in normal areas, there appear to be no significant differences. So there is no higher share of low income farming types in Less Favoured Areas.

For all farming types, the average income is lower in Less Favoured Areas than in normal areas. For the main farming types these differences fluctuate between 2000 and 3000 ECU. Within Less Favoured Areas, income on farms in Mountain areas is lower (2500 ECU) than in the other Less Favoured Areas.

Comparing income level between farming types, dairy farming shows relatively high incomes, while they are low for drystock farms. Even in normal areas they get a lower income than dairy farms in Less Favoured Areas.

A main reason for this lower income in Less Favoured Areas appears to be a lower land productivity (indicated by gross margin per hectare). For drystock and general cropping a lower acreage per worker in Less Favoured Areas is an additional factor. As far as prices could be computed, no significant differences between normal and Less Favoured Areas appeared.

The income gap between farms in normal and Less Favoured Areas is only partly reduced by subsidies (with 19%). On the average, the amount of subsidies per family work unit is about 500 ECU higher in Less Favoured Areas. Between farming types, there are no spectacular differences in level of subsidies.

Regionally, there are large income differences (table A.10 of the annex). In the northern regions (Schleswig Holstein, Niedersachsen and Nordrhein Westfalen) income is high in both Less Favoured and normal areas. Average income of Less Favoured Areas in these regions is even higher than the average income of normal areas for the whole of Germany. In contrast, in the middle and south (Bayern, Baden-Wuerttemberg and Hessen) income for both normal and Less Favoured Areas is low.

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1) With respect to vineyards, it may well be possible that the definition of an LFA farm (...having more than 50% of its acreage in less favoured area) plays a role here. Possibly, farms have their vineyards located in normal areas and their other fields in less favoured areas.

Table 4.2 Income characteristics of all farming types in France (average 1984-1986)

	Indicator FFI/FWU (total normal=100)				Indicator subsidy (total normal=100)				Share in number of farms (in %)	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
Cereals	138	64	6	79	78	102	150	91	9	4
General cropping	111	54	60	53	88	134	127	136	18	14
Horticulture	91	53	44	62	117	131	187	82	2	0
Vineyards	193	133	162	113	113	100	135	76	13	2
Permanent crops	109	112	72	133	127	198	452	70	3	2
Dairy	79	39	34	46	56	176	205	147	26	23
Drystock	55	25	18	31	193	341	389	305	10	35
Granivores	101	78	72	97	201	281	330	121	2	0
Mixed	76	29	26	30	108	178	194	171	21	25
Total	100	38	30	43	100	227	275	197	100	100
(absolute)	9000	3500	2700	3900	900	1900	2400	1700	412800	170100

Source: own computations based on FADN.

No big differences between north and south emerge in respect to the distribution of farms according to farming types. So income differences have to be caused by differences within farming types. Regarding the main farming types in Less Favoured Areas, dairy and mixed farming, acreage and/or milk cows per worker show large differences, whereas gross margin per hectare is of the same level. So it looks as if a smaller scale is an important factor for lower income in southern regions.

The level of subsidies finally, does not deviate much between regions.

4.3.3 France

In France, almost a third of all farms is located in Less Favoured Areas, mainly in central and southern regions. Of all farms in Less Favoured Areas, more than a third (38%) is located in Mountain areas. Main farming types are drystock, dairy and mixed farming (table 4.2).

Income in normal areas is much higher (+5500 ECU) than in Less Favoured Areas. Within Less Favoured Areas, average income in Mountain areas is 1200 ECU lower than in other Less Favoured Areas.

This lower income in Less Favoured Areas can partly be explained by a higher share of drystock and mixed farms, which have a relatively low income.

For selected farming types, differences in income between farms in normal and Less Favoured Areas are mostly smaller (2500-4500 ECU for the main types). Permanent crop farms in Less Favoured Areas even have higher incomes - and additionally higher subsidies! - than their colleagues in normal areas.

For most farming types, lower income in Less Favoured Areas is mainly caused by a low per hectare productivity. Only for cereal and general cropping farms acreage per worker is also significantly lower in Less Favoured Areas. Prices for cereals appeared to be a little higher in normal areas, whereas for milk they were equal.

By means of subsidies these income differences are reduced only slightly (with 1100 ECU (or 20%)). In Less Favoured Areas, Mountain areas receive slightly more subsidies. Among different farming types, a high amount of subsidies is obtained by drystock farms. For dairy and mixed farming these subsidies are considerably lower, which is due to the fact that ewe premiums are included in subsidies for drystock farms.

Comparing absolute income levels of farms in Less Favoured Areas between regions per type of farming, there appear to be no large differences (table A.10 of the annex).

4.3.4 Belgium

In Belgium, a low percentage of farms is located in Less Favoured Areas (16%) while Mountain areas are not apparent (table 4.3).

With an income in Less Favoured Areas which is averagely 5000 ECU lower than in normal areas, income differences are large. Within farming types however these differences are smaller (3000 ECU), which implies that in Less Favoured Areas farming types with low incomes are overrepresented compared to normal areas. This appears to be so, with a relatively high number of dairy and drystock farms (lowest income).

Table 4.3 Income characteristics of all farming type in Belgium (average 1984-1986)

	Indicator FFI/ FWU (total normal=100)		Indicator subsidy (total normal=100)		Share in number of farms (in %)	
	normal	LFA	normal	LFA	normal	LFA
Cereals	86	.		.	0	.
General cropping	124	94	89		17	1
Horticulture	112	.	65	.	12	.
Permanent crops	134	.	0	.	3	.
Dairying	98	78	49	507	18	52
Drystock	82	66	182	743	8	42
Granivores	126	.	53	.	7	.
Mixed	83	71	141	737	34	6
Total	100	73	100	620	100	100
(absolute)	17600	12900	300	1900	46500	8800

Source: own computations based on FADN.

A low productivity per hectare is the main reason for the lower income in Less Favoured Areas. This disadvantage is partly compensated for by a higher acreage of farms in Less Favoured Areas.

Prices for milk and milk products are the same for normal and Less Favoured Areas.

Farms in Less Favoured Areas obtain higher subsidies (+1600 ECU) than in normal areas. Subsidies do compensate the income gap by 34%.

4.3.5 Ireland

In Ireland, the number of farms is equally divided between normal and Less Favoured Areas; Mountain areas do not exist. As in Belgium, nearly all farms in Less Favoured Areas are specialized in animal production (table 4.4).

Family farm income in normal areas is twice as high as in Less Favoured Areas (difference of 3900 ECU).

The main reason for this lower income, is a relatively high number of drystock farms in Less Favoured Areas. On these farms income is lower than in other farming types. In normal areas, most farms are dairy farms, which provide a better income.

Within farming types, income differences between normal and Less Favoured Areas is rather low (1000 ECU) for drystock farms, while it is high for dairy farming. Comparing these two farming types, it appears that in normal as well as in Less Favoured Areas income is low for drystock farms, whereas it is high for dairy farms (especially in normal areas).

One possible reason for the lower income of drystock farms could be the fact that "ewe premiums" are included in subsidies. It appears however, that though subsidies are higher for drystock farms, income is still lower than on dairy farms (in Less Favoured and normal areas). Compared to the normal areas, subsidies are twice as high (+800 ECU) in Less Favoured Areas, which reduces the income gap with a fifth.

Prices are the same for normal and for Less Favoured Areas.

Table 4.4 Income characteristics of all farming types in Ireland (average 1984-1986)

	Indicator FFI/ FWU (total normal=100)		Indicator subsidy (total normal=100)		Share in number of farms (in %)	
	normal	LFA	normal	LFA	normal	LFA
Cereals	91	34	36	.	5	1
General cropping	105	26	165	869	4	0
Dairy	139	69	69	125	43	40
Drystock	46	33	134	290	38	57
Granivores	563	.	37	.	1	.
Mixed	69	59	135	182	10	3
Total	100	50	100	213	100	100
(absolute)	7700	3900	700	1500	72500	72700

Source: own computations based on FADN.

For drystock farms, lower incomes are caused by a low production per hectare. For dairy farms they are caused by both low production per hectare and a lower acreage per worker.

4.3.6 United Kingdom

A quarter of all farms is located in Less Favoured Areas, none of it being Mountain area. The division of farms over farming types is comparable to that in Ireland and Belgium (table 4.5).

Income differences between normal and Less Favoured Areas are extremely high (11000 ECU). The main reason again is the large number of drystock farms with low incomes in Less Favoured Areas. Within farming types these income differences are far lower (some 4000 ECU).

Comparing farming types, again low incomes for drystock farms and high ones for dairy farms can be noticed. However, the exclusion of the variable slaughter premium for sheep is causing part of these deviations. Subsidies for dairy farms are on the average lower than for drystock farms. Especially in Less Favoured Areas subsidies for drystock farms are very high (9800 ECU), because of the large number of sheep. In normal areas subsidies for drystock farming are substantially lower (2600 ECU), because of a lower number of sheep in the total number of

Table 4.5 Income characteristics of all farming types in the United Kingdom (average 1984-1986)

	Indicator FFI/FWU (total normal=100)		Indicator subsidy (total normal=100)		Share in number of farms (in %)	
	normal	LFA	normal	LFA	normal	LFA
Cereals	156	-42	77	408	14	0
General cropping	128	-38	102	155	19	1
Horticulture	121	.	116	.	4	.
Permanent crops	-45	.	131	.	1	.
Dairy	100	61	65	191	28	20
Drystock	25	-10	154	584	19	73
Granivores	261	172	14	57	2	0
Mixed	89	-0	129	398	16	5
TOTAL	100	6	100	479	100	100
(absolute)	11700	700	1700	8100	110200	35200

Source: own computations based on FADN.

livestock. This results in a situation, whereby income including subsidies is lowest of all on drystock farms in normal areas.

For both farming types, productivity per hectare is far higher in normal areas, whereas farm acreage per worker is much higher in Less Favoured Areas, especially for drystock farms.

Finally, there appeared to be no price differences for milk between normal and Less Favoured Areas.

For some regions, the regional income situation (including subsidies) deviates from the national picture (table A.10 of the annex). In Scotland income in normal areas is very low for all farming types (averagely 3200 ECU). Even in the Less Favoured Areas of Scotland and the West, with relatively low incomes, income is far higher (around 7000 ECU).

4.3.7 Italy

While in Germany and France animal production is evidently the main farming activity, in Italy most of the farms are specialized in crop production, both in normal and Less Favoured Areas (table 4.6). Animal production is practiced on a minor number of farms only. A relatively high number of Italian farms is located in Less Favoured Areas (47%). Within these Less Favoured Areas, most farms are located in Mountain areas (74%).

On the average, income in normal areas is 2000 ECU higher than in Less Favoured Areas. In Less Favoured Areas, family farm income in Mountain areas is only a little lower than in other Less Favoured Areas.

It appears that these income differences are not caused by a higher share of low income farming types in Less Favoured Areas:
- the division of farms over farming types in Less Favoured Areas is nearly the same as in normal areas.

Regarding the main farming types, general cropping, mixed and permanent crops farms, income differences between normal and Less Favoured Areas are on the same level. Only less important farming types show a deviating picture. As for vineyards in Less Favoured Areas income appears to be a little higher than in normal areas, whereas on dairy and drystock farms income is much higher in normal areas.

Comparing income between farming types within Less Favoured Areas, again there are no striking differences. As for horticulture, dairy and drystock farms, representing only a minor number of farms, incomes are 2000 ECU higher compared to the main farming types.

Regarding the main farming types in Less Favoured Areas, lower incomes mainly seem to be caused by a lower productivity per hectare. With respect to the acreage per worker, there is no uniform pattern. For the three main farming types it is equal. For dairy and cereals acreage per worker is a little higher in Less Favoured Areas, whereas for the other farming types the acreage per worker is lower.

Table 4.6 Income characteristics of all farming types in Italy (average 1984-1986)

	Indicator FFI/FWU (total normal=100)				Indicator subsidy (total normal=100)				Share in number of farms (in %)	
	normal	LFA	Mountain	other LFA	normal	LFA	Mountain	other LFA	normal	LFA
Cereals	93	76	75	77	156	227	198	263	9	7
General cropping	81	63	59	71	86	66	55	92	36	32
Horticulture	130	99	99	98	27	63	15	155	2	3
Vineyards	76	85	88	66	47	101	93	144	10	6
Permanent crops	92	69	69	70	177	189	157	284	23	21
Dairying	173	95	95	98	59	98	100	68	5	8
Drystock	153	90	80	126	93	143	102	294	4	8
Granivores	415	335	310	462	3	0	0	0	1	0
Mixed	80	58	56	64	84	78	65	123	26	27
Total	100	73	72	78	100	110	91	167	100	100
(absolute)	7700	5700	5600	6100	200	300	200	400	587600	521700

Source: own computations based on FADN.

Table 4.7 Income characteristics of all farming types in Greece (average 1984-1986)

	Indicator FFI/FWU (total normal=100)				Indicator subsidy (total normal=100)				Share in number of farms (in %)	
	normal	LFA	Mountain	other LFA	normal	LFA	Mountain	other LFA	normal	LFA
Cereals	107	86	69	91	80	176	263	151	7	5
General cropping	98	76	75	77	90	66	79	62	52	39
Horticulture	128	125	131	123	130	141	101	154	3	1
Vineyards	108	95	90	101	152	143	162	117	4	5
Permanent crops	106	77	69	83	130	184	188	181	24	24
Dairy	81	69	48	75	46	135	185	118	0	1
Drystock	80	69	67	72	78	190	209	174	4	14
Granivores	184	134	38	205	20	83	10	141	0	0
Mixed	90	73	68	74	147	136	160	125	21	21
Total	100	77	73	79	100	129	161	112	100	100
(absolute)	5100	3900	3700	4100	300	400	500	400	218100	283600

Source: own computations based on FADN.

There are no significant price differences between normal and Less Favoured Areas. As for milk and milk products however, there are significant price differences between regions. These will probably be caused by different types of products from the farm.

The relatively small income differences between normal and Less Favoured Areas are hardly reduced by subsidization (with 5%). The level in subsidies per farmer is low, both for normal and for Less Favoured Areas.

Regionally, there are larger differences in income (table A.10 of the annex). Considering the Less Favoured Areas, income in Lombardia, Emilia-Romagna and Sardegna is higher than the average income for normal areas in Italy. Income is low in Valle d'Aosta, Abruzzi and Campania. On the other hand there are regions (Marche, Umbria, Abruzzi and Basilicata) where income in normal areas lies below the average for Less Favoured Areas.

Although subsidies are low in Italy, in some regions subsidies are rather high. In Valle d'Aosta, low income in Less Favoured Areas levels off to the average of Less Favoured Areas by high subsidies. Whereas in Puglia income after subsidies even rises above the average of normal areas in Italy.

4.3.8 Greece

While in absolute terms Italy has the highest number of farms in Less Favoured Areas, Greece shows the highest number in relative terms, with more than half (57%) of all farms located in Less Favoured Areas (table 4.7). About a third of these farms are located in Mountain areas. As in Italy, most farms are specialized in crop production. With respect to animal production, only drystock farms are apparent.

Income is lower on farms in Less Favoured Areas than in normal areas, but as in Italy the difference is relatively small (1200 ECU). In Mountain areas income is a little lower than in the other Less Favoured Areas.

For the main farming types differences in income between normal and Less Favoured Areas are of the same magnitude. Also within Less Favoured Areas, income differences between the main farming types are rather small.

Differences in income are mainly caused by a lower productivity per hectare in Less Favoured Areas. For some farming types (cereal, permanent crops and drystock) this is partly compensated by a higher acreage per worker.

Prices for cereals were a little higher for cereal farms in normal areas, whereas for general cropping farms these price differences did not occur.

Subsidies are low in absolute terms, and only a little higher in Less Favoured Areas (400 ECU against 300 ECU in normal areas), implying that income differences are reduced only slightly (by 8%).

For all regions of Greece, the picture is quite similar to the national situation (table A.10 of the annex).

4.4 General conclusions

In chapter three an attempt has been made to cluster regions and countries into larger geographical entities. This classification into North-West, Central and South is mainly based on a combination of regional economic and agricultural development.

In Greece and Italy (part of South), crop production is the main agricultural activity. To the contrary, in the central (Central), northern and western (North-Western) parts of the EC-10 agriculture is dominated by livestock production. A second conclusion was that going from South to North-West, polarization between normal and Less Favoured Areas increases. Polarization in this case was related to the division of farms over farming types. In North-West almost all farms in Less Favoured Areas are specialized in dairy (27%) and drystock farms (66%). In Central polarization is only little smaller, whereas in the South it is only modest.

At this stage, some additional conclusions will be drawn for these larger geographical entities, based on results from section 4.3 and a more extensive analysis, that also made part of this study (Godeschalk, 1991).

For South it appears that income differences between normal and Less Favoured Areas are rather small, whereas in Central and North-West these income differences are substantially larger.

Lower incomes in Less Favoured Areas in North-West and Central are partly caused by polarization: an overrepresentation of 'low income' farming types (i.e. drystock farms). Especially in Belgium and the United Kingdom, this shows clearly. It can be seen from table 4.1 - 4.7 that dairy and drystock farms generate relatively low incomes both in normal and Less Favoured Areas.

Additionally however, it appears that per farming types income is still lower on farms in Less Favoured Areas. In South with no polarization of farming types, income differences between normal and Less Favoured Areas are caused completely by these differences within farming types.

Income differences within farming types are strongly correlated with size differences. Yet, size, defined as Farm Net Value Added (excl. subsidies), is quite a general term. With data from FADN, some yardsticks are used to get more insight in these size differences. It appears that in almost all instances the gross margin per hectare is lower for farms in Less Favoured Areas. With respect to acreage per work unit, it shows that there are generally no large deviations between normal and Less Favoured Areas. There are some exceptions, however. In the United Kingdom and Belgium, acreage per worker is larger in Less Favoured Areas

for all farming types. This might indicate that in these countries one tries to compensate production disadvantages by a higher acreage per work unit. Finally, as far as could be analysed, there were in general no differences in price level between normal and Less Favoured Areas.

When comparing farm characteristics per farming type between the three main areas of the EC-10, it becomes apparent that for the main farming types in South (general cropping, cereals and mixed farms), some general farm characteristics deviate strongly from those in other parts of the EC-10. In the South, these farms have a relatively small acreage per worker, whereas the gross margin per hectare is comparable to the rest of the EC-10.

With respect to the family farm income per farming type, it appears that, except for Italy, drystock farms always have low incomes. This applies to farms in normal as well as in Less Favoured Areas. For most other farming types such a general conclusion cannot be drawn. On cereal farms for instance, income in the United Kingdom, France and Greece is above the national average, but in West Germany, Italy and Ireland it is below average.

Another question that had to be answered is to which extent income differences between normal and Less Favoured Areas are overcome by subsidization. In South, where income differences are not very large, the absolute amount of subsidies per farm is very low, both for normal and Less Favoured Areas. This is caused by the fact that the LFA regulation is not implemented in large parts of Italy and Greece.

In all countries, farms in Less Favoured Areas receive more subsidies than farms in normal areas. Differences are extremely high in the United Kingdom and Ireland, caused mainly by the fact that in Less Favoured Areas farms have a large number of sheep and therefore get the variable slaughter premium for sheep. Still, in all countries income including subsidies is steadfastly higher in normal areas. Whereas for Greece and Italy the gap is only narrowed with some percent, for the other countries (except the United Kingdom) income differences are reduced by about 20 to 30%.

Summarizing, it appears that in southern parts of the EC-10 with a low general economic development differences in agriculture between normal and Less Favoured Areas are relatively small. Income differences are small, division of farms over farming types is similar and subsidies are low and do not deviate very much.

In the North-Western and Central parts these differences are more pronounced. The higher income differences in these areas are partly caused by a different division of farms over farming

types. Subsidies for Less Favoured Areas are generally higher, so that the income gap with normal areas is partly narrowed.

5. Integration of the results

5.1 Introduction

In chapter 2, 3 and 4 the economic and agricultural situation in the regions of the EC-10 have been analysed. A summary of the main conclusions from these chapters will be given first (5.2). By integrating results from the different chapters, this chapter will give a characterization of regions by their general economic situation, farm income, and farm characteristics (5.3).

5.2 Summary of the main results

The main topic in chapter two is the general socio-economic situation in connection with the agricultural development in a region. It was investigated if a link exists between the general socio-economic situation of the regions of the EC-10 and the agricultural economic situation. To this end all regions have been classified into three categories (non-LFA, partly LFA and LFA-regions), based on the percentage of farms in Less Favoured Areas.

Generally, agricultural development, in terms of Gross Value Added (GVA) per worker, is relatively low in LFA and high in non-LFA regions. Yet, there are quite some exceptions on this rule. Furthermore, there exists a positive relation between agricultural development of a region and its regional economic development. Again however, the relation is far from strong.

Some remarks must be made concerning these conclusions. Firstly, the GVA per worker for agriculture includes all subsidies. The relatively high GVA per worker in some LFA-regions might be due to these subsidies. Moreover, an average for all farms (LFA- and non-LFA) was used. It may be possible that agricultural development in the LFA part of a region is far worse than the figures suggest.

In chapter three, data from the FADN databank were used. The main advantage is that farms can be classified in Less Favoured and in normal areas. Furthermore, instead of the GVA per worker in agriculture, the annual Farm Net Value Added (FNVA) per worker is used, which is a better indicator to measure economic performance. Some of the main conclusions from this chapter are, that:

- There is a tendency that the higher the GVA per inhabitant in a region, the higher the FNVA;
- With increasing performance in general economic terms regional income disparities decrease, while in agriculture they increase;

- With an increasing general economic performance, agricultural income in Less Favoured Areas does not increase at the same rate as in normal regions.

On the basis of these criteria a rural typology of the EC-10 in three main areas was made: North-West, Central and South. The division of farms over farming types differs considerably between these areas. In the North-Western and Central regions most farms in Less Favoured Areas are specialized in grazing livestock production (North-West mainly drystock, Central mainly dairy farming). In the Southern regions, arable farming and permanent crops are the main farming types.

Chapter four finally, focuses on differences in agricultural performance per farming type between normal, Mountain and other Less Favoured Areas. Instead of Farm Net Value Added, Family Farm Income per Family Work Unit is the key variable. The main conclusions are that:

- In general it is correct to assume that, within a country, income is lower on farms in Less Favoured Areas. However, some Less Favoured Areas have an income above the average of all farms in normal areas within a country;
- Income disparities are highly correlated with differences in farm size. These are caused mainly by differences in gross margin per hectare.
- Except in Greece and Italy, lower incomes in Less Favoured Areas are also caused by an overrepresentation of low-income farming types.
- Income disparities between farms in Less Favoured and normal areas are only partly narrowed by higher subsidies in Less Favoured Areas.
- Compared with all other countries, in Greece and Italy the amount of the subsidies is low for all farms and the differences in income between farms in normal and Less Favoured Areas are small.

5.3 Linking the chapters

5.3.1 Definitions of indicators

In this section these results will be integrated, by combining information about the general regional economic development and the agricultural performance in a region. The results per region are compared with the average results of a larger geographical area. Here again, the typology of rural areas which has been developed in chapter three will be used. All indicators are standardized, by dividing the regional figure by the average of the related main areas (North-West, Central or South).

The following indicators will be used:

A Regional economic situation

- *Gross value added industry + services per worker*
  Describes the gross productivity per employed person for all economic sectors but agriculture.

$$ECON_r = \frac{E_r}{E_a} * 100 \qquad (5.1)$$

where:
$ECON_r$ - Index regional economic situation of region r
E_r - Gross value added per worker for industry + services in region r
E_a - Gross value added per worker for industry + services in on of the three main areas a

- *Share of agriculture in total gross value added*

  Indicates the importance of agriculture for the regional economy in terms of gross value added.

$$SHAREr = \frac{GVA\_AGR_r/GVA_r}{GVA\_A_GRa/GVA_a} * 100 \qquad (5.2)$$

where:
$SHARE_r$ - Index of the share of agriculture in total gross value added
GVA_AGRr- Gross value added agriculture in region r
GVA_r - Total gross value added in region r
GVA_AGR_a- Gross value added agriculture in main area a
GVA_a - Total gross value added in main area a

B Agricultural development

- *Income per family worker (excl. subsidies)*
  This indicator describes the level of income generated on the farm.

$$INCOME_r = \frac{I_r}{I_a} * 100 \qquad (5.3)$$

where
$INCOME_r$ - Income indicator for agriculture in region r
I_r - Agricultural income in region r
I_a - Average agricultural income of one of the three main areas a

- *Structure of farming types*
  In chapter four it appeared that income often deviates

significantly between farming types. By means of a farming type structure index an indication is given whether a region has farming types with low or with high incomes.

$$STRUCT_r = 100 * \sum_f \frac{H_r^f}{H_a^f} * I_a^f \qquad (5.4)$$

where

$STRUCTr$ - Farming type structure index for region r

H_r^f - Share of farms of farming type f in region r

H_a^f - Share of farms of farming type f in main area a

I_a^f - Family farm income of farming type f in main area a

- *Index of gross margin per hectare*
  Again in chapter four, land productivity has been indicated by its gross margin.

$$MARGIN_r = 100 * \sum_f \frac{H_r^f}{H_a^f} * \frac{M_r^f}{M_a^f} \qquad (5.5)$$

where

$MARGIN_r$ - Index gross margin per hectare for region r

H_r^f - Share of farms of farming type f in region r

H_a^f - Share of farms of farming type f in main area a

M_r^f - Gross margin per hectare of farming type f in region r

M_a^f - Gross margin per hectare of farming type f in main area a

- *Index of acreage per unit of labour input*
  Acreage per unit of labour input (family and non family labour) can be seen as a partial labour productivity figure. It is computed in the same way as the former index.

$$ACRE_r = 100 * \sum_f \frac{H_r^f}{H_a^f} * \frac{A_r^f}{H_a^f} \qquad (5.6)$$

where

$ACRE_r$ - Index acreage per work unit for region r

H_r^f - Share of farms of farming type f in region r

H_a^f - Share of farms of farming type f in main area a

A_r^f - Acreage per work unit of farming type f in region r

A_a^f - Acreage per work unit of farming type f in main area a

5.3.2 Global analysis of all regions

Level of farm income depends on a number of variables, whereby there being no strict relationship between them. In some instances a low income is related to a low gross margin per hectare, but in other instances gross margin may be high whereas a low acreage per worker or the appearance of low income farming types are related to the lower income. A partial analysis of these indicators may be helpful, but gives an incomplete picture.

Therefore, in table 5.1, 5.2 and 5.3 all indicators are shown together. These indicators will be described for all regions, divided in three main areas (North-West, Central and South, see figure 3.3). Additionally, indices for income are summarized on figure 5.1, whereas maps with other indicators can be found in figure A.4 - A.6 (annex). As there are many regions and many variables per region, we will not go into detail.

Per main area a geographical division has been made into 'core' and 'peripheral' regions. Within these two parts another subdivision into normal and Less Favoured Areas can be made. In the next section these divisions will be used. After a short introduction, a separate look will be taken at agriculture in the core and the peripheral regions of one of the three main areas respectively. Differences between normal and Less Favoured Areas will be the central issue. After this description it will be seen if there are any differences and similarities between the core and peripheral regions.

At all levels, the value of an indicator will be related with the average of one of the three corresponding main areas. Thus a low income in Less Favoured Areas in Scotland means: lower than the average of all farms (LFA and normal) in North-West. In

three sub-sections North-West, Central and South will be described.

5.3.2.1 North-West

In chapter three it appeared that in the North-West of the EC-10 (Ireland, United Kingdom, Belgium, The Netherlands and Denmark) average agricultural income is quite high in comparison with the rest of the EC-10. Within North-West however, income differences between the Centre and the Periphery are quite high. Yet, it is unknown if this is the case for all separate regions, as well as for normal and Less Favoured parts of these regions. Therefore both the Centre and the Periphery will be looked at.

- Centre

In the normal areas within the Centre, farm income is above the average of North-West for all regions but Denmark. In Denmark income is low, despite the fact that farm characteristics indicators are not specifically low. Other factors, such as a high level of paid interest, are causing the lower income.

Concerning the Less Favoured Areas, income is low in the regions of the United Kingdom. In these regions a high share of low income farming types appears. Farms are characterized by quite an extensive land use, with a low land productivity and a large acreage per worker. In Less Favoured Areas of Belgium, income is above average. A relatively high share of low income farming types and a low acreage per work unit are compensated by a high land productivity.

- Periphery

In normal areas of all regions in the Periphery income level is below the average of North-West. This low level of income can partially be explained by the fact that in regions of the United Kingdom, the variable slaughter premium is not included in the income. Nevertheless, structure and land productivity index are both very low for these regions, which indicate that all regions in the periphery are likely to have difficult production circumstances.

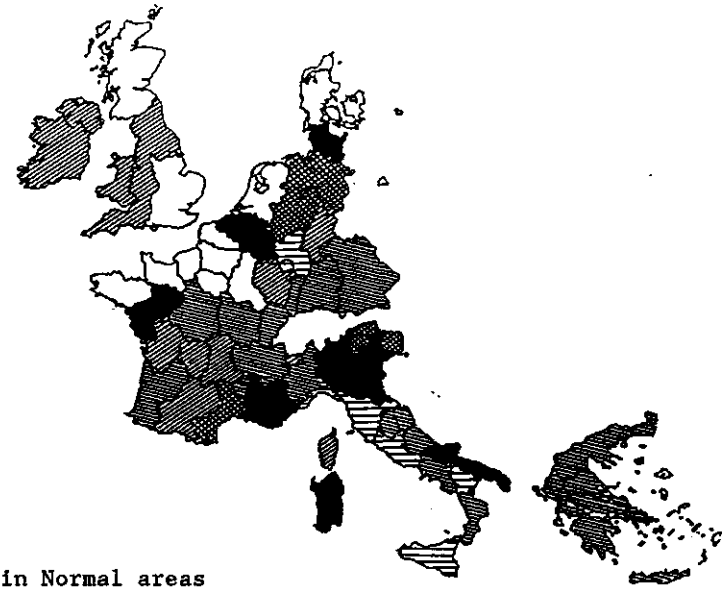
In Less Favoured Areas of the Periphery, income is even lower. Here farming type structure and land productivity are worse than in normal areas.

So for the whole Periphery agriculture appears to be in a difficult position.

- Centre v. Periphery

In the Centre farm income is high in normal areas and low in its Less Favoured Areas except for Belgium. In the Periphery farm income is low, especially in Less Favoured Areas. A relatively high share of low income farming types as well as a low land productivity are related with this lower income.

Farms in Less Favoured Areas



Farms in Normal areas

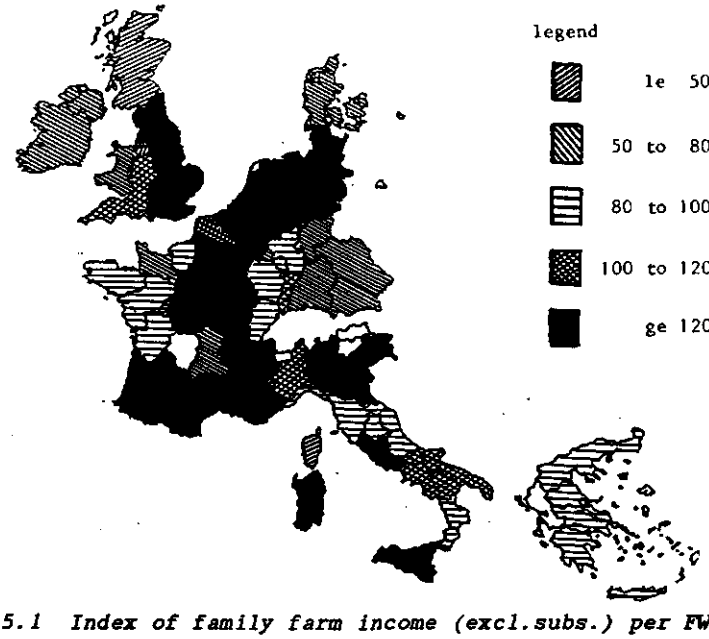


Figure 5.1 Index of family farm income (excl.subs.) per FWU (INCOME) for Less Favoured and normal areas (main area = 100)

Source: Own computations based FADN

Table 5.1 Agricultural and economic indicators per region of the North-West of EC-10, 1984-1986 (North-West=100)

	Family income (excl. subs.) /FWU	Farming type structure index	Index gross margin per ha	Area (ha) per unit of labour input (awu)	Number of repres. farms *)	Relative share of agric. in total GVA	GVA industry + services per worker
North West Central							
Normal areas:							
Denmark	80	115	96	121	85337	222	100
West	105	103	88	107	27908	80	87
North	141	106	97	105	20014	48	92
East	154	108	93	106	34987	40	94
Belgium	169	122	134	65	46581	95	103
Nederland	173	133	190	73	96288	162	145
Less Favoured Areas:							
West	13	53	58	118	5040	80	87
North	21	55	38	225	5964	48	92
Belgium	122	81	130	83	8846	95	103
Total:							
North West Central	132	116	127	96	330965	92	101
North West Periphery							
Normal areas:							
Scotland	9	99	71	120	8384	81	91
Ireland	71	82	65	94	72471	402	85
Northern Ireland	71	77	84	91	11812	137	84
Wales	72	81	89	108	9597	118	101
Less Favoured Areas:							
Scotland	-21	53	24	346	9268	81	91
Wales	6	43	51	147	5990	118	101
Northern Ireland	22	60	45	112	9036	137	84
Ireland	35	67	39	84	73152	402	85
Total:							
North West Periphery	47	74	55	106	199710	160	91
North West							
TOTAL	10507 *)	100	100	100	530675	2.8 *)	24753 *)

*) Absolute figures.
Source: Own calculations based on Eurostat-CRONOS and FADN.

Outside agriculture, gross value added per worker is also lower in the Peripheral regions, although differences with the Centre are not very high. Moreover, the share of agriculture in the regional economy, indicated by its Gross Value Added, is higher in Peripheral regions.

Thus at all fronts Peripheral regions stay behind in their development. Regarding the Centre, farm income is low in Less Favoured Areas of the United Kingdom.

5.3.2.2 Central

Regarding the Central regions of the EC-10 (West-Germany, Luxemburg and north and the centre of France), farm income appears to be relatively high in the Northern part of this area in comparison with the Southern parts (table 5.2).

- North

In the normal areas of the North, income is above average for almost all regions. Only in Basse- and Haute-Normandie income is below average. Here a high percentage of low income farming types and a low land productivity are related to this lower income.

In the Less Favoured Areas income is below average for all regions in France. Especially land productivity is low in these areas. On the contrary, in Less Favoured Areas of Germany and Luxembourg income is above average, despite a relatively high share of low-income farming types. A high land productivity and/or a high acreage per worker more than compensate this disadvantage.

- South

In the South, income is low in most normal areas, especially in West-German regions. In only one region, Alsace, income exceeds the average income of the Central regions. In West-Germany, a low acreage per worker seems to be the main reason for the low farm income. In most French regions land productivity is low, except for Bretagne where acreage per worker is low.

In the Less Favoured Areas of South income is low in all regions. In West Germany, farms have a low acreage per work unit, but additionally there is a high percentage of low income farming types. In all French regions land productivity is relatively low, especially in Poitou-Charentes. In this region income is very low.

- North v. South

The division of regions into normal and Less Favoured seems to be less "income orientated" than in the North-Western regions of the EC-10. Farm income in North is high, even in some Less Favoured Areas, whereas in South income is low in Less Favoured as well as in most normal areas.

Table 5.2 Agricultural and economic indicators per region of Central EC-10, 1984-86 (Central = 100)

	Family income (excl. subs.) /FWU	Farming type structure index	Index gross margin per ha	Area (ha) per labour unit (AWU)	Number of repres. farms *)	Relative share of agric. in total GVA	GVA industry + services per worker
Central North							
Normal areas:							
Basse-Normandie	74	91	80	114	26539	299	88
Haute-Normandie	93	96	83	113	11582	130	104
Nord - Pas-de-Calais	103	103	102	93	22373	100	93
Hamburg	107	139	69	61	1092	11	128
Nordrhein-Westfalen	123	97	130	84	48058	44	100
Picardie	128	111	92	131	17104	287	93
Niedersachsen	132	97	110	101	52789	148	93
Centre	158	129	82	129	26005	304	91
Schleswig-Holstein	160	97	116	115	18768	177	93
Bourgogne	196	133	74	151	11735	300	87
Ile de France	207	138	95	129	6518	16	119
Champagne-Ardennes	227	136	121	136	23734	476	91
Less Favoured Areas:							
Bourgogne	55	76	52	165	14862	300	87
Centre	69	96	48	149	9823	304	91
Niedersachsen	112	89	102	111	15062	148	93
Nordrhein-Westfalen	116	87	110	98	3663	44	100
Luxembourg	134	81	79	141	2137	113	103
Schleswig-Holstein	147	92	116	128	4473	177	93
Total:							
Central North	130	104	100	115	316548	94	103

Table 5.2 (continued)

	Family income (excl. subs.) /FWU	Farming type structure index	Index gross margin per ha	Area (ha) per labour unit (AWU)	Number of repres. farms *)	Relative share of agric. in total GVA	GVA industry + services per worker
Central South							
normal areas:							
Hessen	59	95	104	78	19568	41	108
Bayern	77	92	131	65	74261	101	97
Baden-Wuerttemberg	78	102	118	67	33797	58	96
Franche-Comte	83	96	57	150	2522	164	90
Rheinland-Pfalz	86	139	91	77	23800	96	96
Pays de la Loire	87	89	81	108	56513	290	88
Poitou-Charentes	88	107	65	130	35395	328	87
Lorraine	97	91	55	205	8692	138	90
Bretagne	98	94	115	82	60264	349	86
Alsace	107	127	95	74	7818	114	97
Less Favoured Areas:							
Poitou-Charentes	18	89	48	150	5679	328	87
Lorraine	40	86	56	149	3358	138	90
Hessen	49	89	87	87	5222	41	108
Bayern	55	89	105	71	60178	101	97
Baden-Wuerttemberg	57	88	96	79	15389	58	96
Alsace	62	110	81	95	1112	114	97
Franche-Comte	71	90	55	153	8831	164	90
Rheinland-Pfalz	85	116	86	89	7375	96	96
Total:							
Central South	78	97	100	89	430993	107	97
TOTAL							
Central	8131 *)	100	100	100	747541	2.6 *)	32796 *)

*) Absolute figures.
Source: Own calculations based on Eurostat-CRONOS and FADN.

There is no single explanation for lower farm incomes. In Germany, lower incomes are related to a low acreage per worker, whereas in France and Luxembourg they are mostly related to a low land productivity. In most of the Less Favoured Areas the share of low income farming types is a little higher.

Regarding the regional economic situation, there are no large differences between North and South. The share of agriculture in total Gross Value Added (GVA) is only a little higher in South and GVA per worker outside agriculture is a little lower than in North.

5.3.2.3 South

In the south of the EC-10, average differences in farm income between Centre and Peripheral regions are lower than in the North-Western and Central regions of the EC-10 (table 5.3). But what about regional differences within the South?

- Centre

In normal areas of the Centre, income level varies widely, the income index ranging from 69 to 260. But generally, income is above the average of South. Only in five regions (Auvergne, Umbria, Liguria, Marche and Toscana) income lies below this average. Reasons for this lower income differ from region to region. In Auvergne for instance land productivity is very low, whereas in Liguria acreage per worker is quite low.

Regarding the Less Favoured Areas, most of them have a farm income below average. In most of these areas a low land productivity is the main reason for this lower income. Only in some Italian regions (Liguria, Piemonte and Lazio) a low acreage per work unit is the main reason for their low income. Yet, being a Less Favoured Area, does not necessarily imply a low farm income. Quite high incomes for instance, occur in Lombardia, Emilia-Romagna and Provence-Alpes-Cote d'Azur; regions where income in normal areas is also rather high.

- Periphery

Regarding the normal areas of the Periphery, all Greek regions face a relatively low level of farm income. Here, farms have a low acreage per worker. In Italy, income is below average in Abruzzi and Calabria, whereas in all other regions income is above average. From a study of the role of farm characteristics the conclusion can be drawn that income differences within these Italian regions are positively related with differences in acreage per worker.

With respect to the Less Favoured Areas, income is lowest in Greece, with farms again having a low acreage per worker. In most Italian regions income is below average too. Only in Sardegna, Puglia and Molise income is above the average level of South. As in the normal areas, these regions are characterized by a very

Table 5.3 Agricultural and economic indicators per region of the South of EC-10, 1984-1986 (total South = 100)

	Family income (excl. subs.) /FWU	Farming type struct. index	Index gross margin per ha	Area (ha) unit labour input (AWU)	Number per of of repres. farms *)	Relative share of agric. in total GVA	GVA industry + services per worker
South Centre							
normal							
Auvergne	69	97	35	341	6471	96	115
Umbria	80	93	77	90	14252	119	89
Liguria	87	115	209	27	7942	43	101
Marche	90	93	98	73	27410	116	93
Toscana	95	96	91	93	35123	61	96
Piemonte	102	104	111	72	70953	66	95
Friuli-Venezia	121	95	132	82	19241	64	94
Midi-Pyrenees	121	109	69	315	6993	126	120
Veneto	123	102	170	50	84338	106	94
Lazio	135	100	82	127	42124	58	97
Rhone-Alpes	138	110	80	213	23415	49	131
Aquitaine	144	107	99	174	26229	128	140
Provence-Alpes-Cote d'Azur	152	115	142	120	20774	53	144
Languedoc-Roussillon	179	123	93	217	31226	140	126
Emilia-Romagna	181	98	161	82	67333	140	101
Lombardia	260	117	173	83	43364	41	104

Table 5.3 (continued)

	Family income (excl. subs.) /FWU	Farming type struct. index	Index gross margin per ha	Area (ha) unit labour input (AWU)	Number per of of repres. farms *)	Relative share of agric. in total GVA	GVA industry + services per worker
LFA							
Limousin	29	92	30	178	16718	88	116
Auvergne	43	113	34	289	19945	96	115
Midi-Pyrenees	48	95	46	238	53500	126	120
Valle d'Aosta	49	111	40	119	3039	38	104
Piemonte	53	101	77	58	29061	66	95
Aquitaine	56	98	59	188	31712	128	140
Umbria	74	98	58	132	12122	119	89
Rhone-Alpes	75	111	50	194	21993	49	131
Marche	78	95	72	90	30403	116	93
Liguria	85	111	139	37	22257	43	101
Toscana	88	97	77	116	50441	61	96
Lazio	95	98	92	70	46121	58	97
Languedoc-Roussillon	102	107	41	447	1807	140	126
Friuli-Venezia	113	102	109	90	12798	64	94
Trentino-Alto Adige	114	107	187	57	10896	102	89
Veneto	121	109	120	64	26994	106	94
Provence-Alpes-Cote d'Azur	137	98	63	293	3264	53	144
Lombardia	142	114	123	70	35102	41	104
Emilia-Romagna	147	107	106	91	24854	140	101
TOTAL							
South Centre	114	103	105	116	981778	75	111

*) Absolute figures.

Table 5.3 (continued)

	Family income (excl. subs.) /FWU	Farming type struct. index	Index gross margin per ha	Area (ha) unit of labour input (AWU)	Number per of repres. farms *)	Relative share of agric. in total GVA	GVA industry + services per worker
South Periphery							
normal							
Ipeiros Peloponnissos Nissi Ioniou	81	98	106	53	70639	303	48
Abruzzi	81	102	96	65	26501	146	83
Sterea Ellas Nissi Egaeou Kriti	83	98	106	62	64956	303	48
Makedonia Thraki	92	96	131	55	69678	303	48
Thessalia	94	92	126	62	46556	303	48
Calabria	97	96	91	81	50589	144	80
Campania	101	94	210	33	65852	127	80
Basilicata	104	98	80	98	10232	204	74
Puglia	109	102	73	130	76938	205	81
Molise	115	93	80	108	3414	180	87
Sicilia	130	102	62	182	47092	160	85
Sardegna	159	89	46	226	13973	130	88

Table 5.3 (continued)

	Family income (excl. subs.) /FWU	Farming type struct. index	Index gross margin per ha	Area (ha) unit of labour input (AWU)	Number per of repres. farms *)	Relative share of agric. in total GVA	GVA industry + services per worker
LFA							
Ipeiros Peloponnissos Nissi Ioniou	62	98	83	59	73492	303	48
Thessalia	64	93	101	52	27478	303	48
Makedonia Thraki	66	93	87	62	111020	303	48
Abruzzi	69	96	84	62	32256	146	83
Campania	70	93	134	36	81316	127	80
Sterea Ellas Nissi Egaeou Kriti	71	98	88	64	102759	303	48
Calabria	77	94	71	85	37189	144	80
Sicilia	86	101	50	147	55646	160	85
Basilicata	87	94	43	146	17785	204	74
Puglia	121	106	65	174	86140	205	81
Molise	134	96	83	107	7407	180	87
Sardegna	135	95	37	229	21143	130	88
TOTAL South Periphery	88	97	96	87	1200048	196	70
TOTAL South	5971 *)	100	100	100	2181827	5.8 *)	23642 *)

*) Absolute figures.
Source: Own calculations based on Eurostat-CRONOS and FADN.

high acreage per worker, which seems to compensate their low land productivity.

- Centre v. Periphery

Regional differences in farm income are rather high, especially in the Centre. Whereas the income level is low in all regions of Greece, there is a more diffuse picture for France and Italy. In these countries, farm income is generally lower in Less Favoured Areas, but there appear to be some exceptions to this rule.

Reasons for differences in income are hard to grasp. The influence of an overrepresentation of low income farming types hardly plays a role. With respect to land productivity and acreage per worker there are however large differences between regions. In Greece acreage per worker is low. To the contrary, there appears to be a high acreage per worker in France, whereas land productivity is rather low. Finally, in Italy acreage per worker and land productivity vary widely between regions.

Regarding the total regional economy, the relative importance of agriculture for the regional economy is larger in the Periphery. Moreover, Gross Value Added per worker outside agriculture is also lower than in the Central regions.

5.4 Conclusions

After analysing the three main rural areas of the EC-10 separately, the main conclusions will be compared and summarized.

In the North differences in normal and Less Favoured Areas are rather marked. Farm income is relatively low in Less Favoured Areas (except in Belgium), due to a high share of low income farming types and a low land productivity. Furthermore, in peripheral regions of North economic conditions are generally less favorable than in the Centre regions.

In the Central regions, the distinction between normal and Less Favoured Areas, is not identical with high and low farm incomes. Here, income in North is generally higher than in South, even for Less Favoured Areas. In Germany a lower acreage per worker is related to a lower income, and in Luxembourg and France to a lower land productivity. Differences in general regional economic conditions are relatively small.

In the South finally, it appears that in the south of France and in Italy, farm income is on the average a little lower in Less Favoured Areas. But between regions income differences are very high, and quite some of the Less Favoured Areas have an above average farm income. In Greece incomes are low in all regions, especially in Less Favoured Areas. Here, low incomes are related to a low acreage per worker. In France, land productivity is related to income and in Italy there is a variety of reasons.

Considering the general economic conditions, the Peripheral regions (Greece and south-Italy) are clearly in an adverse position.

In North and Central there is a clear difference between core and peripheral regions in agricultural performance, whereas in South this is the case for the general economic conditions. Regarding the income position of Less Favoured Areas, there are quite some regions with a relatively high income (Belgium, Luxemburg, the northern and western regions of West-Germany, the Mediterranean regions of France, and some regions in Italy).

6. CAP and LFA

6.1 Impact of EAGGF-Guarantee support on LFA

6.1.1 Introduction

A central task of this study is to find out if FADN data can provide better insight in the economic situation of farms in Less Favoured Areas (LFA) of the European Community (EC). If this would be the case, using FADN data could help to improve effectiveness and efficiency of the Common Agricultural Policy (CAP).

The CAP is mainly a market and price policy. The main objective is to safeguard agricultural income. An interesting question in this respect is in how far the disbursements from the guarantee-part of EAGGF benefit the Less Favoured Areas.

The calculation of the regional distribution of costs and benefits flowing from the CAP encounters difficult methodological problems. As described in Von Meyer (1981), CEC (1981) and Meester and Strijker (1985) the budget transfers between Brussels and the regions do not yield much information. The geographical place where a financial transaction takes place mostly has no relation with the places to which the income effects of the transaction accrue. Furthermore, income effects for the producers of a certain crop have consequences for the relative profitability of that crop as compared to other crops. The same counts for agriculture and other economic sectors. But even if the price changes of all crops are known precisely, some problems would remain. The regional nominal rate of protection for various products differs considerably; the same is true for the effective rate of protection (Bonnieux & Rainelli, 1990). Closely connected with the last element is the difference in cost structure of EC-farms and regions. Farms with small margins are more sensitive to changes in prices than farms with high margins, assuming the same income in the period before prices were changed.

The best solution for these elements would be the use of a general equilibrium model of world agriculture. As this goes beyond the scope of this study, we restrict ourselves to the question in its most simple form: what is the geographical distribution of the EC-budget disbursements.

As the dynamic regional income effects of the CAP are difficult to grasp, the static effects of the CAP upon gross production value will be concentrated upon, taking the production and costs structure as given.

In order to calculate the regional distribution of EC-subsidies in the sphere of the market- and price policy, a relation between the amount of subsidy by product and the regional distribution of each product can be assumed. The

reasoning to be followed is than that support for sugarbeets benefits the producers of that crop in relation to their total production. Implicitly the assumption is made that the support for sugarbeets does not affect producers of other products, either agricultural or other. We return to that point later.

Using FADN data in an analysis of the regional incidence of EAGGF-Guarantee expenditures provides at least two advantages:
- FADN data clearly distinguish between the normal and Less Favoured Areas (LFA) of a region;
- Regional support figures can be calculated for various farming types and can be related to their incomes.

On the other hand FADN data also show some shortcomings. As mentioned earlier, FADN data do not represent all farms but rather the bigger farms with a relatively high agricultural income. Despite the fact that FADN only covers about 50% of all farms in EC-10, it nevertheless represents a much higher percentage of the total production.

By comparing the figures for agricultural area and livestock units in the FSS and in FADN (table A.11a (annex)) it can be concluded that for the most important arable products - like cereals, sugar beets, oil seeds and protein crops - the share of total EC production covered by FADN is about 90%. For milk and beef even 95% of the total production is represented by FADN. For typical mediterranean products representation is lower, but even for fruits and vegetables, wine and olives FADN covers more than 70% of the total EC production.

Assuming that the degree of EAGGF support is equal for FADN production and for the rest, more than 85% of all EAGGF-Guarantee expenditures (1985) can be related to the production of FADN farms and thus be regionalised. Differences in the regional distribution of EAGGF-Guarantee funds are depending on two relations (table A.11(a-c) (annex)):
- the intensity of EAGGF-support for various products and
- the regional production patterns.

Another method is not to use FADN, but agricultural physical production statistics as published by Eurostat. The advantage is that, contrary to FADN, physical production for quite a number of products is covered. The shortcoming is that production can not be related directly to Less Favoured and normal areas. The only way out is to use the regional division as was used in chapter 2, where regions were classified according to their percentage LFA-area. With some additional calculations for minor crops on the basis of land use the regional distribution of budgets then can be calculated, based on the whole of the production.

Both methods will be applied here, in order to compare the results.

Table 6.1 Regionalised EAGGF-Guarantee support by products and main geographical areas of EC-10 (1985)

Main geographical areas	LFA-status	Division over products (total row = 100)										Total EAGGF Guarantee	
		cereals	sugar beets	oil seeds, protein crops	fruits, vege-tables	wine	olives tobacco citrus	milk	beef	sheep	pigs	million ECU	in % of EC-10
North-west	normal	11	13	9	5	0	0	43	15	3	1	4.902	29
	LFA	2	0	0	0	0	0	36	34	26	0	579	3
Centre	normal	12	14	10	6	0	0	42	13	3	1	4.140	25
	LFA	2	0	0	0	0	0	36	33	29	0	190	1
Periphery	normal	9	4	2	0	0	0	48	29	7	0	762	5
	LFA	3	0	1	0	0	0	37	35	25	0	389	2
Central	normal	15	14	11	2	4	1	36	15	0	1	4.959	29
	LFA	9	1	7	1	1	0	55	25	0	1	1.030	6
North	normal	18	19	13	2	3	0	31	12	0	1	2.752	16
	LFA	10	2	10	2	1	0	44	29	1	1	352	2
South	normal	10	9	9	2	5	2	42	19	0	1	2.207	13
	LFA	8	1	5	0	1	0	61	23	0	1	678	4
South	normal	13	7	5	10	12	21	20	10	0	0	3.236	19
	LFA	13	4	5	6	6	29	20	15	2	0	2.397	14
Centre	normal	14	8	7	10	14	4	29	13	0	1	2.116	13
	LFA	12	4	7	7	6	7	31	22	2	0	1.233	7
Periphery	normal	10	6	3	11	8	54	4	3	1	0	1.120	7
	LFA	13	4	3	6	5	53	7	7	2	0	1.164	7
EC-10	normal	13	12	9	5	4	6	34	14	2	1	12.906	77
	LFA	9	3	5	4	4	18	32	20	5	0	3.938	23
	TOTAL	12	10	8	5	4	9	34	15	2	1	16.844	100
% LFA		18	7	14	20	20	48	22	31	50	11		23

Source: Own calculations based on FSS-85, CEC 1986b, and FADN.

6.1.2 Distribution based on FADN-data

Table 6.1 and 6.2 show the results of a regionalisation of EAGGF-Guarantee support for normal and Less Favoured Areas (LFA) of EC-10 and its 'main geographical areas' as identified in chapter 3. It shows that each of the three main areas (North-West, Central and South) received about one third of the total EAGGF-Guarantee support of 16.9 billion ECU.

Table 6.2 Division of EAGGF-Guarantee support over main geographical areas (EC-10 = 100)

Area	Total	Division over		Division over	
		core	periphery	normal	LFA
North-West	32	26	6	29	3
Central	35	18	17	29	6
South	33	20	14	19	14
EC-10	100			77	23

In the Central regions support was equally distributed between the core and peripheral regions (North and South). The peripheral regions of South and in particular North-West, in contrast, received less support than Central.

Less Favoured Areas in all three parts of the Community are less supported than normal areas. Despite the fact, that more than one third of the EC-10 territory is designated as Less Favoured Area, these areas do not even get one quarter of the EAGGF-Guarantee support. This means that the budget per hectare of agricultural land in Less Favoured Areas is about 56% of the budget per hectare in normal areas.

Table 6.1 also shows which market regulations tend to be more relevant for Less Favoured Areas. These are the regulations for sheep (50%) as well as for olives, tobacco and citrus (48%). Relatively low is the share of Less Favoured Areas in the support for sugar beets (7%), oil seeds and protein crops (14%) as well as for pork (11%).

Finally table 6.1 also gives an idea on which market regulations total EAGGF-Guarantee support for the various parts of the Community is depending most. Thus, for example, in the Less Favoured Areas of North-West Periphery 97% of total support derives from the market regulations for beef, milk and sheep. In the Less Favoured Areas of the Southern Periphery these regulations only provide 16% of total support. Here olives, tobacco and citrus are much more important (53%).

To assess the impact of EAGGF Guarantee support on the income situation of farms in different parts of the Community, in table 6.3 regionalised EAGGF payments have been related to Farm Net Value Added (FNVA). It can be seen that for the EC as a whole EAGGF-Guarantee support reaches the order of about one third of the farm net value added. In Central regions the percentage is higher (more than 40%), in the Southern regions it is lower (about 25%).

In relative terms, there is no significant difference in the income effect of EAGGF-Guarantee support between Less Favoured and normal areas. It would, however, be misleading, to concentrate only on these relative figures because differences in support per farm and per hectare are much more accentuated.

Table 6.3 Farm income and EAGGF-Guarantee support in the main geographical areas of EC-10 (1985)

Main geographical areas		Farm income indicated by FNVA per farm (in ECU)	Total EAGGF Guarantee per farm (ECU)	per ha (ECU)	as %-age of FNVA
North-West	normal	34.701	11.933	274	34
	LFA	12.385	4.959	74	40
Centre	normal	40.291	13.406	312	33
	LFA	24.364	9.606	115	39
Periphery	normal	17.770	7.469	163	42
	LFA	9.940	4.010	63	40
Central	normal	21.890	8.786	246	40
	LFA	14.818	6.894	196	47
North	normal	27.082	10.692	244	39
	LFA	19.823	7.880	162	40
South	normal	17.553	7.162	247	41
	LFA	12.687	6.473	220	51
South	normal	14.547	3.491	238	24
	LFA	10.046	2.551	189	25
Centre	normal	19.223	4.608	256	24
	LFA	11.975	3.133	179	26
Periphery	normal	9.957	2.394	211	24
	LFA	8.657	2.132	200	25
EC-10	normal	21.079	6.781	266	32
	LFA	10.864	3.266	149	30
	Total	16.940	5.462	230	32

Source: Own calculations based on FSS-85, CEC 1986b and FADN.

Support per FADN-farm in normal areas of EC-10 is calculated as to be almost 7000 ECU compared with less than 3500 ECU per farm in LFA. Looking at the situation in the different parts of the Community, differences in support per farm are particularly marked in North-Western regions: 12000 ECU in normal areas and only 4000 ECU in Less Favoured Areas. Due to the larger farm size however this is still more than the support per farm in the Southern regions - normal: 3500 ECU; Less Favoured: 2500 ECU.

If support intensities per hectare are compared, EAGGF-Guarantee payments in normal areas are always higher than in Less Favoured Areas. Whereas in normal areas support is in the order of 240 ECU/ha (South) to 275 ECU/ha (North-West), in Less Favoured Areas it is about 190 ECU/ha in the Southern and Central regions of the Community and only about 75 ECU/ha in the North-Western regions.

From these calculations it seems reasonable to conclude, that the market and price policy of the Community tends to aggravate inter-regional and intra-sectoral disparities in agriculture. It has, however, to be stressed again that regionalised figures for EAGGF-Guarantee support can only be interpreted as very crude measures of the total 'costs' and 'benefits' of agricultural market policy. Even if a market regulation would cost nothing, but on the contrary, would raise budget revenues - e.g. from import levies - both, costs for consumers and benefits for farmers, could in fact be very high indeed.

6.1.3 Distribution based on Eurostat-data

As mentioned in section 6.1.1, it is also possible to do the same calculation with help of Eurostat-data.

Even within the simple methodology as used here, it is quite difficult to cover the whole agricultural sector, because many data on regional production levels are missing. For some regions and products estimates have to be made. As we are interested in the distribution in groups of regions - LFA and non-LFA - national figures can be used, if all the regions of a country belong to one group. This is the case for Denmark, Greece and The Netherlands. Consequently for a large number of products the regional distribution of the production can be constructed for 1980 and 1985. These products 1) account for 85.8% in 1980 and 81,6% in 1985 of the total budget of the EAGGF-Guarantee fund for market regulations.

For some other products a regional distribution can be constructed, if the regional distribution of the budget is assumed to be identical to the distribution of land use. The CRONOS-data cover land use of many products; but for some smaller

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1) Cereals, sheep, beef, pig meat, wine, olives, sugarbeets, tobacco, dairy products.

crops additional calculations had to be made about the percentage per region in the land use of the member state. These calculations could only be made for 1985, because many relevant figures for 1980 are missing. These remaining products 1) cover 15.4% of total budget disbursements in 1985. In 1980 those products got 12.5% of all the money for market regulations. So, together 97% of the budget disbursements for market regulations in 1985 can be covered.

The calculation could be more precisely if the amount of money that is paid for sheep to member states for ewe-premiums and for slaughter premiums is known. These figures are lacking in the annually published budget-data, so a further elaboration on this point has not been made 2). Other elaborations that could be made are the distribution of money from the sugar budget, used to compensate developing countries. Our opinion is that these disbursements are an integrated part of the sugar regulation. This type of disbursements then simply must be distributed according to production.

Moreover, by taking into account disbursements only, no notice is taken of the fact that these disbursements are paid for by the sugar producing farmers themselves.

Table 6.4 Distribution of EAGGF-support (Guarantee, market regulations) (in million ECU)

	Calculation based upon		Subtotal	No figures	Total
	production	landuse			
1980					
non-LFA	4958 (52.4)	-	-	-	-
partly-LFA	2826 (30.3)	-	-	-	-
LFA	1671 (17.7)	-	-	-	-
Total	9455 (100)	1372	10827	190	11017
1985					
non-LFA	8019 (50.3)	985 (33.0)	9004 (47.6)	-	-
partly-LFA	4755 (29.8)	905 (30.3)	5660 (29.9)	-	-
LFA	3164 (19.9)	1094 (36.7)	4258 (22.5)	-	-
Total	15938 (100)	2984 (100)	18923 (100)	594	19517

Between brackets = percentages.
Source: Own calculations based on Eurostat-CRONOS and CEC 1986b.

1) Rice, oilseeds, peas, cotton, vegetables and fruits, hop.
2) Although not published, these data are available.

Table 6.5.a Budget per product per group of regions in 1985 (million ECU)

	Non-LFA	Partly LFA	LFA	Budget
Beef	1211.63 (44)	922.07 (34)	612.11 (22)	2745.80 (100)
Pigs	105.30 (64)	46.65 (28)	13.44 (8)	165.40 (100)
Sheep	117.11 (23)	86.01 (17)	299.28 (60)	502.40 (100)
Cereals	1340.30 (58)	700.09 (30)	269.81 (12)	2310.20 (100)
Sugar	1205.63 (67)	530.48 (29)	68.39 (4)	1804.50 (100)
Potato	0.00 (-)	0.00 (-)	0.00 (-)	0.00 (-)
Tobacco	129.11 (15)	232.53 (27)	501.26 (58)	862.90 (100)
Milk	3391.96 (57)	1660.84 (28)	880.40 (15)	5933.20 (100)
Wine	364.90 (40)	392.44 (43)	164.06 (18)	921.40 (100)
Olives	153.15 (22)	183.51 (27)	355.55 (51)	692.20 (100)
Rice	2.22 (4)	43.04 (86)	4.83 (10)	50.10 (100)
Oilseeds	507.09 (46)	272.68 (25)	330.83 (30)	1110.60 (100)
Cotton	0.00 (0)	0.00 (0)	212.70 (100)	212.70 (100)
Hop	1.98 (24)	6.18 (75)	0.00 (0)	8.20 (100)
Peas	180.74 (49)	94.52 (25)	97.25 (26)	372.50 (100)
Veget./fruits	293.71 (24)	488.72 (40)	448.27 (23)	1230.70 (100)
Subtotal	9004.83 (48)	5659.75 (30)	4258.21 (23)	18922.80 (100)
Flax, hemp, silk *)				27.90
Seed *)				46.40
Eggs, chicken *)				63.20
Fish *)				16.10
Other *)				440.80
Subtotal *)				594.40
Total market regulations				19517.20

*) Not regionally distributed budget.
Source: Own calculations based on Eurostat-CRONOS and CEC 1986b.

In table 6.4 the results for 1980 and 1985 are summarized. As the data for 1980 are incomplete, we will concentrate on 1985. It has been possible to calculate the regional distribution of 18922 million ECU of the EAGGF (Guarantee-part, market regulations). This is 97% of all relevant disbursements. Of this 18922 million ECU, 9004 million ECU (47.6%) is distributed to non-LFA-regions, 5660 million ECU (29.9%) to regions belonging to the group 'partly-LFA', and 4258 million ECU (22.5%) to LFA-regions. For the products for which a distribution of the budget was calculated on the basis of production figures only, the figures for non-LFA regions were slightly higher than in 1985, for LFA-regions lower.

On the basis of table 6.5.a and 6.5.b some idea can be obtained about which products are important for the groups of regions. From this table it appears that the budget which can be related to the group of LFA-regions exists primarily of milk, beef, tobacco and vegetables and fruits.

Although dairy is quite important for the LFA-regions in absolute terms, dairy products area less dominant than in non-LFA-regions. The same is the case for cereals, which make up only 6% of the budget that is related to LFA-regions, while this

Table 6.5.b Budget per group of regions (percentages per product) in 1985

	Non-LFA	Partly LFA	LFA	Budget
Beef	13	16	14	15
Pigs	1	1	0	1
Sheep	1	2	7	3
Cereals	15	12	6	12
Sugar	13	9	2	10
Potato	0	0	0	0
Tobacco	1	4	12	5
Milk	38	29	21	31
Wine	4	7	4	5
Olives	2	3	8	4
Rice	0	1	0	0
Oilseeds	6	5	8	6
Cotton	0	0	5	1
Hop	0	0	0	0
Peas	2	2	2	2
Veget./fruits	3	9	10	7
Sum	100	100	100	100

Source: Own calculations based on Eurostat-CRONOS and CEC 1986b.

is 15% in non-LFA-regions. Treated in this way it can be said that in LFA-regions sheep, tobacco, olives, oilseeds, cotton and vegetables and fruits have a more than proportional share.

The amount of money which is distributed to the different groups of regions can be related to area, population or agricultural workforce. Table 6.6 gives the results. It shows that non-LFA-regions get much more money per agricultural worker, compared with LFA-regions (2816 ECU against 1779 ECU, hence 37% lower). The same is the case per unit of agricultural land (245 ECU/ha against 138 ECU/ha, the last one being 56% of the first one).

Table 6.6 EAGGF-support (Guarantee, market regulations) related to workforce, agricultural area and population in 1985

Group:	ECU per		
	agricultural worker	ha of agr. area	inhabitant
non-LFA	2816	245	63
partly-LFA	1808	204	63
LFA	1779	138	115

Source: Own computations based on Eurostat-CRONOS and CEC 1986b.

But related to the total population, LFA-regions get nearly twice as much, compared with non-LFA-regions. This shows the relatively higher importance of agriculture for the economic situation in Less Favoured Areas.

The method that has been applied above, implicitly assumes that there are no price and quantity relations between different products. However, it is certain that support for one crop has consequences for the prices and quantities of other crops. The optimal situation would be, to have knowledge of the magnitude of all cross elasticities. A quite crude method to take into account the existence of these cross elasticities is to assume full substitution within the animal and within the vegetable sector and no substitution between the sectors. This requires data about the value of production for both sectors for the three groups of regions. Although exact data are not available, the CRONOS-data allow for such a calculation on the level of the three LFA-groups. Table 6.7 shows the results for 1985. Differences with table 6.4 occur in the distribution of the budget between the groups partly-LFA and LFA. On the basis of the individual products the first group got 30% and the last group 23% of the budget, based on aggregated sub-sectors. These figures are 35% and 19%. The share of the non-LFA-regions remains nearly the same.

Table 6.7 Distribution of EAGGF-support (1985)

	As percentage of value-added per sub-sector		Budget (ECU) per sub-sector		Distribution of budget (%) over LFA-groups
	vegetable	animal	vegetable	animal	
non-LFA	43.3	47.8	4183	4501	46
partly LFA	36.6	33.8	3533	3182	35
LFA	20.1	18.3	1936	1726	19
Total	100	100	9652	9409	100

Source: Own computations based on Eurostat-CRONOS and CEC 1986b.

The changes in the distribution of the budget from LFA-regions to "partly-LFA-regions" indicates that LFA-regions produce relatively many products with high budget disbursements per unit, so, relatively a low amount of products with low or no budget disbursements. Nevertheless, their overall production of products which are heavily supported from the budget is low compared to the other groups of regions.

As stated before, these calculations, about the distribution of the EC-budget, do not give information about the distribution of nominal or effective protection, or about the effects of the CAP on agricultural income.

6.1.4 Comparison of calculations based on two data sources

The foregoing sections showed calculations of the geographical distribution of the EAGGF-budget based on two different data-sources. This allows for a comparison, which can show the degree of reliability of data from FADN compared with Eurostat statistics of physical production. The FADN in general represents the bigger farms: 50% of all farms with 85% of all production. This surely has consequences for costs and income figures. But for calculations based on production figures the reliability could be higher. Table 6.8 shows the percentage distribution of budgets per product between normal and LFA-regions. This comparison only is possible for the products for which production-figures are published. Using land-use figures is much more indirect and yields therefore hardly comparable results.

On the basis of FADN-data it is calculated that 22% of the EAGGF-budget of the analyzed products is distributed to LFA-regions. On the basis of production data this figure is 28%. For some large products (milk, cereals, sugerbeets, beef and pigs) the differences are very small. For some other products, as wine, olives, tobacco and sheep the differences are larger. A possible explanation could be that in these crops there occur large quality differences, with concommittant price differences.

It could be hypothesized that high quality production, with high prices, is concentrated in normal regions. Low price production then would be concentrated in LFA-regions. It is our opinion this hypothesis could be correct, but the FADN does not contain unit-prices for these products. It could be an important element for further research. The above mentioned comparison suggests that the use of FADN data for the calculation of regional distributions of budget is more preferable than the use of physical production data. This, notwithstanding the shortcomings of the FADN: no full coverage of production caused by the exclusion of the smallest farms.

*Table 6.8 Percentage distribution of EAGGF-budget per crop between normal and LFA-regions (1985) *)*

	Based on FADN		Based on Eurostat production-statistics	
	normal	LFA	non-LFA	LFA
Cereals (incl. durum wheat)	83	17	83	17
Sugarbeets	93	7	95	5
Wine	80	20	69	31
Olives	49	51	30	70
Tobacco	52	48	20	80
Milk	78	22	79	21
Beef	69	31	66	34
Sheep	45	55	28	72
Pigs	89	11	89	11
Sum	78	22	72	28

*) Only products included for which a distribution based on production was possible.

6.2 Impact of the LFA Directive

Already in the early seventies it became more and more obvious that the traditional measures of agricultural incomes policy like price support and farm improvement plans (dir. no. 72/159) were unable to solve the income problems in agriculture effectively.

Therefore in 1975, at the request of the British government, the 'Less Favoured Areas Directive' (75/268) was approved, which for the first time in CAP introduced

- a regionally differentiated approach;
- the payment of 'Compensatory Allowances' (CA).

The agricultural income problem was no longer perceived as purely sectoral, but one which had to be considered in a regional

context. CA payments were linked not to criteria of social need but to hectare and livestock-units, in order to ensure the maintenance of the countryside in areas, where farming would otherwise not be continued.

As table 6.9 shows, many member states, have not made full use of the opportunities provided by the LFA program. Still in 1985, ten years after its implementation, only one out of five farms located in the Less Favoured Areas of EC-10 received CA payments. This was in particular due to the very low participation rate in Italy, where for various reasons, only 6 % of the two million LFA-farms were supported by these direct payments. But also in France, Germany and Greece less than one third of all LFA-farms received CA in 1985. Only Belgium and Luxemburg paid CA to almost every farm in Less Favoured Areas.

During eleven years, until the end of 1985, total EAGGF-Guidance expenditure for CA-payments amounted to 861 million ECU. In 1985 about 118 million ECU were spent on CA. These figures have to be compared with an annual total of about 20 billion ECU in 1985 spent by EAGGF-Guarantee on market regulation and price support.

The total amount of EAGGF-Guidance payments for CA from 1975 to 1985 reached only about 20 ECU per hectare in Less Favoured Areas. In Belgium, Luxemburg and Ireland it was more than 50 ECU,

Table 6.9 Number of farms and EAGGF-Guidance payments for Compensatory Allowances (CA) in Less Favoured Areas (LFA) of the member states of EC-10 (1985)

	LFA (1985)			EAGGF-Guidance CA-Payments (1975-85)		
	total number of farms (1000)	farms with CA (%)	total agric. area (1000 ha)	total (million ECU)	per farm (ECU)	per ha (ECU)
West Germany	290	31	4,316	109	376	26
France	494	28	13,411	203	412	15
Italy	2,175	6	13,024	61	28	5
Belgium	14	85	282	20	1,424	69
Luxembourg	4	87	126	7	1,564	54
Ireland	132	68	2,406	173	1,312	72
United Kingdom	87	53	7,986	289	3,308	36
Greece	785	23	4,151	-	-	-
EC-10	3,981	17	45,702	-	-	-
EC-9 (w/o. Greece)	-	-	-	862	216	21

Source: Own calculations based on FSS 85 and CEC 1986b.

in Italy less than 5 ECU per hectare. Even if one considers that the EC part in total CA payments is only 25% - in peripheral regions of Italy, Ireland and in Greece 50% - the amount of money spent on CA in LFA can only be regarded as marginal compared with EAGGF-Guarantee payments.

Unfortunately FADN data do not allow for a clear identification of CA payments. This item is included in an aggregated figure on 'subsidies on products and animals'. In table 6.10 these subsidies are related to the farm income (FNVA) in normal and Less Favoured Areas of the main geographical areas.

On the average these subsidies accounted for 420 ECU/farm in normal and 980 ECU/farm in LFA. The difference between these

Table 6.10 Subsidies on products and animals - including CA-payments - in the Main Geographical Areas of EC-10 (1985)

Main geographical areas	LFA-status	Farm income (FNVA) (ECU/farm)	Subsidies on products and animals - incl. CA-payments -	
			ECU/farm	% FNVA
North-west	normal	34,701	541	2
	LFA	12,385	3,776	30
Centre	normal	40,291	431	1
	LFA	24,364	6,050	25
Periphery	normal	17,770	873	5
	LFA	9,940	3,312	33
Central	normal	21,890	423	2
	LFA	14,818	1,188	8
North	normal	27,082	341	1
	LFA	19,823	1,250	6
South	normal	17,553	490	3
	LFA	12,687	1,161	9
South	normal	14,547	368	3
	LFA	10,046	598	6
Centre	normal	19,223	218	1
	LFA	11,975	518	4
Periphery	normal	9,957	515	5
	LFA	8,657	655	8
EC-10	normal	21,079	421	2
	LFA	10,864	979	9
	Total	16,940	619	4

Source: Own calculations based on FADN.

figures will mainly be the CA-payments and premiums for sheep. In the Southern regions the difference is only 230 ECU, whereas in the North-Western regions it is more than 3200 ECU. This high difference in North-West will partly be caused by the different market regime for sheep in the United Kingdom, with lower prices and higher premiums, the last being included in the 'subsidies on products and animals'.

In absolute terms subsidies on products and animals are about 1000 ECU per farm in Less Favoured Areas of EC-10 and Central. Related to farm income (FNVA) this is almost 10%. In Less Favoured Areas of the Southern regions 600 ECU correspond to 6% of farm income, whereas in the North-Western regions the absolute amount of subsidies on products and animals in Less Favoured Areas is almost 3800 ECU/farm. Here more than 30% of the farm income (FNVA) results from this kind of subsidies.

If the results of table 6.10 are compared with those of 6.3 it can be seen, that CA payments - EC and national money together - cannot really "compensate" for the differences in support per farm between normal and Less Favoured Areas generated by the EC market regulations. This conclusion being strengthened by the fact that not only CA payments but also premiums from the Guarantee Fund are included in the subsidies. On the other hand, for many low income farms CA payments surely provide a strong incentive to continue farming even under unfavourable conditions.

7. Conclusions

7.1 Introduction

This study aims to analyze:
- The economic situation of farms in Less Favoured Areas of the EC-10.
- The usefulness of the Farm Accountancy Data Network (FADN) for this type of study.

In the next two sections the main conclusions on these objects of study will be given.

7.2 The economic situation of farms in Less Favoured Areas - conclusions

1. In 1975 the "Less Favoured Areas Directive (75/268)" was given approval, facilitating the payment of "Compensatory Allowances" to farms in regions with an LFA (Less Favoured Area)-status in order to ensure permanency of farming. This implies that income problems in the Less Favoured Areas are considered to be worse than elsewhere. Besides it means that (regional) economic policy, market and price policy and structural policy are insufficient to meet these problems. And for that reason Compensatory Allowances can play an important role in realizing the above mentioned goal. Directive 75/268 is part of the structural policy. The decision on which regions are brought in directive 75/268 is based on national judgement primarily.

2. Against this background this study, based on data covering the EC-10 in 1985, was focused on the following issues:
   a. Are there income differences between the Less Favoured Areas of 1985 and normal areas and what is the magnitude of these differences?
   b. To what extent do subsidies narrow the income gap between Less Favoured Areas and normal areas?
   c. What are the main causes for these differences in income? In particular how far are they based on unchangeable production circumstances, or are other factors such as regional economic or structural backwardness sources for lower incomes?
   d. Are there differences in the situation of Less Favoured Areas between EC member states?

3. Generally incomes are lower in Less Favoured Areas than in normal areas. This conclusion holds for all countries within

the EC-10. If one makes a distinction on the base of Eurostat-CRONOS data between LFA-regions, partly LFA-regions and normal regions the Gross Value Added (GVA) per agricultural worker is lower in the first and higher in the last mentioned regions, the partly LFA-regions are in between. Also on basis of data from the Farm Accountancy Data Network (FADN) it appeared that the Farm Net Value Added (FNVA) per agricultural work unit and also the family farm income per family farm worker are lower in Less Favoured Areas than in normal areas. The incomes in Mountain areas being still a bit lower than in the other Less Favoured Areas.
The same conclusion can be drawn for farming types. In general the income per farming type within Less Favoured Areas is lower than in normal areas.

4. The magnitude of the income differences varies widely between countries and sometimes also within countries. The difference in family farm income (without subsidies) per family work unit between Less Favoured Areas and normal areas is smallest in Greece. In that country the average income in Less Favoured Areas is about 1200 ECU or 25% lower than that in normal areas. Also in Italy and Germany these differences are relatively moderate (2000 ECU respectively 2700 ECU) These amounts are the equivalent of 26% and 33% of the income in normal areas. In Belgium the income difference amounts 4700 ECU, but this is only 27% of the income as income is much higher than in the before mentioned countries. In Ireland and France the income in Less Favoured Areas is on the average respectively 3800 ECU and 5500 ECU (60%) lower than in normal areas. Extremely high is the difference in income in the United Kingdom: no less than 11000 ECU (94%). This extreme position of the UK is partly caused by a divergent market regime for sheep. Nevertheless there are big differences among countries in the income position of Less Favoured Areas. So at first sight there seems to be a different need for compensatory allowances.

5. The amount of subsidies per farm is higher in Less Favoured Areas. However, the difference in Greece and Italy between normal and Less Favoured Areas is rather small, only 100 ECU. So the income gap in these countries between these two groups of areas is hardly narrowed by subsidies. In this respect subsidies play a more important role in West-Germany, Ireland and France, where they narrowed the income gap with about twenty percent. In Belgium the subsidy per farm in Less Favoured Areas is on the average 1600 ECU's higher than in normal areas, that is about a third of the income gap. The United Kingdom is the country with the highest subsidies and especially in Less Favoured Areas: more than 8100 ECU per farm. These subsidies exceed the sub-

sidies in normal areas by 6400 ECU. So the income gap was narrowed by nearly sixty percent. This is more than in other countries but, as said before, this is partly due to a different market regime for sheep. It can be concluded in general that subsidies narrow the income gap with normal areas only to a limited extent.

6. There is a clear relationship between regional development and agricultural income. Not only agricultural income per work unit based on Eurostat-CRONOS data is lower in LFA-regions, but also the income in industry and services per work unit is lagging behind in LFA-regions. The partly LFA-regions are again in between LFA- and normal regions. So the conclusion arises that backwardness of agriculture in LFA-regions can at least partly be explained by a less developed regional economy. Also the relation of FNVA per work unit and regional development points at the same direction. In both normal and Less Favoured Areas the FNVA per work unit is higher when the GVA per inhabitant is higher. This relation however is not very strong, especially for the Less Favoured Areas. This gives an indication that regional development plays a role in explaining agricultural backwardness of Less Favoured Areas but that other factors are more important. Besides, the analysis leads to the conclusion that these other factors play a more important role when regional GVA per inhabitant is higher. In particular in regions with a high GVA per inhabitant agricultural income in Less Favoured Areas is much lower than in normal areas. There appears to be a certain relationship between on the one hand the state of the regional and agricultural development and on the other hand the geographical division of regions. A distinction has been made in North-West, Central and South, each area having its 'core' and its 'peripheral' regions. In Southern regions with an averagely low regional income, policies directed to regional development are far more important to solve agricultural income problems than in high income regions (mostly in North-West and Central).

7. What kind of other policy measures are needed, depends on the origins of lower agricultural incomes in LFA's. Apart from the regional development, in this project four reasons for lower incomes are distinguished:
   - lower prices of outputs or higher prices for intermediate inputs,
   - lower productivity by lower production per hectare or per animal, or
   - by a small acreage per worker
   - a relative high proportion of farms belonging to so-called low income farming types.

For all these reasons there could be a relationship with natural handicaps. But also other relations may be relevant. Possibly lower prices of outputs and higher prices of inputs are caused by a less developed market structure which could (partly) be overcome by market structure policy. A small acreage per worker signs on structural problems which could partly be solved by structural and economic policy measures. As far as production per hectare is low and low income farming types prevail more than in other regions it seems to be much more difficult to overcome the low income problem and there will be more need for Compensatory Allowances.

8. In the FADN there are only a few data on prices (unit values) available which are restricted to a number of agricultural outputs. Sometimes these prices vary strongly within a country, probably partly because these products are not homogeneous. Nevertheless, in general these data do not suggest that prices of outputs in Less Favoured Areas play an important role in explaining low incomes. Only in a few LFA-regions there seems to be a very limited relationship. This does not have to mean that prices do not play a role at all, as prices in the FADN are calculated as values per unit of production and, as said before, only for a few products these calculations can be made.

9. In explaining income differences a much more important role is played by the share of "low income" farming types. This applies especially to Ireland, the United Kingdom, Belgium, France and Germany. In these countries the relative percentage of farms which belong to a low income farming type in Less Favoured Areas is higher than in normal regions. In general drystock farming shows the lowest income in these countries. Especially in Ireland and the United Kingdom however, drystock farmers in Less Favoured Areas get such an amount of subsidies (partly from the market regulation for sheep) that their income is higher that of their colleagues within the same farming type in normal areas.
In the South (Greece and Italy), with a low regional development, this 'polarization' of farming types between normal and Less Favoured Areas does not occur.

10. The production per hectare or the margin per hectare plays an important role in explaining income differences. Within the same farming type the Gross Margin per hectare is lower in most of the Less Favoured Areas. This relation is most pronounced in Ireland, the United Kingdom, Luxemburg, Greece and parts of France and Italy. Only in a number of Less Favoured Areas this disadvantage is (partly) compensated by a higher acreage per worker.

11. The acreage per worker did not prove to be an important factor in explaining income differences between Less Favoured Areas and normal areas. Only in some areas a low acreage per work unit appears to be a reason for low incomes, especially in the south of Germany, Belgium, Greece and parts of Italy. In these areas however, this applies for both normal and Less Favoured Areas. Sometimes this disadvantage is compensated by a high production per hectare, especially in normal areas.

12. There are many deviations from this very generalized picture. In quite some countries there are also Less Favoured Areas with a relative high agricultural income and normal areas with a relatively low income. Beside there are for example also normal regions in Italy with a small acreage per worker or in France with a low production per hectare. And with respect to Less Favoured Areas there are areas in Italy with a relatively high acreage per worker or in France with a high production per hectare. From the analysis with Eurostat-CRONOS data and FADN-data for some regions, like Luxemburg, Belgium, northern regions of West Germany and some French and Italian regions, the question can be posed why they have the LFA-status. On the other hand some normal regions (south and east of West Germany, Greece Scotland, some regions of Italy and France) do have the same characteristics as LFA's.

13. The most important policy instrument for income support in the agricultural sector is the market and price policy. The socio-structural policy, of which the LFA-policy forms part of, is in this respect only of secondary importance. Expenditures of the Guarantee Funds of the EAGGF, expressed as a percentage of FNVA, are lower for the southern countries than for the northern countries. But within these countries there are only slight differences between Less Favoured Areas and normal areas. However, as farms in normal areas have a higher production than farms in Less Favoured Areas in absolute terms, normal areas are benefiting more from the EC market and price policy than the Less Favoured Areas. On the other hand the Less Favoured Areas get more subsidies from the Orientation part of the EAGGF and from national sources. These extra amounts of subsidies however are relatively small in relation to the differences between normal and Less Favoured Areas in the field of market and price policy.

7.3 The usefulness of FADN

One of the objectives of the study was to investigate the usefulness of the farm accountancy data network for research on

the position of the Less Favoured Areas. After completing the research the conclusion can be taken that the FADN contains a substantial source of information that is very useful for this type of policy-research. No other statistical source provides data on farm income for groups of farms which are broken down to types of farming, region (including Less Favoured / normal areas) and size-class. In our view it is a pity that such an instrument is not used more often on the european level, as it has been in some member states. More cooperation between researchers, national networks and the FADN would improve the use and the quality of the network as well as the policy oriented research.

Despite this basically positive attitude towards FADN this study revealed some serious drawbacks of the network. The rest of this paragraph deals with these points for improvement.

First of all it is a pity that data on non-farm income and spendable income of the farm family are not available. In chapter 3 it has been stressed that the income situation in Less Favoured Areas cannot be judged by looking at the family farm income only. Income from non-agricultural activities on the farm and from non-farm activities can be important, especially on smaller and/or part-time farms. Other studies (Peat, Marwick and Mitchel, 1986) have shown that family farm income is only of minor importance to some groups of farmers. In addition member states have different systems and levels of income-tax and social security benefits. Most (if not all) of them also handle special regulations in their tax system for agriculture. Information on taxes paid and social security premiums in order to calculate spendable income is therefore not to be neglected.

The second point concerns the lack of data on the smallest farms. Although FADN represents a very high percentage of the production (90%), about 40% of the holdings is excluded from the network because they are too small (see section 1.4.2). However, as these very small farms are supposed to have a considerable amount of non-farm income or to receive a generous treatment from the tax authorities, it is not very sensible to include them in the network as long as the issue on non-farm income and spendable income has not been solved.

Regarding the data that are gathered by the FADN there are two more major fields for improvement: the lack of gross margins and the lack of data on volumes and prices. European farming is characterized by heterogenous production: a lot of farms are mixed farms, and even on 'specialised' farms several types of output (e.g. different crops or milk together with beef and veal) occur. Costs and income at farm level are therefore an imperfect indicator for the production cost and the income on the level of the individual products. The FADN does not allocate any type of costs to individual products. Thus it is impossible to calculate even gross margins per crop or animal. Comparisons between Less Favoured Areas and normal areas can therefore only be made at

farm level, but as product mixes (cropping pattern, types of livestock) between groups differ, such a comparison is problematic.

One of the objectives of this study was to attribute differences between LFA and non-LFA farms to differences in productivity or terms of trade. Some yields (on important arable crops and on milk) are available in the FADN, which makes the calculation of an implicit unit value possible. However for the bulk of the output yields are not available and a division between productivity and terms of trade is impossible. In cases where yields are available the type of output can be very broadly defined (e.g. cow milk and products). A difference in the calculated implicit price could then easily be a difference in product mix in stead of a difference in the terms of trade of the farm.

The four points mentioned above, which are the most important drawbacks in using FADN for this type of research, have been documented before (Poppe, 1984, 1987, 1989). This study has also revealed some new points, where perhaps headway can be made more easily because they do not require a major change in the gathering of the FADN data:

* analysing FADN-data on the regional level for EC-10 means that in principle 69 regions have to be taken into account, with most of them having LFA and non-LFA farms. On EC-12 level the FADN has 91 regions, and the enlargement of Germany will bring us even closer to 100. This raises the question if - for EC purposes - an aggregation of regions to a higher NUTS-level would not be beneficial. The triangles which were developed in chapter 3 of this study and possibly a cluster-analysis could be helpful in this discussion.
* In this study a split between LFA- and non-LFA subsidies has not been possible because the Compensatory Allowances are included in the "grants and subsidies on animals and products".
* Farms with land in both normal and Less Favoured Areas in the FADN are classified in Less Favoured or normal areas on the basis of their share of land in the Less Favoured part. This means that holdings which grow wine on non-LFA areas (like the steep hills along the Moselle river in Germany or Luxembourg) and have a larger area of less productive LFA grassland elsewhere are classified as LFA. This effect cannot be neglected: although all vineyards in Germany and Luxembourg are per definition non-LFA, the FADN gives results on specialist vineyards in LFA areas. These strange results could be eliminated by asking the accountants to weight the acreage with the according standard gross margins.
* Although the statistical categories used for this study have been defined by the same people who make abundant use of FADN data (including staff members of the Commission) some

problems in handling the data have not been foreseen. After creating and using the database it turned out that the definitions of some areas and output items in the standard list of FADN variables ("level I") are not comparable and therefore the output per ha cannot be calculated. An example is "market gardening and flowers" in the cropping pattern compared to "vegetables and flowers" in the output. Mistakes made by unexperienced users of the standard FADN-data are not inconceivable.

* The comparability of FADN and the Farm Structure Survey is important. The fact that a FSS for 1985 is not available for Portugal and Spain means that even if FADN data for 1984, 1985 and 1986 for Spain and Portugal would have been available at the start of this study, the analysis in chapters 2 and 3 would have been impossible to make.

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Table A.1 Percentage of farms represented by FADN and average farm size according to type of area in FADN and FSS in EC-10, by country

	Normal				LFA				Total			
	FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)		FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)		FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)	
			FADN	FSS			FADN	FSS			FADN	FSS
West Germany												
Cereals	17	30	29	8	11	14	16	4	15	44	26	7
General cropping	55	84	41	23	15	28	27	6	45	112	40	18
Horticulture	66	13	63	39	29	2	88	32	61	15	65	38
Vineyards	33	36	35	16	119	1	28	11	37	38	34	15
Permanent crops	34	13	50	28	6	2	67	31	30	15	50	29
Dairying	76	93	33	22	62	93	26	17	69	185	30	20
Drystock	35	49	31	11	22	44	25	7	29	93	29	9
Granivores	40	15	45	21	17	4	49	16	35	19	45	20
Mixed	72	143	35	21	41	77	27	12	61	219	33	18
Total	54	475	37	20	39	265	27	13	49	740	34	17
France												
Cereals	60	62	42	28	58	12	28	20	60	75	40	27
General cropping	56	135	43	29	53	45	32	16	56	181	40	25
Horticulture	46	22	63	41	13	3	32	162	43	25	62	53
Vineyards	53	101	39	23	24	16	32	16	49	117	38	22
Permanent crops	52	22	42	31	26	11	43	18	44	33	42	27
Dairying	82	131	28	21	63	62	21	15	76	193	26	19
Drystock	42	99	25	11	49	123	21	13	46	222	23	12
Granivores	68	11	52	48	34	2	49	31	62	14	52	45
Mixed	70	124	35	21	57	75	24	12	65	198	31	18
Total	58	706	36	23	49	350	24	15	55	1057	32	21

Table A.1 (continued)

	Normal				LFA				Total			
	FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)		FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)		FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)	
			FADN	FSS			FADN	FSS			FADN	FSS
Italy												
Cereals	25	206	15	5	39	99	11	4	30	305	13	5
General cropping	48	441	14	9	47	356	10	4	47	797	12	7
Horticulture	40	28	65	55	97	17	38	63	62	45	49	58
Vineyards	25	220	9	4	30	101	9	2	27	322	9	3
Permanent crops	34	398	13	6	31	354	10	4	33	752	12	5
Dairying	72	42	32	25	74	59	14	7	73	101	21	15
Drystock	36	69	27	10	32	132	14	6	33	201	19	7
Granivores	36	9	90	48	19	8	44	16	28	17	76	33
Mixed	152	102	14	12	105	136	10	6	125	238	12	8
Total	39	1515	17	9	41	1263	11	5	40	2778	14	7
Belgium												
Cereals	13	1	16	6	.	0	.	11	12	1	16	6
General cropping	62	13	52	31	55	0	31	23	62	13	52	31
Horticulture	68	8	45	30	.	0	.	10	68	8	45	30
Vineyards	.		.	.	.		.	.	.		.	.
Permanent crops	48	3	55	28	.	0	.	52	47	3	55	28
Dairying	64	13	35	24	93	5	34	23	72	18	35	24
Drystock	22	17	35	11	49	7	34	14	30	24	35	12
Granivores	65	5	47	32	.	0	.	18	64	5	47	32
Mixed	69	23	43	28	56	1	44	19	69	24	43	28
Total	56	84	44	25	64	14	35	18	57	98	42	24

Table A.1 (continued)

	Normal				LFA				Total			
	FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)		FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)		FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)	
			FADN	FSS			FADN	FSS			FADN	FSS
Luxembourg												
Cereals	.		.	.	.	0	.	4	.	0	.	4
General cropping	.		.	.	18	0	20	8	18	0	20	8
Horticulture	.		.	.	.	0	.	10	.	0	.	10
Vineyards	.		28	.	2	1	49	10	34	1	29	10
Permanent crops	.		.	.	.	0	.	22	.	0	.	22
Dairying	.		.	.	86	1	39	30	86	1	39	30
Drystock	.		.	.	60	1	36	19	60	1	36	19
Granivores	.		.	.	.	0	.	7	.	0	.	7
Mixed	.		.	.	49	1	33	17	49	1	33	17
Total	.		28	.	49	4	36	19	54	4	35	19
Netherlands												
Cereals	.	.	243	.	.	.	.	.	10	0	243	23
General cropping	.	.	71	.	.	.	.	.	72	21	71	47
Horticulture	.	.	113	.	.	.	.	.	80	19	113	68
Vineyards	.	.	.	.	.	.	.	.	.		.	.
Permanent crops	.	.	53	.	.	.	.	.	64	6	53	35
Dairying	.	.	61	.	.	.	.	.	91	45	61	49
Drystock	.	.	54	.	.	.	.	.	20	18	54	16
Granivores	.	.	62	.	.	.	.	.	71	13	62	41
Mixed	.	.	59	.	.	.	.	.	61	14	59	34
Total	.	.	70	.	.	.	.	.	71	136	70	44

Table A.1 (continued)

	Normal				LFA				Total			
	FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)		FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)		FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)	
			FADN	FSS			FADN	FSS			FADN	FSS
Denmark												
Cereals	.	.	18	.	.	.	.	.	82	18	18	13
General cropping	.	.	33	.	.	.	.	.	93	24	33	27
Horticulture	.	.	55	.	.	.	.	.	97	2	55	53
Vineyards	.	.	.	.	.	.	.	.	.		.	.
Permanent crops	.	.	44	.	.	.	.	.	99	1	44	40
Dairying	.	.	44	.	.	.	.	.	99	18	44	38
Drystock	.	.	39	.	.	.	.	.	33	1	39	14
Granivores	.	.	72	.	.	.	.	.	95	4	72	60
Mixed	.	.	42	.	.	.	.	.	97	25	42	36
Total	.	.	37	.	.	.	.	.	92	92	37	31
Ireland												
Cereals	89	4	22	15	128	0	4	5	93	4	20	14
General cropping	79	4	33	23	8	2	62	4	53	6	35	16
Horticulture	.	0	.	45	.	0	.	11	.	0	.	38
Vineyards	.		.	.	.		.	.	.		.	.
Permanent crops	.	0	.	25	.		.	.	.	0	.	25
Dairying	110	28	25	23	99	29	12	11	105	58	19	17
Drystock	63	44	10	6	45	93	7	4	50	137	8	4
Granivores	51	1	78	28	.	1	.	19	23	2	78	23
Mixed	105	7	21	20	33	6	17	6	72	12	20	14
Total	83	87	20	14	55	132	9	5	66	219	15	9

Table A.1 (continued)

	Normal				LFA				Total			
	FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)		FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)		FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)	
			FADN	FSS			FADN	FSS			FADN	FSS
United Kingdom												
Cereals	79	19	102	72	8	2	210	28	73	21	103	69
General cropping	75	28	164	104	16	2	60	49	70	30	162	100
Horticulture	58	7	62	44	.	0	.	14	56	7	62	43
Vineyards	.		.	.	.		.	.	.		.	.
Permanent crops	40	3	77	41	.	0	.	17	37	4	77	40
Dairying	121	25	69	58	50	14	46	45	95	40	65	54
Drystock	40	53	32	10	42	61	43	19	41	115	38	14
Granivores	36	7	46	23	8	1	23	13	32	9	45	21
Mixed	94	18	112	69	32	6	64	39	79	24	108	61
Total	68	161	88	50	40	87	46	25	58	249	78	42
Greece												
Cereals	24	60	8	3	44	32	7	3	31	92	8	3
General cropping	62	184	11	7	86	130	7	4	72	314	9	6
Horticulture	61	12	10	7	51	7	17	9	57	19	13	8
Vineyards	34	24	8	4	79	19	7	4	54	43	7	4
Permanent crops	30	172	7	3	40	173	5	2	35	345	6	2
Dairying	40	2	5	4	232	1	5	4	99	3	5	4
Drystock	74	12	9	7	106	37	9	8	98	49	9	8
Granivores	25	3	19	17	67	2	16	7	41	5	17	13
Mixed	188	24	11	5	108	55	7	4	132	79	9	4
Total	44	494	10	5	62	454	7	4	53	948	8	4

Table A.1 (continued)

	Normal				LFA				Total			
	FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)		FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)		FADN farms/ FSS-farms (%)	FSS-farms (1000 holdings)	Farm size (ESU)	
			FADN	FSS			FADN	FSS			FADN	FSS
EC-10												
Cereals	35	401	32	12	39	160	12	5	36	561	26	10
General cropping	55	934	29	17	55	564	11	5	55	1498	23	13
Horticulture	58	111	67	45	73	29	36	56	61	140	59	47
Vineyards	34	381	24	10	37	139	11	4	35	520	20	8
Permanent crops	34	620	16	7	34	540	9	4	34	1160	12	6
Dairying	85	397	38	28	69	264	20	15	79	661	32	23
Drystock	41	363	24	10	44	498	18	9	43	861	20	10
Granivores	54	68	57	36	24	19	37	17	47	87	55	32
Mixed	97	479	29	22	79	356	14	9	89	835	23	16
Total	50	3752	31	16	47	2570	15	8	49	6322	25	13

Source: Own computations based on FADN and FSS-1985.

Table A.2 Some socio-economic characteristics of three groups of regions and the EC-10 in 1975 a)

	Group 1 non-LFA	Group 2 partly-LFA	Group 3 LFA	EC-10
Number of regions	46	24	23	93
Total area (1000 ha)	59,816	52,235	53,655	165,706
Total agric. area b) (1000 ha)	38,537	28,505	31,177	98,218
Share of agric. area in total area (%)	64	55	58	59
Population (million)	142	90	36	268
Population / km2	237	172	67	162
Total workforce (million)	61	37	14	113
Activity rate (workforce/ population) (%)	43	41	39	42
Share of agriculture in total workforce (%)	5	10	17	8
Share of industry in total workforce (%)	37	41	33	38
Share of services in total workforce (%)	57	49	50	54
Unemployment in % of workforce	5	5	5	5
GVA/inhabitant (ECU)	4,311	3,888	2,656	3,946
GVA/worker (ECU)	10,473	9,798	7,027	9,812
GVA/worker in agriculture (ECU)	7,004	4,943	3,558	5,301
GVA/worker in industry (ECU)	11,561	11,045	8,260	11,017
GVA/worker in services (ECU)	10,679	10,591	7,315	10,255
Ratio of GVA/worker in agriculture and total (%)	67	50	51	54
Ratio of GVA/worker in industry and total (%)	110	113	118	112
Ratio of GVA/worker in services and total (%)	102	108	104	105

Source: Own calculations based on Eurostat-CRONOS.
a) Employment and unemployment figures relate to 1977; b) Due to administrative redivisions the total agricultural area of 1975 is not fully comparable with 1985.

Table A.3 Coefficients of variation for GVA/employed person and GVA/inhabitant of table 2.1 and table A.2 (1975, 1985)

	GVA/employed person				GVA/ inhabitant
	agriculture	industry	services	total	
1975					
Group 1 (non-LFA)	0,42	0,25	0,22	0,24	0,25
Group 2 (partly LFA)	0,46	0,29	0,22	0,26	0,38
Group 3 (LFA)	0,55	0,25	0,29	0,26	0,34
1985					
Group 1 (non-LFA)	0,35	0,19	0,20	0,17	0,21
Group 2 (partly LFA)	0,44	0,19	0,21	0,21	0,31
Group 3 (LFA)	0,55	0,22	0,28	0,24	0,33

Source: Own calculations based on Eurostat-CRONOS.

Table A.4 Regions classified according to LFA group and according to GVA per worker in agriculture and in industry (1985)

Group 1 (Non-LFA)

a. GVA agr,reg < GVA agr,eur & GVA ind,reg < GVA ind,eur
Veneto, Puglia, South-east (UK), South-west (UK), Basse-Normandie, Bretagne, East-Anglia, Poitou-Charentes and East-Midlands
(n = 9; Italy = 2, United Kingdom = 4, France = 3)

b. GVA agr,reg < GVA agr,eur & GVA ind,reg > GVA ind,eur
North-west (UK) and Hessen
(n =2; United Kingdom = 1, W.Germany = 1)

c. GVA agr,reg > GVA agr,eur & GVA ind,reg < GVA ind,eur
Pays de la Loire Champagne-Ardennes, Denmark(3*), Nord - Pas-de-Calais, Yorkshire & Humberside, Picardie, West-Midlands, Lorraine, West-Vlaanderen
(n =11; France = 5, Denmark = 3, United Kingdom = 2, Belgium = 1)

d. GVA agr,reg > GVA agr,eur & GVA ind,reg > GVA ind,eur
Nordrhein-Westfalen, Schleswig-Holstein, Provence-Alpes-Cote d'Azur, Limburg, Languedoc-Roussillon, Oost-Vlaanderen, Alsace, W-Berlin, Haute-Normandie, Brabant, Hainaut, Antwerpen, Ile-de-France, Nederland(11*)
(n =24; W.Germany = 3, France = 5, Belgium = 5, Netherlands = 11)

Group 2 (partly LFA)

a. GVA agr,reg < GVA agr,eur & GVA ind,reg < GVA ind,eur
Piemonte, Campania, Sicilia, Saarland, Friuli-Venezia, Toscana, Marche, Abruzzi
(n =8; Italy = 7, W.Germany = 1)

b. GVA agr,reg < GVA agr,eur & GVA ind,reg > GVA ind,eur
Lazio, Niedersachsen, Rrheinland-Pfalz, Baden-Wuerttemberg, Bayern, Hamburg, Emilia-Romagna (n = 7; Italy = 2, W.Germany = 5)

c. GVA agr,reg > GVA agr,eur & GVA ind,reg < GVA ind,eur
Lombardia, Centre (Fr.), North (UK), Bourgogne
(n =4; Italy = 1, France = 2, United Kingdom = 1)

d. GVA agr,reg > GVA agr,eur & GVA ind,reg < GVA ind,eur
Bremen, Aquitaine, Namur, Liege, Rhone-alpes
(n =5; W.Germany = 1, France = 2, Belgium = 1)

Group 3 (LFA)

a. GVA agr,reg < GVA agr,eur & GVA ind,reg < GVA ind,eur
Basilicata, Calabria, Midi-Pyrenees, Sardegna, Auvergne, Valle d'Aosta, Northern-Ireland, Liguria, Umbria, Greece (3*), Molise, Trentino-Alto Adige, Ireland, Limousin
(n =16; Italy =8, France =3, United Kingdom =1, Ireland =1, Greece =3)

b. GVA agr,reg < GVA agr,eur & GVA ind,reg > GVA ind,eur (n =0)

c. GVA agr,reg > GVA agr,eur & GVA ind,reg < GVA ind,eur
Franche-Comte, Luxembourg (B), Scotland
(n = 3; France = 1, Belgium = 1, United Kingdom = 1)

d. GVA agr,reg > GVA agr,eur & GVA ind,reg > GVA ind,eur
Wales, Luxembourg
(n = 2; United Kingdom = 1, Luxemburg = 1)

Table A.4 (continued)

Summary of the three groups together (EC-10).

a. GVA agr,reg < GVA agr,eur & GVA ind,reg < GVA ind,eur
(n = 33; Italy = 17, France = 6, W.Germany = 1, United Kingdom =5, Ireland =1, Greece =3)

b. GVA agr,reg < GVA agr,eur & GVA ind,reg > GVA ind,eur
(n = 9; Italy = 2, United Kingdom = 1, W.Germany = 6)

c. GVA agr,reg > GVA agr,eur & GVA ind,reg < GVA ind,eur
(n = 18; Italy = 1, France = 8, United Kingdom = 4, Denmark = 3, Belgium = 2)

d. GVA agr,reg > GVA agr,eur & GVA ind,reg > GVA ind,eur
(n = 31; France = 7, W.Germany = 4, United Kingdom = 1, Luxemburg = 1, Belgium = 7, The Netherlands = 11)

Source: Own computations based on Eorostat-CRONOS.

Table A.5 Regions classified according to LFA group and subsequently classified according to the ratio of GVA per worker in agriculture and GVA per worker in the region as a whole

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Group 1 (Non-LFA)

a. Ratio below EC-average
Poitou-Charentes, Bretagne, Nordrhein-Westfalen, Pays de la Loire, Nord - Pas-de-Calais, Basse-Normandie, Hessen, Haute-Normandie, South-east (UK), Puglia
(n =10; France = 6, Italy = 1, W.Germany = 2, United Kingdom = 1)

b. Ratio above EC average
Alsace, Schleswig-Holstein, Limburg (B), Ile-de-France, Picardie W-Midlands, Languedoc-Roussillon, Denmark (3*), Lorraine, Provence-Alpes-Cote d'Azur, Champagne-Ardennes, West-Vlaanderen, Veneto, East-Anglia, Antwerpen, Oost-Vlaanderen, South-west (UK), Yorkshire & Humberside, Hainaut, Nederland (11*), East-Midlands, Brabant, North-West (UK), West-Berlin
(n = 36; France =7, W.Germany =2, United Kingdom =6, Belgium =6, Denmark =3, Netherlands =11, Italy =1)

Group 2 (partly LFA)

a. Ratio below EC average
Rhone-Alpes-Cote d'Azur, Bayern, Saarland, Bremen, Campania, Baden-Wuerttemberg, Rheinland-Pfalz, Hamburg, Friuli-Venezia, Abruzzi, Toscana, Niedersachsen, Marche, Aquitaine, Lazio, Sicilia, Piemonte
(n =17; France =2, W.Germany =7, Italy =8)

b. Ratio above EC average
Bourgogne, Centre (Fr), Lombardia, Emilia-Romagna, Liege, Namur, North (UK)
(n =7; France =2, Italy =2, Belgium =2, United Kingdom =1)

Group 3 (LFA)

a. Ratio below EC average
Auvergne, Valle-d'Aosta, Midi-Pyrenees, Franche-Comte, Limousin, Greece (3*), Basillicata, Sardegna, Northern-Ireland, Liguria, Trentino-Alto Adige, Molise, Calabria
(n =15; France =4, Italy =7, Greece =3, United Kingdom =1)

b. Ratio above EC average
Umbria, Luxembourg, Scotland, Wales, Ireland, Luxembourg (B)
(n =6; Italy =1, Luxemburg =1, United Kingdom =2, Ireland =1, Belgium =1)

Source: Own computations based on Eurostat-CRONOS.

Table A.6 GVA per worker in agriculture and industry compared with the national average (country=100), 1985, and LFA-class

Region	Agr.	Ind.	LFA	Region	Agr.	Ind.	LFA
West-Germany				Italy			
Hessen	74	96	1.00	Veneto	141	99	1.00
Nordr-Westfalen	156	103	1.00	Puglia	83	84	1.00
West-Berlin	240	149	1.00	Marche	79	94	2.00
Schlesw-Holstein	169	102	1.00	Lazio	123	112	2.00
Rheinland-Pfalz	96	102	2.00	Campania	80	77	2.00
Bayern	76	89	2.00	Sicilia	90	86	2.00
Bremen	148	115	2.00	Abruzzi	82	82	2.00
Baden-Wuerttemberg	82	95	2.00	Piemonte	99	103	2.00
Hamburg	100	141	2.00	Emilia-Romagna	148	113	2.00
Saarland	89	89	2.00	Friuli-Venezia	132	95	2.00
Niedersachsen	120	104	2.00	Toscana	99	99	2.00
France				Lombardia	161	110	2.00
Alsace	130	99	1.00	Trentino-Adige	99	103	3.00
Nord-Pas-de-Calais	91	88	1.00	Basillicata	62	78	3.00
Lorraine	124	83	1.00	Calabria	57	80	3.00
Picardie	138	86	1.00	Molise	53	100	3.00
Champagne-Ardennes	192	88	1.00	Liguria	111	108	3.00
Languedoc-Roussil.	115	95	1.00	Valle-d'Aosta	62	107	3.00
Ile-de-France	167	131	1.00	Umbria	146	88	3.00
Prov.-Alpes-C.Azur	123	112	1.00	Sardegna	78	102	3.00
Pays de la Loire	88	84	1.00	Belgium			
Haute-Normandie	108	126	1.00	Limburg	99	95	1.00
Poitou-Charentes	85	79	1.00	Brabant	70	95	1.00
Basse-Normandie	71	84	1.00	W-Vlaanderen	134	81	1.00
Bretagne	87	78	1.00	O-Vlaanderen	90	96	1.00
Rhone-Alpes	90	96	2.00	Antwerpen	91	123	1.00
Aquitaine	104	117	2.00	Hainaut	107	96	1.00
Bourgogne	114	88	2.00	Namur	118	96	2.00
Centre	131	88	2.00	Liege	89	106	2.00
Franche-Comte	88	82	3.00	Luxembourg	100	87	3.00
Auvergne	58	78	3.00	United kingdom			
Limousin	42	77	3.00	South-west	101	99	1.00
Midi-Pyrenees	79	86	3.00	W-Midlands	106	83	1.00
				Yorkshire & Humberside	118	97	1.00
				North-west	100	116	1.00
				East-Anglia	102	91	1.00
				South-east	83	102	1.00
				East-Midlands	103	87	1.00
				North	117	98	2.00
				Wales	108	131	3.00
				Scotland	112	104	3.00
				North.-Ireland	67	99	3.00

Source: Own calculations based on Eurostat-CRONOS and FSS 1985.

Table A.7 GVA/INH and FNVA/AWU by member states and regions of EC-10 (EC-10 = 100)

Nr	Region	GDP per inhabitant	FNVA/AWU			UAA of LFA as % of total
			total	normal	LFA	
907	Denmark	116	224	186	0	0
906	Netherlands	107	230	191	0	0
904	Belgium	91	192	162	267	20
909	United Kingdom	90	154	136	167	47
	England	92	168	144	187	17
	Scotl., Wales, N.Irel.	81	113	101	155	83
411	North	83	167	144	208	44
412	East	102	184	153	0	2
413	West	84	153	132	162	13
421	Wales	83	125	108	179	74
431	Scotland	84	115	101	166	87
441	N.Ireland	68	101	95	127	72
908	Ireland	59	83	87	92	48
901	West Germany	123	110	98	136	32
	North	119	145	122	214	23
	South	127	86	76	115	40
10	Schleswig Holstein	104	166	139	245	23
20	Hamburg	199	89	74	0	38
30	Niedersachsen	104	147	125	210	28
40	Bremen	150	0	0	0	0
50	Nordrhein-Westfalen	118	136	113	204	14
60	Hessen	136	79	68	103	25
70	Rheinland Pfalz	109	103	86	156	41
80	Baden-Wuerttemberg	130	92	80	121	33
90	Bayern	123	82	74	110	46
100	Saarland	108	90	79	128	54
110	W-Berlin	148	0	0	0	0
905	Luxemburg	113	137	104	214	100
999	EC-10	9.862	10.108	12.165	6.526	39
902	France	119	118	113	114	35
	North/centre	135	162	142	171	17
	East	106	109	102	139	34
	West	99	113	95	133	7
	South	109	92	102	103	71
121	Ile de France	175	216	180	0	0
131	Champagne Ardennes	110	229	190	0	9
132	Picardie	104	175	145	0	0
133	Haute-Normandie	125	131	109	0	0
134	Centre	112	164	155	167	27
135	Basse-Normandie	103	115	96	0	0
136	Bourgogne	101	161	180	173	56
141	Nord - Pas-de-Calais	95	140	116	0	0
151	Lorraine	98	116	114	98	7

Table A.7 (continued)

Nr	Region	GDP per inhabitant	FNVA/AWU			UAA of LFA as % of total
			total	normal	LFA	
152	Alsace	121	109	93	127	10
153	Franche Comte	103	101	86	156	90
162	Pays de la Loire	104	116	96	320	2
163	Bretagne	97	113	94	0	0
164	Poitou-Charentes	95	109	97	121	22
182	Aquitaine	116	92	99	94	51
183	Midi-Pyrenees	98	71	98	95	87
184	Limousin	90	59	0	87	100
192	Rhone-Alpes	120	96	96	116	60
193	Auvergne	92	80	90	113	87
201	Languedoc-Roussillon	96	136	114	192	49
203	Provence-Alp.-C.d'Az.	110	117	99	172	52
903	Italy	77	75	70	97	51
	Lombardia/Emilia-Romagna	98	125	117	146	27
	North-west/North-east	87	71	65	91	47
	Centre	83	64	60	101	54
	South	55	66	59	98	58
230	Lombardia	99	148	143	153	21
260	Emilia-Romagna	96	109	98	136	33
221	Valle d'Aosta	115	62	0	96	100
222	Piemonte	90	63	61	52	36
241	Trentino-Alto Adige	84	79	0	122	100
243	Veneto	80	80	68	114	33
244	Friuli-Venezia	85	73	68	105	30
250	Liguria	95	58	58	87	86
270	Toscana	86	62	57	115	52
281	Marche	77	53	46	77	52
282	Umbria	74	52	46	98	78
291	Lazio	83	74	75	102	46
292	Abruzzo	64	47	41	70	72
301	Molise	57	72	61	330	79
302	Campania	55	53	53	68	66
303	Calabria	47	62	55	88	68
311	Puglia	56	83	67	134	36
312	Basilicata	54	63	53	93	73
320	Sicilia	54	63	61	89	48
330	Sardegna	59	94	84	136	69
999	EC-10	9.862	10.108	12.165	6.526	39
910	Greece	40	52	49	72	58
999	EC-10	9.862	10.108	12.165	6.526	39

Source: Own calculations based on Eurostat-Cronos, FSS 1985 and FADN.

	AGGREGATED REGIONS	RICA-Regions	Region Code
NORTH-WESTERN REGIONS (NO-WE)			
CENTRE (NO-WE-CE)	DANMARK	Danmark	907
	NEDERLAND	Nederland	906
	BELGIQUE	Belgique	904
	UKI-ENG	England-North	411
		England-East	412
		England-West	413
PERIPHERY (NO-WE-PE)	UKI-SWI	Wales	421
		Scotland	431
		Northern Ireland	441
	IRELAND	Ireland	908
CENTRAL REGIONS (CENTR)			
NORTH (CENTR-NO)	FRA NOR/CEN	Ile-de-France	121
		Champagne	131
		Picardie	132
		Haute-Normandie	133
		Centre	134
		Basse-Normandie	135
		Bourgogne	136
		Nord-Pas-de-Calais	141
	DEU NORTH	Schleswig-Holstein	10
		Hamburg	20
		Niedersachsen	30
		Bremen	40
		Nordrhein-Westfalen	50
SOUTH (CENTR-SO)	FRA EAST	Lorraine	151
		Alsace	152
		Franche-Comté	153
	FRA WEST	Pays de la Loire	152
		Bretagne	163
		Poitou-Charentes	164
	LUXEMBRG	Luxembourg	905
	DEU SOUTH	Hessen	60
		Rheinland-Pfalz	70
		Baden-Württemberg	80
		Bayern	90
		Saarland	100
		Berlin	110

	AGGREGATED REGIONS	RICA-Regions	Region Code
SOUTHERN REGIONS (SOUTH)			
CENTRE (SOUTH-CE)	FRA SOUTH	Aquitaine	182
		Midi-Pyrenees	183
		Limousin	184
		Rhône-Alpes	192
		Auvergne	193
		Languedoc-Roussillon	201
		Provence-Alpes-C.d'Azur	203
	ITA LOM/ER	Lombardia	230
		Emilia-Romagna	280
	ITA N-W/N-E	Valle d'Aosta	221
		Piemonte	222
		Trentino-Alto Adige	241
		Veneto	243
		Friuli-Venezia Giulia	244
		Liguria	250
	ITA CENTRE	Toscana	270
		Marche	281
		Umbria	282
		Lazio	291
PERIPHERY (SOUTH-PE)	ITA SOUTH	Abruzzi	292
		Molise	301
		Campania	302
		Calabria	303
		Puglia	311
		Basilicata	312
		Sicilia	320
		Sardegna	330
	ELLAS	Ellas	910

Table A.8 FADN-regions and 'main geographical areas' of EC-10

Table A.9 Distribution (%) of farms by type of farming in normal and Less Favoured Areas (LFA) of member states and regions of EC-10 (1985)

Nr.	Region name:	LFA	Cer-eals	Oth. arabl	Horti-cult.	Vine-yard	Perm. crops	Dairy	Dry-stock	Grani-vores	Mixed
907	Denmark	normal	17	27	2	0	1	20	0	4	28
		LFA	0	0	0	0	0	0	0	0	0
906	Netherlands	normal	0	15	16	0	4	43	4	9	9
		LFA	0	0	0	0	0	0	0	0	0
904	Belgium	normal	0	17	12	0	3	18	8	7	34
		LFA	0	1	0	0	0	52	41	0	6
909	United Kingdom	normal	13	18	4	0	1	27	19	2	15
		LFA	0	1	0	0	0	20	72	0	5
	England	normal	16	21	5	0	2	25	13	3	16
		LFA	0	0	0	0	0	26	72	0	1
	Scotl.,Wales	normal	6	11	0	0	0	33	35	1	13
	+ N-Ireland	LFA	1	1	0	0	0	18	73	0	7
411	North	normal	11	22	4	0	0	30	14	4	15
		LFA	0	0	0	0	0	26	72	1	1
412	East	normal	25	30	7	0	3	10	9	3	14
		LFA	0	0	0	0	0	0	0	0	0
413	West	normal	8	9	3	0	1	40	17	2	19
		LFA	0	0	0	0	0	26	73	0	1
421	Wales	normal	1	2	0	0	0	51	41	0	6
		LFA	0	0	0	0	0	14	85	0	1
431	Scotland	normal	20	32	0	0	0	13	11	0	25
		LFA	1	2	0	0	0	14	71	0	12
441	N.Ireland	normal	1	4	0	0	0	34	47	2	11
		LFA	0	2	0	0	0	25	66	1	7
908	Ireland	normal	5	4	0	0	0	43	38	1	10
		LFA	1	0	0	0	0	40	57	0	3
901	W.Germany	normal	2	17	3	5	2	26	6	2	37
		LFA	1	5	0	2	0	52	9	1	29
	North	normal	2	19	4	0	2	25	4	4	40
		LFA	0	4	2	0	0	56	8	2	27
	South	normal	2	16	2	8	1	27	8	1	35
		LFA	2	6	0	2	0	51	9	1	29
10	Schl.Hols.	normal	4	16	2	0	3	44	5	1	26
		LFA	1	10	1	0	2	62	11	0	12
20	Hamburg	normal	0	0	87	0	13	0	0	0	0
		LFA	0	0	0	0	0	0	0	0	0
30	Niedersachs.	normal	2	22	1	0	3	25	3	3	42
		LFA	0	2	3	0	0	55	7	2	30
40	Bremen	normal	0	0	0	0	0	0	0	0	0
		LFA	0	0	0	0	0	0	0	0	0
50	NR.Westf.	normal	2	17	6	0	1	18	5	5	45
		LFA	0	3	0	0	0	52	9	2	35
60	Hessen	normal	2	15	4	2	1	10	7	1	58
		LFA	2	5	1	0	0	49	9	0	32
70	Rh.Pfalz	normal	4	17	2	39	2	9	1	1	24
		LFA	5	6	0	22	0	36	4	2	25
80	Baden-W.	normal	0	16	6	7	3	18	7	3	42
		LFA	3	3	0	0	0	43	12	3	35
90	Bayern	normal	2	15	0	1	0	41	10	1	30
		LFA	1	6	0	0	0	55	9	0	28
100	Saarland	normal	3	0	0	0	0	52	16	4	25
		LFA	0	0	0	0	0	43	13	0	44
		LFA	0	0	0	0	0	0	0	0	0

Table A.9 (continued)

Nr.	Region name:	LFA	Cer-eals	Oth. arabl	Horti-cult.	Vine yard	Perm. crops	Dairy	Dry-stock	Grani-vores	Mixed
110	W-Berlin	normal	0	0	0	0	0	0	0	0	0
		LFA	0	0	0	0	0	0	0	0	0
905	Luxemburg	normal	0	0	0	100	0	0	0	0	0
		LFA	0	1	0	1	0	46	32	0	20
902	France	normal	9	18	2	12	3	25	10	2	20
		LFA	5	16	0	3	2	21	31	1	22
	North/Centr	normal	18	26	1	8	1	23	5	0	19
		LFA	7	10	0	2	1	3	52	0	24
	East	normal	10	12	0	10	0	33	7	0	28
		LFA	2	2	0	1	0	79	10	0	6
	West	normal	1	12	1	4	0	39	16	4	22
		LFA	4	15	2	6	0	9	44	0	21
	South	normal	6	17	6	30	9	6	7	1	18
		LFA	5	18	0	3	2	19	29	1	23
121	Ile de Fr.	normal	55	29	12	0	2	0	0	0	3
		LFA	0	0	0	0	0	0	0	0	0
131	Champ-Ard.	normal	14	29	0	30	0	10	4	0	14
		LFA	0	0	0	0	0	0	0	0	0
132	Picardie	normal	12	43	0	2	0	16	2	0	25
		LFA	0	0	0	0	0	0	0	0	0
133	H-Normand.	normal	11	16	0	0	0	33	14	0	25
		LFA	0	0	0	0	0	0	0	0	0
134	Centre	normal	46	24	0	5	2	2	3	0	18
		LFA	13	21	0	1	2	2	29	0	32
135	B-Normand.	normal	3	4	0	0	0	79	7	0	8
		LFA	0	0	0	0	0	0	0	0	0
136	Bourgogne	normal	27	21	1	22	0	2	6	0	20
		LFA	3	4	1	3	0	4	67	0	19
141	NpdCalais	normal	2	43	2	0	0	16	4	1	33
		LFA	0	0	0	0	0	0	0	0	0
151	Lorraine	normal	5	10	0	0	0	42	11	0	33
		LFA	0	0	0	0	0	81	16	0	3
152	Alsace	normal	17	16	0	24	0	14	3	0	25
		LFA	9	0	0	14	0	68	2	0	7
153	Fr. Comte	normal	3	4	0	5	0	64	6	0	17
		LFA	1	3	0	0	0	79	9	0	7
162	Pays Loire	normal	1	6	2	3	1	41	28	1	18
		LFA	0	78	0	0	0	0	0	0	22
163	Bretagne	normal	0	7	1	0	0	57	5	10	20
		LFA	0	0	0	0	0	0	0	0	0
164	Poitou-Ch.	normal	4	29	0	12	0	5	16	0	33
		LFA	4	11	2	6	0	9	46	0	21
182	Aquitaine	normal	15	21	0	23	2	5	3	1	30
		LFA	10	27	0	8	2	7	17	0	29
183	Midi-Pyr.	normal	15	33	0	3	15	8	7	4	15
		LFA	7	28	0	0	1	9	21	1	33
184	Limousin	normal	0	0	0	0	0	0	0	0	0
		LFA	0	0	0	0	0	8	84	1	7
192	Rhone-Alp.	normal	6	17	3	14	10	14	6	2	27
		LFA	0	8	0	5	4	39	21	2	20
193	Auvergne	normal	7	9	0	0	0	10	59	2	13
		LFA	1	3	0	0	0	56	30	0	9
201	Langued-R.	normal	0	9	3	63	10	3	6	0	6
		LFA	2	8	0	30	5	10	34	0	11

Table A.9 (continued)

Nr.	Region name:	LFA	Cer-eals	Oth. arabl	Horti-cult.	Vine yard	Perm. crops	Dairy	Dry-stock	Grani-vores	Mixed
203	Prov.C.d.A	normal	0	18	24	25	17	1	1	0	13
		LFA	5	22	2	7	15	6	36	0	8
903	Italy	normal	8	31	2	8	20	5	4	1	23
		LFA	7	27	3	8	18	7	7	0	23
	Lomb./E.Rom	normal	9	33	0	5	15	13	6	2	16
		LFA	10	20	0	3	12	27	8	3	18
	N-west/N-e.	normal	13	23	3	10	7	8	5	1	31
		LFA	9	16	8	4	17	18	10	0	19
	Centre	normal	10	35	2	5	16	2	3	0	27
		LFA	9	33	4	3	11	4	6	0	29
	South	normal	3	32	1	11	30	1	3	0	18
		LFA	5	30	1	12	23	1	6	0	23
230	Lombardia	normal	20	16	0	8	1	23	14	4	14
		LFA	14	17	0	4	13	23	11	4	15
260	Emilia-R.	normal	2	44	0	3	24	7	1	1	18
		LFA	3	26	0	0	9	33	4	1	23
221	Vall.Aosta	normal	0	0	0	0	0	0	0	0	0
		LFA	0	1	0	1	10	51	36	0	2
222	Piemonte	normal	15	19	1	14	9	8	5	1	28
		LFA	6	14	0	1	14	22	18	0	25
241	Trentino-A	normal	0	0	0	0	0	0	0	0	0
		LFA	0	2	0	9	62	17	3	0	6
243	Veneto	normal	12	23	2	8	6	9	6	1	33
		LFA	21	22	4	5	4	23	8	1	12
244	Friuli-V.	normal	15	37	1	1	1	4	2	0	39
		LFA	13	23	2	6	2	16	5	0	33
250	Liguria	normal	0	19	41	8	10	1	0	0	20
		LFA	0	14	33	1	26	5	2	0	18
270	Toscana	normal	9	32	4	2	21	1	3	0	27
		LFA	8	32	6	3	17	2	4	0	29
281	Marche	normal	15	53	0	2	1	0	2	0	27
		LFA	19	44	1	2	1	2	4	0	27
282	Umbria	normal	14	38	0	1	2	3	4	0	37
		LFA	13	35	1	1	4	4	5	2	36
291	Lazio	normal	7	26	2	10	27	4	2	0	22
		LFA	3	27	4	5	12	9	10	0	29
292	Abruzzo	normal	2	26	1	23	19	0	2	0	26
		LFA	2	36	0	14	4	1	9	0	34
301	Molise	normal	0	67	0	8	3	0	0	0	22
		LFA	27	60	0	2	1	0	0	0	10
302	Campania	normal	0	53	3	2	19	2	2	0	19
		LFA	2	45	2	3	16	1	2	0	28
303	Calabria	normal	1	25	0	3	48	1	3	0	19
		LFA	1	22	0	2	44	2	3	0	26
311	Puglia	normal	5	24	1	17	39	0	1	0	13
		LFA	8	23	1	25	28	1	2	0	12
312	Basilicata	normal	34	36	0	0	15	0	2	0	13
		LFA	22	21	0	1	6	2	10	0	38
320	Sicilia	normal	2	24	1	19	34	0	0	0	19
		LFA	3	23	3	15	34	0	4	0	18
330	Sardegna	normal	2	39	1	1	1	0	32	0	23
		LFA	1	17	1	13	5	2	39	0	23
910	Greece	normal	6	46	3	3	20	0	4	0	18
		LFA	4	36	1	5	22	1	12	0	19

Table A.9 (continued)

Nr.	Region name:	LFA	Cer-eals	Oth. arabl	Horti-cult.	Vine yard	Perm. crops	Dairy	Dry-stock	Grani-vores	Mixed
999	EC-10	normal	7	25	3	6	10	16	7	2	22
		LFA	5	24	2	4	14	14	17	0	21

Source: Own computations based on FADN.

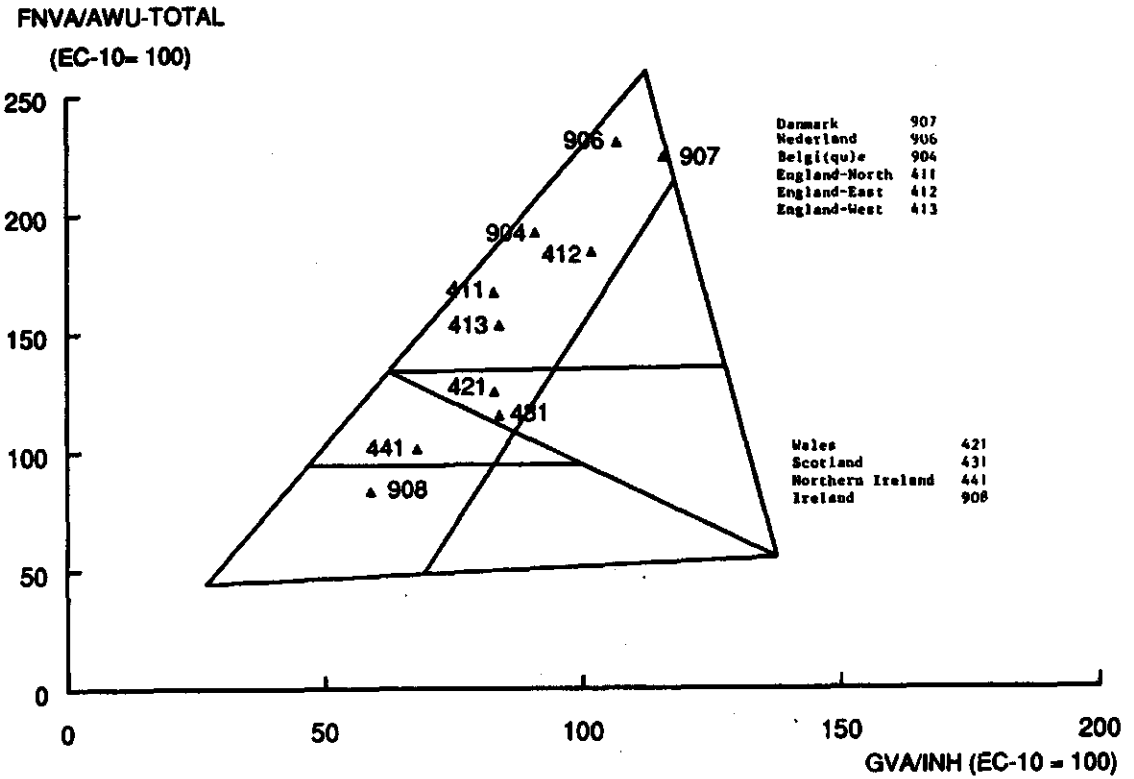


Figure A.1 State of the regional development (GVA/INH) and agricultural income (FNVA/AWU) in the North-West of EC-10 (1985)

Source: Own computations based on Eurostat-CRONOS and FADN

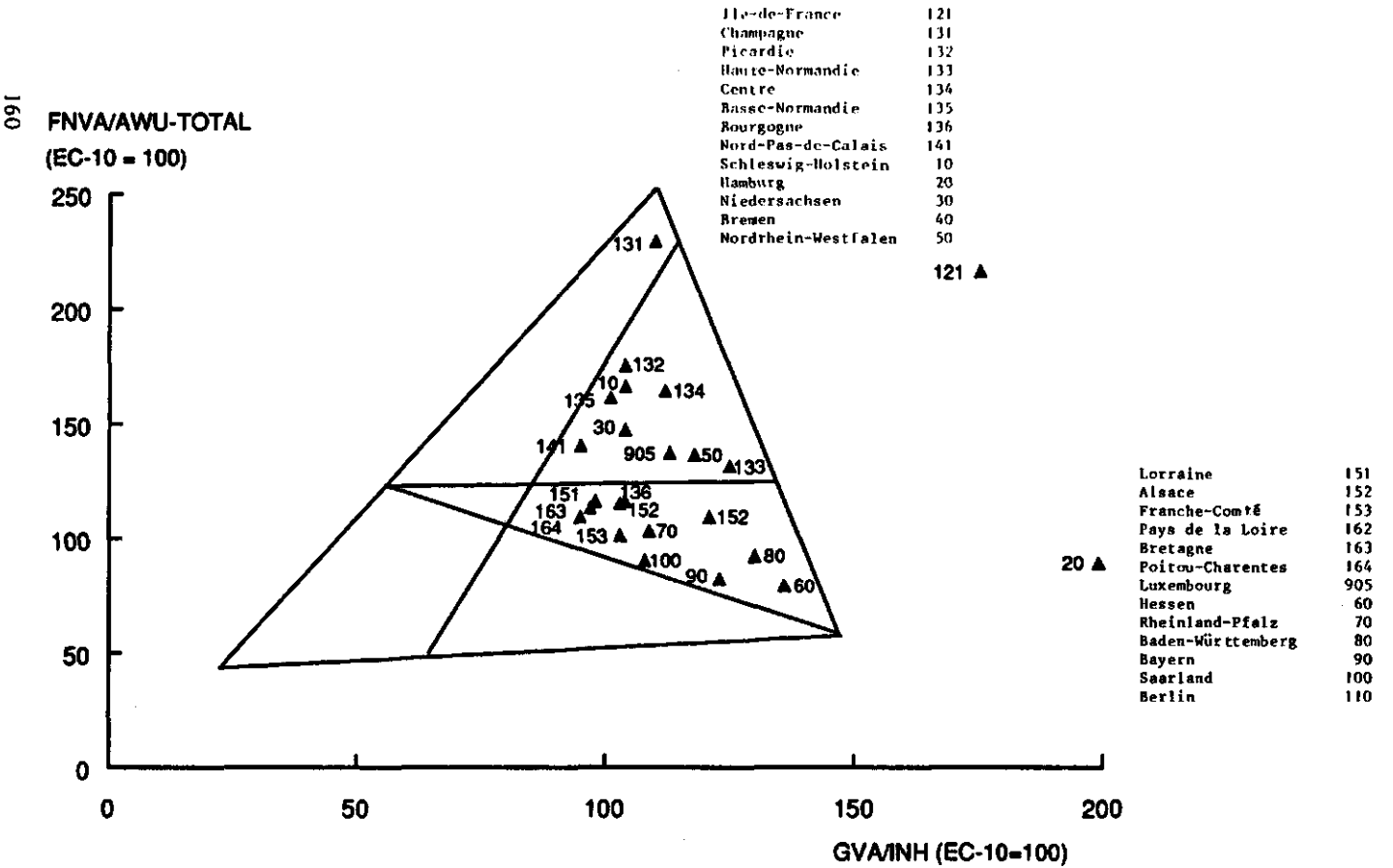


Figure A.2 State of the regional development (GVA/INH) and agricultural income (FNVA/AWU) in Central EC-10 (1985)
Source: Own computations based on Eurostat-CRONOS and FADN

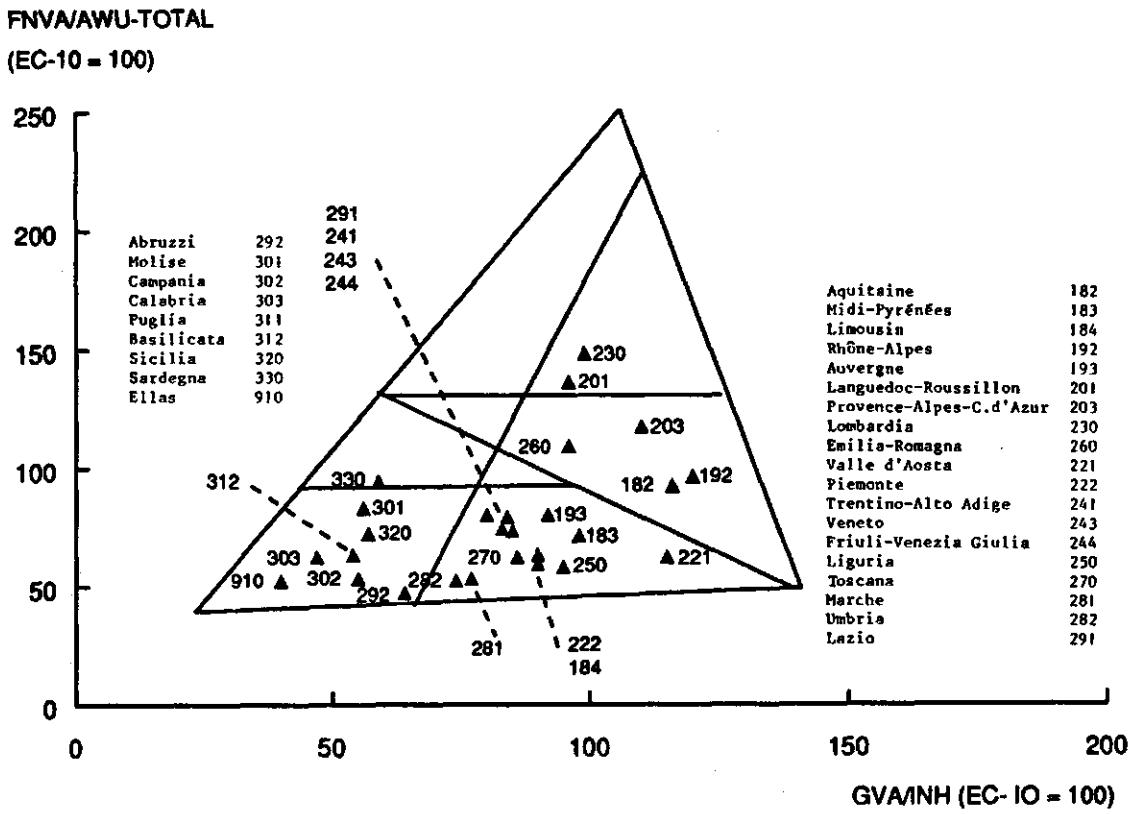


Figure A.3 State of the regional development (GVA/INH) and agricultural income (FNVA/AWU) in the South of EC-10 (1985)
Source: Own computations based on Eurostat-CRONOS and FADN

Table A.10 Income characteristics per farming type and region (country = 100) and farms represented

	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
W. GERMANY	(8200)	(5500)	(3300)	(5900)	(700)	(1200)	(1700)	(1200)	258800	104700
Schleswig-Holstein										
general cropping	184	.	.	.	178	.	.	.	2900	.
dairying	155	190	.	190	80	151	.	151	8200	2800
mixed	149	.	.	.	118	.	.	.	4800	.
TOTAL	160	158	.	158	102	115	.	115	18200	2900
Hamburg										
TOTAL	106	.	.	.	7	.	.	.	1100	.
Niedersachsen										
general cropping	189	.	.	.	159	.	.	.	11400	.
permanent crops	160	.	.	.	32	.	.	.	1500	.
dairying	136	127	.	127	102	160	.	160	13300	8300
drystock	110	97	.	97	136	150	.	150	1700	1100
granivores	110	.	.	.	89	.	.	.	1600	.
mixed	99	83	.	83	119	179	.	179	21900	4500
TOTAL	131	113	.	113	119	159	.	159	50600	14800
Nordrhein-Westfalen										
general cropping	130	.	.	.	127	.	.	.	8200	.
horticulture	149	.	.	.	35	.	.	.	3100	.
dairying	139	116	.	123	137	275	.	284	8500	1900
drystock	91	.	.	.	262	.	.	.	2500	.
granivores	149	.	.	.	88	.	.	.	2400	.
mixed	109	129	.	127	96	133	.	134	21800	1300
TOTAL	122	112	.	108	112	234	.	243	45500	2900
Hessen										
general cropping	51	.	.	.	145	.	.	.	3000	.
dairying	68	56	.	56	91	195	.	195	2000	2600
drystock	51	.	.	.	78	.	.	.	1400	.
mixed	50	33	.	33	144	166	.	166	11300	1700
TOTAL	59	46	.	46	119	177	.	177	17900	4900

Table A.10 (continued)

	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
Rheinland-Pfalz										
general cropping	102	.	.	.	90	.	.	.	4100	.
vineyards	85	82	.	82	48	111	.	111	9300	1600
dairying	79	111	.	111	77	190	.	190	2200	2600
mixed	81	80	.	80	80	166	.	166	5600	1900
TOTAL	84	84	.	84	66	158	.	158	21900	6600
Baden-Wuerttemberg										
general cropping	76	.	.	.	109	.	.	.	5300	.
horticulture	117	.	.	.	16	.	.	.	2100	.
vineyards	78	.	.	.	61	.	.	.	2300	.
dairying	78	56	30	66	112	260	335	230	5900	6700
drystock	48	36	.	53	162	237	.	230	2300	1800
mixed	73	61	.	58	107	275	.	172	14100	5400
TOTAL	77	53	28	58	103	251	482	200	31400	14600
Bayern										
cereals	4	.	.	.	46	.	.	.	1200	.
general cropping	89	58	.	58	124	105	.	105	11300	3700
dairying	79	61	44	67	63	158	145	163	30300	33200
drystock	60	41	.	43	99	173	.	167	7800	5500
mixed	74	50	.	50	88	146	.	146	22400	16800
TOTAL	76	55	42	58	84	153	149	154	71700	57700
FRANCE	(9000)	(3500)	(2700)	(3900)	(900)	(1900)	(2400)	(1700)	412800	170100
Ile de France										
cereals	197	.		.	106	.		.	3600	.
general cropping	210	.		.	37	.		.	1900	.
TOTAL	185	.		.	77	.		.	6500	.

Table A.10 (continued)

	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
Champagne-Ardenne										
cereals	159	.		.	100	.		.	3300	.
general cropping	222	.		.	72	.		.	6800	.
vineyards	311	.		.	46	.		.	7000	.
dairying	82	.		.	100	.		.	2300	.
mixed	112	.		.	127	.		.	3300	.
TOTAL	193	.		.	86	.		.	23300	.
Picardie										
cereals	133	.		.	64	.		.	2100	.
general cropping	126	.		.	68	.		.	7300	.
dairying	92	.		.	29	.		.	2700	.
mixed	95	.		.	57	.		.	4200	.
TOTAL	114	.		.	57	.		.	16900	.
Haute-Normandie										
cereals	145	.		.	64	.		.	1300	.
general cropping	62	.		.	171	.		.	1800	.
dairying	82	.		.	30	.		.	3800	.
drystock	58	.		.	52	.		.	1700	.
mixed	85	.		.	90	.		.	3000	.
TOTAL	82	.		.	71	.		.	11500	.
Centre										
cereals	179	130		130	49	89		89	11900	1300
general cropping	134	102		102	55	81		81	6200	2000
vineyards	188	.		.	29	.		.	1300	.
drystock	.	26		26	.	278		278	.	2800
mixed	64	47		47	120	158		158	4600	3200
TOTAL	142	64		64	66	164		164	24800	9300

Table A.10 (continued)

	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
Basse-Normandie										
general cropping	34	.		.	153	.		.	1100	.
dairying	70	.		.	57	.		.	20900	.
drystock	54	.		.	66	.		.	1800	.
mixed	53	.		.	175	.		.	2100	.
TOTAL	66	.		.	72	.		.	26500	.
Bourgogne										
cereals	111	.		.	86	.		.	3100	.
general cropping	153	.		.	110	.		.	2500	.
vineyards	400	.		.	74	.		.	2600	.
drystock	.	50		51	.	357		347	.	9900
mixed	90	36		36	137	269		267	2400	2800
TOTAL	181	48		48	113	308		308	11200	14700
Nord - Pas de Calais										
general cropping	101	.		.	53	.		.	9600	.
dairying	77	.		.	40	.		.	3600	.
mixed	88	.		.	48	.		.	7300	.
TOTAL	94	.		.	48	.		.	21300	.
Lorraine										
dairying	85	39		36	81	115		99	3600	2700
drystock	64	.		.	171	.		.	1000	.
mixed	98	.		.	165	.		.	2900	.
TOTAL	86	37		35	167	111		94	8700	3300
Alsace										
cereals	64	.		.	28	.		.	1300	.
general cropping	87	.		.	45	.		.	1300	.
vineyards	168	.		.	17	.		.	1900	.
dairying	53	.		.	29	.		.	1100	.
mixed	85	.		.	37	.		.	2000	.
TOTAL	96	53		.	32	100		.	7600	1100

Table A.10 (continued)

	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
Franche-Comte										
dairying	73	66		66	95	159		160	1600	7000
TOTAL	76	64		63	92	172		173	2500	8800
Pays de la Loire										
general cropping	51	.	.	.	124	.	.	.	3400	.
horticulture	128	.	.	.	101	.	.	.	1100	.
vineyards	188	.	.	.	83	.	.	.	1700	.
dairying	86	.	.	.	49	.	.	.	23000	.
drystock	69	.	.	.	129	.	.	.	15600	.
mixed	63	.	.	.	107	.	.	.	10000	.
TOTAL	80	.	.	.	88	.	.	.	55100	.
Bretagne										
general cropping	106	.	.	.	55	.	.	.	4000	.
dairying	87	.	.	.	45	.	.	.	34500	.
drystock	52	.	.	.	152	.	.	.	3100	.
granivores	110	.	.	.	191	.	.	.	6000	.
mixed	85	.	.	.	103	.	.	.	12000	.
TOTAL	88	.	.	.	78	.	.	.	60000	.
Poitou-Charentes										
cereals	129	.	.	.	86	.	.	.	1400	.
general cropping	79	.	.	.	74	.	.	.	10200	.
vineyards	142	.	.	.	73	.	.	.	4200	.
dairying	54	.	.	.	56	.	.	.	1700	.
drystock	51	1	.	1	359	258	.	258	5800	2600
mixed	65	29	.	29	110	90	.	90	11800	1200
TOTAL	78	19	.	19	138	170	.	170	30600	5000

Table A.10 (continued)

	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
Aquitaine										
cereals	78	82	54	115	109	87	108	57	4000	3300
general cropping	80	19	32	-2	117	116	169	-40	5500	8600
vineyards	182	96	108	72	106	109	118	91	6000	2600
dairying	43	28	.	29	72	89	.	50	1200	2100
drystock	.	18	19	17	.	332	321	351	.	5300
mixed	52	29	31	28	122	207	214	201	7700	9000
TOTAL	96	34	25	42	114	222	242	205	23900	22000
Midi-Pyrennes										
cereals	95	59	55	61	146	159	340	92	1100	3500
general cropping	137	47	36	50	70	151	163	148	2300	15000
permanent crops	36	.	.	.	70	.	.	.	1000	.
dairying	.	27	27	28	.	138	204	78	.	4700
drystock	.	22	23	20	.	380	423	297	.	11400
mixed	46	18	3	23	122	184	237	167	1100	17700
TOTAL	77	30	19	36	110	224	333	166	6600	44700
Limousin										
dairying	.	40	.	.	.	200	.	.	.	1300
drystock	.	19	13	24	.	320	374	274	.	14100
mixed	.	19	.	.	.	293	.	.	.	1100
TOTAL	.	21	17	24	.	307	356	263	.	16600
Rhone-Alpes										
cereals	55	.	.	.	65	.	.	.	1400	.
general cropping	72	86	107	.	78	203	97	.	4000	1700
vineyards	257	157	.	.	17	113	.	.	3300	1100
permanent crops	96	.	.	.	92	.	.	.	2400	.
dairying	57	43	39	49	131	204	194	221	3300	8700
drystock	57	8	4	13	284	357	422	275	1400	4700
mixed	59	56	54	59	108	192	141	275	6400	4500
TOTAL	93	48	49	47	107	226	233	215	21400	20700

Table A.10 (continued)

	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
Auvergne										
dairying	.	29	30	22	.	222	225	200	.	11200
drystock	21	28	18	56	358	375	376	370	3800	6000
mixed	.	31	24	.	.	260	238	.	.	1800
TOTAL	40	29	25	46	308	269	267	275	6400	19500
Languedoc-Rousillon										
general cropping	122	.	.	.	168	.	.	.	2700	.
horticulture	93	.	.	.	188	.	.	.	1100	.
vineyards	136	.	.	.	221	.	.	.	19700	.
permanent crops	108	.	.	.	163	.	.	.	3100	.
drystock	15	.	.	.	466	.	.	.	1700	.
mixed	108	.	.	.	178	.	.	.	1900	.
TOTAL	115	77	.	89	226	543	.	557	29400	1400
Provence-Alpes-C.d'Azur										
general cropping	98	.	.	.	90	.	.	.	3900	.
horticulture	71	.	.	.	142	.	.	.	5300	.
vineyards	134	.	.	.	81	.	.	.	5000	.
permanent crops	106	.	.	.	126	.	.	.	3500	.
mixed	106	.	.	.	111	.	.	.	2700	.
TOTAL	96	91	.	86	119	270	.	276	18200	2900
ITALY	(7700)	(5700)	(5600)	(6100)	(200)	(300)	(200)	(400)	587600	521700
Valle d Aosta										
dairying	.	39	39	.	.	1130	1130	.	.	1500
drystock	.	37	37	.	.	1018	1018	.	.	1100
TOTAL	.	37	37	.	.	1053	1053	.	.	3000

Table A.10 (continued)

	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
Piemonte										
cereals	117	112	112	.	18			.	10500	1700
general cropping	56	30	30	.	9	2	2	.	13600	4100
vineyards	54	.	.	.	6	.	.	.	9800	.
permanent crops	53	32	32	.	18	0	0	.	6700	3900
dairying	134	49	49	.	54	86	86	.	5700	6300
drystock	110	34	34	.	95	46	46	.	3700	5200
mixed	63	31	31	.	30	17	17	.	19900	7300
TOTAL	86	40	40	.	29	36	36	.	62400	25500
Lombardia										
cereals	146	79	79	.	177	3	3	.	8700	5000
general cropping	142	87	87	.	82	11	11	.	6900	5800
vineyards	97	58	58	.	1	8	8	.	3500	1500
permanent crops	.	84	84	.	.	10	10	.	.	4700
dairying	257	124	124	.	67	59	59	.	9900	8000
drystock	227	133	133	.	137	72	72	.	5900	3700
granivores	498	290	290	.				.	1900	1400
mixed	197	116	116	.	111	42	42	.	6000	5100
TOTAL	211	114	114	.	97	36	36	.	42000	32000
Trentino										
vineyards	.	112	112	.	.	245	245	.	.	1000
permanent crops	.	97	97	.	.	159	159	.	.	6800
dairying	.	52	52	.	.	274	274	.	.	1800
TOTAL	.	87	87	.	.	208	208	.	.	10800

Table A.10 (continued)

	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
Veneto										
cereals	72	93	.	92	0	13	.	13	9900	5800
general cropping	77	110	.	111	8	2	.	2	19800	5900
horticulture	95	97	.	94	17		.		1700	1200
vineyards	76	119	123	.	3			.	7100	1400
permanent crops	119	57	.	.	20	0	.	.	5000	1000
dairying	127	72	71	.	18	32	32	.	7400	6100
drystock	216	81	61	.	38	22	26	.	4900	2200
mixed	83	102	98	106	27	8	14	2	27600	3200
TOTAL	102	92	78	106	17	14	23	5	74000	25600
Friuli										
cereals	86	72	72	.	1	5	5	.	2800	1700
general cropping	89	88	88	.	20	104	104	.	7100	2900
dairying	.	52	52	.	.	141	141	.	.	2000
mixed	84	75	75	.	47	97	97	.	7400	4200
TOTAL	94	78	78	.	21	142	142	.	12300	11600
Liguria										
general cropping	56	57	57	.	23	22	22	.	1500	3000
horticulture	91	94	94	.	27	17	17	.	3300	7300
permanent crops	.	46	46	.	.	101	101	.	.	5700
dairying	.	56	56	.	.	55	55	.	.	1200
mixed	55	53	53	.	27	23	23	.	1600	4100
TOTAL	78	69	69	.	25	43	43	.	6200	19800
Emilia-Romagna										
cereals	169	.	.	.		.	.	.	1600	.
general cropping	113	114	107	.	3	9	10	.	29500	6400
vineyards	110	.	.	.	2	.	.	.	1900	.
permanent crops	127	88	84	.	4	1	2	.	16200	2300
dairying	267	112	112	.	27	4	4	.	4700	8300
mixed	137	100	99	.	9	27	27	.	12200	5800
TOTAL	147	108	107	.	7	15	13	.	57800	21800

Table A.10 (continued)

	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
Umbria										
cereals	48	38	.	41	9	22	.	9	2000	1600
general cropping	69	69	.	64	47	220	.	205	5400	4200
mixed	53	46	.	48	36	198	.	181	5300	4400
TOTAL	63	59	47	60	41	210	914	120	11700	8900
Lazio										
cereals	129	112	.	.	371	83	.	.	2900	1300
general cropping	97	69	53	95	128	28	7	62	11000	12700
horticulture	.	86	.	78	.		.		.	2000
vineyards	85	75	75	.	64	19	9	.	4100	2500
permanent crops	101	60	46	81	142	88	26	183	11400	5300
dairying	128	129	131	.	119	51	39	.	1800	4000
drystock	.	105	102	.	.	9	2	.	.	4800
mixed	99	47	42	68	97	24	11	73	9300	13300
TOTAL	109	80	75	93	121	30	13	71	35800	40000
Abruzzi										
general cropping	45	52	50	.	134	30	15	.	6900	11500
vineyards	90	53	53	.	36	210	210	.	6200	4600
permanent crops	63	43	43	.	157	15	15	.	5000	1400
drystock	.	74	73	.	.	62	31	.	.	2800
mixed	47	50	48	60	92	35	25	74	7000	11000
TOTAL	61	54	53	63	98	43	32	115	17900	24400
Molise										
cereals	.	103	109	.	.	360	159	.	.	2000
general cropping	86	83	81	.	241	204	173	.	2300	4400
TOTAL	89	219	241	.	217	408	363	.	2700	4200

Table A.10 (continued)

	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
Campania										
cereals	.	39	39	.	.	36	36	.	.	1500
general cropping	72	48	44	57	0	5	3	8	35000	36300
horticulture	128	93	.	87			.		1900	1900
vineyards	45	72	.	86		15	.	23	1200	2600
permanent crops	103	73	72	74	5	19	16	25	12700	13400
dairying	63	.	.	.	1	.	.	.	1600	.
drystock	69	59	53	.		1	1	.	1100	2000
mixed	67	47	44	68	1	7	3	30	12300	23100
TOTAL	79	55	49	66	2	8	6	13	56800	69200
Calabria										
general cropping	67	48	37	95	132	81	81	91	12700	8300
vineyards	91	.	.	.	59	.	.	.	1600	.
permanent crops	87	73	71	82	404	458	502	292	24100	16500
drystock	110	71	.	.	75	86	.	.	1300	1000
mixed	51	42	40	50	146	101	86	162	9800	9600
TOTAL	77	62	56	81	260	230	249	168	43700	31500
Puglia										
cereals	60	125	20	148	966	1100	571	1233	3700	7200
general cropping	100	79	90	66	554	658	630	686	18100	19500
vineyards	93	119	119	119	166	57	37	214	12800	21200
permanent crops	63	80	123	48	625	1642	1613	1627	30000	23900
drystock	.	87	.	89	.	156	.	142	.	1800
mixed	79	69	67	71	460	520	605	438	10300	10600
TOTAL	86	82	76	88	476	984	631	1336	68100	54300
Basilicata										
cereals	88	76	68	.	1138	721	688	.	3500	4000
general cropping	74	70	67	.	221	180	151	.	3600	3800
permanent crops	71	76	75	.	183	104	104	.	1600	1000
drystock	.	56	56	.	.	55	55	.	.	1800
mixed	85	61	57	101	337	166	151	324	1300	6800
TOTAL	68	68	64	120	386	252	223	610	9000	15400

Table A.10 (continued)

	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
Sicilia										
cereals	.	57	51	.	.	888	759	.	.	1900
general cropping	113	45	44	.	562	118	119	.	11500	12800
horticulture	.	85	85	.	.	35	35	.	.	1800
vineyards	96	91	77	161	136	94	111	18	9000	8200
permanent crops	93	78	66	151	38	126	147		16000	18900
drystock	.	93	93	.	.	175	175	.	.	2000
mixed	107	42	42	.	586	134	134	.	9100	10000
TOTAL	83	63	57	153	207	122	125	80	38700	46800
Sardegna										
general cropping	145	88	146	54	633	359	466	298	5500	3500
vineyards	.	84	88	83	.	579	16	805	.	2700
permanent crops	.	133	.	.	.	305	.	.	.	1200
drystock	110	117	148	104	140	285	276	286	4500	8300
mixed	98	98	150	82	611	340	324	343	3200	4800
TOTAL	120	111	133	99	398	1717	243	2452	12900	16700
UNITED KINGDOM	(11700)	(700)		(700)	(1700)	(8100)		(8100)	110200	35200
North										
cereals	153	.	.	.	73	.	.	.	2300	.
general cropping	177	.	.	.	80	.	.	.	4300	.
dairying	101	55	.	55	75	200	.	200	6000	1500
drystock	33	5	.	5	183	567	.	567	2800	4300
mixed	142	.	.	.	131	.	.	.	3000	.
TOTAL	124	20	.	20	99	454	.	454	19600	6000

Table A.10 (continued)

	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
East										
cereals	206	.	.	.	76	.	.	.	8600	.
general cropping	156	.	.	.	101	.	.	.	10500	.
horticulture	181	.	.	.	156	.	.	.	2400	.
permanent crops	-78	.	.	.	149	.	.	.	1000	.
dairying	66	.	.	.	26	.	.	.	3500	.
drystock	3	.	.	.	130	.	.	.	3100	.
mixed	103	.	.	.	142	.	.	.	5100	.
TOTAL	139	.	.	.	96	.	.	.	33900	.
West										
cereals	129	.	.	.	98	.	.	.	2300	.
general cropping	117	.	.	.	69	.	.	.	2500	.
dairying	114	58	.	58	50	58	.	58	11100	1300
drystock	32	-7	.	-7	142	469	.	469	4800	3700
mixed	94	.	.	.	110	.	.	.	5300	.
TOTAL	96	13	.	13	79	368	.	368	27200	5000
Wales										
dairying	92	.	.	.	58	.	.	.	4900	.
drystock	35	-5	.	-5	178	665	.	665	3900	5100
TOTAL	67	6	.	6	112	583	.	583	9600	6000
Scotland										
cereals	-1	.	.	.	43	.	.	.	1700	.
general cropping	-2	.	.	.	175	.	.	.	2700	.
dairying	52	64	.	64	52	161	.	161	1100	1300
drystock	.	-29	.	-29	.	637	.	637	.	6600
mixed	14	-43	.	-43	110	453	.	453	2100	1100
TOTAL	11	-15	.	-15	114	509	.	509	8200	9300
Northern Ireland										
dairying	116	68	.	68	130	318	.	318	4000	2300
drystock	25	-2	.	-2	130	525	.	525	5600	5900
mixed	52	.	.	.	153	.	.	.	1300	.
TOTAL	68	22	.	22	132	448	.	448	11800	9000

Table A.10 (continued)

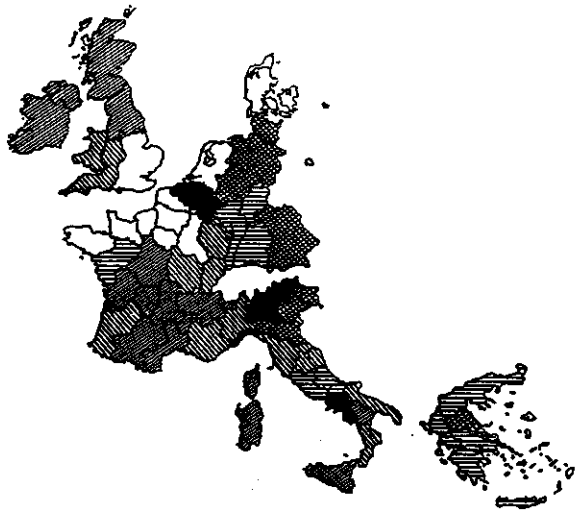
	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
GREECE	(5100)	(3900)	(3700)	(4100)	(300)	(400)	(500)	(400)	218100	283600
Makedonia Thraki										
cereals	123	79	63	84	43	180	270	153	8900	12100
general cropping	99	74	79	73	25	46	57	44	35900	64700
horticulture	111	.	.	.	24	.	.	.	1500	.
vineyards	.	131	.	.	.	20	.	.	.	1000
permanent crops	120	76	90	68	17	34	68	17	10300	7900
dairying	.	82	.	87	.	132	.	118	.	1300
drystock	67	76	66	82	136	243	266	228	1500	7100
mixed	103	78	77	79	38	128	186	111	10300	16500
TOTAL	103	76	77	75	30	81	118	71	62300	103600
Ipeiros, Peloponnissos, Nissi Ioniou										
general cropping	95	71	65	73	106	108	137	96	18400	11400
horticulture	113	.	.	.	107	.	.	.	2800	.
vineyards	101	98	77	107	120	103	81	112	2800	5800
permanent crops	99	76	52	83	155	180	161	185	32100	24900
drystock	67	61	54	70	102	163	179	144	1900	14400
mixed	83	65	61	66	127	116	135	107	11700	15200
TOTAL	95	71	57	77	129	147	157	142	61700	64100
Thessalia										
cereals	133	.	.	.	180	.	.	.	2900	.
general cropping	104	79	61	81	46	26	65	22	30700	8600
permanent crops	153	76	73	.	52	70	69	.	2000	6700
drystock	86	63	75	51	72	193	226	162	2000	6500
mixed	111	66	71	59	45	157	202	107	8500	4400
TOTAL	107	72	70	73	53	106	155	70	39900	26400

Table A.10 (continued)

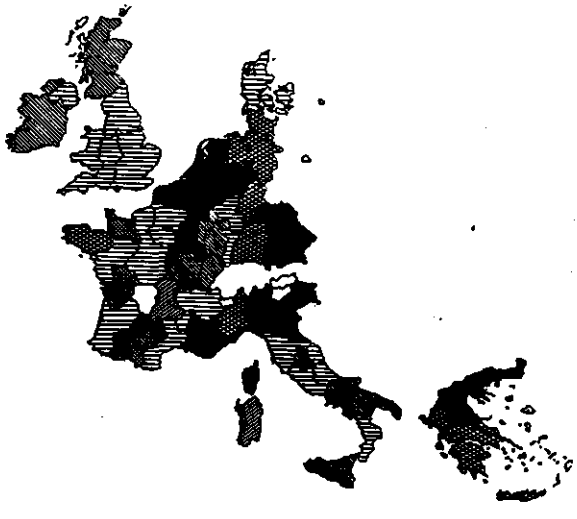
	Indicator FFI(excl. subsidy) / FWU (country total normal=100)				Indicator subsidy (country total normal=100)				Number of farms represented	
	normal	LFA	mountain	other LFA	normal	LFA	mountain	other LFA	normal	LFA
Sterea Ellas Nissi Egaeou Kriti										
cereals	97	.	.	.	142	.	.	.	1600	.
general cropping	94	82	75	86	207	114	93	126	28900	27000
horticulture	155	129	.	128	230	151	.	174	2900	3100
vineyards	102	88	90	79	201	187	199	149	4500	8100
permanent crops	114	79	73	89	183	251	248	254	7900	29300
drystock	90	82	90	78	46	196	230	174	3600	10500
mixed	79	76	69	79	285	152	153	152	15100	23100
TOTAL	99	84	80	88	176	181	193	172	54100	89400

Between brackets: in ECU.
Source: Own calculations based on FADN.

Farms in Less Favoured Areas



Farms in Normal areas



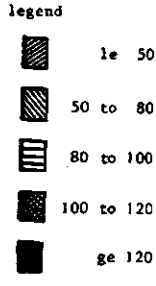


Figure A.4 Index of GVA per hectare (MARGIN) for Less Favoured and normal areas, (main area = 100)
Source: Own computations based on FADN

Farms in Less Favoured Areas

Farms in Normal areas

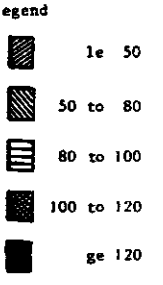
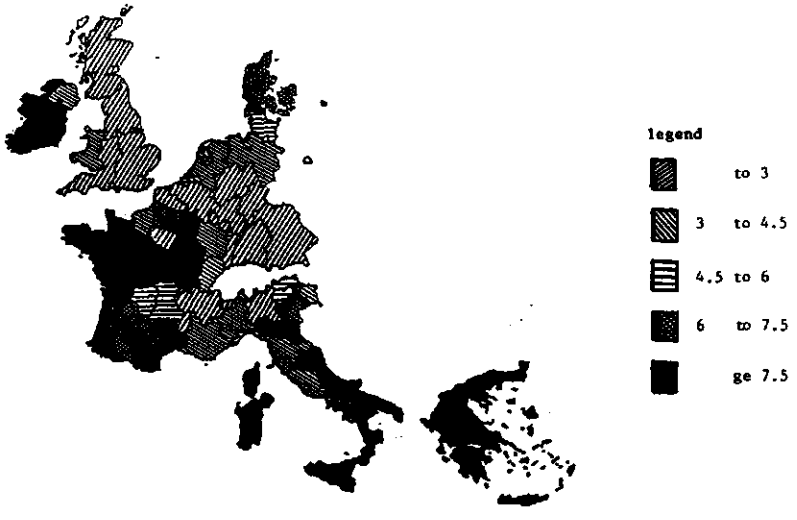


Figure A.5 Index of farming type structure (STRUCT) for Less Favoured and normal areas (main area = 100)
Source: Own computations based on FADN

SHARE OF AGRICULTURE IN TOTAL GVA (%)



INDEX OF REGIONAL GVA PER WORKER EXCL. AGRICULTURE
(MAIN AREA = 100)

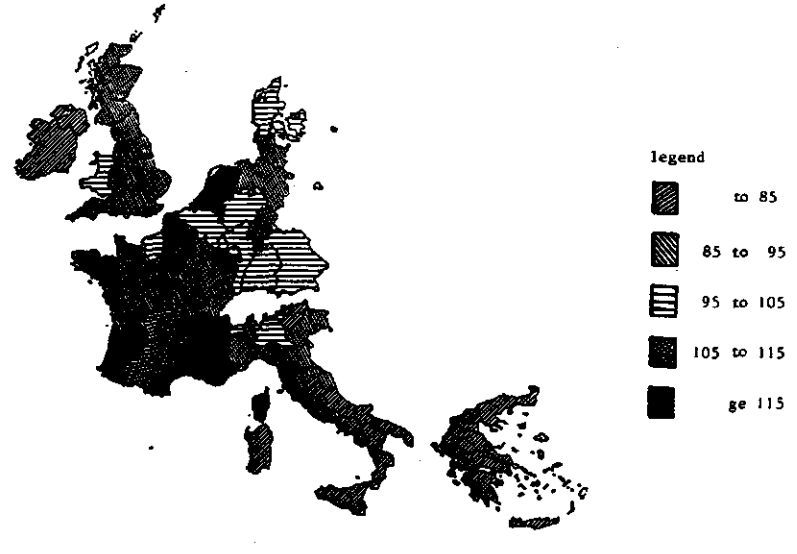


Figure A.6 Share of agriculture in total GVA (in %) and index of regional GVA per worker excl. agriculture (main area = 100) per region
Source: Own computations based on FADN

Table A.11.a Intensity of EAGGF-Guarantee support and production of EC-10 (1985)

	Cereals	Durum	S.beets	Oil s.	Prot.c.	Fr,veg.	Wine
Agr.area (or LU) repres. by FADN (in % of FSS)	88	74	93	88	100	75	78
Production (million ECU)	22,778	1,481	3,635	2,202	865	9,987	7,493
EAGGF, total (million ECU)	2,068	242	1,805	1,111	373	1,105	921
EAGGF/Production (%)	8.0	12.1	46.2	44.4	43.0	8.3	9.6

Table A.11.a (continued)

	Olives	Tobac.	Citrus	Milk	Beef	Sheep isl.	Sheep cont.	Pigs
Agr.area (or LU) repres. by FADN (in % of FSS)	73	100	71	96	94	76	92	85
Production (million ECU)	1,697	1,496	809	30,643	18,277	1,103	1,117	13,935
EAGGF, total (million ECU)	692	863	126	5,933	2,746	422	81	165
EAGGF/Production (%)	29.8	57.7	11.0	18.6	14.1	29.1	6.6	1.0

Table A.11.b Production patterns by main geographical areas of EC-10 (1985)

		Cereals	Durum	S.beets	Oil s.	Prot.c.	Fr,veg.	Wine
North-west	normal	6,805	1	1,331	621	364	2,863	1
	LFA	176	0	4	4	1	1	0
Centre	normal	5,962	1	1,270	594	351	2,838	1
	LFA	40	0	1	1	0	0	0
Periphery	normal	843	0	61	27	14	25	0
	LFA	137	0	3	4	1	0	0
Central	normal	8,860	109	1,556	1,019	261	1,171	2,021
	LFA	1,128	6	30	153	10	99	66
North	normal	5,992	104	1,142	613	228	613	806
	LFA	448	4	13	77	4	87	26
South	normal	2,868	5	414	406	33	558	1,215
	LFA	680	2	17	76	7	11	40
South	normal	3,819	822	519	238	157	4,002	4,057
	LFA	2,299	977	214	194	94	1,851	1,428
Centre	normal	3,182	289	383	206	118	2,556	3,167
	LFA	1,649	182	108	166	43	995	820
Periphery	normal	637	534	136	32	39	1,446	890
	LFA	650	794	106	28	51	856	608
EC-10	normal	19,183	838	3,393	1,867	773	7,968	6,024
	LFA	3,596	643	242	335	92	2,020	1,469
	Total	22,778	1,481	3,635	2,202	865	9,987	7,493

Table A.II.b (continued)

		Olives	Tobac.	Citrus	Milk	Beef	Sheep isl.	Sheep cont.	Pigs
North-west	normal	0	8	0	11,238	5,277	580	25	6,400
	LFA	0	0	0	1,132	1,398	523	1	53
Centre	normal	0	8	0	9,283	3,698	386	25	6,081
	LFA	0	0	0	368	440	190	1	10
Periphery	normal	0	0	0	1,955	1,579	194	0	320
	LFA	0	0	0	764	959	333	0	43
Central	normal	0	91	0	9,633	5,365	0	164	5,137
	LFA	0	5	0	3,050	1,810	0	71	813
North	normal	0	10	0	4,652	2,354	0	49	2,891
	LFA	0	2	0	835	717	0	37	363
South	normal	0	82	0	4,981	3,011	0	115	2,246
	LFA	0	3	0	2,214	1,093	0	35	450
South	normal	817	670	533	3,564	2,265	0	227	1,114
	LFA	946	667	344	2,524	2,479	0	687	981
Centre	normal	77	97	4	3,301	2,004	0	85	1,063
	LFA	104	101	1	2,070	1,927	0	358	522
Periphery	normal	740	574	529	263	261	0	142	52
	LFA	842	566	343	454	552	0	329	459
EC-10	normal	825	781	514	23,884	12,683	580	418	12,468
	LFA	871	715	295	6,759	5,595	523	698	1,467
	Total	1,697	1,496	809	30,643	18,277	1,103	1,117	13,935

Table A.11.c EAGGF-Guarantee support on basis of production patterns from FADN for the EC-10 (1985)

	Cereals	Durum	S.beets	Oil s.	Prot.c.	Fr,veg.	Wine
EAGGF (million ECU):normal	1,532	101	1,566	829	333	661	578
LFA	287	78	112	149	40	168	141
total	1,820	179	1,678	977	373	829	719
EAGGF of LFA in % of total	16	43	7	15	11	20	20
EAGGF/ha (ECU)	25	2	23	13	5	11	10
EAGGF/farm (ECU)	590	58	544	317	121	269	233

Table A.11.c (continued)

	Olives	Tobac.	Citrus	Milk	Beef	Sheep isl.	Sheep cont.	Pigs
EAGGF (million ECU):normal	246	450	57	4,440	1,791	169	28	126
LFA	260	413	32	1,256	790	152	46	15
total	505	863	89	5,696	2,581	321	74	141
EAGGF of LFA in % of total	51	48	36	22	31	47	63	11
EAGGF/ha (ECU)	7	12	1	78	35	4	1	2
EAGGF/farm (ECU)	164	280	29	1,847	837	104	24	46

Source: Own calculations based on FSS 85, COM (86) 631 final: EAGGF-Report 1985 and FADN.

Glossary

Abbreviations	Description
Data source:	
FADN	Farm Accountancy Data Networksystem
FSS	Farm Structure 1985 Survey
Variables:	
FFI	Family farm income
FNVA	Farm Net Value Added
FWU	Family Work Unit
AWU	Annual Work Unit
INH	Inhabitant
UAA	Utilized Agricultural Area
LU	Livestock Units
Subsidies	Subsidies on products and costs + investment grants and subsidies
GVA	Gross Value Added
GDP	Gross Domestic Product