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**POLICY DEPARTMENT**  
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**COMPARISON OF  
FARMERS' INCOMES  
IN THE EU  
MEMBER STATES**

**STUDY**







DIRECTORATE-GENERAL FOR INTERNAL POLICIES  
POLICY DEPARTMENT B: STRUCTURAL AND COHESION POLICIES

AGRICULTURE AND RURAL DEVELOPMENT

# COMPARISON OF FARMERS' INCOMES IN THE EU MEMBER STATES

STUDY

This document was requested by the European Parliament's Committee on Agriculture and Rural Development.

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POLICY DEPARTMENT B: STRUCTURAL AND COHESION POLICIES  
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# COMPARISON OF FARMERS' INCOMES IN THE EU MEMBER STATES

## STUDY

### Abstract

With the main stated objectives of the CAP in mind, relevant comparisons that involve the incomes of farmers are made. EU official data sources are used to describe income differences between holdings of different sizes and types and between Member States. Comparisons between the incomes of farmer household and other groups in society have to rely on ad hoc information. Recommendations relate to the support of small farms, actions to mitigate instability and to fill the important gap in farm household income information.



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## LIST OF ABBREVIATIONS

ARMS	Agricultural Resource Management Survey
AWU	Agricultural work unit
CAP	Common Agricultural Policy
CMO	Common market organisation
DG AGRI	Directorate-General for Agriculture and Rural Development
EAA	Economic Accounts for Agriculture
ECA	European Court of Auditors
ECU	European Currency Unit
ERS	Economic Research Service (of the United States Department of Agriculture)
ESA	European System of Accounts
EU	European Union
EU-15	Grouping of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the UK.
EU-27	Grouping of the EU-15, EU-N10 and EU-N2
EU-28	Grouping of the EU-15, EU-N10, EU-N2 and Croatia
EU-N2	Grouping of Bulgaria and Romania
EU-N10	Grouping of Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia
EU-SILC	European Union Statistics on Income and Living Conditions
FADN	Farm Accountancy Data Network
FAO	Food and Agriculture Organisation of the United Nations

FFI	Farm Family Income
FNVA	Farm Net Value Added
FSS	Farm Structural Survey
FWU	Family Work Unit
GATT	General Agreement on Tariffs and Trade
IAHS	Income of the Agricultural Households Sector
JRC	Joint Research Centre (of the European Commission)
LFA	Less Favoured Area
LKAU	Local Kind of Activity Unit
NVA	Net Value Added
OECD	Organisation for Economic Co-operation and Development
OGA	Other Gainful Activity
SFS	Small Farmers Scheme
SNA	System of National Accounts
SO	Standard Output
TFEU	Treaty on the Functioning of the European Union
UN	United Nations
UK	United Kingdom
US(A)	United States (of America)

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## EXECUTIVE SUMMARY

### Introduction

The purpose of this study for the European Parliament, as set out in the Terms of Reference, is to:

- Provide an overview of the income developments of EU agriculture.
- Examine the different dynamics of farming incomes (changes, amplitudes of movements, stability) and their main drivers.
- Analyse the disparities across Member States and aggregates.
- Provide recommendations in order to adjust the CAP income support and national policies to counteract current trends.

This purpose has to be achieved within the context of what the Terms of Reference describe as the central aim of the Common Agricultural Policy 'to ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture'.

The Terms of Reference also make it clear that data sources and methodologies for making the comparative analysis are the responsibility of the authors of the briefing note. With that in mind, the chosen starting point is a review of the incomes of agricultural households and in particular the incomes they receive from independent activity in agriculture (their self-employment income from farming).

The profit from running a business (which may be called entrepreneurial income) has a number of economic functions which make it a very important concept in the context of farmers and agriculture. In particular, it represents both funds generated within the farm that can be used for consumption, investment and saving and the rewards to the resources owned by the farmer (including the unpaid labour on the farm).

Profits from agriculture in developed countries such as those of the EU generally suffer from a long-term downward pressure that help explain structural change and from shorter-term instability. Furthermore, there are geographical and circumstantial differences between groups within agriculture.

There are two alternative approaches to measuring entrepreneurial incomes in agriculture: aggregate accounting as used by the Economic Accounts for Agriculture (EAA) drawn up by Eurostat and microeconomic accounting as used by the EU's Farm Accountancy Data Network (FADN). Both have important limitations, and there are also methodological differences between them that have relevance for their use in the context of this brief.

However, profit from agriculture is only part of the income picture for many farm households and a focus on their returns from agriculture will therefore present only a partial picture of the farm household's income, which is a main determinant of the farmer's standard of living.

### Data sources and methodological explanations

Literature has been drawn on to establish the main types of comparison relevant to this study. This has been followed by an in-depth analysis of the statistical systems that generate income data in the EU, and a detailed and independent analysis of what the data show (presented in Chapters 3 to 5).

For statistics on the incomes of agricultural households key definitions for use in the monitoring and guidance of agricultural policy have been worked out by Eurostat and at international level by the FAO. The most appropriate indicator is considered to be the net disposable income of households (covering income from farming and other gainful activities, from property, pensions and other transfers, and after the deduction of personal taxes and other non-optional payments). Possible data sources to furnish these statistics are considered; these vary between Member States.

For income that arises from agricultural activity indicators based on the Economic Accounts for Agriculture are calculated by Eurostat, but these are only available at the national level. However, the Farm Accountancy Data Network (FADN) calculates indicators at the level of the farm business and these can be used to illustrate detailed patterns in the agricultural industry.

Two FADN indicators are appropriate in the present context. Farm Net Value Added (FNVA) represents the rewards to all the fixed factors used in the farm business, irrespective of their ownership. Farm Family Income (FFI) is after the further deduction of the costs of hired labour, interest paid and rent paid and is the return to the farmer for the use of his own labour, own land and own capital; it represents the amount generated by the farm business that is available for consumption, investment and saving.

FFI expressed per business or per work unit of family (unpaid) labour (FFI/FWU) is the preferred income concept for this analysis because it corresponds most closely to the concept of the profit from farming that is available to support the living standards of farmers. Because incomes are subject to much short-term instability, where possible, averages are taken across three adjacent years; the main study period is 2010-2012.

## Overview of the income development of EU agriculture

There is currently no working statistical system at EU level for agricultural household incomes. Structural statistics for EU agriculture make it clear that many farmers (at least a third, and more if other members of their household are included) also have other gainful activities. National results where available show that other incomes not only raise the household income levels of farm families, but also add to its stability.

Furthermore, the evidence points to farmers NOT being a particularly low-income sector of society in most Member States judged on the basis of their household disposable incomes. This is of obvious importance to the CAP's aim to ensure a fair standard of living of the agricultural community.

In terms of incomes from agricultural activity, the focus of this report, it is clear that the income indicators at aggregate level (Eurostat) and farm level (FADN), where they share similar concepts, tend to move in similar fashion. The two FADN indicators (FNVA/AWU and FFI/FWU) are also closely aligned in their directions of change over time.

Among the various groups of Member States in common usage, in absolute terms FFI/FWU is highest in the EU-15, then the EU-N10 and lowest in the EU-N2. FFI/FWU increased over the 2004 to 2012 period with a substantial decline between 2007 and 2009 in all groupings with the exception of EU-N2.

For the EU-27, a strong relationship exists between the economic size of farm business and the average levels of income generated. This applies not only to FFI per farm (as might be expected) but, more importantly, income per unit of family labour (FFI/FWU). Care has to be exercised in interpreting results for small farms because only some Member States are represented because of the application of different thresholds for inclusion in FADN; only for size classes with Standard Output of €25,000 and over are all countries represented.



That said, in each farming type the smallest farms have the lowest incomes, and absolute incomes per FWU increase with farm size.

Incomes differ between the various types of farming, granivores having the highest incomes, and mixed farms the lowest. Granivores also tend to dominate in the largest size groups.

This relationship between farm size and income levels permeates other differences, such as between farms of different legal status and age of farmer, with the observed patterns largely explainable by differences in farm size.

Incomes of farms in Less Favoured Areas were lower than those in non-Less Favoured Areas, even after including the special payments that the former receive.

It is clear that the variability of income over time in FADN results at the group level is much greater in the smallest size class of farms, though it should be recalled that this omits data from many Member States because of the differing size thresholds applied. Beyond that, variation increases with farm size.

'Granivore' and 'Fieldcrop' farms have the greatest volatility of income. The most stable incomes are found in the 'Horticulture' and 'Other permanent crops' sectors.

When income volatility is measured at the level of the individual farm 55% of large farms and 38% of small farms experienced income volatility of  $\pm 30\%$  from the previous three year average.

The distribution of income at the farm level is very unequal; 20% of the labour force generates 78% of the FFI. Furthermore, incomes averaged over three years 2010-2012 were negative for large parts of the farm labour force, suggesting that additional factors, such as income from other gainful activities, is important in explaining the ability of such farms to survive.

For the dependent (paid) section of the labour force, agricultural worker income (wages) increased steadily (in nominal terms) over the 2004-12 period with only the EU-N2 group experiencing a decline in 2008 and the EU-N10 one in 2009. The pay of agricultural workers in the EU-N10 converged with that in the EU-15 over the period, but pay in the EU-N2 did not. Agricultural wages per hour differ across farming type, being highest in the wine sector and lowest in 'Other grazing livestock' and 'Fieldcrops' farm types.

## The dynamics of farm incomes and the key drivers

For agricultural households with income from other gainful activities, earnings from property and/or pensions and transfers, the drivers of this non-farm income are largely those that shape the general economy. Some 12% of EU-27 farms also draw income from on-farm diversified activities, and these increase with farm scale; this income is also driven by general economic factors, although some will be related to the agricultural economy.

The most important component of agricultural revenue is returns from the market which account for 86% of FADN Total Output for the EU-27.

Market returns are driven by quantity of output and price. Yields have been relatively stable, but prices, especially for crops, have fluctuated considerably over the 2005 to 2012 period.

Subsidies make up the balance of Total Output; there is no suggestion that changes in subsidies have played a major role in the evolution of income.

The most important cost element is total intermediate consumption which accounts for two-thirds of total expenses for the EU-27. Depreciation accounts for 15% of total costs, wages paid 9%, rent 5% and interest payments 3%.

Total intermediate consumption is made up of total specific costs (crop and livestock) and overheads (machinery and building costs, energy, contract work and direct inputs). These elements of intermediate consumption have all increased between 2004 and 2012, but specific crop costs have increased the least. Within specific crop costs, fertiliser cost is the most volatile element. Within overheads, energy costs have been the most volatile and showed the sharpest absolute increase.

Although the use of paid labour has declined, wages paid per farm increased steadily between 2007 and 2012.

The importance of these income components differs by farm type. Subsidies account for a quarter of the value of total output in 'Other grazing livestock' farms, but less than 5% in the horticulture, granivore and wine sectors. There is less difference in the relative importance of costs by farm type, although paid wages are more important in the horticulture and wine sectors.

Analysis by farm size shows that the relative importance of subsidies decreases as farm size increases.

## Differences between Member States

A Common Agricultural Policy does not appear to result in a common absolute level of income for the average farm in different Member States. Belgium, Denmark, Germany, France, Luxembourg, the Netherlands and the UK stand out as having high farm incomes. Amongst the EU-N10 Member States, only in the Czech Republic, Estonia and Hungary do farm income indicators exceed or come close to the EU-27 average.

The main reason for this is the economic size of farms; the mix of farm types also plays a role. However, when farms of the same size and type are compared, performance is often equivalent throughout the EU-28 and sometimes higher in the EU-N10 and EU-N2 than it is in the EU-15.

The influence of farm structure is also important at the regional level with farm incomes varying widely within Member States. This regional variation is especially noticeable in France and Germany.

In terms of the growth in farm incomes between figures averaged for the 2004-06 and 2010-12 periods, EU-N10 Member States have outperformed EU-15 Member States as a result of higher market prices, access to the single market and increased public support. The increase in farm income per unit of labour in these Member States also reflects decreases in total labour use. Despite these increases, farm income in the EU-N10 and especially the EU-N2 lags behind that in the EU-15.

Within this overall trend, farm incomes are highly variable from year to year, but farm incomes in different Member States move in different directions and by different magnitudes, partly the result of structural difference in farm type.

Some Member States have higher levels of income variation than others. Again this is partly structural with income in the granivore and fieldcrop sectors relatively unstable while income in horticulture and permanent crops is relatively stable. The relatively low variability in farm income seen in Greece, Spain and Italy reflects the substantial proportion of other permanent crop farm types in these Member States.

There is a tendency for EU-N12 Member States to have higher coefficients of variation than EU-15 Member States, but this is partly the result of the general upward trend in farm incomes that these Member States have experienced.

Farm income levels differ between Member States within farm type, although this is partly the result of the structure of farms within FADN. A key factor in differences between Member States by farm type is actually farm size within the FADN sample.

As economic size increases, it becomes more common for farms from the EU-N10 to show higher FFI/FWU than farms in the EU-15. For the largest size group, only farms in Italy and the UK from the EU-15 have farm income higher than the EU-27 average.

Agricultural wages differ markedly between Member States. In Denmark, the Netherlands and Sweden wage levels average more than €15 per hour while in Bulgaria, Greece, Latvia, Lithuania, Poland and Romania the average is €3 or less.

Agricultural wages vary little within Member States, although there are some exceptions with wages higher in Champagne than in the rest of France and higher in the east of Germany where the wages of company farm managers and administrators are included in the figures.

## Recommendations for future income support under the CAP

Based on our analysis the recommendations to the European Parliament are that:

- Further consideration is given to the re-establishment of EU statistics on the incomes of agricultural households, since they are needed to assess the extent to which the CAP is achieving this core objective of a fair standard of living.
- Data sources that relate to the entire economic activities of the households (and other institutional units) that operate farms should be encouraged.
- A study be undertaken to assess the relative attributes of a safety net for the incomes of farm households for the EU, including its costs, and the necessary technical conditions that would be required for it to operate successfully.
- When considering the need for support of incomes, the wealth of agricultural holdings should be taken into account.
- Suitable caveats should be used when FADN data are reported to make clear the impact of the field of observation on the results.
- Consideration should be given to the need to represent people (the operators of farm holdings) rather than production. A suitable balance needs to be struck between the current production/land use focus of FADN and the social impact of the CAP.
- Attention should be diverted away from interventions that attempt to combat instability directly at the farm level and towards risk management schemes that prepare farm operators to better anticipate and cope with instability. This could involve further studies.
- Consideration should be given as to how the occupiers of small farms can enhance their economic prospects by building their skills and other forms of human capital.
- We recommend that policies that increase market participation and ease the adjustment of farm businesses and households should be further supported and that current impediments to access be examined.



## 1. INTRODUCTION

The purpose of this detailed briefing note for the European Parliament, as set out in the Terms of Reference, is to:

- Provide an overview of the income developments of EU agriculture.
- Examine the different dynamics of farming incomes (changes, amplitudes of movements, stability) and their main drivers.
- Analyse the disparities across Member States and aggregates.
- Provide recommendations in order to adjust the CAP income support and national policies to counteract current trends.

This purpose has to be achieved within the context of what the Terms of Reference describe as the central aim of the Common Agricultural Policy 'to ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture'.

The Terms of Reference also make it clear that data sources and methodologies for making the comparative analysis are the responsibility of the authors of the briefing note.

### KEY FINDINGS

- Entrepreneurial income (less formally called 'business profit') has a number of economic functions which make it a very important concept in the context of farmers and agriculture.
- Profits from agriculture are generally suffering from long-term downward pressure and shorter-term instability and there are geographical and circumstantial differences between groups within agriculture.
- However, profit from agriculture is only part of the income picture for many farm households and a focus on returns from agriculture will therefore present only a partial picture of farm household income.
- There are two possible approaches to measuring entrepreneurial incomes in agriculture: aggregate accounting as used by the Economic Accounts for Agriculture (EAA), drawn up by Eurostat, and microeconomic accounting as used by the EU's Farm Accountancy Data Network (FADN). Both have important methodological limitations and there are also methodological differences between them that have relevance for their use. Neither at present is capable of describing the overall income situations of the households that operate farms, which represents a major gap in the information needed to assess the performance of the CAP in relation to its stated objectives.

The evidence on 'Comparison of Farmers' Incomes in the EU Member States' and its accompanying analysis presented in this Report needs to be put in context. This section does so by presenting the functions of income (for farmers the essential component of which is profits from their agricultural activity), the characteristics of incomes in agriculture, the approaches taken to incomes within accounting systems, and the

relationship between policy aims and measurements of income. Further contextual information is provided in Hill (2012), FAO (2011) and UN (2008).

### 1.1. The economic function of profit from farming

The large majority of EU farms are arranged as independent units (businesses operated by households or corporations) and thus farmers receive their rewards from agriculture in the form of entrepreneurial income, or less formally, business profit. For household firms entrepreneurial income is a hybrid, in the sense that it is a mix of rewards for the unpaid labour provided by the family, for using its own land and capital, and for the risk-taking and management function. Ways in which this income is defined and measured will be considered later, but at the outset it is worth noting why there is interest for purposes related to the CAP in observing changes and differences in entrepreneurial incomes (various forms of comparisons over time and place and circumstance).

In the EU's modern competitive market economy profit performs important economic functions as shown in the Box below.

#### Box 1: The economic functions of profit

- Profit is the reward from production, and is the residual remaining to the operators of businesses (including farms) once the costs of inputs, wages paid to hired labour, rent paid to landowners, interest paid on loans and an estimate of depreciation have been deducted from the value of sales and other forms of revenue. Profit reflects the risks that the farmer is taking and the use of his/her own factors of production including labour.
- Profits signal to producers where expansion or contraction of production should take place as they reflect changes in market prices (driven by changes in demand) and costs.
- Profits enable the most efficient firms to expand.
- Profits provide the incentive for innovation.
- Profits are therefore key to explaining structural change, although it should be noted that income from non-agricultural activities is also a factor here.

In addition to its economic functions, the business structure of EU agriculture, with the numerical dominance of the small family farms<sup>2</sup>, means that profits from farming form an important component of the personal incomes of most farmers' households, though they often also have other income sources (see below).

### 1.2. Characteristics of incomes in agriculture

The literature shows that agriculture is characterised by a number of features that have to be understood if income comparisons over time and place and circumstance are to be understood.

- The long-term downward pressure on incomes (comparison over time). Historical evidence shows that agriculture in economically developed countries is caught in a cost-price squeeze. On the one hand, the prices that farmers receive for their output is in long-run decline because the supply of farm products has

<sup>2</sup> According to the 2010 Farm Structure Survey there were 12 million farms in the EU-28, 97% of which were single holder operations.

expanded faster than the demand for them. Technological advances in production processes (new varieties of crops, improved livestock, more and better machinery and fertilisers, etc.), which it is in the interest of the individual farmer to adopt, have led to greater volumes of production, whereas in contrast factors that affect demand (such as the size of the market and willingness of people to spend more on food) have changed much less. The outcome has been a fall in the real value of the net margin between costs and revenues remaining to the sector as a whole, and thus a fall in the relative position of average rewards to productive resources (in particular labour) in agriculture compared with those available in the rest of the economy. This in turn has led to structural change (such as the migration of labour out of agriculture, the reduction in numbers of smaller farms and the absorption of their land by larger ones). This downward pressure on incomes in agriculture is a result of the basic economics of supply and demand and shows the competitive market economy performing its normal role in bringing about change.

- Shorter-term income instability (comparisons over time). Superimposed on the long-term trend are shorter-term movements in income which, mostly, reflect the market doing its job in better matching shorter-term supply and demand. There are medium-term diversions from the long-term trend, resulting, for example, from natural disasters or political events that interrupt supply or demand. There will be inter-seasonal variations caused by good or poor growing conditions that lead to temporary over or under-supply. There are also regular seasonal price variations and random market ones. Thus farmers face an inherently unstable income situation. Farmers are expected to manage most of these risk factors as part of their normal operation.
- The heterogeneous nature of agriculture (comparisons over space and circumstance). Farms differ greatly in terms of the types of production taking place on them (their farming type), their size (measured in terms of land area or economic size), the diversity of natural conditions they face (climate, soil, slope, altitude, etc.), labour force (numbers of workers and composition), and region. Even within one type/size/region group there will be differences in income brought about by differences in management ability, the age profile and experiences of farmers, etc. It is worth noting that the Commission has drawn a distinction between income disparities, income dispersion, and income distribution (CEC, 1985b). Disparities refer to the differences in average incomes between groups (such as between Member States or types of farming); a specific type of disparity which is of significance to achieving the official aims of the CAP is the relative incomes of farmers and those of the rest of the EU population. Income dispersion refers to the deviations of the individual figures within a given group from the average for the group. Income distribution refers to the breakdown of farmers (and/or other units of labour) according to income classes. This in-depth analysis deals with all three, within the constraints of available data.

Observation of the documentation, discussion and practice of policy suggests that farmers and their households are caught up in income problems that are widespread and characterise the agriculture industry. These income problems are as follows:

- The particularly low incomes in certain regions or sizes of farm (the poverty issue). At the same time the occupiers of other farms may have high incomes, so that the heterogeneity of the income situation presents a problem in describing the (income) poverty issue in agriculture as a whole and in designing policy to address it.



- The variations of income experienced by the individual farm over time (the instability issue). Again this may vary between region, type and size of farm. However, it is readily shown that instability as measured by group averages greatly understates the degree of instability experienced at the level of the individual farm business (for a review of this evidence see Hill (2012), Chapter 4). An implication is that the measurement of income in a single year is unlikely to be a reliable indicator of the income of a farm over a run of years; empirical evidence suggests that an average over three years is preferable and this is the approach we take in this report where possible. While incomes from agricultural activity are inherently unstable, the presence of other income may dampen the impact on total farm household income; this appears to be usually the situation. This means that farm household income is usually more stable than agricultural income.
- The general levels of rewards of those engaged in farming compared with earnings in other sectors (the parity issue). This is often expressed in terms of the incomes of people working in agriculture compared with those in other groups in society or the national average. However, for self-employed farmers these incomes are a mix of rewards to labour, capital and land and the issue of parity includes the return to investments in land and capital assets as well as to labour. A major factor in explaining the apparently low reward to land is that its value is determined in a market, typically very small in relation to the total stock that is often dominated, on the demand side, by existing farmers trying to expand to reap the benefits of spreading fixed costs and technical advances that require larger-scale production. However, expanding farmers typically bid up land prices to levels that are determined by their margins over variable costs, not by total costs, and thus land appears very expensive in relation to average profits.
- Partly as a result of this last point, and because in market economies public support of farm incomes tends to be capitalised into higher land prices<sup>3</sup>, income problems are often seen among farm occupiers that are often also owners of substantial amounts of wealth. Wealth is even more unequally distributed than are incomes, and farmers who own land are likely to have a markedly different economic status from those who are tenants or where land rights are poorly defined. It is worth noting that the wealth of farm households is usually ignored when discussing the need for policy intervention to tackle income problems.

The first three of these points are the same trio of central components of 'the farm problem' that have been identified in the United States and summarised by Gardner (1992).

Parity and poverty are concerned essentially with the welfare of farmers and their dependants. Instability is somewhat different. A low farm income in a single year may not immediately throw the recipients into the poverty category. Reserves will be drawn on or borrowings made to maintain living standards through times of temporary financial setback. Thus in industrialised countries it is important to distinguish between those farm households that have to contend with occasional periods of low income and those that suffer hardship from incomes that are persistently low. However, when year-to-year fluctuations are anticipated, the level of consumption by farmers and their households may have to be curtailed in order to set aside reserves for years of low incomes or to pay for past borrowing in lean years. Farmers may have to be content with generating a safer but

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<sup>3</sup> See, for example, European Parliament (2013b); Swinnen, et al. (2008); and the Framework 7 project Factor Markets, Grant agreement N°: 245123-FP7-KBBE-2009-3 <http://www.factormarkets.eu/content/rural-land-market>



lower income, with consequences both for consumption possibilities and the potential for the business to grow.

A further characteristic of agriculture in the EU that must be borne in mind is the business structure of farms. As noted above, the large majority of EU farms, in terms of numbers, are arranged as unincorporated businesses that are operated by households (the relevance of this for income accounting is covered below). In EU structural statistics these are returned as farms operated by 'natural persons', in contrast with farms arranged as companies or similar forms which have their own legal status ('legal persons'). In practice this means that:

- On farms operated by households no clear distinction can be drawn between the business income and assets of the farm and the personal income and wealth of the farmer and his immediate household. This is of importance when assessing the sums that are available to support the living standards of the farm household.
- Because many farm households have additional sources beyond what they receive from farming, the income obtained from farming activity is not a reliable guide to the total or disposable income of the household, usually taken as an important determinant of potential consumption spending and thus of the standard of living of the household.
- Because in international accounting systems households are seen as being engaged in both consumption and (as in agriculture) production activities, great care has to be taken not to confuse and misuse indicators of one function for the other. As will be seen below, in reality indicators of the rewards from farm production have often been used as proxies for household disposable income, leading to important misunderstandings of the need for and effectiveness of spending under the CAP.

### 1.3. Accounting systems and agricultural incomes

Accounting systems allow for the possibility of basing the measurement of incomes on institutional units (e.g. family farms) or activities (e.g. agricultural production). Within this structure, each approach can be taken at the level of the aggregate (industry/sector) or of the individual unit (farm or household). Within the EU's statistical system aggregate accounting is represented by the Economic Accounts for Agriculture (EAA) (based in national accounts) which are drawn up by Eurostat for the EU and Member States. Microeconomic accounting, built up from individual units, is used to produce the EU's Farm Accountancy Data Network (EU-FADN) and household accounts, such as in the EU Statistics on Income and Living Conditions (EU-SILC). For historic reasons, accounting systems and income measurement in agriculture have been based on farming activities and not the more appropriate farm household unit (when measuring incomes that relate to the standards of living). This has resulted in misunderstandings and potentially inappropriate policies.

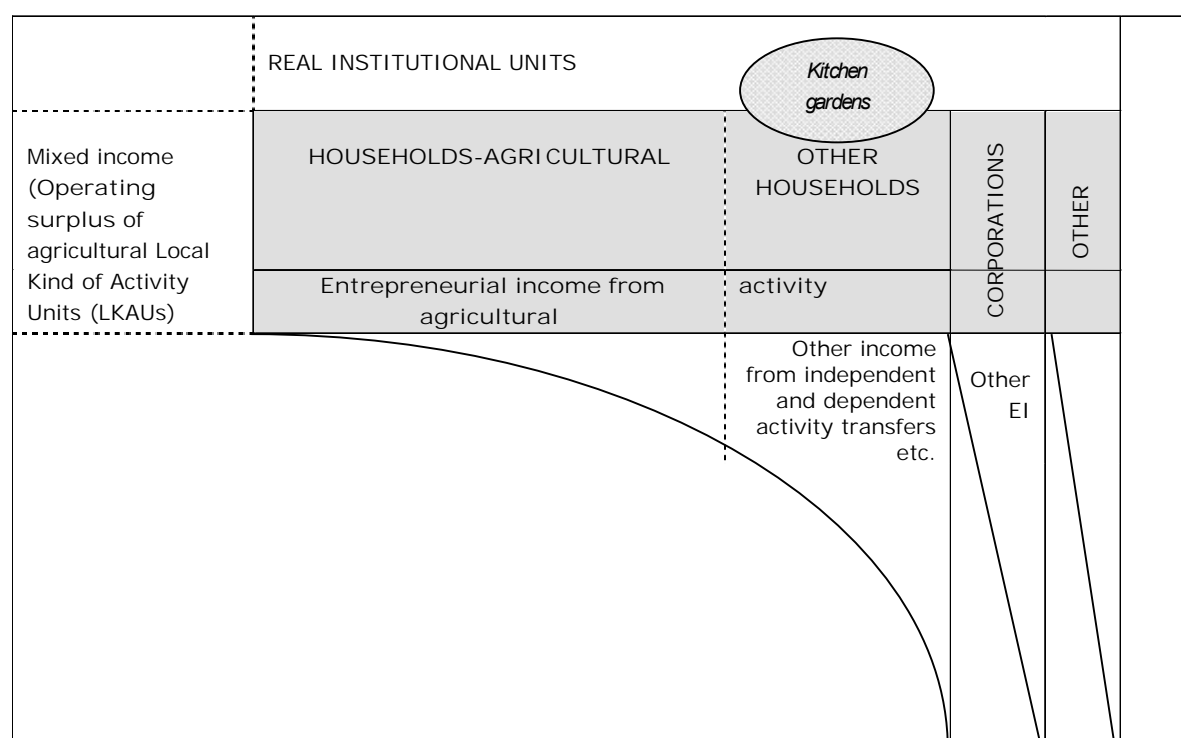
The UN's System of National Accounts (SNA) is probably the most universally accepted set of international accounting conventions and is the basis of the European System of Accounts (ESA). With roots going back some fifty years, the SNA has formed the basis of much of the economic statistics that already exist for agriculture in countries at all levels of economic development. The SNA, though aggregate in nature, also commonly acts as a benchmark for micro-economic accounting.

Two main approaches towards accounting for agriculture can be found within the SNA accounting framework:

- accounts for the activity of producing commodities (goods and services) deemed to be agricultural according to agreed international classification, together with their residual 'income' concepts;
- accounts for institutional units that engage in agricultural production; these form three main types:
  - households, in their role as units of production (household-firms), and for which agricultural activity is one (possibly the only) form of independent activity (self-employment) that the household members engage in. The household may also engage in dependent activity (its members work as employees) and may also receive resources in other ways (for example, from welfare transfers, property income, etc.). The independent agricultural activity may account for various shares of the total resources available to the household;
  - corporations, at least part of whose activity involves agricultural production; and,
  - other types (including government and Non-Profit Institutions).

Of course, as these are part of a single system, they relate to each other (see Hill, 2003). Figure 1 illustrates this relationship in an agricultural context. It shows that agricultural activity is divided between the various types of institutional units that are involved in entrepreneurial activity.

Figure 1: The relationship between agricultural activity and the institutional units that generate it<sup>4</sup>



Source: Hill (2003).

Activity accounts which cover the value of production of agricultural commodities and the associated costs can only, strictly, be taken to the level of Operating Surplus (value added minus the cost of paid labour). To go further to estimate Entrepreneurial Income by the further deduction of interest and rent payments means attributing these to specific activities. This requires assumptions about the extent to which the farm household is involved in other (non-agricultural) activities and how these payments should be allocated. For example, the extent to which any of the interest payment relate to non-farming activities or consumption goods. However, such assumptions are often made by the array of indicators commonly in use. Both aggregate income indicators developed by Eurostat from the EAA and microeconomic indicators within FADN make such assumptions.

The nature of what constitutes an agricultural household (or an agricultural corporation) is critical to the generation of statistics and can affect both the numbers of households and the income levels and compositions relating to them. The concept of a household (which may take a variety of forms) and the basis used to classify them as agricultural or non-agricultural (for which several possibilities exist) is discussed in Chapter 3.1.

<sup>4</sup> Also used in Hill and Platt (2003) and FAO (2011). An agricultural Local Kind of Activity Unit (LKAU) is the fictional basic statistical unit concerned with agricultural production and for which accounting for output, intermediate consumption, etc. is possible. It may form part of an institutional unit (such as a farm business operated by a household), but does not include any non-agricultural activities in which the farm may engage other than those that are inseparable in the data sources (such as minor farm-gate sales). See Eurostat (2000).

## 1.4. Policy aims and appropriate measures of income

A major issue that has to be confronted when reviewing the information on incomes in EU agriculture is that there is a mismatch between the declared aims of the CAP and the indicators that are available to monitor the policy's performance. As will become clear, in reality accounts drawn up on the basis of institutions (such as farm households) are relatively poorly developed, whether at sector or microeconomic levels. In contrast, accounts for the activity of agricultural production are well established at both levels and the indicators are in common use.

One source of the aims of policy is what appears in official statements. On the one hand, the Treaty is clear that a central concern is with the living standards of the agricultural community, though Hill (2012) points out that this rather general objective has not been articulated in a more precise and testable form. First seen in the 1957 Treaty of Rome (Article 39), the wording has been carried forward into subsequent Treaties, including the 2012 Consolidated Version of the Treaty on the Functioning of the European Union (Official Journal of the European Union, C326, 26 October, 2012). The implication is that the 1957 wording has been the basis of giving legal validity to any proposed policy measures since the start of the CAP and continues to do so.

Box 2: The Treaty statement of the objectives of the Common Agricultural Policy<sup>5</sup>

The Treaty states that 'The common agricultural policy shall have as its objectives:

- a) To increase agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and the optimum utilisation of the factors of production, in particular labour.
- b) Thus to ensure a fair standard of living for the agricultural community, in particular by the increasing of the individual earnings of persons engaged in agriculture [emphasis added].
- c) To stabilise markets.
- d) To assure the availability of supplies.
- e) To ensure that supplies reach consumers at reasonable prices.'

The Agenda 2000 agreement, though lacking the full authority of a Treaty, also articulated the CAP's aims, carrying over the 'fair standard of living' phrase but also adding an assurance of promoting income stability and of expanding on how farmers might be assisted by providing alternative sources of livelihood.

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<sup>5</sup> Official Journal of the European Union, C326/47, Article 39, pp62-63.

## Box 3: CAP aims as articulated in Agenda 2000 (European Commission, 1997)

- [To] 'increase competitiveness internally and externally in order to ensure that Union producers take full advantage of positive world market developments.
- Food safety and food quality, which are both fundamental obligations towards consumers.
- Ensuring a fair standard of living for the agricultural community and contributing to the stability of farm incomes [emphasis added].
- The integration of environmental goals into the CAP.
- Promotion of sustainable agriculture.
- The creation of alternative job and income opportunities for farmers and their families [emphasis added].
- Simplification of Union legislation'.
- To ensure that supplies reach consumers at reasonable prices.'

Another indication of the persistence of the CAP aim of 'ensuring a fair standard of living of the agricultural community' is that these words are incorporated into the Regulations that give the legal basis for spending on agriculture from the EU budget. For example, Regulation (EC) No 1308/2013 establishing a common organisation of the markets in agricultural products uses these same words, following a convention demonstrated in the superseded legislation. When referring to support of particular commodities, the aim of ensuring the living standards of growers concerned is also mentioned. The apparent requirement for this aim to be stated in Regulations, linking back to the fundamental Treaties, should be noted, even if what the phrase means is far from transparent.

The need for income information relevant to the standard of living of farmers, as a major component of the agricultural community however defined, is supported by a number of EU and other international organisations. It was the basis of Eurostat's establishment of its Income of the Agricultural Households Sector (IAHS) statistics in the late 1980s (see Eurostat 1996, 2002), was commented on by the European Court of Auditors as something that the Commission should monitor<sup>6</sup> (ECA, 2004), was the subject of studies and a policy brief by the OECD (OECD 2002, 2003, 2004), and was the driver for the drafting of a Handbook covering statistics on agricultural households (in two editions, UNECE 2007 and FAO 2011) under the auspices of the UNECE, FAO, OECD, the World Bank and Eurostat. Agra CEAS Consulting (2007) investigated the feasibility of reintroducing a rebased IAHS for Eurostat, although this has not been acted upon. There are many other commentators and researchers who also interpret the income situation of farmer households as at the centre of the purpose of the CAP (reviewed in Hill 2012).

Given that there would appear to be an obvious need to know about the standard of living of the agricultural community for policy purposes, statisticians are faced with the task of turning the concepts of 'standard of living' and 'agricultural community' into operational entities (indicators) before the process of actual measurement by data collection can take place. Indicators should be closely aligned with the policy impact that is required and be sensitive to the extent of that impact. When attempting to devise practical indicators for the standard of living it is conventional to use disposable income of the household or the average per household member, as this represents their potential command over the consumption of goods and services, though it has to be acknowledged that some factors which may be important to farm families (such as their independence and work

<sup>6</sup> The ECA (2004) noted that 'Although this is only one of the five objectives of agricultural policy expressly stated in the EC Treaty, the income of the agricultural community runs like a leitmotif through the CAP'.

environment) are not captured. Farm families are typically asset-rich, and there are ways in which the wealth of farm households can be taken into account; wealth itself provides a potential command over goods and services, and estimates of 'economic status' combine current income with an annuitized value of net worth, though this indicator has not so far taken a significant part in EU agricultural statistics.

The agricultural community is similarly a concept that has to be made operational. Again, alternative approaches are possible (see Hill, 1990). The consensus is that (a) this is made up of households, rather than individuals; (b) it is made up of the households where income from independent activity in agriculture (that is, entrepreneurial income) is part of the household's total income, though various criteria can be used to, for example, separate those households where farming is the main source of income from those where it is a minor part. It should be noted that hired workers on farms are not treated as part of the agricultural community according to this approach as their incomes are not residual profits; this is not considered satisfactory in some countries where agriculture is dominated by large corporate (and similar) units, and even where farms in other countries are arranged as private companies; to answer such problems Eurostat proposed a series of 'add-ons' to the strict coverage.

As has been noted above, despite the apparent need for income statistics to be available that relate to agricultural households and to agricultural activity, in practice there is no working system for agricultural household income statistics in the EU. Eurostat's IAHS statistics, which was a pioneer in this area when it started in the late 1980s, was terminated in 2002 for reasons that included problems with quality (especially in Member States using national accounting methodology), lack of comparability across Member States, low priority given to developing these statistics at a time of declining resources, and, in some administrations, concerns with the results that showed farmers as a group to have household incomes broadly comparable with the rest of society (with some exceptions). Instead, indicators taken from activity accounts are dominant, though they are incapable of answering central questions on the income of agricultural households that are crucial to illuminating the living standards of farmers.

UNECE 2007 offers some suggestions as to why (taken from Hill, 2000), which can be adapted to the present circumstances (see Box 4).

## Box 4: Reasons for non-adoption of household statistics

Lack of political demand. Politicians have not requested this information, perhaps because of a too-simple perception of the agricultural industry, or a fear of the electoral consequences of drawing attention to results that suggest that farmers are in a relatively favourable income position.

Historical precedent. Activity accounts, at both aggregate and farm levels, and their related "income" indicators are long-established, having been set up when there were stronger grounds for assuming that the only source of incomes of farm households was from farming. In the EU, the EAA adopted the 'Branch' concept at its outset in 1964; as did the FADN basic legislation of 1965.

Operational requirement. The fact is that the CAP has operated apparently successfully for many years in many countries without information on the incomes of agricultural households. The administration of income support systems has rarely if ever required the data (though some tests of eligibility have been applied within individual structural schemes).

'Rational ignorance' among many users. There is a tendency among users, especially non-specialists, to adopt satisficing behaviour. That is, they take the first available indicator that appears to meet their needs, so that measure of the income from agricultural activity may be assumed to show the income of farmers. Among some users there may be a suspicion that the information revealed by household-firm data could be against their political and/or bureaucratic interests.

Self-interest of bureaucracies. Government departments for agriculture have often taken a pro-farmer stance and might therefore not wish to draw attention to anything that might lead to a reduction in support for the industry, as might be revealed by statistics on household income. There is also an understandable aim of wishing to maintain continuity with long-established systems of activity accounting.

Data availability. Lack of basic data of suitable quality in some countries is a major constraint in the development of statistics on the complete activities of farm businesses and their households. In countries where it has not been conventional to ask questions on non-farm income, agencies that collect data have been reluctant to ask new questions about non-farm income for fear of harming response rates.

The importance of knowing about the income situation of farm households does not remove the importance of knowing what is happening to the rewards from the activity of agricultural production. For example, these would be helpful in understanding changes in the supply of farm commodities, in explaining why farmers diversify and take steps to reduce risk, and why structural change occurs in the industry. The indicators of the rewards from agricultural production, though superficially more agreed upon among statisticians in EU Member States than those relating to agricultural households, in fact are based on concepts that are by no means self-evident. Principle among these are the following:

- In both the aggregate Economic Accounts for Agriculture and microeconomic FADN the basic unit is not the complete farm business. Rather it is only the agricultural activities taking place on farms and excludes (with small exceptions) any other gainful activities in which the farm may engage. This may involve misattribution of the costs of inputs where these are used by both the agricultural and other activities (such as energy usage). These other activities (which may take

place on or off the farm) may well be important in explaining the overall performance and viability of the farm business as an economic unit<sup>7</sup>.

- The main indicator at both levels (Net Value Added per Annual Work Unit, in absolute or index form), though usually labelled as income, is a concept distinctly different from that of business profit and even further from personal or household income. It represents the reward to all the 'fixed' factors of production (all the land and all the capital irrespective of whether or not owned by the farm operator, and all the labour whether hired or part of the farmer's family). When looking at changes over time the practice of dividing the NVA factor reward by the size of the factor base has some logic, but taking account of changes in only one fixed factor (labour) can be objected to on both theoretical grounds (such as attributing any productivity gains to labour whereas increases in capital may be partly responsible) and practical ones (at least in some countries statisticians have reservations about the quality of data on labour input where most of this consists of the contribution of the self-employed farmer and spouse) (Hill, 1991).
- While the EAA Entrepreneurial Income and FADN Family Farm Income<sup>8</sup> (both of which involve removing the costs of paid labour, paid interest and paid rent) are reasonable approximations of profit from agricultural production, indicators that go further and attempt to remove costs for the farmer's owned land, owned capital and family (unpaid) labour, singly or together, are on weak ground because of the difficulty of agreeing on imputed values. This was proposed by the Commission (CEC, 1982) but soon abandoned. Nevertheless, attempts to use the same dubious process have been repeatedly made, most recently in 2014<sup>9</sup>.

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<sup>7</sup> This problem has been behind suggestions that agricultural income statistics at both macroeconomic and microeconomic levels should be re-engineered and based on real institutional units (in effect, households and companies). While this would represent a hiatus in agricultural statistics, it would place agriculture on a similar footing as other industries.

<sup>8</sup> The term Farm Net Income (FNI) is used for farms that are arranged as legal entities (such as companies) within FADN.

<sup>9</sup> In EU farm economics overview (European Commission, 2014a) two indicators involving imputation are used. The concept of 'Remuneration of family labour' involves imputing a charge for owned capital and land. The concept of 'Return on assets' involves imputing a cost for family (unpaid) labour.



## 2. DATA SOURCES AND METHODOLOGICAL EXPLANATION

### KEY FINDINGS

- For statistics on the incomes of agricultural households key definitions for use in the monitoring and guidance of agricultural policy have been worked out by Eurostat and at international level by the FAO. The most appropriate indicator is considered to be the net disposable income of households (covering income from farming and other gainful activities, from property, pensions and other transfers, and after the deduction of personal taxes and other non-optional payments). Possible data sources to furnish these statistics are considered; these vary between Member States.
- For income that arises from agricultural activity the Economic Accounts for Agriculture calculated by Eurostat are only available at the national level. However, the Farm Accountancy Data Network (FADN) calculates indicators at the level of the farm business and can be used to illustrate detailed patterns in the agricultural industry.
- Two indicators are appropriate in the present context. Farm Net Value Added (FNVA) represents the rewards to all the fixed factors used in the farm business, irrespective of their ownership. Farm Family Income (FFI) is after the deduction of the costs of hired labour, interest paid and rent paid and is the return to the farmer for the use of his own labour, own land and own capital.
- FFI expressed per business or per work unit of family (unpaid) labour (FFI /FWU) is the preferred income concept for this analysis because it corresponds most closely to the concept of the profit from farming that is available to support the living standards of farmers.

The evidence on the comparisons required in this report has comprised three main components. First there was a literature review to establish the nature of the comparisons of incomes that can be expected to be of concern to policy makers (which will include those that have featured in regular and occasional reports by the services of the European Commission). This has been followed by an in-depth analysis of the methodology used by the statistical systems that generate data about EU agriculture (especially those of the Commission). Thirdly, and potentially of greatest concern to the European Parliament, there has been a fresh and independent analysis of the data on the incomes from farming in the EU and a presentation of results with a commentary on the findings. This means that, with a few exceptions, our results are not dependent on what is found in existing publications from the European Commission.

In the light of the objectives of the CAP that appear in the Treaty on the Functioning of the European Union (TFEU, 2012), attention is given first to data on the incomes of agricultural households before moving to the rewards from agricultural activity.

Data are not the same as information; information implies the analysis and interpretation of data in the context of some problem. However, data form an integral part of the information required for agricultural policy directed at achieving the objects set. As has already been noted, a major aim of the CAP is directed at the living standards of the agricultural community, though there are reasons why there is also interest in the levels of production of agricultural commodities and the way in which these are changing.

## 2.1. Data sources on the incomes of agricultural households

As explained above, there is currently no EU statistical system that is capable of providing information on the living standards of the agricultural community, either directly or through the conventional proxy of the disposable income of agricultural households. Despite this, a substantial amount of national information exists, much of which is relevant to understanding the income problems faced by farmers and their responses to policy interventions. Data come from three main types of source, each of which has drawbacks:

- National surveys of farm accounts that contribute to FADN (see below) where these collect information beyond the narrow requirements of FADN and extend to questions relating to the household (such as income from other gainful activities and from property and social transfers). However, in many Member States such surveys do not collect this sort of data.
- Taxation and administration records where persons that are members of agricultural households can be distinguished from those in other socio-professional groups. Problems with this source are that, in many Member States, some or all farmers are not taxed according to their personal incomes as shown in accounts but by various flat rate systems (per hectare, etc.). Operators of farms arranged as companies may escape coverage (as their directors may not have income from self-employment in agriculture).
- National surveys of households. There are EU-wide networks of household surveys of expenditure and income and the EU Statistics on Incomes and Living Conditions (EU-SILC); each of these is capable of providing data on the household incomes of agricultural households. The main limitations for both are the small number of cases of farmer households (sometimes very small) that are found within these surveys at national level and, for countries where numbers are adequate, issues over the quality of the income data relating to self-employment.

Sometimes these sources are used in combination (for example, France which periodically combines FADN and tax records, and Ireland which uses farm accounts surveys in association with its household survey). The situation in each EU-27 Member State is described in detail in Hill (2012), Chapter 5 and in the online edition of the Wye Group Handbook<sup>10</sup>.

Though within a single data source the income of agricultural households will generally be assessed in a consistent way compared with those of other households, care has to be taken in interpreting results for consistency between sources and between Member States in three key methodological issues:

- Definition of a household. The main alternatives are the single dwelling unit (individuals under the same roof) and the single budgetary unit (individuals sharing income and consumption expenditure). Households containing several generations or siblings are thought to be more common among farmers than among the general population in some Member States, and these do not necessarily pool income and expenditure, so a single dwelling may contain several financially independent budgetary units. Also, it is important to record the number of individuals in the household and their ages, since income per person and per

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<sup>10</sup> <http://www.fao.org/economic/ess/ess-capacity/wyegroup/wyehandbook/en/>

adult-equivalent (or per consumer unit) is more relevant to potential consumption expenditure (and hence standards of living) than income of the entire household. Equivalence scales are used to calculate the number of consumer units.

- Definition of an agricultural household. Classification can be on the basis of income from farming, labour input to farming, or occupation of a farm. The Eurostat preferred 'narrow' definition for its IAHS statistics was where the main source of income of the head of household (reference person) was from self-employment in farming (independent activity in agriculture), though some countries apply this to the composition of the entire household income. Others have applied a definition based on the main occupation of the reference person, which can generate rather different numbers of households and income levels. Both approaches allow a complete and consistent breakdown of households into socio-professional groups. A Eurostat 'broad' definition was to include all households where any member of the household had some income from self-employment in agriculture, which produces coverage close to that of all farm occupiers. Such broad approaches include many households for which agriculture is a very minor component of household income<sup>11</sup>.
- Definition of income. There are relatively few contentious issues in the definition of household income. Total income conventionally includes income from self-employment, from employment, property and social transfers (including pensions); capital gains on property (which may be important to farmers in the long-run) are not included. Disposable income is after the deduction of direct taxes and other compulsory contributions (such as to social security schemes). FAO 2011 sets out a definition, based on the recommendations of the Canberra Group (2001), but slightly adapted to suit farming, that was agreed by contributing international institutions. There remains the issue of whether income in kind provided by the farm (such as the ability to acquire fuel for the farmhouse and food produced directly – things that in part determine consumption possibilities) are adequately treated within the income computation, which suggests that changes over time are probably more robust than comparisons of disposable income with other socio-professional groups, such as wage-earners where the role of the household as a producer (as well as a consumer) is absent or less prominent (such issues are dealt with extensively in Hill 2012, Chapter 3).

## 2.2. Data sources on the rewards from agricultural production

Two separate but related systems currently exist by which the rewards from agricultural production are measured and monitored – the aggregate accounts for agriculture produced by Eurostat using information supplied by statistical authorities in the Member States, and the microeconomic approach of the Farm Accountancy Data Network (FADN) supervised by the European Commission (DG AGRI) that gathers information from the accounts of individual farm businesses. Each level produces an array of indicators, commonly described as 'income' indicators, but in reality relating to the rewards to the owners of factors of production used in agricultural activity. Both are described in Annex 1. The key points of relevance to this study are set out in the sub-sections below.

<sup>11</sup> In the USA a farm is defined as any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the year. Thus statistics on farm household income has a wide coverage of farms where agriculture is not the main income source of the operator.

### 2.2.1. Economic Accounts for Agriculture (EAA) and its indicators

The EAA methodology involves three current transactional accounts which when linked together produce net entrepreneurial income for all agricultural production as shown in the Box below.

#### Box 5: Definition of indicators used in the Economic Accounts for Agriculture

Output, minus intermediate consumption, minus consumption of fixed capital = Net Value Added

Net Value Added, minus compensation of employees, minus other taxes on production, plus other subsidies on production, minus interest paid, minus rent paid = Net Entrepreneurial Income

Based on these aggregates, three indicators are derived.

Indicator A: Index of the real income of factors in agriculture per annual work unit. This is calculated by taking the Net Value Added at basic prices that appears in the Production account and adjusting it by adding 'other subsidies on production' (which includes direct payments to farmers) and deducting 'other taxes on production', dividing by the labour input, and expressing in deflated and index form. NVA in this form is referred to as being at Factor Cost.

Indicator B: Index of real net agricultural Entrepreneurial Income per unpaid annual work unit. This is appropriate for countries where agriculture is organised almost totally as unincorporated holdings (family farms).

Indicator C: Net Entrepreneurial Income of agriculture. This aggregate is given in absolute terms, but may also be expressed in index form. The important point is that it is not calculated per unit of non-hired labour and so is suitable for uses involving countries where the output from corporate farms is an important part of the total.

It is clear that the approach embodied in each of the present Indicators is essentially one of trying to gauge the rewards to a hybrid bundle of factors used in the production of agricultural commodities. NVA at Factor Cost is a long way from the personal incomes of the agricultural community (unless there is no borrowing, no renting of land, no hired labour and no other sources of income to the household). While Entrepreneurial Income coincides broadly with what might be seen as profit, it only relates to that originating from agricultural activity and excludes that which might come from other activities carried on within the farm business, unless these are very minor.

### 2.2.2. Farm Accountancy Data Network (FADN) and indicators

At EU level, the farm accounts surveys of all the Member States are brought together under the co-ordination of the Commission's Directorate-General for Agriculture and Rural Development (DG AGRI) as the Farm Accountancy Data Network (FADN). This was established in 1965 'with the specific objective of obtaining data enabling income changes in the various classes of agricultural holding to be properly monitored' (Commission, 1982). The justification for FADN was rooted in policy, in that '...the development of the Common Agricultural Policy requires that there should be available objective and relevant information on incomes in the various categories of agricultural holdings and on the business operation of holdings coming within categories which call for special attention at

Community level' (EEC Regulation 79/65). The FADN is therefore not a single survey but is an amalgamation of national surveys carried out by Member States.

There is a minimum size threshold, set to capture 'commercial farms' that varies between Member States, reflecting their different farm size structures as shown in the periodic EU Farm Structure Survey. Consequently, while the overwhelming majority of farming activity falls within the FADN field of observation, only 42% of the EU's agricultural holdings found in its farm structure survey are represented (2015). Figures vary widely between countries. For example, in Slovakia only 17% of farms are covered by FADN, but these represent 96% of the economic activity, whereas in Ireland 75% of the farms are covered, with 98% of the activity. Though numerically important, holdings below the FADN size thresholds contribute very little in terms of agricultural activity. In many Member States, especially more recent additions to the Union, it is likely that the coverage of holdings within FADN is even lower because some farms are small that they fall below the size for qualification for inclusion in the Structure Survey. Altogether the FADN sample consists of just under 87,000 holdings (2014), corresponding to about 1.7% of all holdings within the FADN's field of observation.

FADN's main income measures are Farm Net Value Added, expressed per farm or per Annual Work Unit (FNVA/AWU) (that is, per full-time person equivalents working on the farm) and Family Farm Income (FFI), per farm or per Family Work Unit (FFI/FWU). These are calculated as follows:

Box 6: Definition of indicators used in the Farm Accountancy Data Network

Total Output, plus balance current subsidies and taxes, minus intermediate consumption, minus depreciation = Farm Net Value Added (FNVA)

Farm Net Value Added, plus balance subsidies and taxes on investment, minus wages paid, minus rent paid, minus interest paid = Farm Net Income (FNI) or Family Farm Income (FFI) (depending on organisational structure)

FFI is often expressed per annual work unit of unpaid (family) labour (FFI/FWU), including the farmer, in order to reflect the varying amounts of such labour used. As long as its definition is borne in mind, FFI is a very useful measure on two counts: first, it represents what would generally be accepted as being income derived from farming; and, second, by excluding the hired labour force, it covers only those people whose welfare the CAP is in practice primarily aimed – farmers and their families.

FFI is conceptually close to Eurostat's Entrepreneurial Income and, when expressed per unit of family labour input, to Indicator B.



### 3. OVERVIEW OF THE INCOME DEVELOPMENT OF EU AGRICULTURE

#### KEY FINDINGS

- It is important to be aware that farm families cannot be assumed to depend on their incomes from farming, and that other incomes not only raise their household income levels but also add to its stability.
- The evidence points to farmers NOT being a particularly low-income sector of society in most Member States judged on the basis of their household disposable incomes. This is of obvious importance to the CAP's aim to ensure a fair standard of living of the agricultural community.
- In terms of incomes from agricultural activity, the focus of this report, it is clear that the income indicators at aggregate level (Eurostat) and farm level (FADN) move in similar fashion. The two FADN indicators (FNVA/AWU and FFI/FWU) are also closely aligned in their directions of change over time.
- Among the various groups of Member States in common usage, in absolute terms FFI/FWU is highest in the EU-15, then the EU-N10 and lowest in the EU-N2. FFI/FWU increased over the 2004 to 2012 period with a substantial decline between 2007 and 2009 in all groupings with the exception of EU-N2.
- For the EU-27, a strong relationship exists between the economic size of farm business and the average levels of income generated. This applies not only to FFI per farm (as might be expected) but, more importantly, income per unit of family labour (FFI/FWU). This relationship permeates other differences, such as between farms of different legal status and age of farmer, with the observed patterns largely being explained by differences in farm size. In each farming type the smallest farms have the lowest incomes and absolute incomes increase with farm size. Incomes differ between the various types of farming, granivores having the highest incomes, and mixed farms the least.
- Incomes of farms in Less Favoured Areas (LFA) were lower than those in non-Less Favoured Areas, even after including the special payments that the former receive.
- It is clear that the variability of income over time in FADN results at the group level is much greater in the smallest size class of farms, though it should be recalled that this omits data from many Member States because of the differing size thresholds applied. Beyond that, variation increases with farm size.
- 'Granivore' and 'Fieldcrop' farms have the greatest volatility of income. The most stable incomes are found in the 'Horticulture' and 'Other permanent crops' sectors.
- When income volatility is measured at the level of the individual farm 55% of large farms and 38% of small farms experienced income volatility of  $\pm 30\%$  from the previous three year average.
- The distribution of income at the farm level is very unequal; 20% of the labour force generates 78% of the FFI. Furthermore, incomes averaged over three years 2010-2012 were negative for large parts of the farm labour force, suggesting that additional factors, such as income from other gainful activities (OGA), is important in explaining the ability of such farms to survive.



- Agricultural worker income (wages) increased steadily (in nominal terms) over the 2004-2012 period with only the EU-N2 group experiencing a decline in 2008 and the EU-N10 one in 2009.
- The pay of agricultural workers in the EU-N10 converged with that in the EU-15 over the period, but pay in the EU-N2 did not.
- Agricultural wages per hour differ across farming type, being highest in the wine sector and lowest in 'Other grazing livestock' and 'Fieldcrops' farm types.

### 3.1. Incomes of farm households

A comparison that is key to monitoring the extent to which the CAP has achieved its stated objectives, as shown in the Treaty (TFEU) is that between the disposable incomes of household of farmers and the households of the rest of society; this is pertinent to the 'fair standard of living for the agricultural community' aim (section 1.4 – Box 2). Closely allied to this is the proportions of farmers and other social groups that have incomes that place them in poverty; a satisfactory group average income can nevertheless hide considerable numbers of households whose standards of living can be taken as being less than 'fair'.

Though the targeted agricultural community might be considered as somewhat broader than the households of self-employed farmers, especially in some of the new Member States, it is clear that households headed by farmers (or at least having a farmer as a member) form the dominant sector in terms of numbers<sup>12</sup>. Furthermore, the CAP uses intervention tools that almost exclusively impact on the entrepreneurial incomes of such farmers; the 'fairness' of the wages of farm employees (dependent workers) are not an issue addressed directly by the CAP, being left to national legislation such as minimum wage levels and social policies on poverty alleviation.

The European Commission has, on a number of occasions, asserted that incomes in agriculture compare unfavourable with those in the rest of the economy (see for example, European Commission, 2010a; 2010b; 2010c; and 2009 and Box 7). Disparities of the order of 40% are mentioned which, if taken at face value, might give cause for concern as being unfair and the basis of continuing support to EU agriculture. However, the basis of this claim is not information on the incomes of farm households, though this impression may be given. Rather, it comes from estimates of the rewards to factors engaged in agricultural production compared with those in the broader economy (indicators from the activity approach to income accounting). Objections can be made to comparing the incomes of self-employed farmers (their entrepreneurial rewards from the factors they use in agricultural production) with labour earnings in the economy as a whole, which will be dominated by wages; the economic characteristics are different, including the spread of factors to which they relate and the role of risk. Furthermore, the CAP policy aim is not to secure fairness of returns to factors of production but, rather, to ensure fair standards of living, which is a concept related to the disposable incomes of farm households (or their consumption expenditures). The Commission assertions about low incomes in agriculture are not borne out by evidence based on the incomes of agricultural households (that is, making measurement according the institutional units – principally household-firms – involved in farming).

<sup>12</sup> In EU-28 in 2010 the Farm Structure Survey showed that 97% of holders were natural persons (in contrast to legal entities, such as companies and groups of natural persons). France alone accounted for more than two-fifths of the holdings in the EU-28 that were under the control of legal entities or groups.



### Box 7: Statements by the Commission on the relative position of incomes in agriculture

2010 Consultation Document for Impact Assessment of the Reform of the CAP towards 2020: 'Family labour is not sufficiently remunerated and family assets do not provide adequate returns. Farm incomes are lower than that of the rest of the economy. In 2008, the entrepreneurial income per worker employed in agriculture in the EU-27 was estimated to be around 58% of the average wage in the EU. The gap is more pronounced in the EU-N12 than in the EU-15. Since the year 2000, the gap has decreased in the EU-12, but actually increased in the EU-15'.

2010 'Developments in the income situation of the EU agricultural sector': '...the evidence clearly points to the conclusion that agricultural incomes in the EU are significantly lower than earnings outside the sector. In 2008 the entrepreneurial income per worker employed in agriculture in the EU-27 was estimated at around 58% of the average wage in the EU. The gap was more pronounced in the EU-N12 than in the EU-15.'

November 2010 Communication from the Commission: 'After a decade of mere income stagnation, agricultural income dropped substantially in 2009 adding to an already fragile situation of an agricultural income significantly lower (by an estimated 40% per working unit) than that in the rest of the economy, and income per inhabitant in rural areas is considerably lower (by about 50%) than in urban areas'.

December 2009 'Why Do We Need a Common Agricultural Policy': graphics are given in which the relative income position of agriculture is shown as declining over the period 2000 to 2008. Using as an indicator 'agricultural income (not specified in detail) per AWU unit as % of total economy income/labour unit' the relative position of agriculture is shown as falling from about 22% to about 20% in EU-27 over the nine years, the decline in EU-15 being from a relative income of almost 40% down to close to 30%. For EU-N10 the relative position of agricultural income was broadly maintained over the period, whereas in EU-N2 it fell sharply.

This section reviews the evidence on the incomes of agricultural households, in particular how these relate to other households, details of which are given in FAO (2011) and Hill (2012). This is in the form, first, of national data from eight Member States using a mix of sources (farm accounts surveys, taxation data, household surveys, etc., either singly or in combination); countries covered are Denmark, Finland, France, Ireland, Italy, Poland, Sweden, and the United Kingdom (England). Second, the main findings of Eurostat's Income of the Agricultural Household Sector statistics should be noted; though suspended in 2002 these remain the only attempt to generate harmonised statistics on this issue, and many of the results were not invalidated by the disparities in methodology between countries (the weakness that led inter alia to their suspension). Third, the OECD has published an overview taking national results (including some from Eurostat's IAHS project) which has relevance here (OECD, 2003). Fourth, the Luxembourg Income Study<sup>13</sup> (LIS - an international collaboration of which Eurostat is a member) has also analysed relative income levels, though its basic sources of data (national household surveys) are handicapped by, in many countries, few cases of households headed by farmers in the sample<sup>14</sup>.

It is well-known that many households that operate farms are also active in other sectors of the economy. Over a third of farmer/managers are known to have an 'Other Gainful

<sup>13</sup> <http://www.lisdatacenter.org/>

<sup>14</sup> See Hill (2012), Chapter 5 for a critique of de Frahan, et al. (2008).

Activity' (OGA) with earnings from outside the farm businesses (see Box 8), and this proportion would be larger if spouses/partners were to be included. For many of these, particularly where the farm is very small, farming is likely to be a very minor activity<sup>15</sup>. Hence there is a need to draw a distinction between those where agriculture is the main source of livelihood, which might be termed 'agricultural households', and the others.

The lack of a harmonised and working statistical system way of measuring the total and disposable incomes of agricultural households in the EU is a major impediment in providing an authoritative picture. Having said that, bringing together the evidence for the EU it is clear that:

- The definition of what is an agricultural household is important to both the numbers of households and their income situation. The number of agricultural households (where the main income of the reference person comes from farming) is substantially smaller than the number of households where there is some income from farming, and generally smaller than the number of agricultural holdings. Where data exist over time, absolute numbers of agricultural households have been falling, in some instances very rapidly. The fact that results do not relate to a constant set of households must be borne in mind when interpreting changes in incomes per household over time.
- Agricultural households (defined as above) in all countries are recipients of substantial amounts of income from outside agriculture. Though typically about a half to two thirds of the total comes from farming, there are large differences between Member States and some differences between years. Other households with farms will have even more reliance on incomes from outside the farm business. It follows that knowing the income that a farm operator obtains from farming is not a reliable guide to their level of household income, so that statistics on incomes from farming should not be used to draw conclusion relating to household living standards of farm operators.
- The total income of agricultural households is more stable than their income from farming alone. Non-agricultural income (taken together) is less variable from year to year than is farming income. Disposable income seems to be less stable than total income, but the relationship between the two depends on a variety of factors, including the way that taxation is levied. Because of short-term variability, figures for total and disposable household incomes in single years should be treated with caution; this applies to an even greater extent to data on the income from farming alone.
- The average disposable incomes of households headed by farmers (in the sense that farming is the main income source) are generally of similar levels to those of society in general. This is rather different from the 58% implied by the Commission's 2010 statements. In a few countries they are rather lower (Portugal and Poland for example), but in a greater number of Member States they can be substantially higher than national household averages. It seems likely that national circumstances (farm structures, which reflect histories of adjustment, patterns of land inheritance, pluriactivity rates, etc.) influence relative income positions.

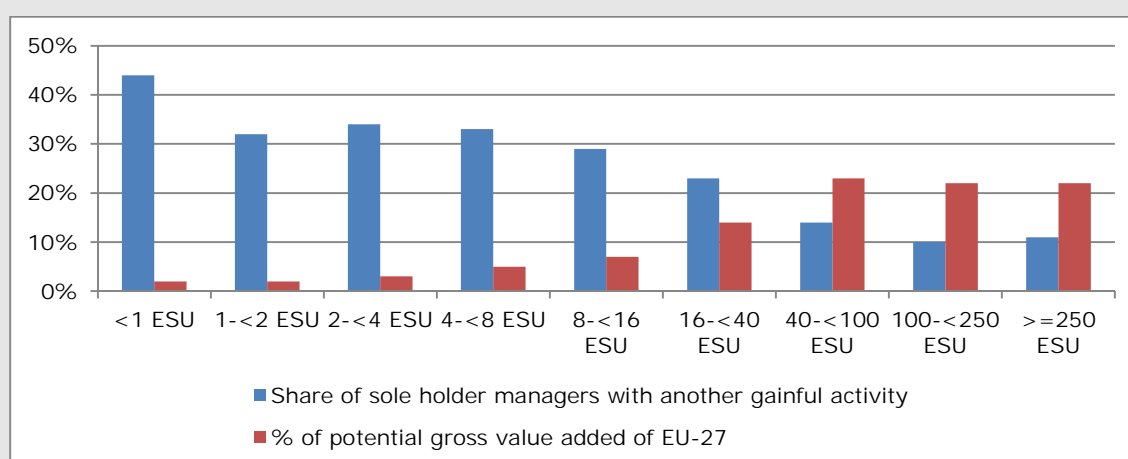
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<sup>15</sup> European Commission (2013) reports that over 60% of managers of farms with less than 5 ha UAA spend less than a quarter of their working time on farm. Over 70% of managers of farms with more than 100 ha UAA work full-time on the farm. The CAP context indicators show the relative unimportance of agriculture as an economic activity in most parts of the EU (European Commission, 2014a).

- Incomes per household member (or per Consumer Unit) are typically somewhat lower than per household because of the larger size of the average farm household (though this characteristic varies between countries).

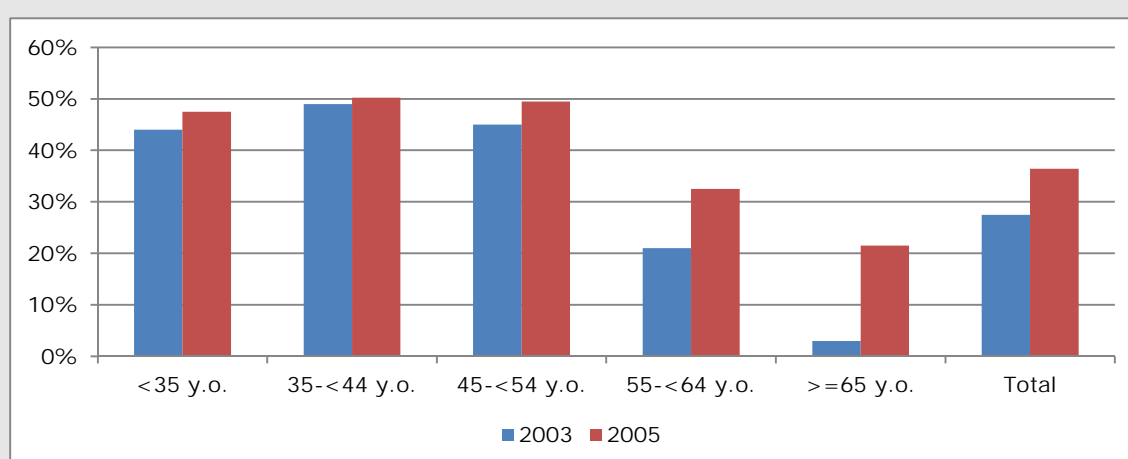
#### Box 8: Pluriactive farm operators in the EU-27

According to the 2005 Farm Structure Survey, 36% of EU farmer/managers were pluriactive, in the sense that they had some other gainful activity (OGAs) outside the farm businesses. These can fall into two main types: entrepreneurial rewards from independent activity (self-employment); and, wages and salaries from dependent activity (as employees). The incidence of OGAs was much higher among small farms, but even among the largest size groups at least one fifth of farmer/managers had an OGA.



Source: 2005 FSS given in Barthomeuf (2008).

Some types of farming are particularly associated with pluriactivity, such as specialist olive farms and grazing and fattening of livestock, while its incidence is lower in others, for example, specialist dairying and horticulture, where the type of activity seems to provide less opportunity to be away from the farm. Having an OGA is also more prevalent among younger farmers than older ones.



Source: 2005 FSS given in Barthomeuf (2008).

These statistics do not cover spouses and other family members, so the percentage of households having income from involvement with occupations off the farm is likely to be higher.

If, as seems very likely, living standards of farmers as a group can be shown to be already 'fair' (as indicated by approximate parity of disposable incomes) in most EU countries, this is important from the perspective of social welfare policy. It suggests that farm households are not a particularly low-income group and points to the need to be able to spot the low income cases that undoubtedly exist in order to target support at them. The fact that the mean (or median) disposable incomes of some other groups (such as households headed by other self-employed persons) are higher than those of farmers is not of much concern in this context, though it points to the need to be careful in the choice of comparators.

Little attention has been given here to the wealth of farm households. What little information exists at Member State level suggests that farm operators form a relatively high net-worth group, largely because of the land assets they control. When considering support on social grounds, some systems take wealth into account when testing eligibility (e.g. the English approach to Social Service departments paying for care in retirement and nursing homes). If the support of low household incomes in agriculture is seen as a function of social policy rather than agricultural policy, the likelihood of being able to reflect wealth would appear to be greater than if it were a function of the CAP.

### 3.2. Incomes from agricultural activity

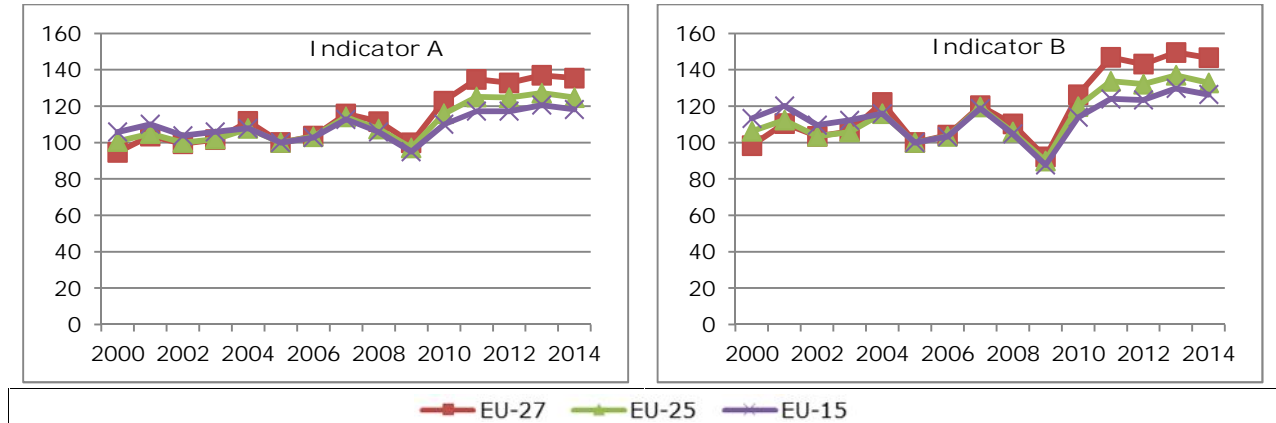
Income from agricultural activity is only a contributor to what should be understood as 'farmers' income', though the extent of its contribution depends on how broadly the boundaries of an 'agricultural household' are drawn (see the discussion on agricultural household income above). This will be especially true among small farms where other gainful activities are the most prevalent, though those that are unmistakably commercial in their farming operations will tend to be mainly dependent on their profits from agriculture. As has been explained in Chapter 1.3, there are two approaches to establishing income derived from agricultural activities: the aggregate approach using sector data (Eurostat) and the farm-level approach using individual farm data (FADN). Eurostat's approach covers all the agricultural activity in the Member State whereas FADN only covers that on holdings that are deemed to be 'commercial' by exceeding a given economic size (which varies between Member States). The former has attracted the attention of EU policymakers because of the speed with which results can be made available, whereas the latter contains much of the detail that is important to CAP decisions. Income from agricultural activity is set out using both approaches in the sub-sections below.

#### 3.2.1. Aggregate levels (Eurostat)

Chapter 2.2.1 explained the income indicators developed by Eurostat from the Economic Accounts for Agriculture. Indicators A (income of factors in agricultural activity per AWU) and B (Entrepreneurial Income per AWU of unpaid labour) are relevant here; both are in real terms and expressed as indices. Figure 2 presents the evolution of both these indicators for the EU-27, the EU-25 and the EU-15 (no other aggregations are available). The general trend is the same for both indicators with Indicator B showing greater volatility; this difference results from the difference in definition (Indicator B reflects what is left over from NVA after the further deduction of payments for rent, interest and wages of hired workers, which tend to be quite stable from year to year). Although there were decreases in these indicators in 2005 and, more seriously, in 2008/2009 due to declining commodity prices and increasing input costs, both have since recovered to finish the 2000-2014 period substantially higher (see Chapter 4 for a discussion on the drivers of income development). The EU-27 group has outperformed the EU-25 and the EU-15 since 2009 which reveals that incomes in the EU-N10 grouping have converged with those in the EU-

15 while those in the EU-N2 have converged with those in the EU-25 from this point onwards.

Figure 2: Evolution of index of real income of factors in agricultural activity per annual work unit (Eurostat Indicator A) and index of real net agricultural entrepreneurial income per unpaid work unit (Eurostat Indicator B) (2005=100)



Source: Eurostat.

Eurostat's aggregate indicators cannot, by definition, be used to describe income developments by sub-groups such as farm size and types; this analysis has to be undertaken using farm-level data in the FADN (Chapter 3.2.3).

### 3.2.2. Comparing aggregate to farm level data

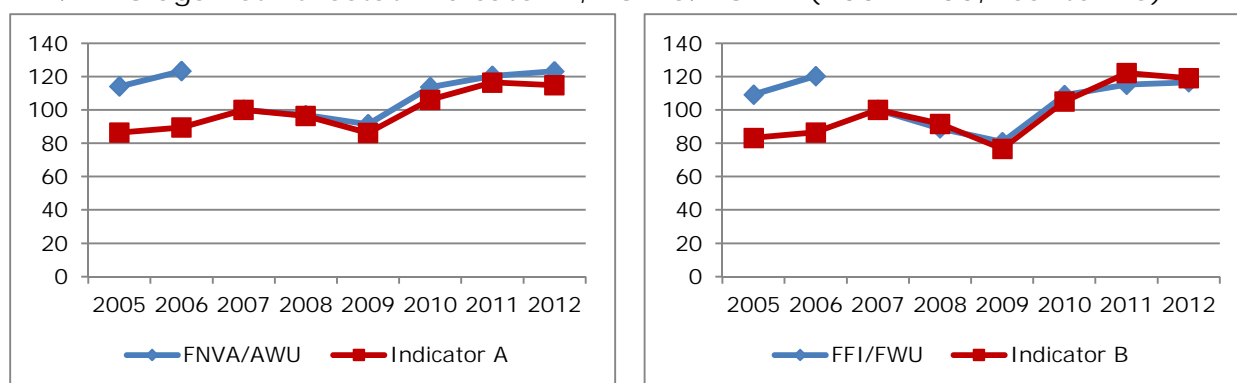
Before analysing the farm-level FADN data it is worth investigating how the dataset compares to the aggregate Eurostat data. The most appropriate income indicators for this analysis are<sup>16</sup>:

- FADN Farm Net Value Added per Annual Work Unit compared with Eurostat Indicator A (index of real income of factors in agricultural activity per AWU); and,
- FADN Family Farm Income per Family Work Unit compared with Eurostat Indicator B (real net agricultural entrepreneurial income per unpaid annual work unit).

Figure 3 presents an index of these variables in real terms where 2007 = 100. From 2007 both series are EU-27. Prior to this date the FADN series is EU-25 only, and this helps explain why the series only move together from 2007; Indicators A and B evolved differently in Bulgaria and Romania prior to 2007 and this is reflected in Eurostat index for these years. The conclusion to draw from this analysis is that the two approaches to calculating farm income provide very similar results in terms of annual fluctuation. It is reasonable therefore to treat them as broadly comparable.

<sup>16</sup> Eurostat income indicators are expressed in real terms while FADN data are nominal. For the purposes of this comparison we have converted FADN data into real terms.

Figure 3: Comparison of FADN FNVA/AWU against Eurostat Indicator A and FFI/FWU against Eurostat Indicator B, EU-25/EU-27 (2007=100, real terms)



Source: Eurostat and DG AGRI EU-FADN.

### 3.2.3. Farm level data (FADN)

FADN data are available for all EU-25 Member States from 2004 to 2012; Bulgarian and Romanian data are included from 2007 onwards. Where possible we have presented EU-25 data for 2004 to 2006 and EU-27 data for 2007 to 2012 showing a structural break between the two. Where this is not possible (in the interests of clarity) we have used a vertical line to divide graphs to make this structural break clear.

It is also important to understand the basis on which FADN data are compiled because this influences the results produced. The key point is that the FADN field of observation does not include all agricultural holdings but rather those that are above certain size thresholds (Economic Size expressed in Standard Output terms), which vary between Member States to reflect their agricultural structures. In practice this means that FADN covers almost all production (around 90% or more which comes mostly from what might be termed 'commercial farms') but a much smaller share of farms by number (typically nearer 50% though again there are differences between Member States (these data are presented in Annex 1).

This means that no farms below a Standard Output (SO) size threshold of €2,000 are included in FADN at all and no farms below €25,000 SO are included in Belgium, Germany, Luxembourg, Netherlands or Slovakia, or below €8,000 in Austria, Czech Republic, Denmark, Finland, France, Ireland, Sweden or the UK. The consequence of this is that FADN results for farms within these lower size classes must be treated with caution as they do not encompass farms from every Member State.

For example, in published EU-27 results, farms in the €2,000 to €8,000 size class only come from 14 countries<sup>17</sup> and those in the €8,000 to €25,000 size class 22 countries<sup>18</sup>. Only in results for farms with SO of €25,000 and over are all Member States represented. This is important in making observations about the relationship between income and farm size using EU-level results and also when drawing comparisons between Member States. Also there are some farmers at the smaller end of the scale for which information on income from agricultural activities is simply not covered in FADN (see above), an omission

<sup>17</sup> Bulgaria, Cyprus, Greece, Spain, Estonia, Hungary, Italy, Lithuania, Latvia, Malta, Poland, Portugal, Romania, Slovenia.

<sup>18</sup> The additional eight Member States are Czech Republic, Denmark, France, Ireland, Austria, Finland, Slovenia, United Kingdom.

that is important when viewing the CAP as a policy directed at the standards of living of the persons engaged in agriculture, but of less significance when the focus of concern is on the level of agricultural production. By definition, farmers on very small farms are likely to be earning only small incomes from farming, although they are also likely to earn income from other gainful activities.

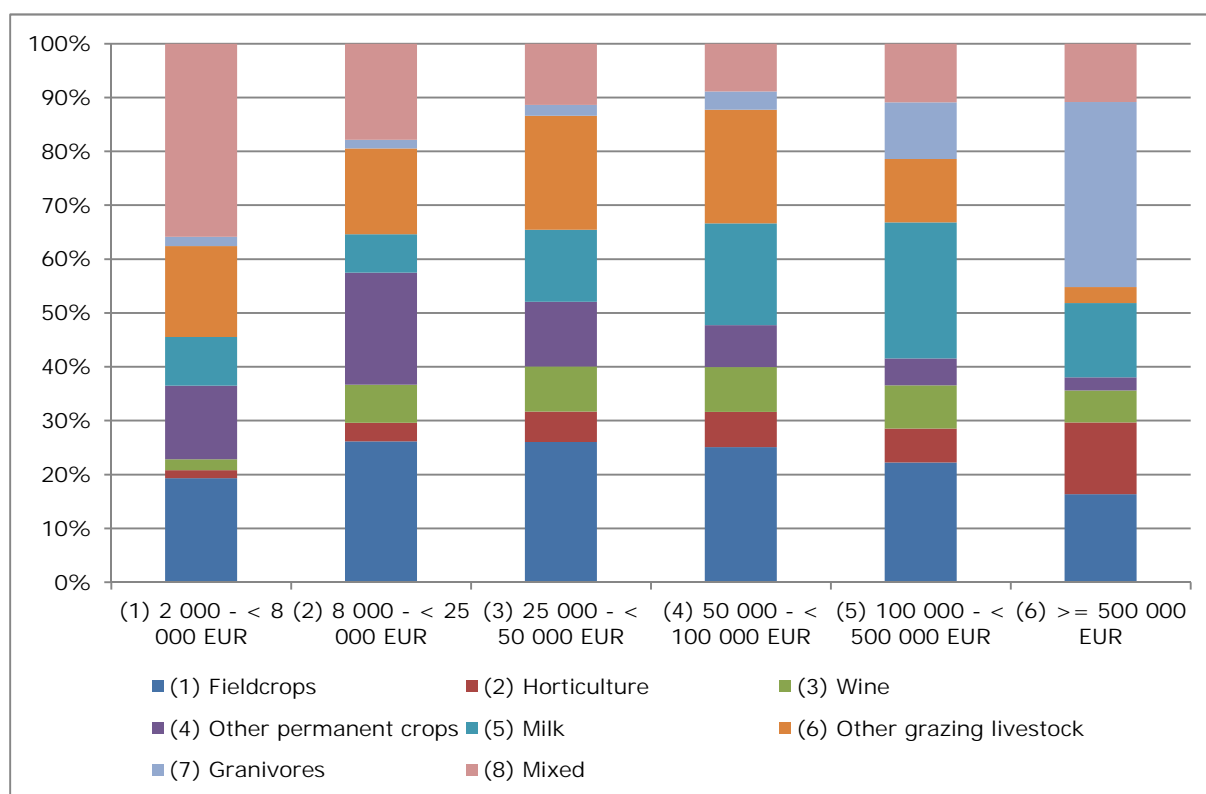
FADN also classifies farms by type, using two standard breakdowns (into fourteen and eight types: TF14 and TF8 respectively). There is considerable overlap between the two and we have used the latter which classifies farms as (1) Fieldcrops; (2) Horticulture; (3) Wine; (4) Other permanent crops; (5) Milk; (6) Other grazing livestock; (7) Granivores; (8) Mixed. The relative importance (in SO terms) of the different farm enterprises is used to determine farm typology.

Before presenting analysis at the farm level, it is worth setting out the correspondence between farm size and type within the FADN sample because there are areas of correlation between the two which should be kept in mind. Figure 4 shows that the smallest Economic Size group contains a disproportionate number of mixed farms (the fact that only 14 Member States are represented should also be borne in mind) while the largest group contains a disproportionate number of granivore enterprises. Dairy enterprises are more likely to be between €50,000 and €500,000 in Economic Size terms (groups 4 and 5). Other permanent crop enterprises tend to be of small Economic Size. Horticultural enterprises increase in proportion with scale (although here it is especially important to note the exclusion of small farms in half the Member States; horticulture is often a small-scale enterprise).

As a result of these relationships, when discussing farm income for granivores, for example, there will be some correspondence with findings for the largest Economic Size grouping and vice versa.



Figure 4: Distribution of farm size by farm type in the FADN sample, 2010-2012 average



Source: DG AGRI EU-FADN.

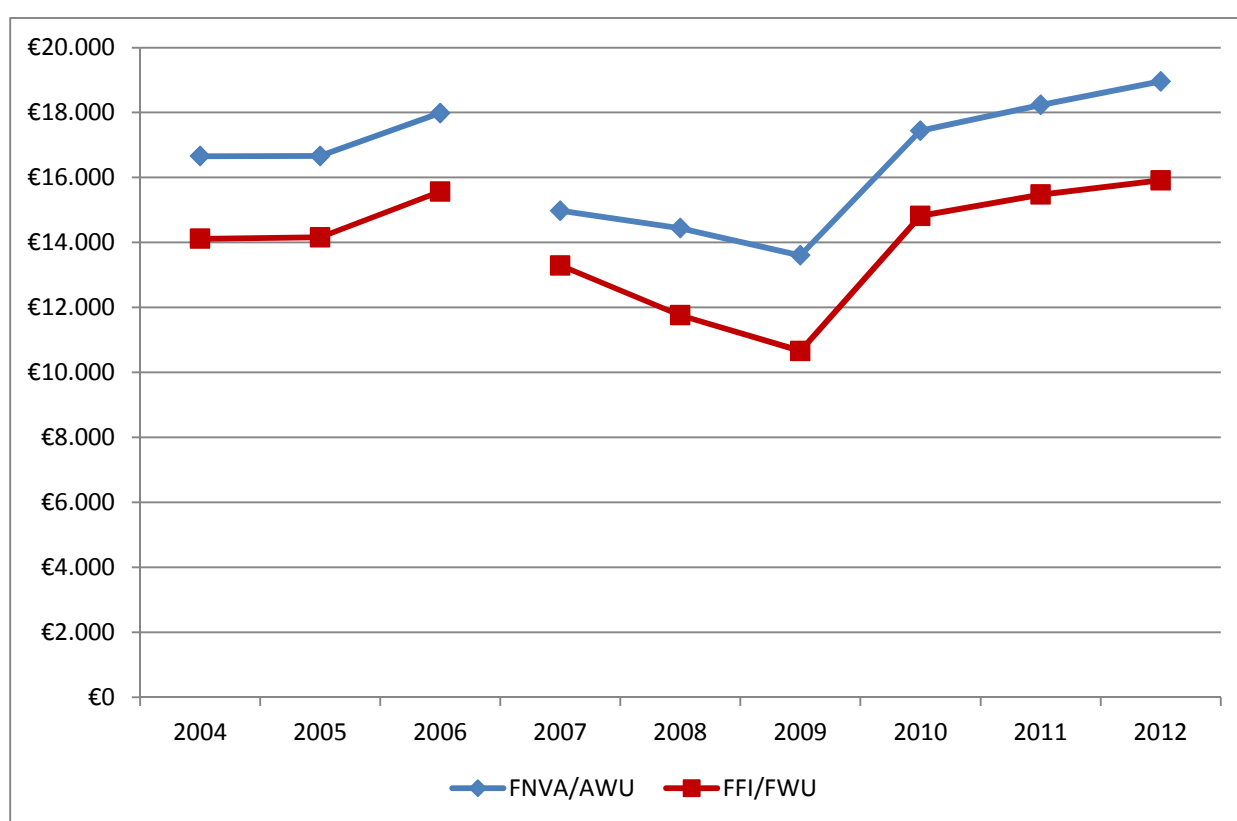
### 3.2.3.1. Overview

As has been explained above (Chapter 2.2.2 – Box 6), the two main indicators of farm income within the FADN dataset are Farm Net Value Added per Annual Work Unit (FNVA/AWU) and Family Farm Income per Family Work Unit (FFI/FWU) (this only relates to family farms, not those arranged as legal entities). Of the two, FFI is closer to the concept of ‘farmer income’ in that it represents the profits generated by the farm business which are available to the farm operator to help fund consumption spending, personal taxation and saving. FFI is the reward to all the factors of production owned by the farm operator – the land, labour and capital owned plus the physical labour and managerial input of the farmer and any other non-hired workers; it is therefore a hybrid of all these. In contrast, FNVA measures the reward to all the fixed factors used, irrespective of who owns them. It should be noted that an estimate for the depreciation of capital assets is deducted from both of these indicators, in line with the conventional approach to income measurement (in the short-term actual spending on capital items can be delayed or brought forward).

These two measures are compared in Figure 5 for the EU-27 where it can be seen that their movements are closely correlated. FFI/FWU equated to 85% of FNVA/AWU in 2004, increased to 89% in 2007 before falling to 78% in 2009, from which position it increased to 84% by 2012. On average over the 2004 to 2012 period FFI/FWU was 84% of FNVA/AWU. The close correlation of these measures mean that analyse of FFI/FWU, the most appropriate measure, does not need to be universally accompanied by a separate analysis of FNVA/AWU.



Figure 5: Indicators of farm income, EU-25 2000-06, EU-27 2007-12, 2004-2012



Source: DG AGRI EU-FADN.

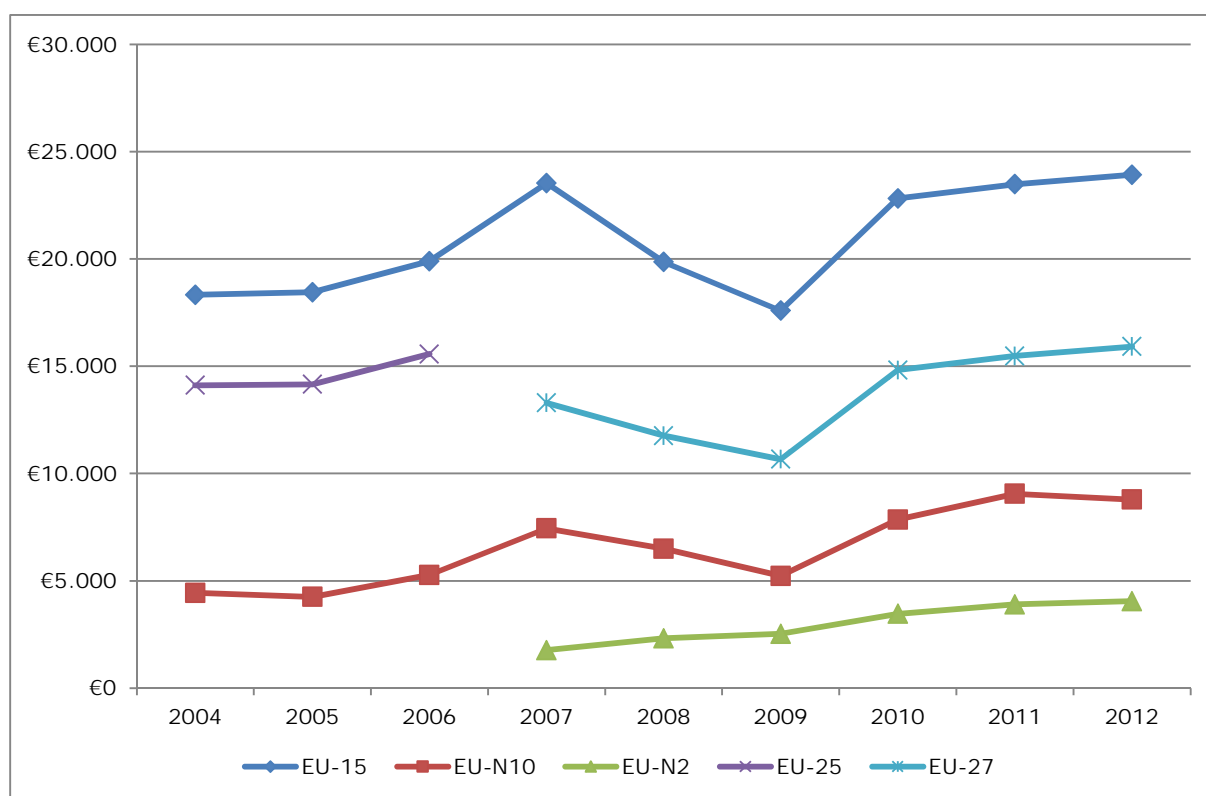
Both of these indicators relate to the rewards earned by self-employed (independent) farmers). Wages paid to the hired workers (who may include managers employed by farms organised as legal entities) are considered later in section 3.2.3.10. The rationale is that, in some Member States, such workers are generally considered as part of the agricultural community and thus potential targets for support under the Common Agricultural Policy.

Within the EU there are important differences between groups of countries that were Member States before 2004 and those that joined subsequently (the treatment of incomes in single countries are presented separately in Chapter 5). Figure 6 disaggregates FFI/FWU by EU-15, EU-N10 and EU-N2. The key points to note are:

- In absolute terms FFI/FWU is highest in the EU-15, then the EU-N10 and lowest in the EU-N2; and,
- FFI/FWU increases over the 2004 to 2012 period with a substantial decline between 2007 and 2009 in all groupings with the exception of EU-N2.

The Figure shows some convergence in absolute levels of income between FFI/FWU in the EU-15 and EU-N10. In 2004 and 2005, FFI/FWU in the EU-15 was just over four times the magnitude of FFI/FWU in the EU-N10, but by 2012 was only 2.7 times larger. There was similar convergence between FFI/FWU in the EU-N2 and the other groups. Although the decline in FFI/FWU between 2007 and 2009 was greater in absolute terms in the EU-15, in percentage terms FFI/FWU declined more in the EU-N10 (30% c.f. 25%). The EU-N2 grouping showed no such decline. The drivers behind these changes are considered later (Chapter 4).

Figure 6: Evolution of FFI /FWU by EU groupings, 2004-12



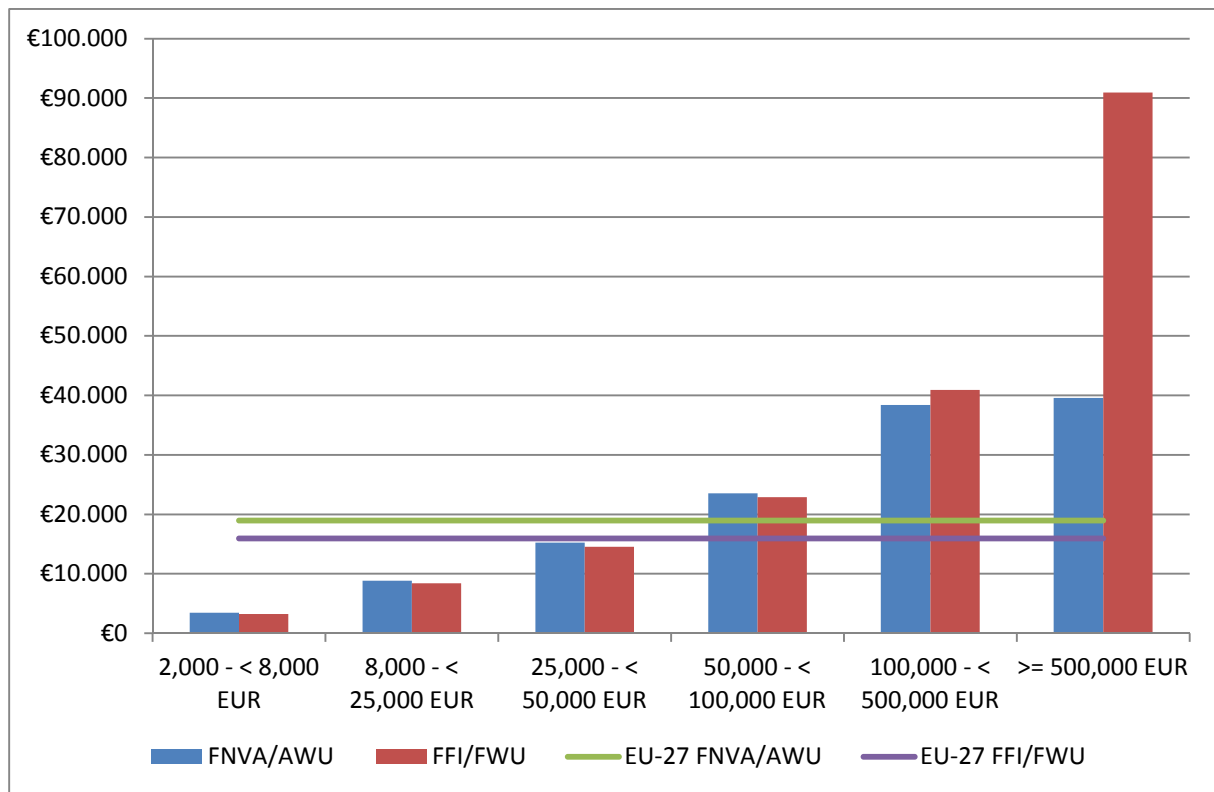
Source: DG AGRI EU-FADN.

### 3.2.3.2. Farm size

When considering farm economic size it is important to bear in mind that the field of observation of FADN does not cover any farms below €2,000 Standard Output and that coverage is not universal until an SO of €25,000 is reached.

With that in mind, it is nevertheless clear that a strong relationship exists between the size of farm business and the average levels of income generated over the three year period 2010-2012. This is evident in Figure 7 which shows both FNVA/AWU and FFI/FWU increasing with scale. FFI/FWU edges above FNVA/AWU for the €100,000-€500,000 size group and is considerably higher for farms above €500,000 (more than double). Though FNVA/AWU also shows a rise across the farm size spectrum, it is fairly similar between these two largest size groups. Literature suggests that this association between farm size and income level is mainly due to the ability of larger farms to take advantage of scale economies, including crucially on returns to labour. The high FFI/FWU among the largest farms reflects the large quantities of the capital and land in these businesses that are combined with relatively small numbers of FWU of (family) labour; it should be recalled that large farms arranged as legal entities are excluded from coverage by this indicator (though they are covered by FNVA/AWU) so that this group will contain many large businesses that are run as family (non-corporate) farms.

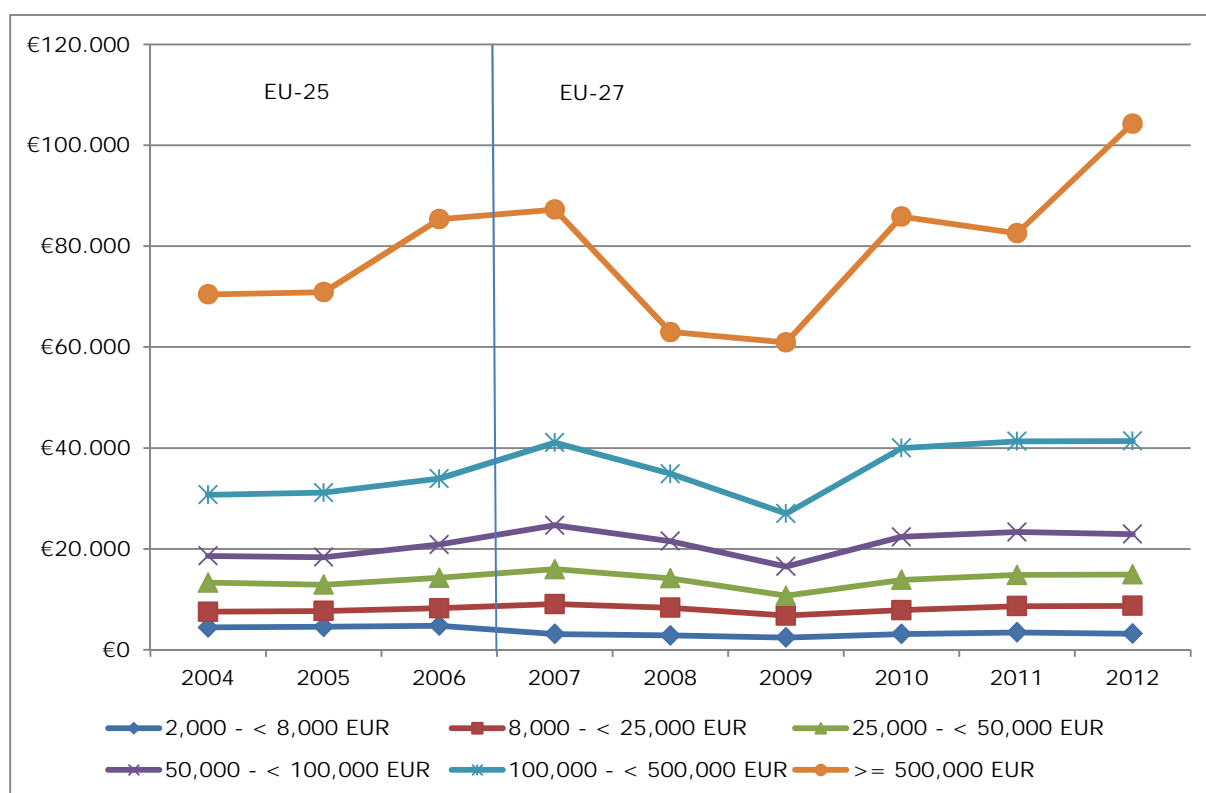
Figure 7: Indicators of farm income by farm size, 2010-2012 average



Source: DG AGRI EU-FADN.

The evolution of FFI /FWU by farm size between 2004 and 2012 found in FADN results is shown in Figure 8. The first point to note is that FFI/FWU increases with the economic size of farms. Within each size group, the general pattern is the same as shown above in Figure 7, but the decrease in FFI/FWU from 2007 to 2008 is not only larger in absolute terms (as would be expected) for the largest size group than it is for the smallest, it is also much more substantial in relative terms (28% c.f. 9%). Prior to that, the apparent decrease in FFI/FWU for the smallest size group in 2007 was largely the result of the accession of Bulgaria and Romania which have a large number of small farms (see Chapter 3.2.3), and the move from EU-25 to EU-27.

Figure 8: Evolution of FFI /FWU by farm size, 2004-2012



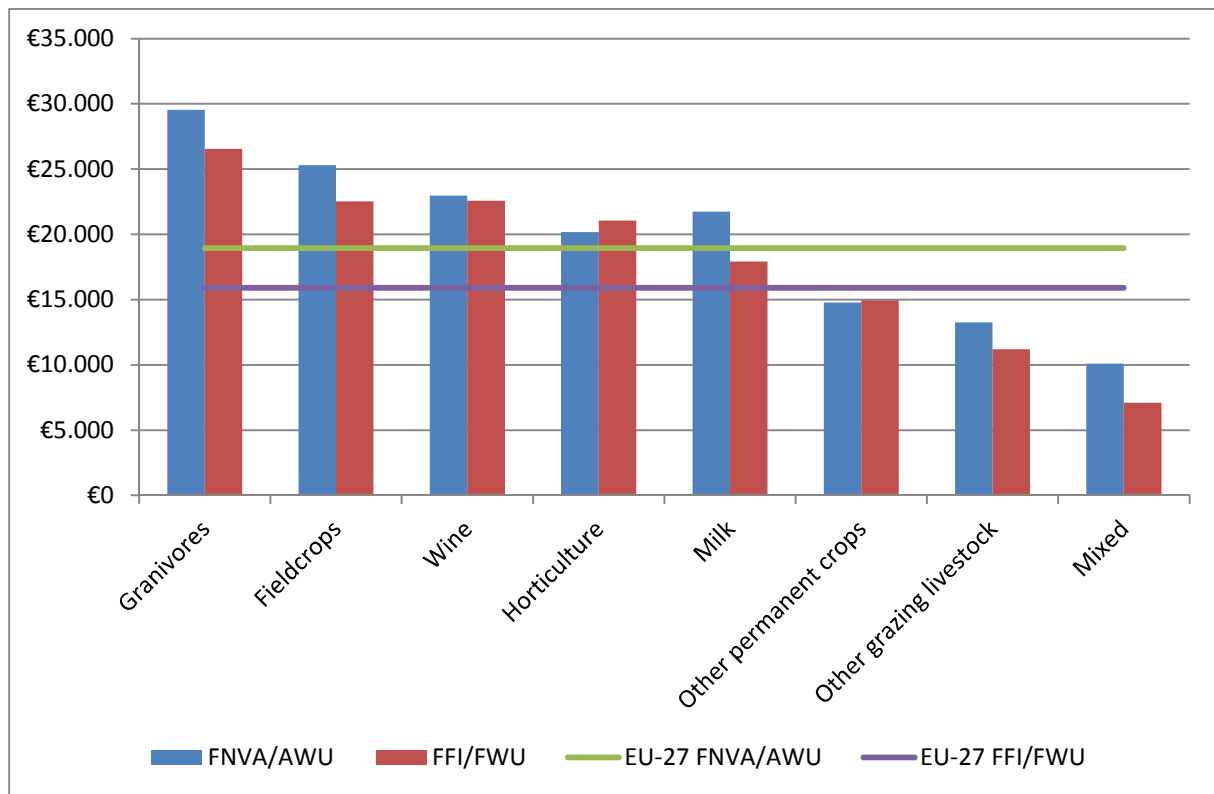
Source: DG AGRI EU-FADN.

### 3.2.3.3. Farm type

Figure 9 examines FNVA/AWU and FFI /FWU (both taking the average for 2010-2012) by farm type using the FADN TF8 classification system<sup>19</sup>. Although the relationship between the two indicators varies by farm type, there is no change in the order of types, with 'Granivores' having the highest farm income and 'Mixed' farms the lowest. These findings are also influenced by scale (see section 3.2.3), with 'Granivores' appearing disproportionately among large farms and 'Mixed' farms disproportionately among small farms. 'Other permanent crops', 'Other grazing livestock' and 'Mixed' farms all had FFI/FWU below the EU-27 average while the other farm types all reported FFI/FWU above the average. This is also the case with respect to FNVA/AWU.

<sup>19</sup> The prevalence of farm types differs across the EU Member States; it should also be noted that 'Granivores' are not included in the Irish sample because the total number of these types of farm is too small.

Figure 9: Indicators of farm income by farm type, 2010-2012 average

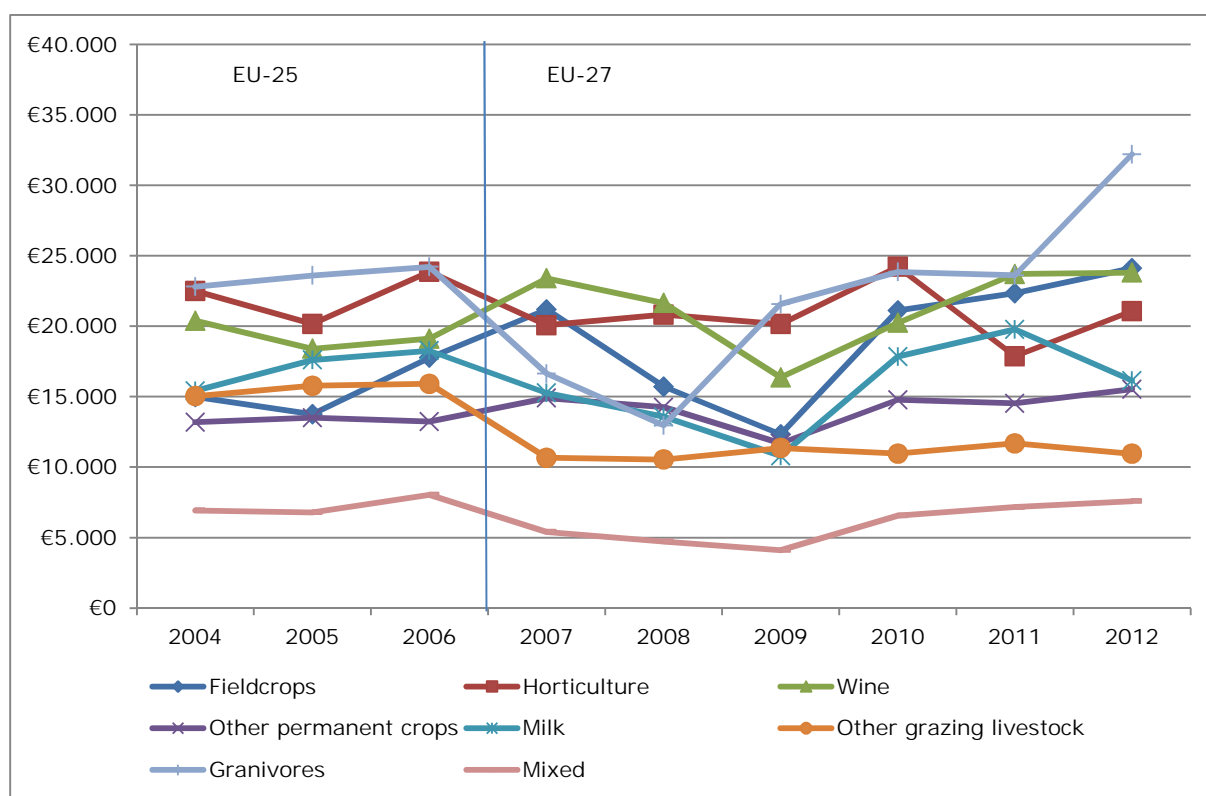


Source: DG AGRI EU-FADN.

The evolution of FFI/FWU for each type between 2004 and 2012 is shown in Figure 10 while some farm types show the same evolution as noted for all farm types at the EU-27 level (Figure 9), others do not. In making this observation it is important to bear in mind the impact of enlargement from EU-25 to EU-27 which generally reduced FFI/FWU at the aggregate level. The 2006-2007 decline in the 'Horticulture' sector is mainly due to the accession of Bulgaria and Romania in which the horticulture sector is very fragmented. Sectors which are less significant in Bulgaria and Romania, e.g. wine, do not show this decrease at EU level.

The dip in FFI/FWU in the 'Granivore' sector in 2007 is partly influenced by the accession of Romania and Bulgaria, but the main causes of the large decrease were a general decline in FFI/FWU and negative FFI/FWU in Denmark and the Netherlands. Negative FFI/FWU in Denmark in 2007 in the 'Other grazing livestock' and the 'Mixed' sectors also contributed to the large decrease seen here (in the later cases there were also large falls in the Netherlands). The developments in these two countries, and in the other Member States, are considered in more detail in Chapter 5.

Figure 10: Evolution of FFI /FWU by farm type, 2004-2012



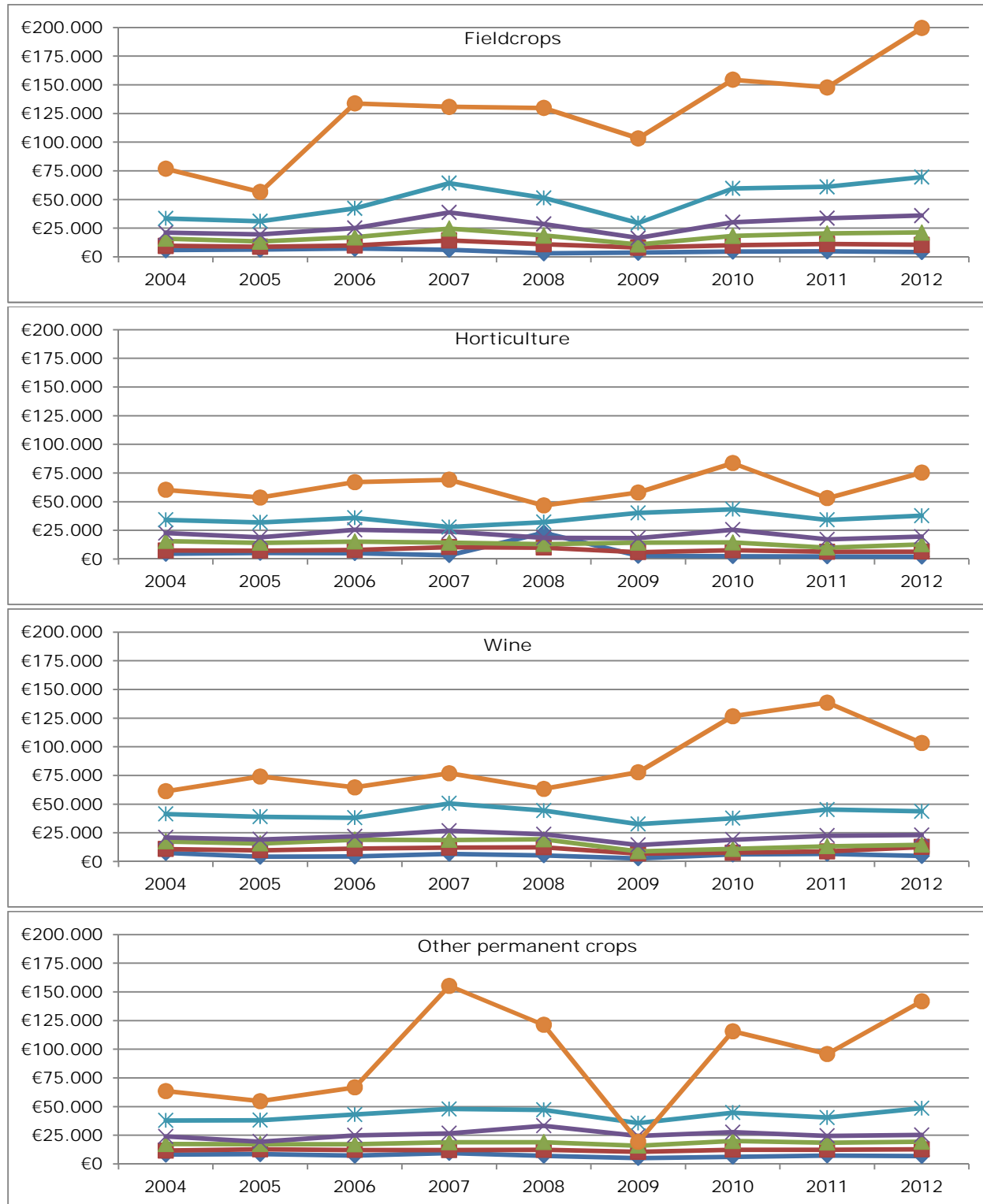
Source: DG AGRI EU-FADN.

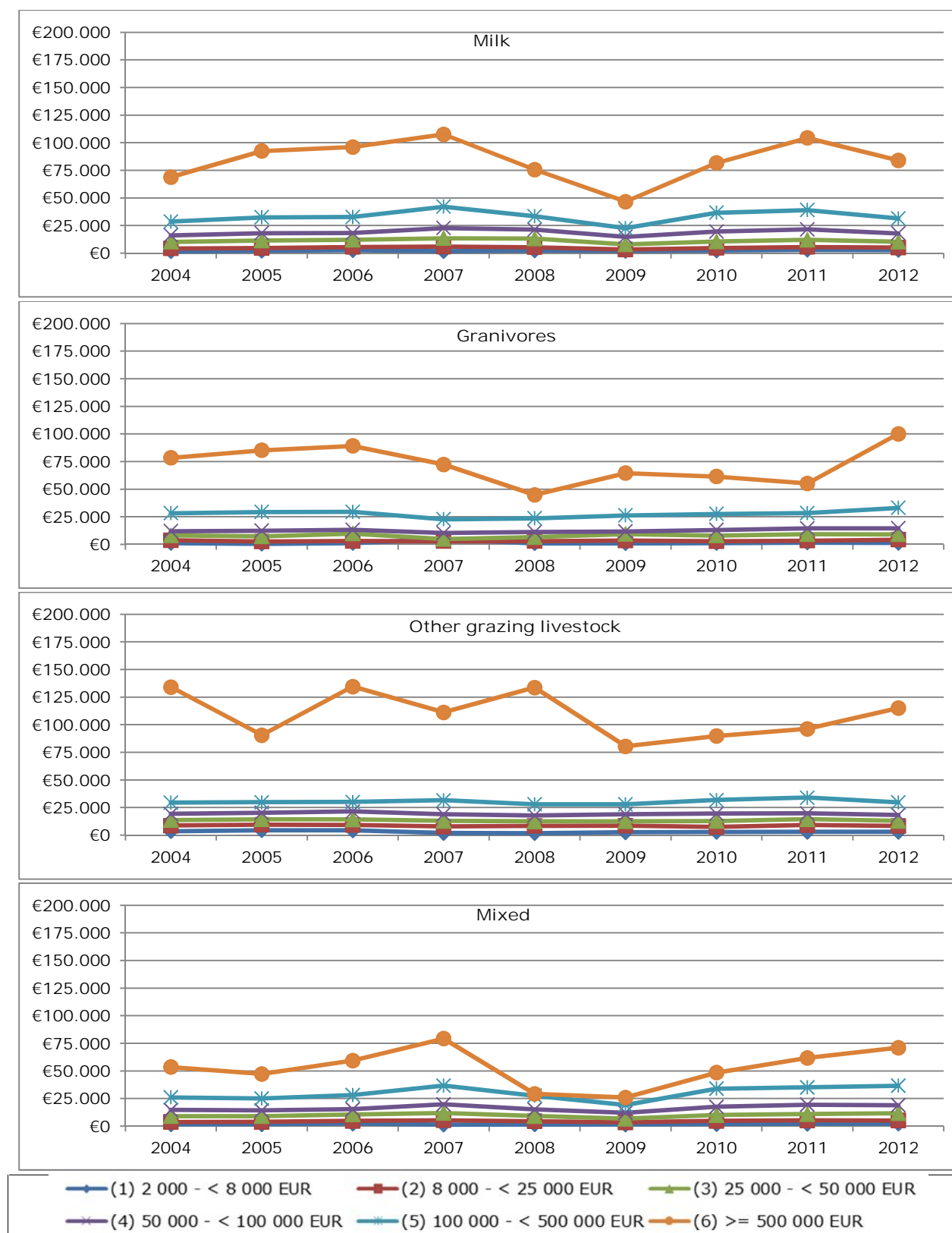
### 3.2.3.4. Size and type

Figure 11 shows the evolution of FFI /FWU between 2004 and 2012 by farm size and type. Although not marked on the Figure to improve readability, the reader should recall the structural break between the EU-25 and EU-27 which took place in 2007 and which will have a disproportionate impact for smaller size groups.

As would be expected, in each farming type the smallest farms have the lowest incomes (though it should be borne in mind that not all countries are represented in these classes) and that absolute incomes increase across the size spectrum. Within each type the pattern was similar across the size classes with the exception of the largest farms which generally show greater volatility (partly because of their higher dependence on hired labour). FFI /FWU in the largest size class also evolved differently in some farm types such as 'Wine' and 'Other grazing livestock'; in others its movements were in the same direction as the other size groups, but were more extreme. The dip in incomes between 2007 and 2009 is present in all farm types and size classes, but the magnitude of the decreases varied by farm type and size.

Figure 11: FFI /FWU by type of farm and size class, 2004-2012





Source: DG AGRI EU-FADN.

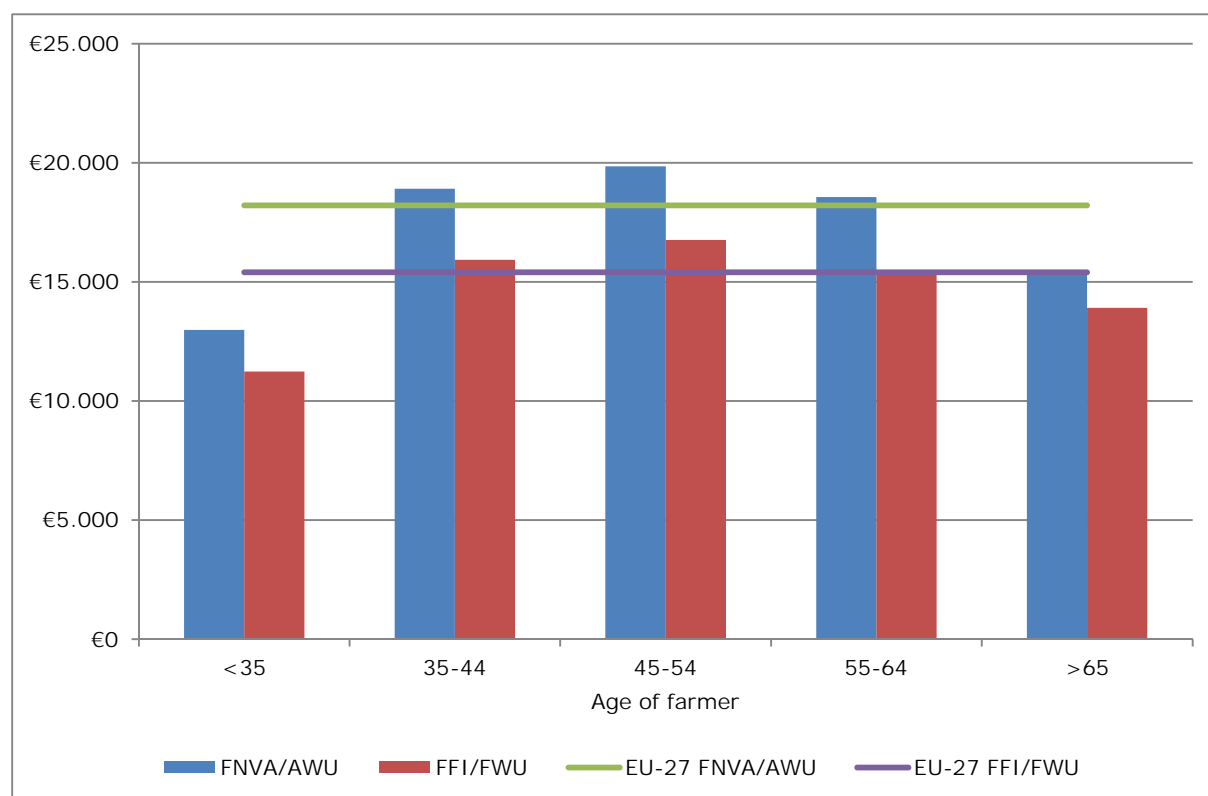
### 3.2.3.5. Age of farmer

Age in the FADN farm return can be reported for up to six combinations of holders/managers and whether they are paid or unpaid per farm. To classify farms by the



age of the farmer, rather than just considering the principle farmer (which can be misleading where other family members contribute to management), the age of each holder/manager has been weighted by their respective contribution to their collective sum of AWU. Indicators of farm income are assessed by this age of farmer indicator in Figure 12. The pattern of income is the same for both indicators and shows income increasing with age up to the age of 54, after which income declines.

Figure 12: Indicators of farm income by age, EU-27 2010-2012

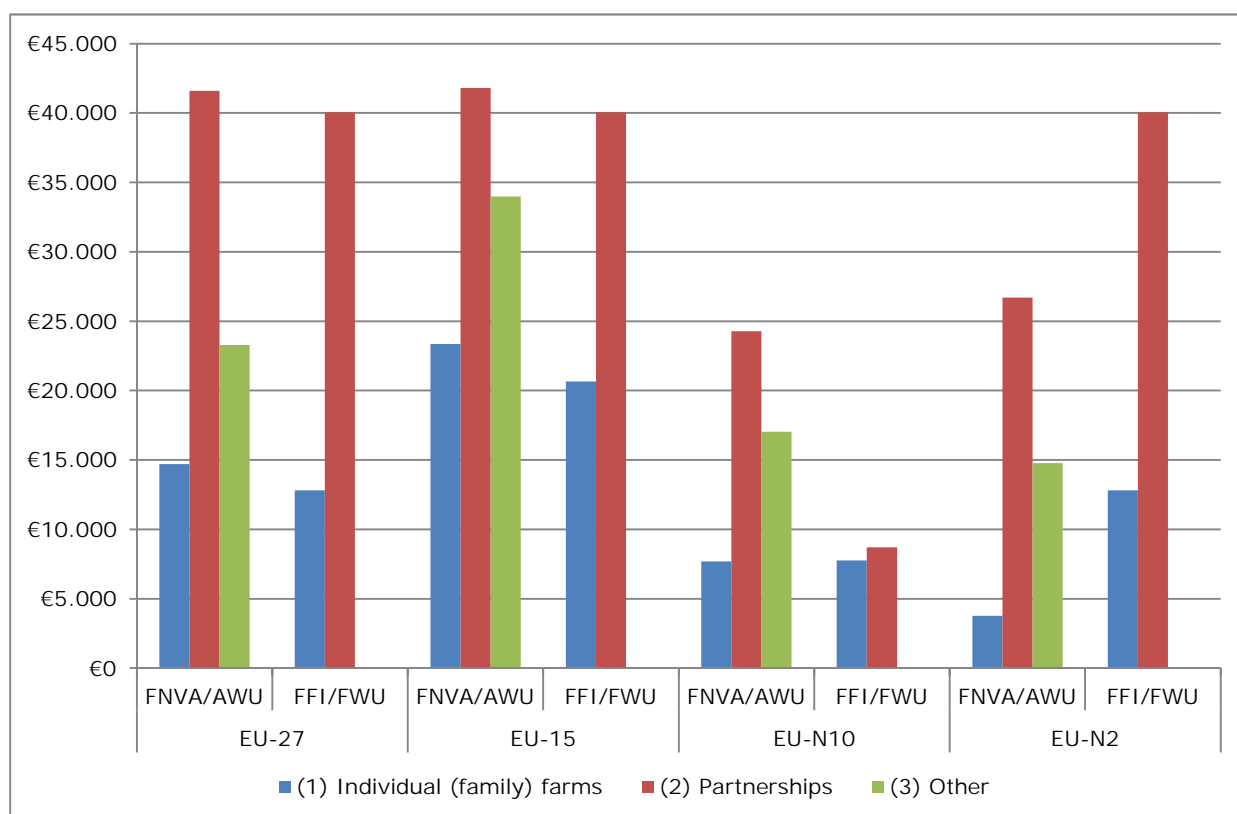


Source: DG AGRI EU-FADN.

### 3.2.3.6. Institutional structure

Figure 13 presents the indicators of farm income by ownership structure for the EU-27 and EU sub-groups. The first point to note is that, while FNVA/AWU is appropriate for farms of all ownership structures, FFI/FWU is not meaningful for farms organised as legal entities (company farms) where all the labour is treated as paid; FADN results do not calculate it for farms that have zero unpaid labour. With that in mind, income (as measured by FNVA/AWU) is lowest for all sub-groups for individual (family) farms and highest for farms organised as partnerships; economic size provides part of the explanation for this with partnerships tending to be more prevalent in larger size groups (European Commission, 2013). FNVA/AWU on company farms (other) falls between these extremes. For all sub-groups with the exception of the EU-N10, FFI/FWU is considerably higher for farms organised as partnerships than for individual (family) farms. The gap between FFI/FWU for these organisational forms is greatest in the EU-N2 (a factor of 7.1) and least in the EU-15 (a factor of 1.8); for the EU-N10 FFI/FWU farms organised as partnerships exceeds that of individual (family) farms by a factor of 3.2. It is expected that farm size is the key explanatory factor of these differences rather than anything linked to the way in which farms function under the three ownership structures shown.

Figure 13: Indicators of farm income by ownership structure and EU sub-group, 2010-2012 average

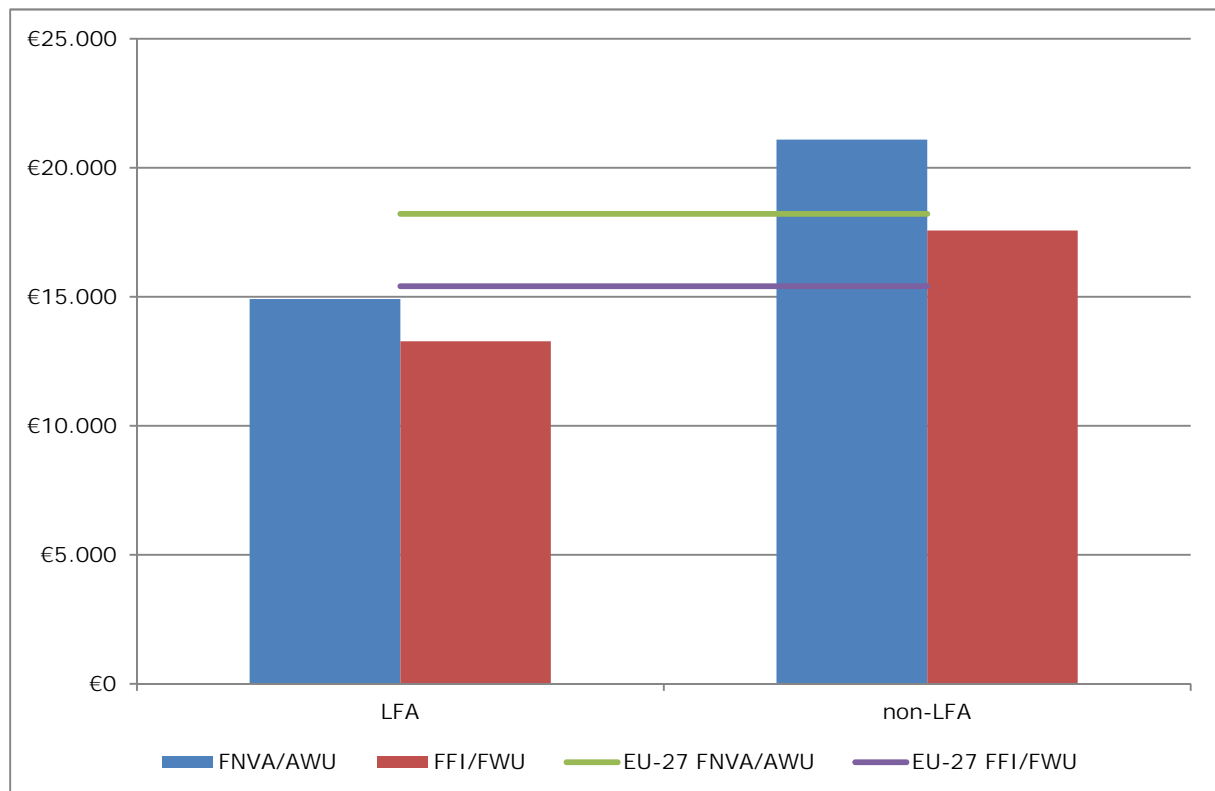


Source: DG AGRI EU-FADN.

### 3.2.3.7. Less Favoured Area status

Figure 14 shows the indicators of income for farms in Less Favoured Areas (mountain and non-mountain areas) and those in non-Less Favoured Areas (including those with no significant area). As one would expect from the designation, income is higher in the non-LFA, despite the LFA payments made.

Figure 14: Indicators of farm income by Less Favoured Area status, EU-27 2010-2012



Source: DG AGRI EU-FADN.

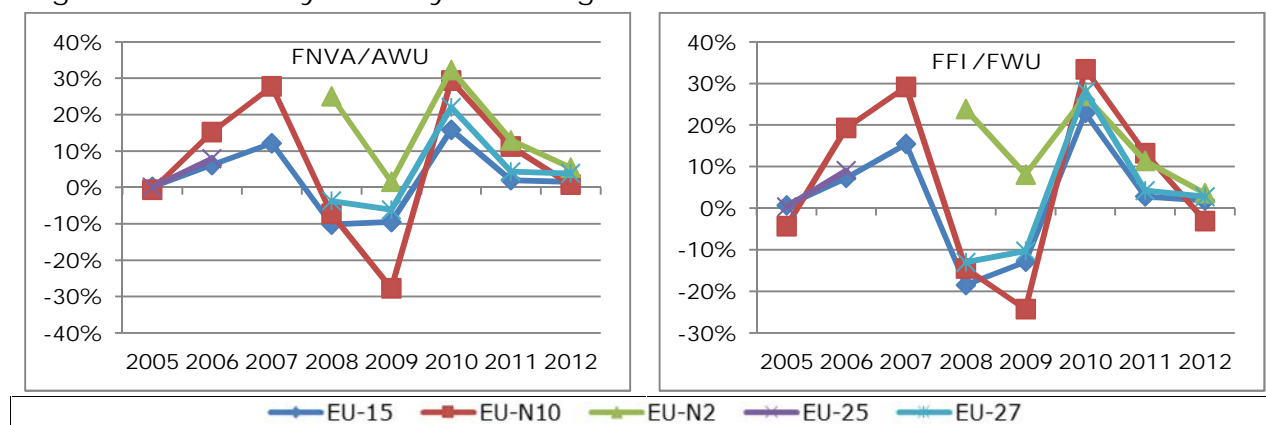
### 3.2.3.8. Volatility

Volatility can be considered at the group level (Member State, or type and size class) and at the level of the individual farm. Group figures can be of interest, but they hide much of what happens at the farm level because the short-run experiences of single businesses, while significant to their operators, to an extent cancel each other out.

#### Group level volatility

The first approach is to examine the year-on-year changes seen in average result for groups of Member States. While the direction of change is broadly similar in EU-15 and EU-N10, the latter group shows a more pronounced variation, though in the last three years of the series that is a closer commonality (Figure 15). The negative changes in the middle of the period were generally recouped in following years.

Figure 15: Annual year-on-year change in farm income indicators



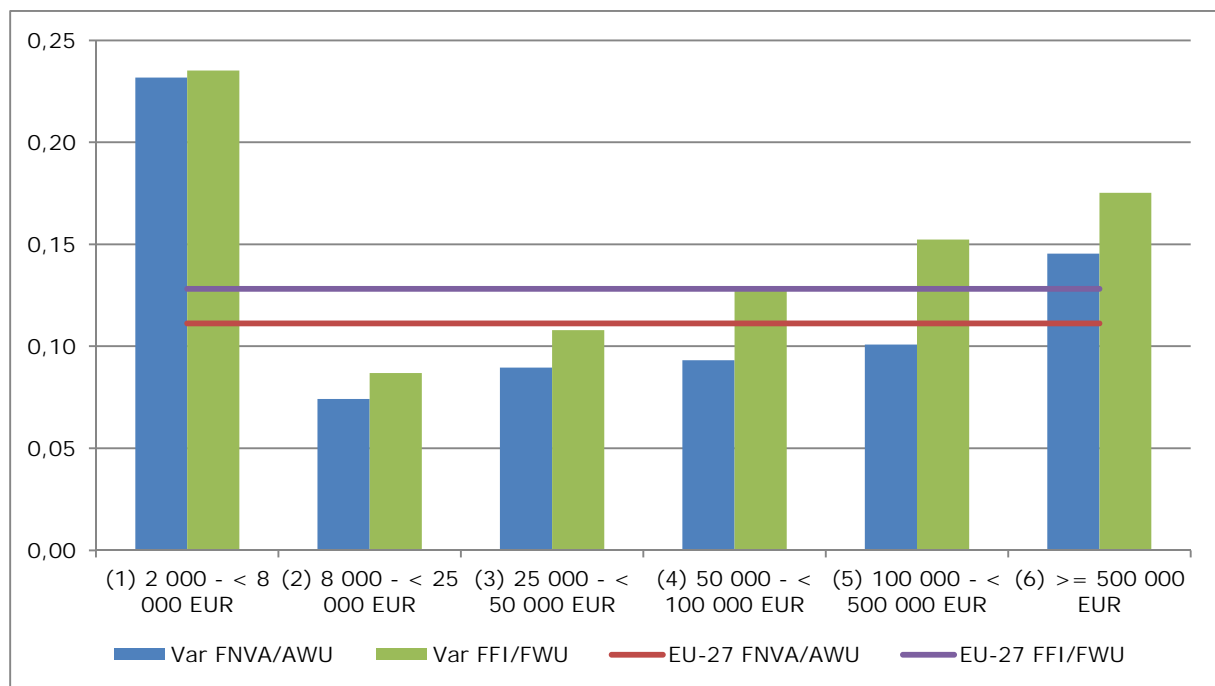
Source: DG AGRI EU-FADN.

Another, more formal, way of measuring volatility is using a coefficient of variation<sup>20</sup>; the higher the coefficient, the greater the relative variation from year to year. The coefficients have been calculated for 2004 to 2012.

The analysis here is carried out for size classes (Figure 16) and type of farming (Figure 17). It is clear that the variability of incomes, as measured by the coefficient of variation, in FADN results is much greater in the smallest size class of farms, though it should be recalled that this omits data from many Member States. Beyond that, variation rises with larger farm size, though there is little difference between the medium size groups in terms of FNVA/AWU. However, this must also reflect the domination of the largest size class by 'Granivores'. Among farming types 'Granivores' is characterised by volatility of income, closely followed (in terms of FFI/FWU) by 'Fieldcrops'. At the other end of the volatility spectrum, with the most stable incomes, are 'Horticulture' and 'Other permanent crops'.

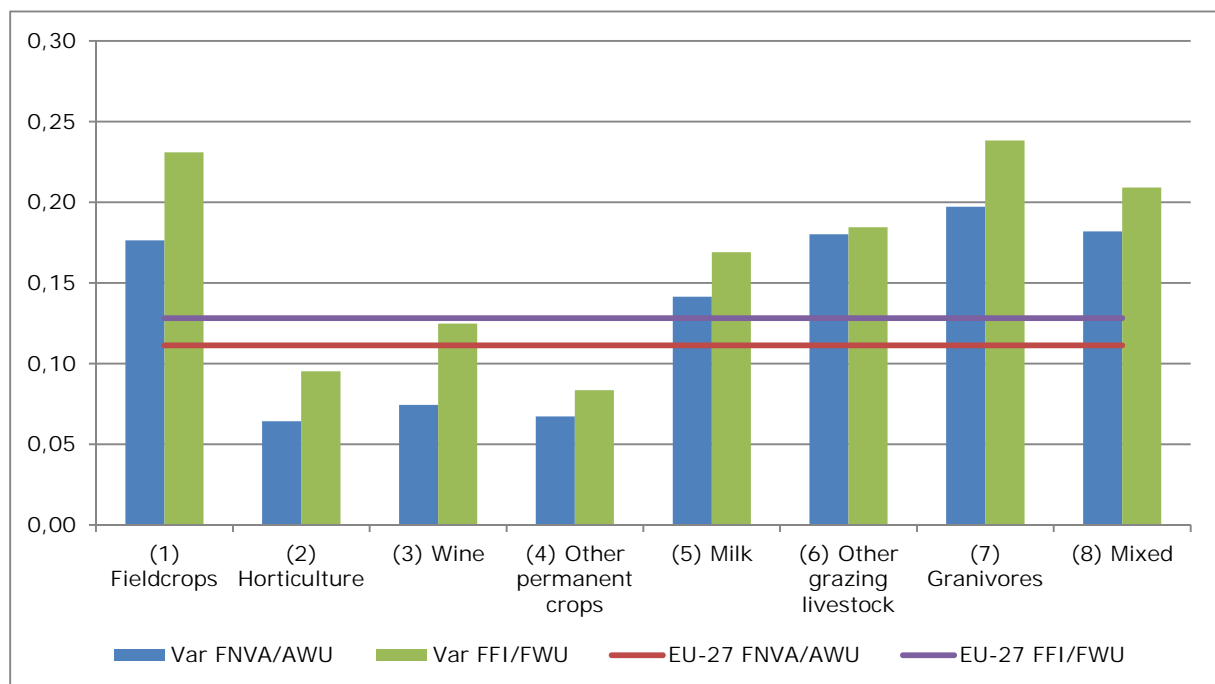
<sup>20</sup> Standard Deviation/mean.

Figure 16: Coefficient of variation of income indicators by farm size, 2004-2012



Source: DG AGRI EU-FADN.

Figure 17: Coefficient of variation by farm type, 2004-2012



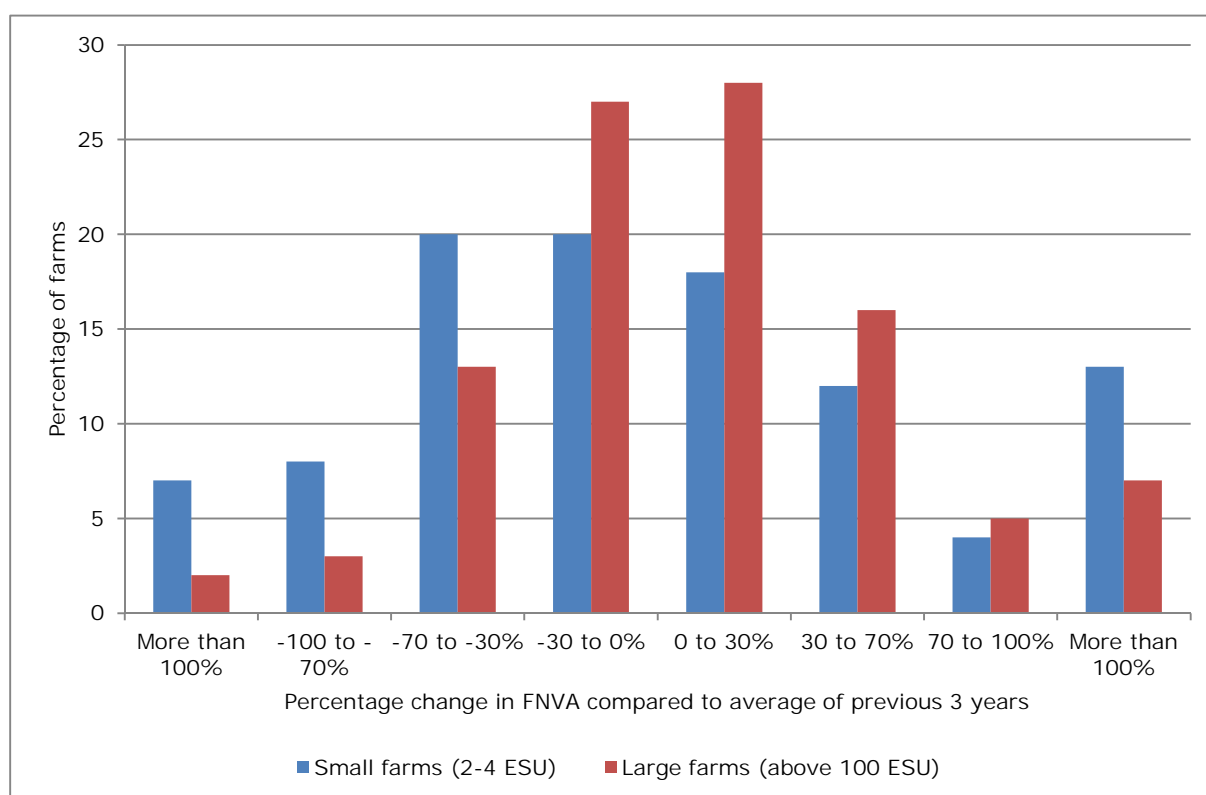
Source: DG AGRI EU-FADN.

### Farm level volatility

Almost all results reported in this document have been freshly calculated using the latest FADN results. However, the data to construct a new assessment of farm-level volatility (an

up to date version of (Figure 18) are not available, though it is unlikely that the overall pattern would be much altered since the Commission published results for 1998-2007. According to that analysis, a higher proportion of small farms appeared to see large negative changes (more than 30%) in FNVA compared to the average of the three previous years relative to large farms which in turn were more likely to see positive changes (up to 100%). Despite this general pattern, a high proportion of small farms recorded an increase of more than 100% than did large farms. However, a key point to note from the Figure is that 55% of large farms and 38% of small farms experienced income volatility of  $\pm 30\%$  from the previous three year average. Such information is important to policy that attempts to bring greater stability to the incomes of farm operators from their agricultural activities.

Figure 18: Farm level volatility, 1998-2007



Source: Elaborated from European Commission (2010) based on EU-FADN data.

### 3.2.3.9. Distribution of incomes

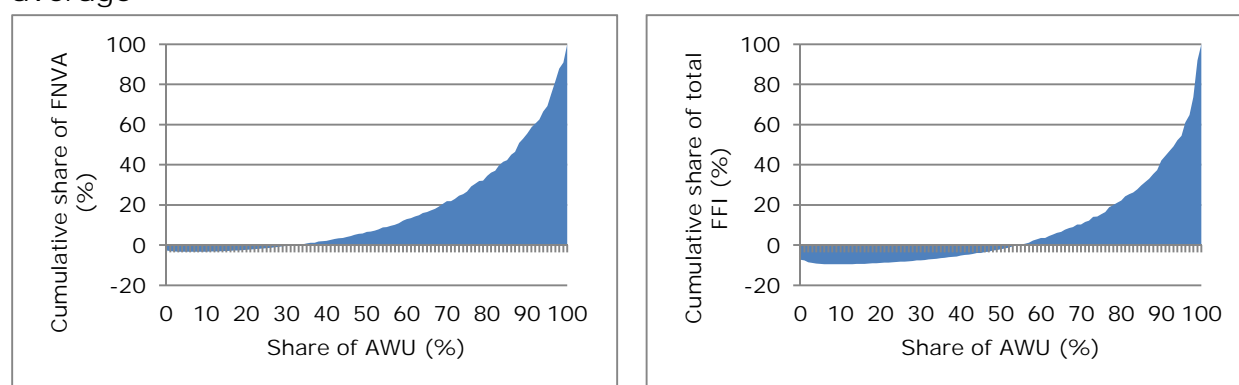
Figure 19 presents the distribution of income (FNVA and FFI) among the labour force (AWU) for the EU-27 using a Lorenz curve<sup>21</sup>. An average income at the farm level for the period 2010-12 has been used. An equal distribution of income would show a straight line from the origin to the top right hand corner. The evidence seen here demonstrates that the distribution of income is not equal. Furthermore, income for large parts of the farm labour force was negative, much more so in the case of FFI. In FNVA terms, 20% of the agricultural labour force generates 66% of FNVA with 10% accounting for 55% of FNVA.

<sup>21</sup> A Lorenz curve is a graphical representation of the cumulative distribution of wealth or income. A straight line from the origin to the top right hand corner at 45° would indicate perfect equality. The extent of deviation from this straight line shows the extent of inequality.

The lack of equality is even more noticeable in FFI terms where 20% of the labour force generates 78% of the FFI but 10% generates 58% of FFI.

Given that these incomes cover three years, the numerical importance of labour units with negative incomes from farming raises the question of how the holdings to which they belong manage to stay in business. Income sources from outside the farm business are expected to play a major part in explaining the persistence of such farms, though this might also involve increases in borrowing against assets that may or may not be increasing in value in real terms. Though non-agricultural income can be documented in countries where farm accounts surveys collect such information (and, for example, is well documented in the ARMS survey in the US), the lack of coverage of variables on other household incomes by FADN means that no direct evidence can be drawn from the EU's main data source on farm economics. This is regrettable and points to the need for change in the coverage of FADN to bring it in line with what many Member States already do in their national surveys of farm accounts.

Figure 19: Lorenz curve of the distribution of FNVA and FFI, EU-27, 2010-2012 average



Source: DG AGRI EU-FADN.

The Gini coefficient can also be used to measure the distribution of income. This coefficient is the ratio of the area between the line of equality<sup>22</sup> and the Lorenz distribution. A value of 0 shows perfect equality of income and 1 perfect inequality.

Figure 20 presents the Gini coefficient for the various EU groupings. Some caution is required in interpreting this data because the FADN field of observation differs by Member State with smaller farms generally not included in the EU-15. That said, two patterns stand out. First, the distribution of FNVA per AWU is less concentrated in the EU-15 than the EU-N10 or EU-N2. Second, income concentration is generally decreasing in the EU-N10 and EU-N2 showing a degree of convergence with the distribution in the EU-15. That said, it will be at least five years before a definitive judgement on the extent of convergence can be reached given annual fluctuations<sup>23</sup>. A final observation is that income concentration increased in the EU-15 in 2008 and in the EU-N10 and EU-N2 in 2009 as a result of the financial crisis before declining to pre-2008 levels in the case of the EU-15 and to trend in the other groupings. The lack of change in income distribution between the beginning and

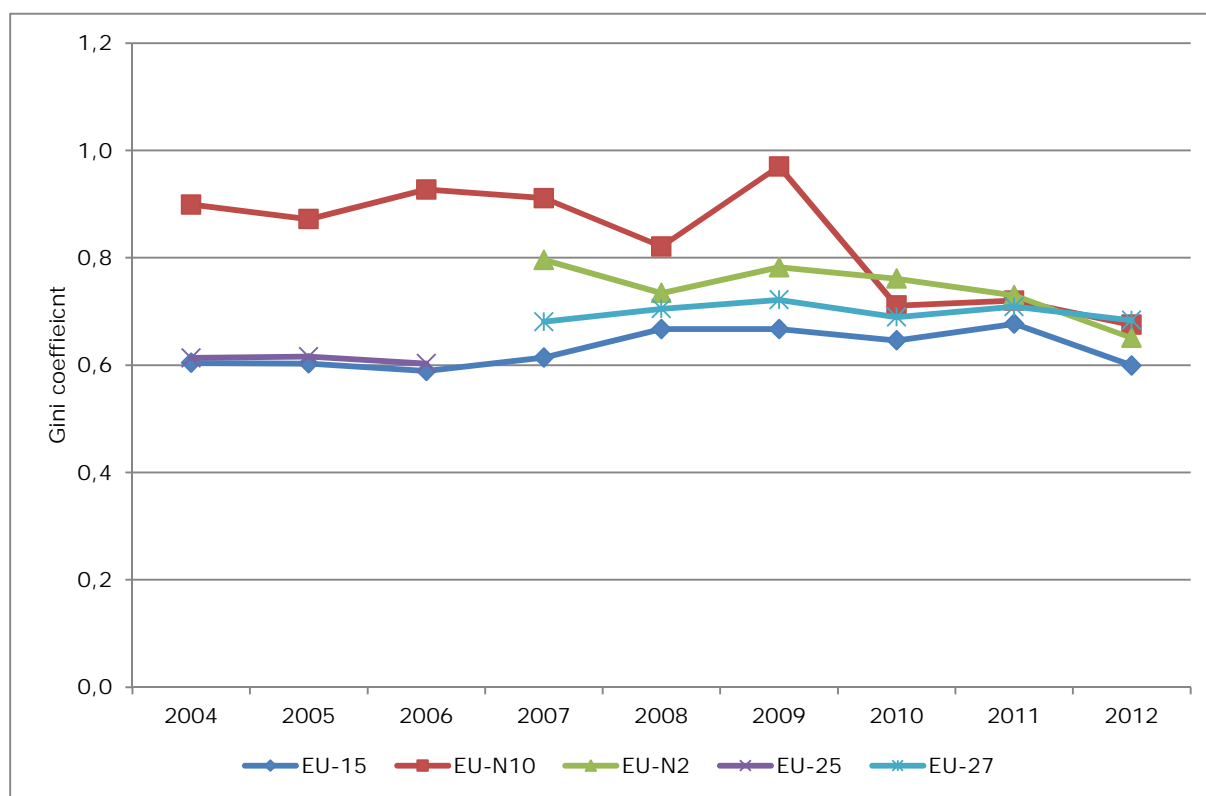
<sup>22</sup> Straight line from the origin to the top right hand corner at 45°.

<sup>23</sup> A reminder of the dangers of looking at short-term trends and focusing on annual data is provided by European Commission (2014a) which, based on a data series finishing in 2011 concluded that income concentration was increasing in the EU-15. With the addition of 2012 data this now looks incorrect with the 2008 to 2011 period appearing to be a temporary phenomenon. However, this conclusion requires data from further years to be confirmed.

end of the observation period in the EU-15 might suggest that a Gini coefficient of around 60% is typical for the agricultural sector.

European Commission (2014b) notes that income inequality in the EU-N2 decreased as a result of the increase in direct payments during the phasing-in process. An examination of the balance of current subsidies and taxes reveals that subsidies did indeed increase by higher proportions for smaller farms in both Bulgaria and Romania.

Figure 20: Development of the Gini coefficient of FNVA per AWU



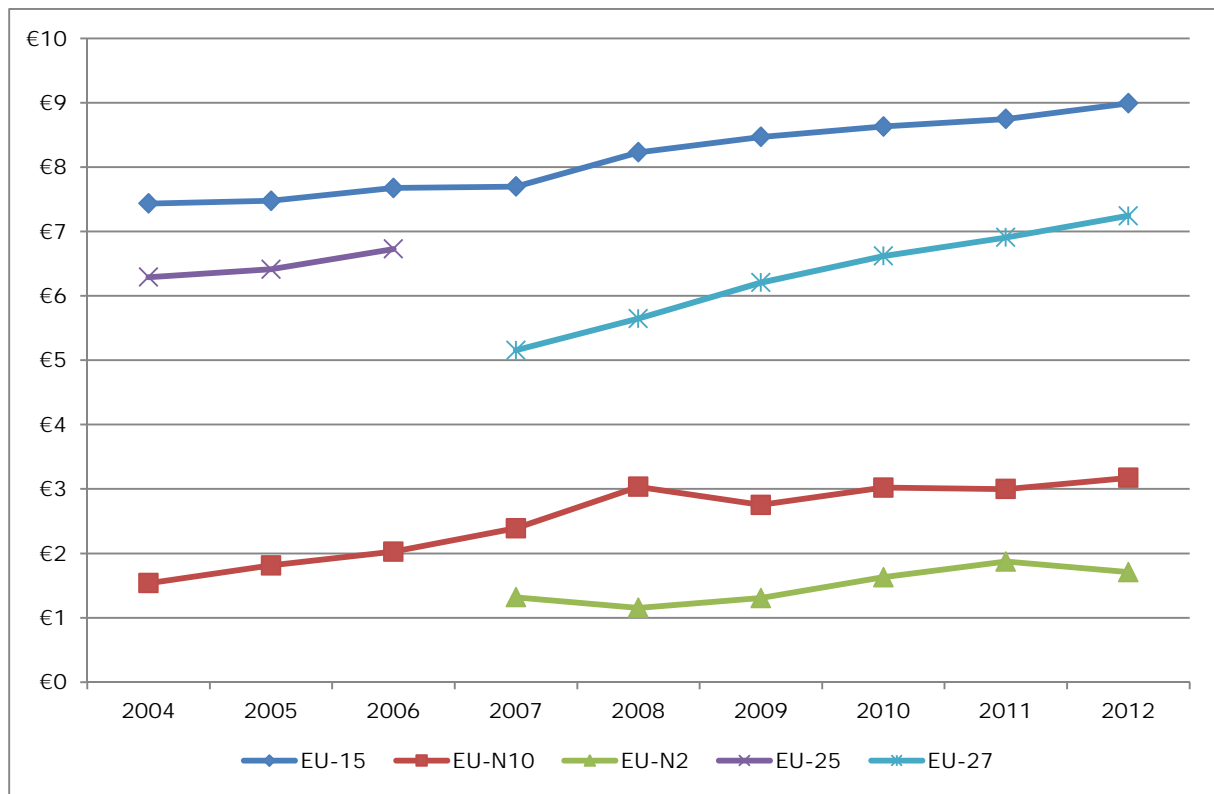
Source: DG AGRI EU-FADN.

### 3.2.3.10. Wages of hired farm labour

Although the incomes of self-employed farmers are the main focus of our attention in this report, there is interest in the earnings of hired workers, not least because they are numerically significant in some Member States and opinion in some countries suggests that there they are seen as part of the agricultural community for policy purposes. However, it must be emphasised that the factors determining their incomes are fundamentally different from those that drive the incomes of farmers; for example, wage levels are not directly connected to the market conditions for agricultural commodities. FADN contains some data that are relevant to the earnings of hired workers, and for completeness these are reported. Figure 21 presents the evolution of agricultural wages from 2004 to 2012.



Figure 21: Paid labour (€/hour), 2004-2012

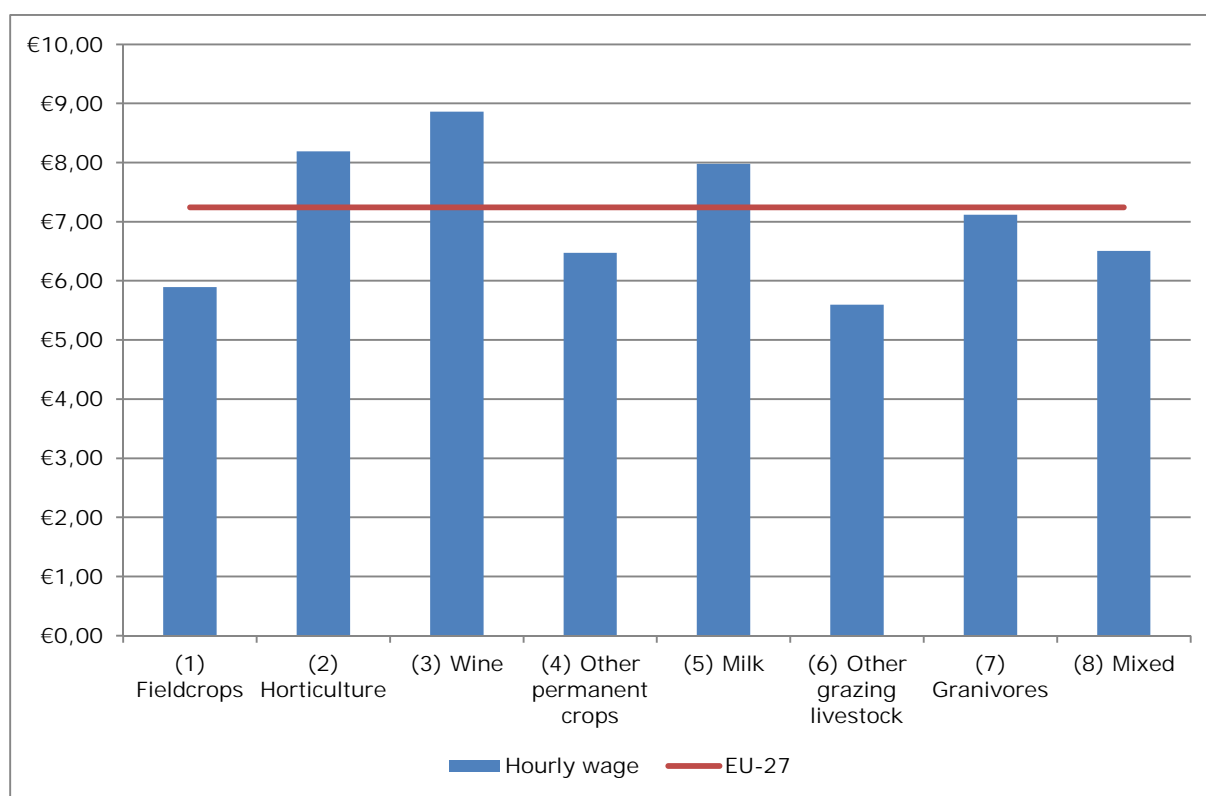


Source: DG AGRI EU-FADN.

The key points are that, firstly, agricultural wages increased steadily (in nominal terms) over the 2004-2012 period with only the EU-N2 group experiencing a decline in 2008 and the EU-N10 one in 2009. Secondly, agricultural wages in the EU-N10 converged with those in the EU-15, but those in the EU-N2 did not.

Agricultural wages averaged over the years 2010-2012 by farm type are shown in Figure 22. There are some apparent differences. Wages per hour are highest in the wine sector, followed by the horticulture and milk sectors (the three sectors where wages exceed the EU-27 average) and are lowest in 'Other grazing livestock' and 'Fieldcrops' farm types. However, the way in which FADN takes account of casual labour is not clear and, in practice, low-waged casual labour in the wine and horticultural sector might reduce the real average wages in these sectors.

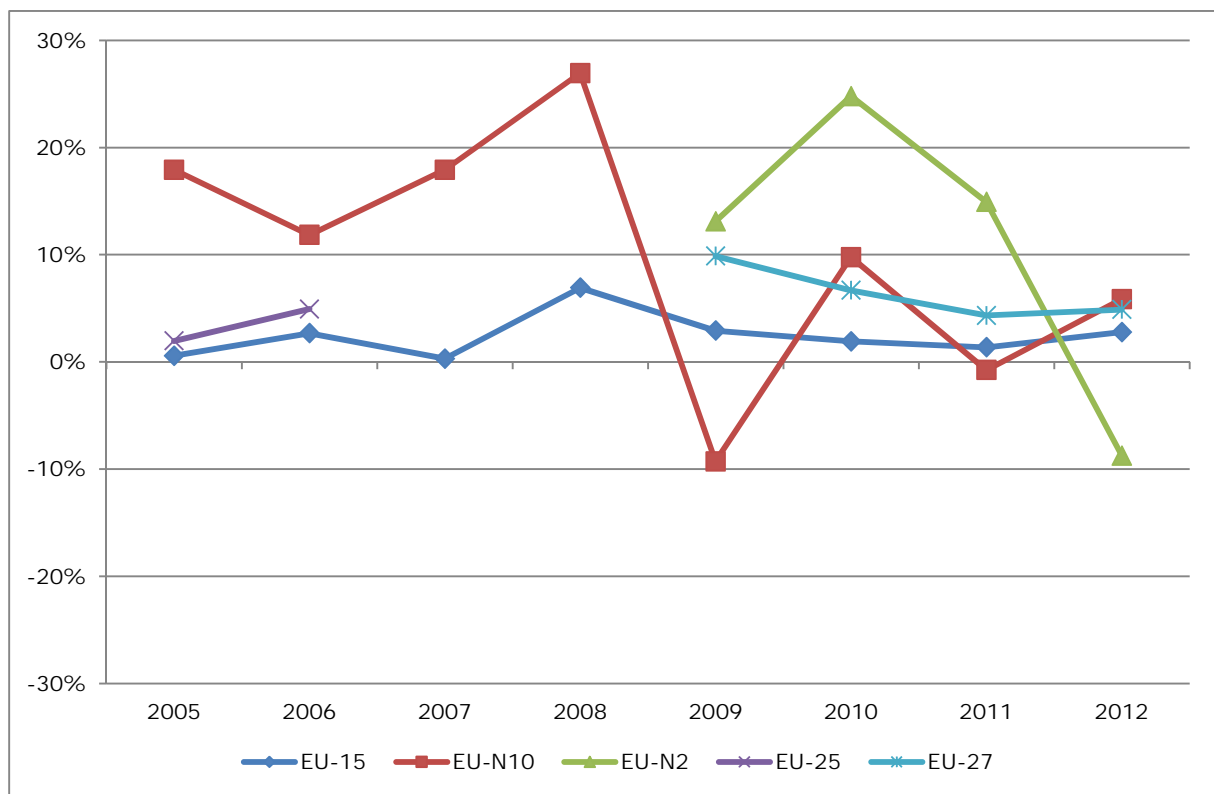
Figure 22: Paid labour (€/hour) by farm type, 2010-2012 average



Source: DG AGRI EU-FADN.

Annual volatility in paid agricultural wages is shown in Figure 23. The main volatility is in the EU-10 where wages have been rising more quickly (see above). There was a major impact in 2009 in EU-10, which is possibly linked to the adverse economic conditions experienced in these Member States at the time.

Figure 23: Annual year-on-year change in paid agricultural wages per hour



Source: DG AGRI EU-FADN.



## 4. THE DYNAMICS OF FARM INCOMES AND THE KEY DRIVERS

### KEY FINDINGS

- A substantial minority of holdings (at least a third) derive income from other gainful activities, earnings from property, pensions and transfers. The drivers of this income are largely those that shape the general economy. Some 12% of EU-27 farms also draw income from diversified activities and diversified activities increase with scale. This income is also driven by general economic factors, although some will be related to the agricultural economy.
- The most important component of agricultural revenue is returns from the market which account for 86% of FADN Total Output for the EU-27.
- Market returns are driven by quantity of output and price. Yields have been relatively stable, but prices, especially for crops, have fluctuated considerably over the 2005 to 2012 period.
- Subsidies make up the balance of Total Output; there is no suggestion that changes in subsidies have played a major role in the evolution of income.
- The most important cost element is total intermediate consumption which accounts for two-thirds of total expenses for the EU-27. Depreciation accounts for 15% of total costs, wages paid 9%, rent 5% and interest payments 3%.
- Total intermediate consumption is made up of total specific costs (crop and livestock) and overheads (machinery and building costs, energy, contract work and direct inputs).
- These elements of intermediate consumption have all increased between 2004 and 2012, but specific crop costs have increased the least. Within specific crop costs, fertiliser cost is the most volatile element. Within overheads, energy costs have been the most volatile and showed the sharpest absolute increase.
- Although the use of paid labour has declined, wages paid per farm increased steadily between 2007 and 2012
- The importance of these income components differs by farm type. Subsidies account for a quarter of the value of total output in 'Other grazing livestock' farms, but less than 5% in the horticulture, granivore and wine sectors. There is less difference in the relative importance of costs by farm type, although paid wages are more important in the horticulture and wine sectors.
- Analysis by farm size shows that the relative importance of subsidies decreases as farm size increases.

The way in which farming incomes have been changing over time has been described in previous sections. Here we are concerned with the explanations for these changes and the factors that drive them. While the emphasis has to fall on the incomes that farmers derive from their agricultural activities, it is necessary to first outline the broader picture that embraces the incomes of the households of farmers, as this bears a close relationship with the CAP's core aim of ensuring a fair standard of living for the agricultural community.

When examining drivers, it is helpful to break these down according to scale (from global to local, following the model of Hazell and Wood (2008)) and by time period.

## 4.1. Farm household income

By definition, farm households will receive part of their incomes from farming, and in many cases where farming is carried on as a commercial activity this will be a major source though not necessarily the largest in terms of earnings. As noted in Chapter 1, a substantial minority of holdings in the Farm Structure Survey (at least a third and probably a much higher proportion if spouses and partners are included) have some other gainful activity (OGAs) outside the farm businesses, to which should be added earnings from property (interest and rent) and various forms of pensions and transfers.

The important point to recognise in connection with OGAs and earning from property is that the drivers are largely those that shape the general economy rather than those specific to agriculture. The opportunity for farm households to take employment off the farm or build a business will be affected by issues such as the general level and growth in consumer spending growth, interest rates, government interventions to stimulate economic activity and so on.

Then there is the issue of diversification on the farm into activities that are not strictly part of the farm business, e.g. tourism, handicraft, processing of farm products, wood processing, aquaculture, contract work using farm equipment, etc. Some 12% of EU-27 farms are diversified in this sense, and the proportion increases with farm size (see Barthomeuf, 2008).

While pressure to consider on-farm diversification will mirror inversely what is happening to profitability of agriculture, the opportunities to diversify and the earnings from them are again likely to be driven primarily by what is happening in the general economy, though for the process of farm products and for contract work using farm equipment (which may be for other farms and forestry holdings) a case could be made that there may be a partial connection with developments in the agricultural economy.

At the farm level the growth of OGAs and of diversification are commonly associated with inter-generational change, so factors that impinge on decisions on succession and on career choices by younger family members will act as drivers to the non-farming incomes of farm households (Hill, 2012).

It should not be forgotten that, in the long-term, changes in the real value of assets constitute an element in personal income. Farm families tend, as a group, to hold more assets than society in general in most countries principally because of the value of the agricultural land that they own. They are thus in a position to make substantial real capital gains when land prices rise, even when these movements are brought about by non-agricultural factors; these gains help explain why some farmers persist in remaining in agriculture. Of course, were land prices to fall they would make capital losses. It follows that factors that determine land prices are drivers of long-term income change<sup>24</sup>. One of these is the preferential treatment given in taxation systems in many Member States to wealth in the form of agricultural assets, particularly to capital gains on agricultural land and on its transfer between generations (OECD, 2005). It follows that national government policy in this area of tax legislation can materially affect long-term income. As things stand

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<sup>24</sup> Drivers of land prices are considered by European Parliament (2013b); Swinnen, et al. (2008); and the Framework 7 project Factor Markets. Grant agreement N°: 245123-FP7-KBBE-2009-3. <http://www.factormarkets.eu/content/rural-land-market>

and despite the commonality of preferential treatment, there are differences between countries in capital taxation that are significant both to the comparisons between farmers

## 4.2. Income from agricultural activity

Any analysis of the drivers of change in the income from agricultural activity, the patterns of which were described in Chapter 1 above, has to reflect the elements that compose the indicators used to measure income and its changes. In this report they are, at microeconomic level, FNVA/AWU and FFI/FWU and their equivalents at macroeconomic level of NVA/AWU and Entrepreneurial Income per AWU of Family Labour Input (Indicators A and B respectively when expressed in real terms and in index form). The definitions of these indicators were given in Chapter 2 above. In short, the main elements are the value of outputs, the costs of producing that output (which differ between the indicators), subsidies received that are related to that production (though not necessarily coupled to it), and the volume of the labour among which the rewards are divided. These are the main groups of drivers that we need to examine.

### 4.2.1. Results by EU group

In order to focus on the most important drivers of change and to understand other comparisons it is necessary first to know about the main components of both the revenue received and the costs.

Figure 24 presents the composition of income and expenses/income by EU grouping using an average for the 2010-2012 period. The difference between income and expenses is Family Farm Income (FFI), shown in the right hand bar for each grouping<sup>25</sup>. Most family farmers draw their income from what they would understand as profit (FFI), the difference between income and expenditure.

The first point to note is the large difference between the absolute amounts of revenue and expenditure per farm between EU groups. Average income in the EU-15 is 2.3 times that in the EU-N10 and 6.5 times higher than that in the EU-N2. However, the focus of attention here has to fall on their compositions.

The most important revenue component seen in FADN results is returns from the market. This accounts for 86% of FADN Total Output for the EU-27 and EU-15, 82% for the EU-N10 and 88% for the EU-N2; subsidies (the sum of net current and investment subsidies) make up the balance. These include EU coupled and decoupled payments, less favoured area (LFA) payments, rural development payments and national aid, in all cases net of any relevant taxes (but not, of course, taxes on incomes).

The most important cost element for all groupings is total intermediate consumption which accounts for just over two-thirds (68%) of total expenses for the EU-27 grouping<sup>26</sup>. This is a broadly consistent proportion across the sub-groups. The next most important cost component is depreciation which accounts for 15% of costs in the EU-27; again this is

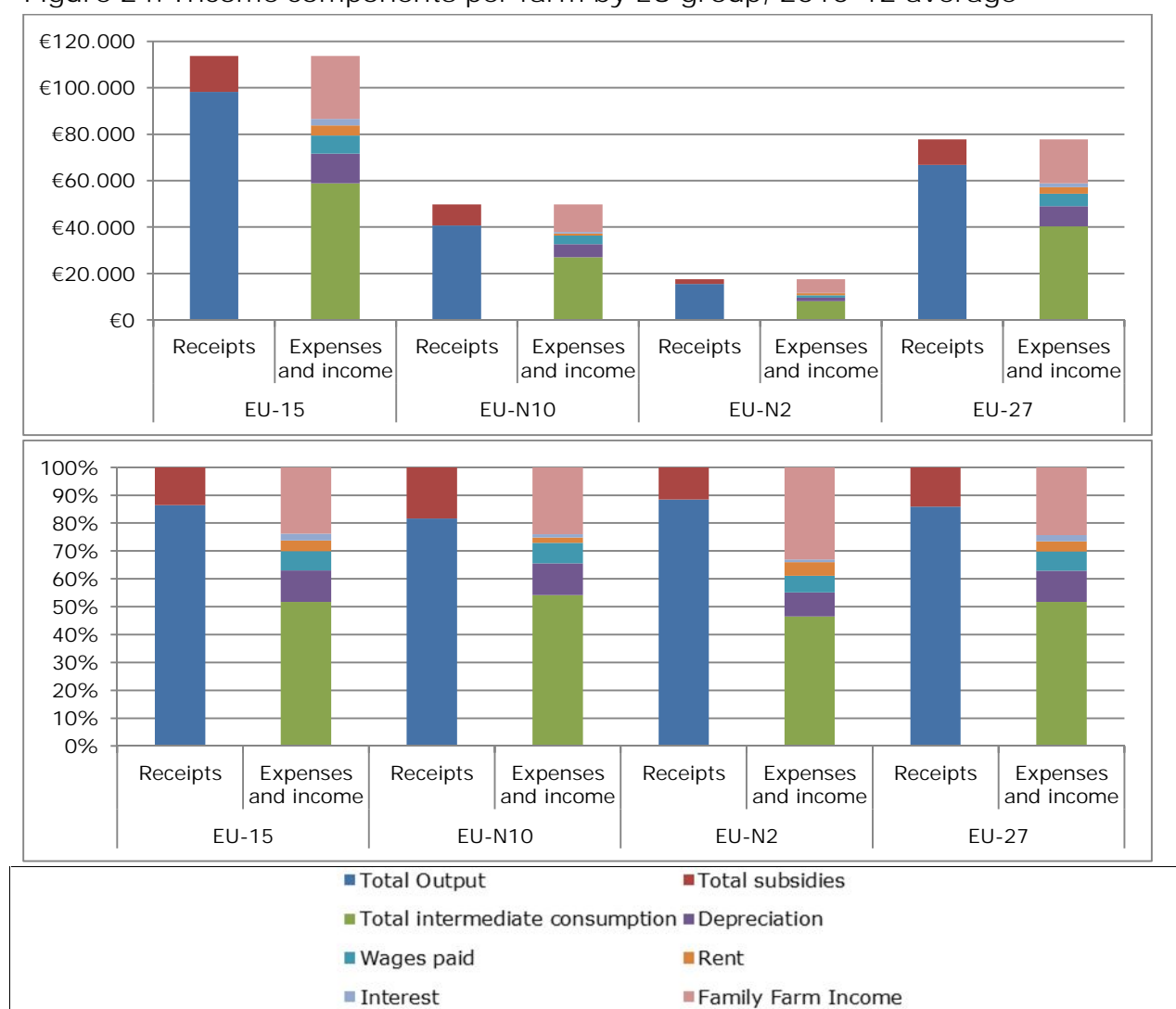
<sup>25</sup> European Commission (2014b) presents similar information, but instead of showing FFI, shows the estimated opportunity costs of 'own factors', which comprises imputed values for the farmers' time, own land and own capital. This sometimes leads to expenses being higher than income which leads to statements about profitability which are somewhat misleading.

<sup>26</sup> Note that European Commission (2014b) states that intermediate consumption accounts for only half of total expenses; this is because these total expenses include own factors, the rewards to the farmer's input, which is potentially misleading.

consistent across the sub-groups. Wages paid account for 9% of total costs for the EU-27, rent for 5% and interest payments 3%. While the importance of wages is comparable across the groupings, rent is highest in the EU-N2 at 7% and lowest in the EU-N10 at 3% (the EU-15 is the same as the EU-27). Interest payments are lower in both the EU-N10 (2%) and the EU-N2 (1%) while again, the EU-15 is the same as the EU-27. In summary, there are in fact few differences in the components of income.

The biggest difference between the groups is in fact in Family Farm Income which is equivalent to a quarter of total output (24%) in the EU-27, EU-15 and EU-N10, but is a third (33%) of total output in the EU-N2, although in absolute terms it is smallest there.

Figure 24: Income components per farm by EU group, 2010-12 average



Source: DG AGRI EU-FADN.

In addition to the components of farm income it is also necessary to consider the impact of structural change over time. As farms increase in scale returns per labour unit will increase. Average farm size tends to increase over time (European Commission, 2013) and this will exert some upward influence on farm incomes when measured at the level of the farm or, as we do throughout this analysis, per unit of labour.



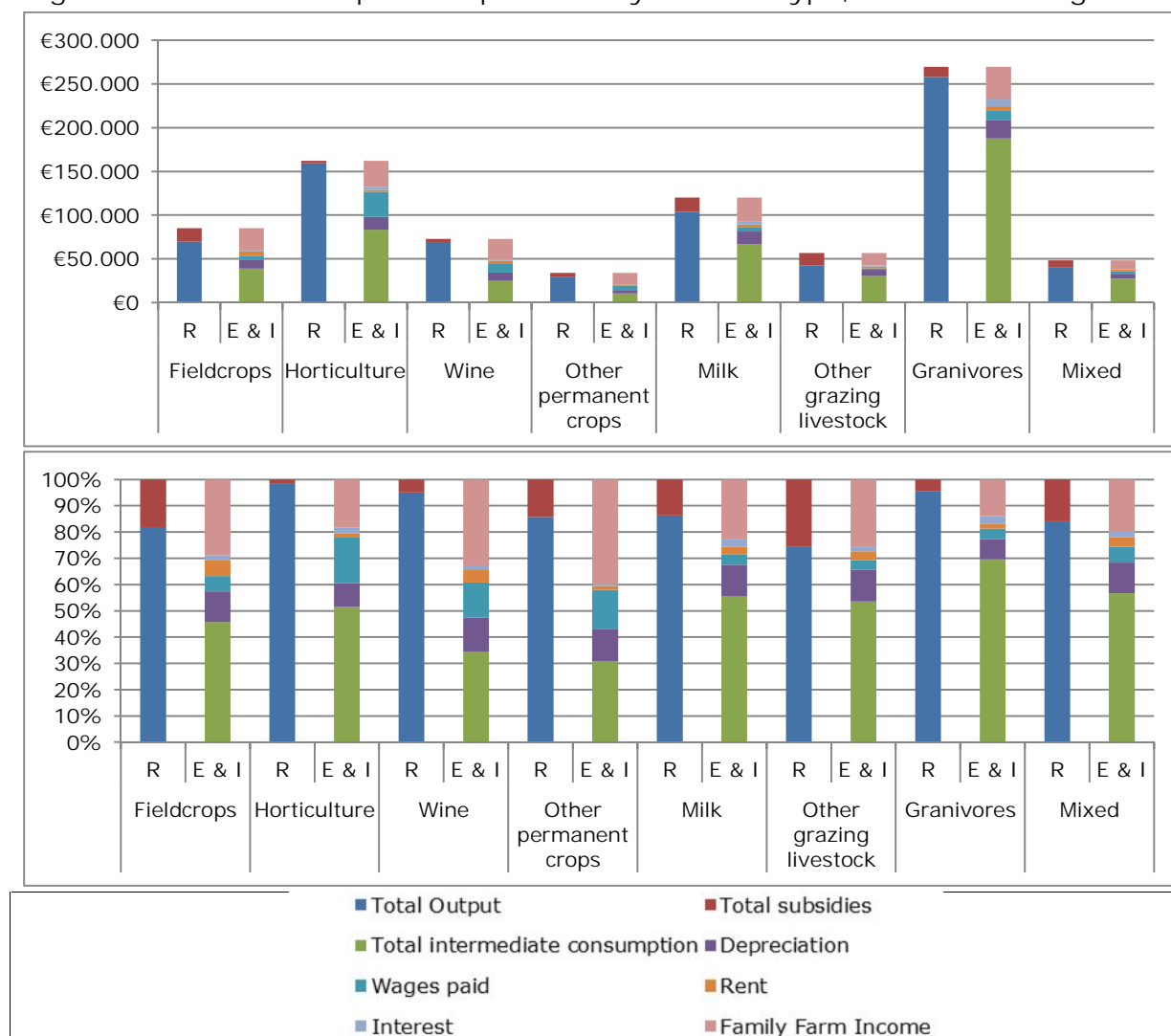
Another factor which is not a component of income, but which influences income as measured per labour unit, is the quantity of labour used. This tends to decrease over time as labour efficiency increases (European Commission, 2013). This will also manifest as an upward influence on income when measured as a return to labour over time.

#### 4.2.2. Results by type of farming

In absolute terms per farm both the values of revenues and the costs were highest among granivores, horticulture and milk farms, and these also had the largest sales to the market (Figure 25). The lowest, both for total revenue and for sales to the market, occurred among the 'other permanent crops' farms. While it is clear that the market is the main source of revenue for all farming types, accounting for some 85% of the total, and hence changes there will be the main revenue drivers, the importance of subsidies is not uniform. They accounted for about a quarter of the value of total output in the 'Other grazing livestock' group, but a far lower share (less than 5%) in horticulture, granivores and wine farms; even quite large changes in subsidies are thus unlikely to make major impacts on the total value of output among these farming types.

On the costs side, the balance between the ways in which the various categories of costs absorb revenues, and what is left to form FFI, is broadly similar across the farming types. Paid wages are relatively more important in horticulture and wine, so what happens to labour costs could be expected to be a more significant driver there than among other farm types. However, in all farm types the largest costs are those that make up 'intermediate consumption' rather than those of the 'fixed factors' (payments for rent, interest and hired labour) and hence this is likely to be where the biggest cost-based drivers of income are located.

Figure 25: Income components per farm by EU farm type, 2010-12 average

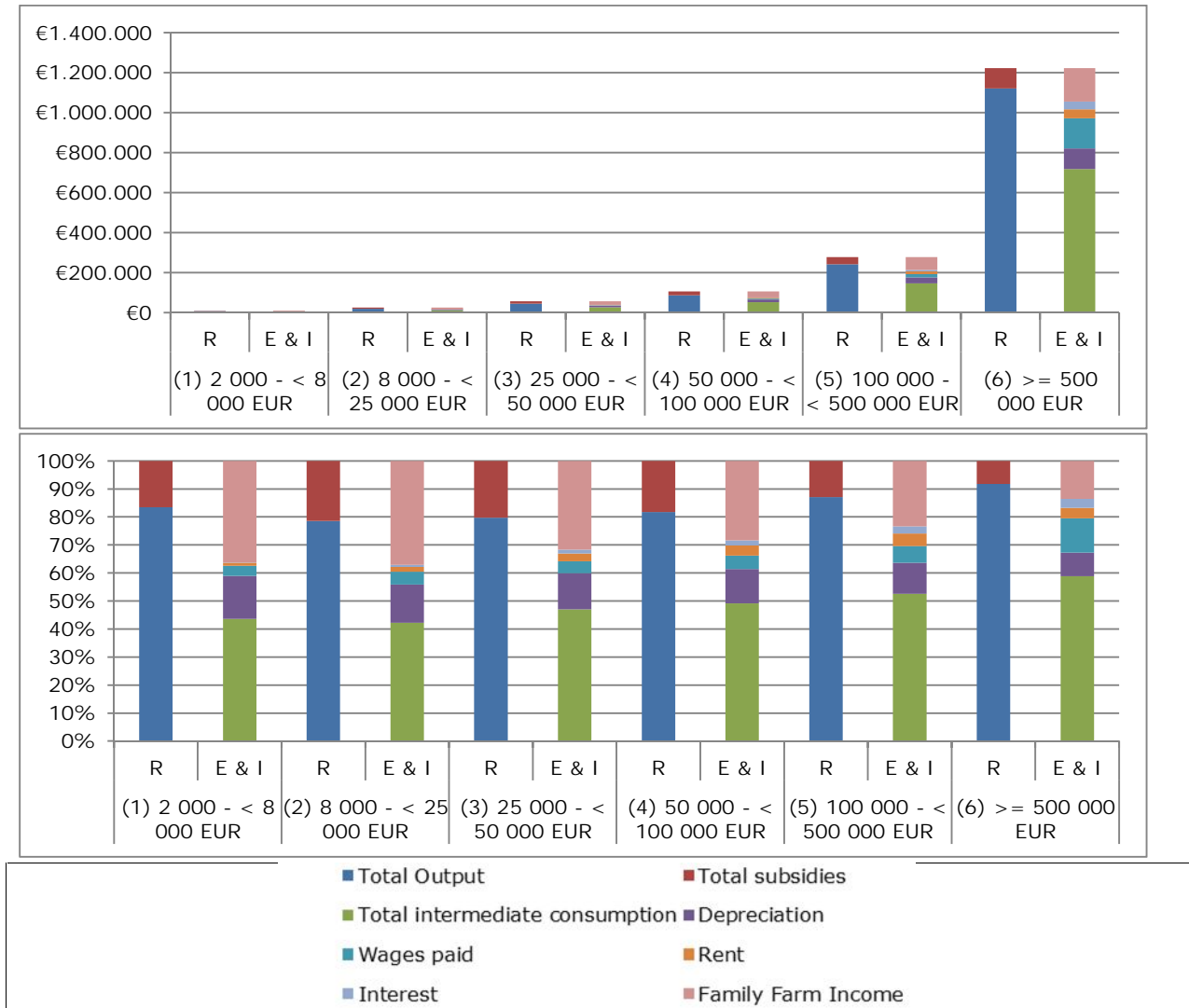


Source: DG AGRI EU-FADN.

#### 4.2.3. Results by size of farm

Some interesting patterns emerge from examination of income components by farm size (Figure 26), though the relationship between farm size and the dominant farm types, and of coverage of Member States should be borne in mind (particularly the importance of mixed farms and Bulgaria, Romania and Portugal to the smallest size class and of granivores and horticulture to the largest size classes). Nevertheless, a general relationship is seen in which the relative importance of subsidies declines with increasing size of farm, more than halving between the smaller size classes and the largest (from about one fifth to less than one tenth of the total value of output). Another feature is the rise in relative importance among the costs of intermediate consumption with increasing farm size. Wages paid take a larger share among the biggest farms, but this is probably a reflection of the dominance of granivores and horticulture in this size class. Perhaps surprising is the finding that the proportion of total output that remains to the operators as FFI declines as larger farm classes are encountered, though of course the absolute amounts will be larger.

Figure 26: Income components per farm by economic size, 2010-12 average



Source: AGRI EU-FADN.

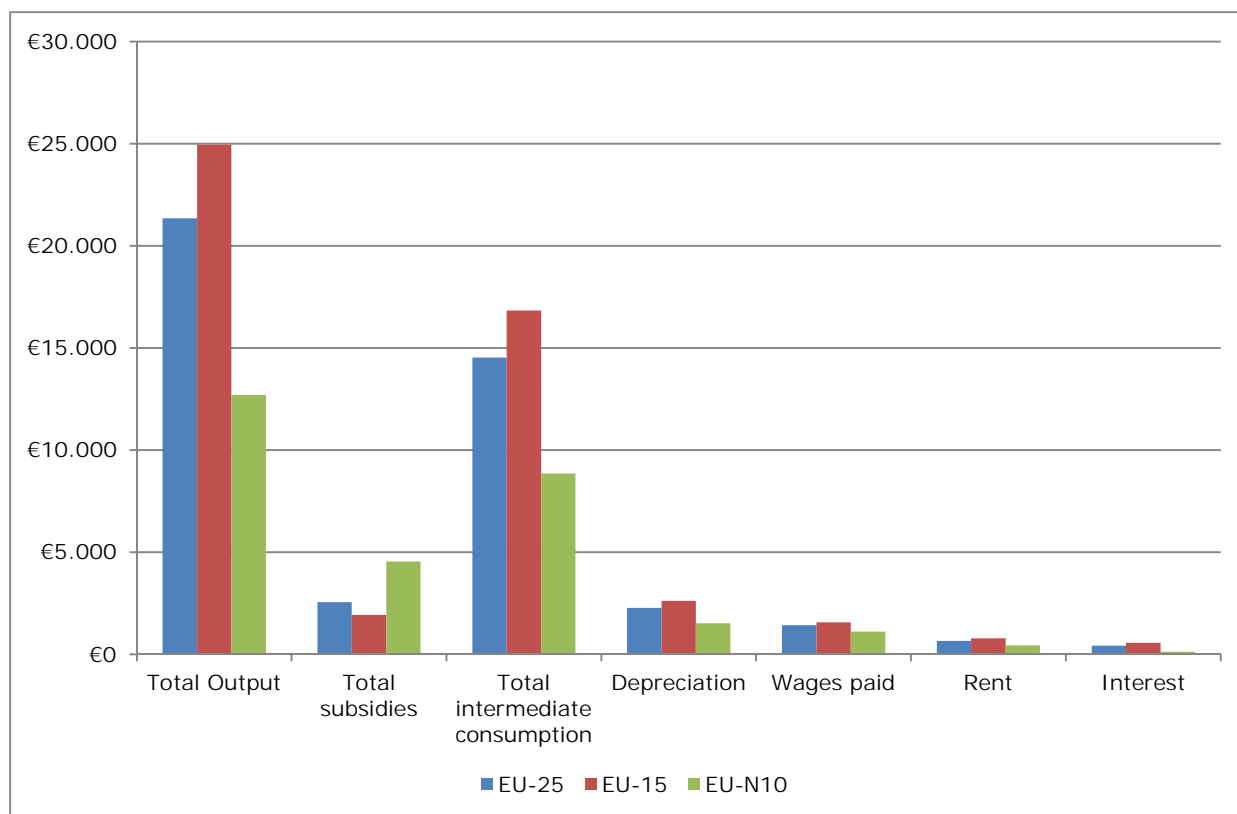
#### 4.2.4. Changes in income components between 2004-2006 and 2010-2012

A further method of identifying the key drivers of income is to look at the changes in absolute amounts of each element between two representative periods, in our case between the averages of two three-year periods (2004-2006 and 2010-2012). From this it is possible to identify which items were responsible for overall changes in income. For example, was there a rise in the value of output and no change in costs, or static output and a fall in costs, or some other combination? On the costs side, some elements may have changed dramatically in percentage terms but, because they are small in absolute terms, have very little impact on overall costs and incomes.

By way of summary, the absolute change in the components of income between the average for the 2004-2006 and 2010-2012 periods is set out in Figure 27 for the EU-25 and the two EU sub-groups that it is possible to examine over this period. The figure makes clear that the key components which drive the development of income are, on the revenue side, total output, and on the cost side, total intermediate consumption. There is some difference in the scale of changes by EU grouping, most notably the greater increase in subsidies in the EU-N10. This aside, changes to the components of income were lower in

the EU-N10 than in the EU-15, although this is largely because these changes are from a lower base.

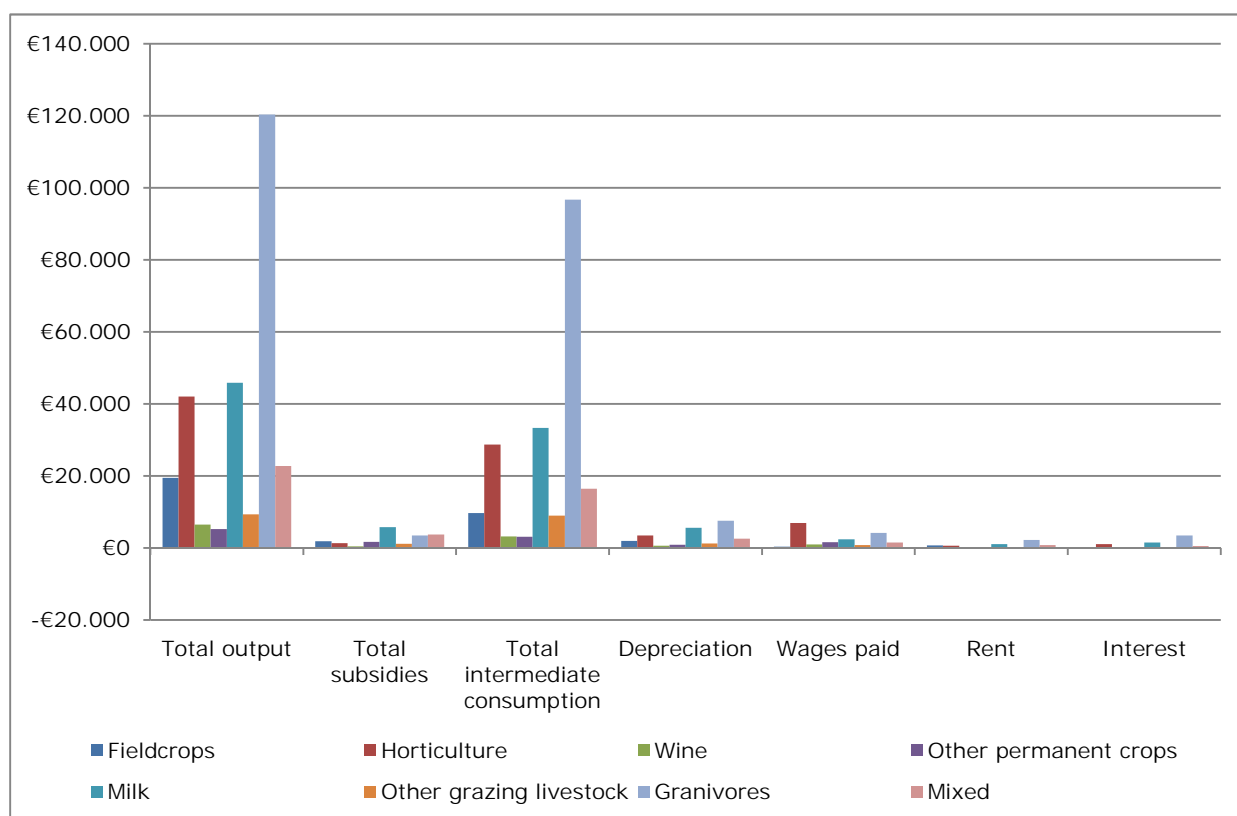
Figure 27: Change in value of income components 2004-06 average compared to 2010-12 average by EU sub-group



Source: DG AGRI EU-FADN.

Figure 28 presents similar analysis for farm type. The same general pattern prevails in that total output and total intermediate consumption are the key components of income in terms of change over the period. Key points to note are that the granivore sector saw the greatest changes in these components, although as has been explained above, this is partly the result of the correlation between this farm types and increased scale. The larger increase in wages paid in the horticultural sector should also be noted, as should the greater increase in depreciation in the granivore and milk sectors.

Figure 28: Change in value of income components 2004-06 average compared to 2010-12 average by farm type



Source: DG AGRI EU-FADN.

#### 4.2.5. Changes in the key drivers

Agricultural income varies substantial from one year to the next as a natural consequence of weather and other short-term factors and is anticipated by farmers (though they may occasionally represent disasters for individuals). This is why in this report we focus on income averaged over a three year period. In this section we focus on medium and long-term variation and trends.

From the above, and from the literature, it is clear that the main drivers of income are on the revenue side of the income calculation, the value of total output, which is the combination of market output (price and quantity) as well as subsidies. Prices are affected by trends, medium-term slumps and high-price periods. Quantity is affected by changes in productivity or more/less factors of production, such as capital. Subsidies can be changed by policy decision.

On the cost side of the income calculation, the main items are the costs of intermediate production (price and quantity, trends and medium-term movements) and labour costs, which are a combination of wage levels (trends) and quantities of labour employed (to give labour costs). Other relatively minor drivers are interest costs (again a combination of levels of charges, although in the period considered these were largely static, and the amount of borrowing) and rents. Depreciation is a cost that has changed in absolute amounts more than labour, though we have not treated it as a main driver because, by its nature, the rate at which capital items are assumed to be consumed is set administratively

and is independent of market conditions, and the stock to which it applies can only change gradually.

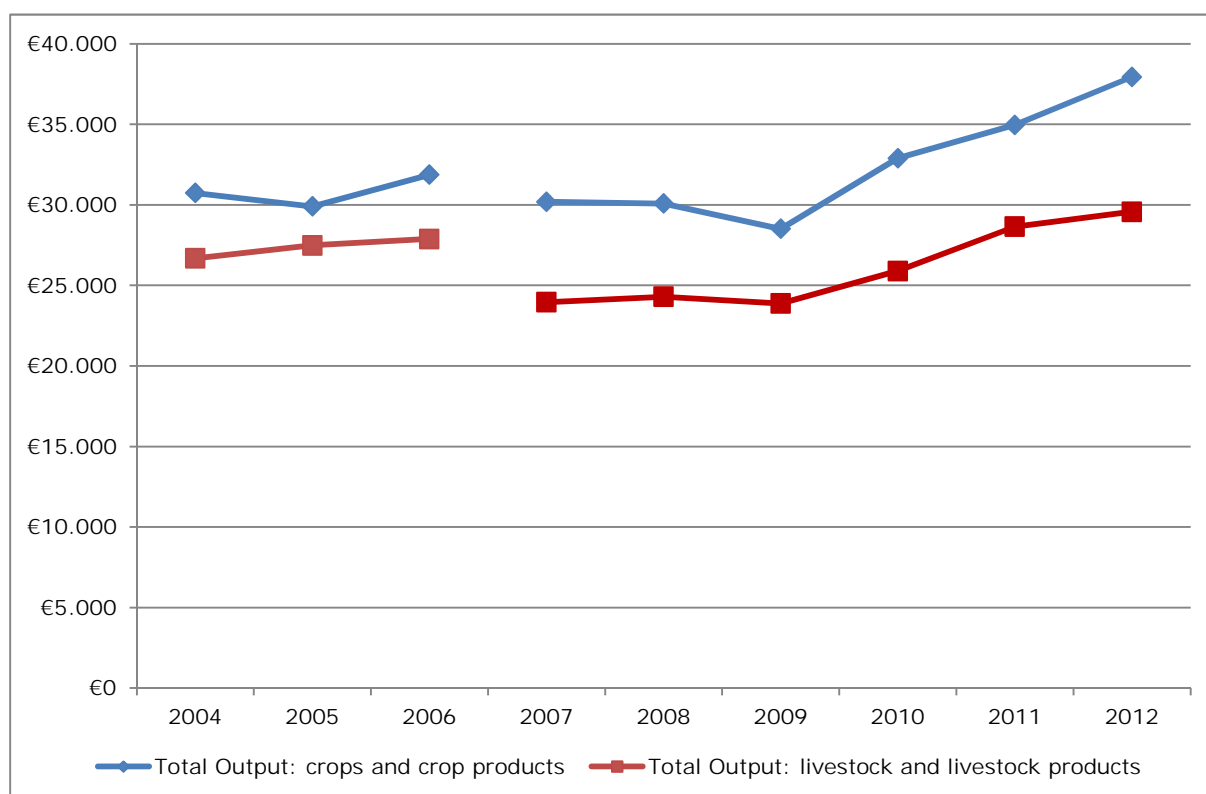
When looking at indicators expressed per work unit (either total labour or only family labour), it is necessary to look at how the amount of labour used in agriculture has changed. These issues are considered in turn in the sub-sections below.

#### 4.2.6. Total output

Figure 29 shows the two principal components of 'Total output': crops and crop products and livestock and livestock products on FADN farms. When using this data source to trace developments in drivers over time care has to be taken to account for the enlargement that took place in 2007, so that the series should be properly interpreted as falling into two sections, 2004-2006 and 2007-2012 (this is not the case for Eurostat data which is EU-27 throughout the period of interest). It is also necessary to recall that FADN results are given in nominal values, and that inflation will have caused small but gradual changes in values over the runs of years studied (annual inflation of the Euro averaged a little less than 2% over the period).

In the pre-enlargement period shown in Figure 30 there is no noticeable trend in either the value of crop or livestock output. Following the drop in levels associated with the inclusion of Bulgaria and Romania into the EU, the first three years were characterised by stagnation or decline to 2009, after which there was a noticeable rise.

Figure 29: Evolution of the components of Total Output per farm, EU-25 2004-2006, EU-27 2007-2012

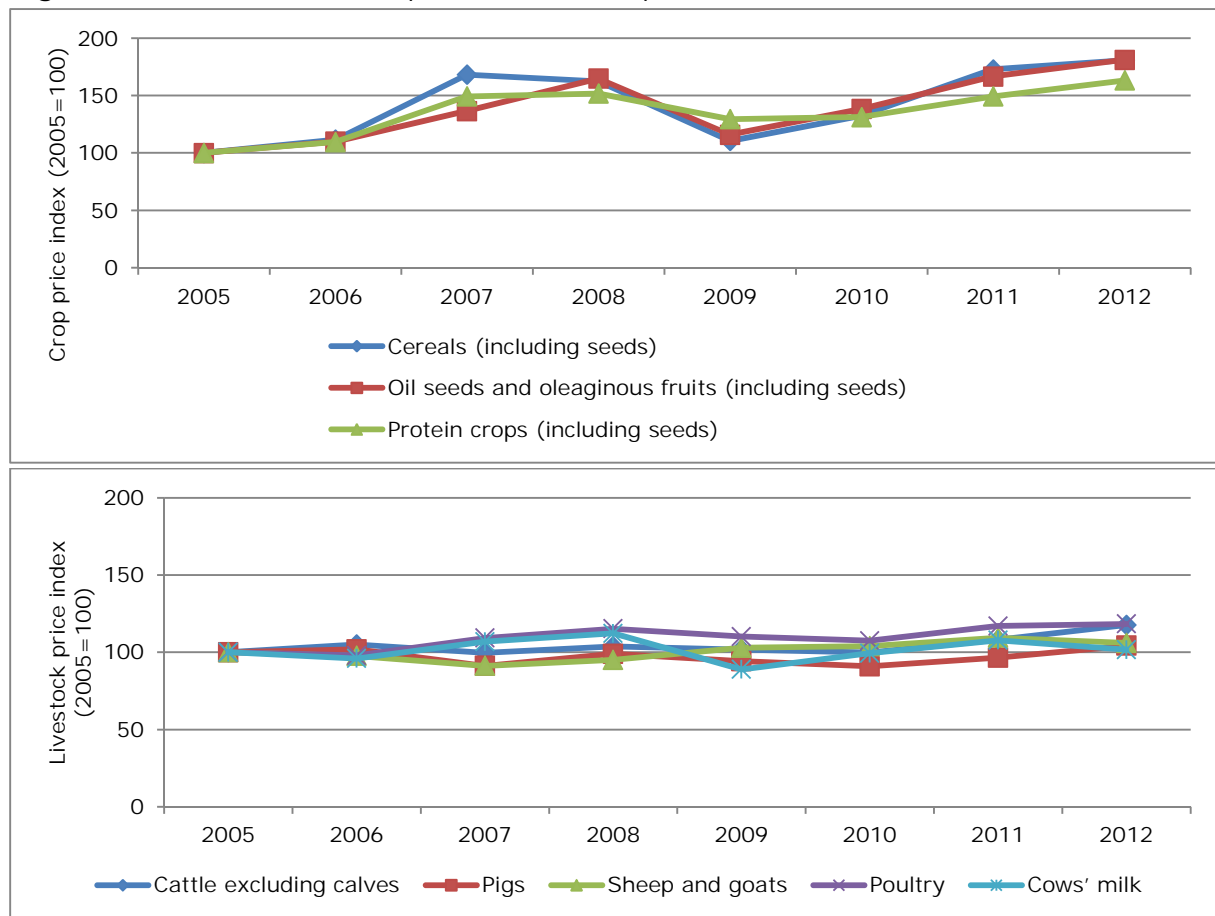


Source: DG AGRI EU-FADN.

Total output is the product of quantity of output and price. Of the two, when looking at group average results the more volatile element is the market prices obtained by farmers, and this is particularly clear with farm crops.

Figures from Eurostat (that cover the EU-27 throughout the period) show that prices of crop products rose substantially from 2005 to 2008, typically by about 50%, but then fell dramatically in a single year, with prices in 2009 almost back to the 2005 level. However, from 2009 to 2012 there was a sustained recovery to levels that exceeded the previous peak. Prices for livestock and livestock products were relatively more stable, with only milk showing a similar pronounced fall in 2009. Other categories were quite stable, while poultry showed a rising trend.

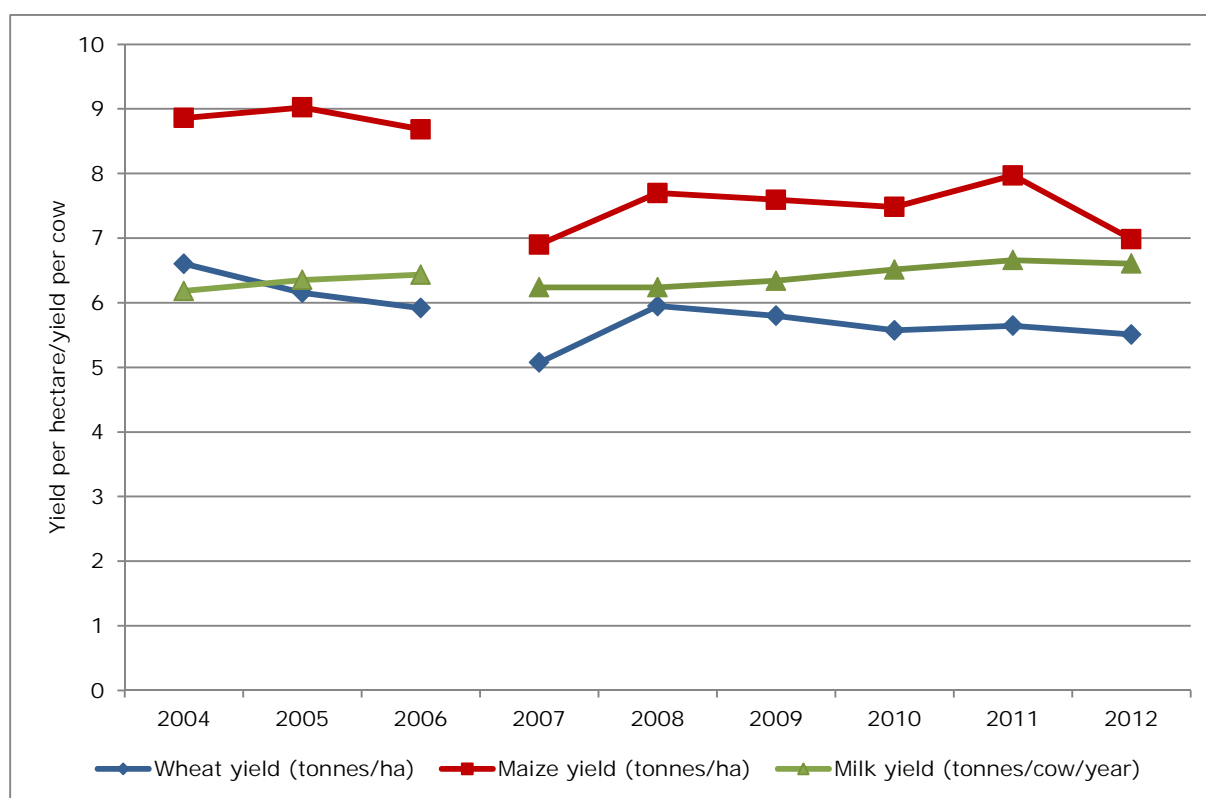
Figure 30: Evolution of crop and livestock prices, EU-27, 2005 = 100



Source: Eurostat.

Of course, at the farm level there can be changes in physical crop output and animal performance that can affect the business revenue, and occasionally there will be disease or climatic conditions that are more widely experienced. However, at group average level there is a remarkable consistency of yields over time. Figure 31 shows wheat and maize yields and milk output per dairy cow, taken from FADN. Bearing in mind the break in the series associated with enlargement in 2007, across the EU wheat yields and maize yields have been stable though perhaps with a slight downward trend. In contrast, milk yields per cow have shown a small but steady rise.

Figure 31: Evolution of yield per unit of output, EU-25 2004-06, EU-27 2007-12

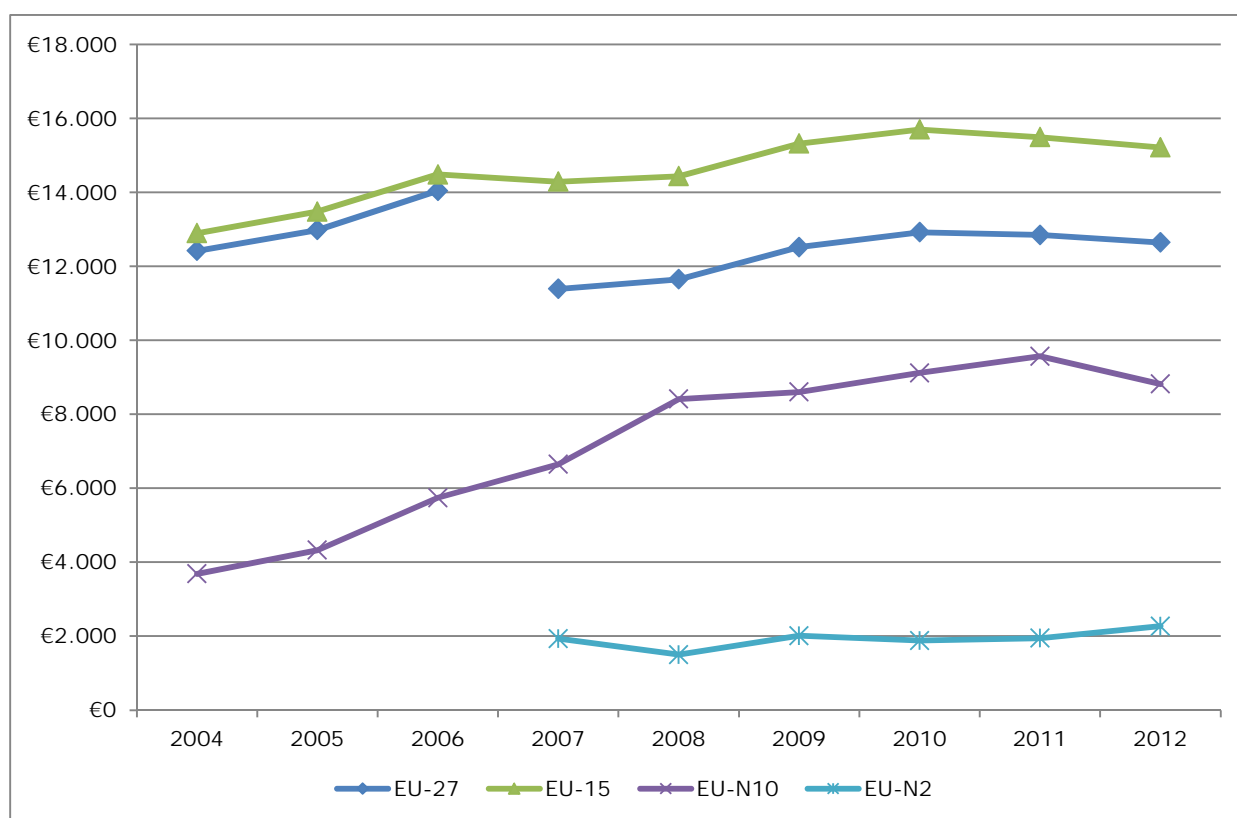


Source: DG AGRI EU-FADN.

Turning to the other main element in the revenue of farms, subsidies, we see that at EU level the accession of Bulgaria and Romania lowered the average received per farm (Figure 32). However, from 2007 there was a modest rise to 2010, since when the level has been approximately sustained. Certainly, at EU-27 level there is no suggestion that changes in subsidies have had a major part to play in the evolution of incomes. However, the importance of payments for public goods via subsidies, for example agri-environment payments under the second pillar of the CAP should be noted, although these are replacing more production related subsidies rather than increasing the total amount of subsidy available.



Figure 32: Evolution of subsidies, EU-25 2004-06, EU-27 2007-12



Source: DG AGRI EU-FADN.

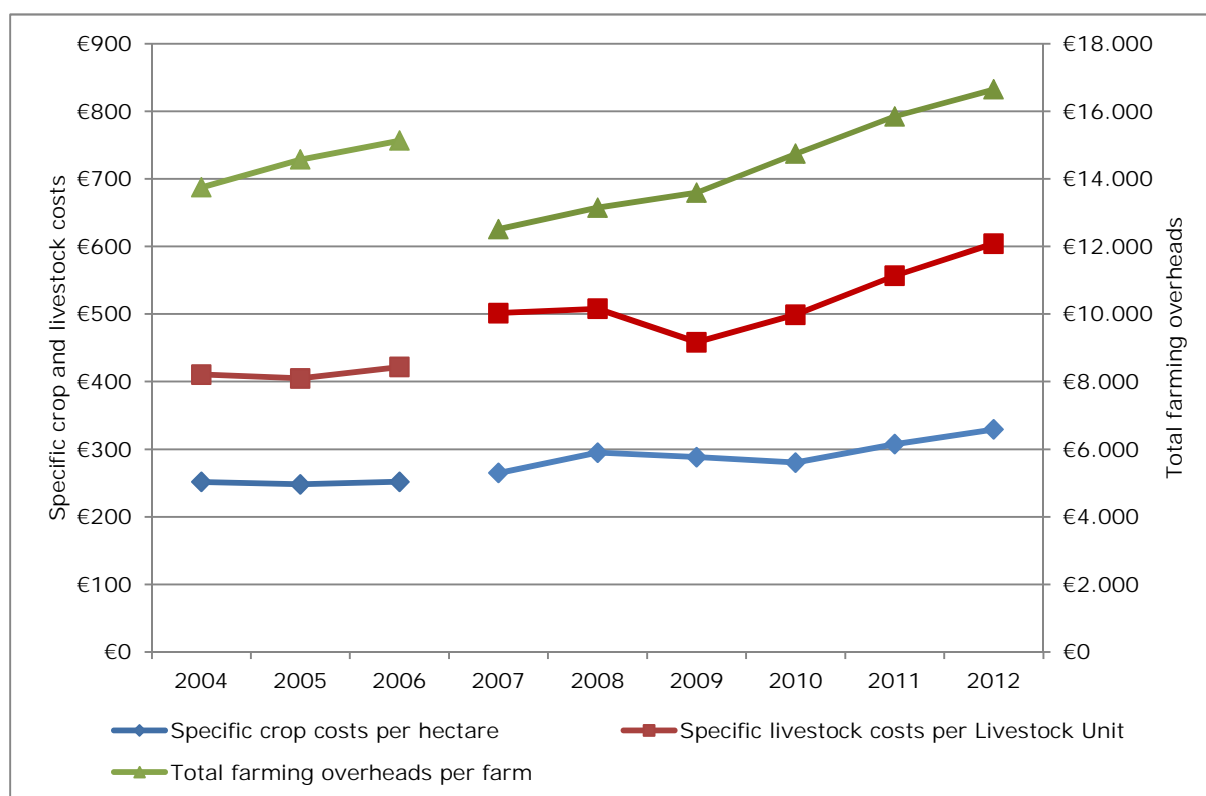
#### 4.2.7. Costs of intermediate production

From the analysis of income components above, the key cost element to focus on is "total intermediate consumption". This is defined within FADN as "total specific costs (including inputs produced on the holding) and overheads arising from production in the accounting year". "Total specific costs" includes specific crop costs (bought and home-grown seeds and plants, fertilisers, crop protection and other crop specific costs) and specific livestock costs (bought and home-grown feed for grazing livestock, bought and home-grown feed for pigs and poultry and other livestock specific costs). "Overheads" includes machinery and building current costs, energy, contract work and other direct inputs.

Figure 33 shows the evolution of specific crop costs, specific livestock costs and total farming overheads<sup>27</sup> for the EU-27. Specific crop costs per hectare increased gradually after enlargement, but without large variations between years. Livestock costs per livestock unit appeared to be quite stable either side of enlargement, but fell in 2009 and then increased steadily but quite rapidly, rising by some €103 per farm between 2007 and 2012). In contrast, farming overheads per farm were on a rising trend before enlargement (a 10% rise between 2004 and 2006), and this has continued consistently since 2007 with a steady upward trend from 2007 to 2012 that resulted in a 33% increase over this period, or just over €4,000 per farm.

<sup>27</sup> It is not possible to calculate overheads with reference to any other unit than the farm. The requirement for FADN to be representative in terms of farm sizes mitigates against the risk that the trend is influenced by structural change.

Figure 33: Evolution of specific crop and livestock costs and total farming overheads, EU-25 2004-16, EU27 2007-12

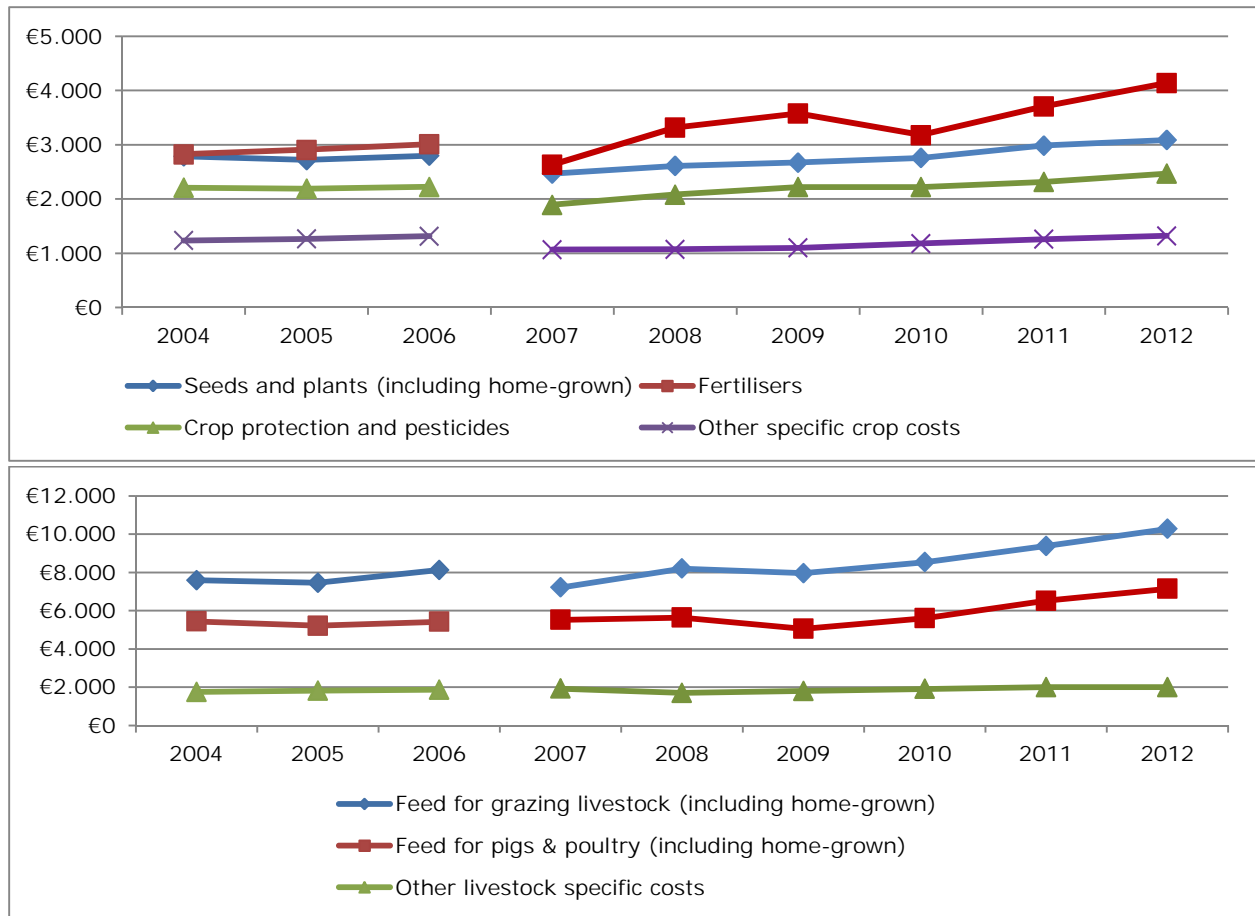


Source: DG AGRI EU-FADN.

Among the specific crop costs, fertilisers are clearly the category that has been the most volatile and has increased the most per farm at EU level (Figure 34). Costs were rising before EU enlargement, but among EU-27 there was a rapid upward shift from 2007 for two years, a sharp drop in 2010, subsequently followed by a further short rise to leave spending per farm almost double the 2007 level and representing an increased cost of some €2,500 per farm. In contrast, the other elements of crop costs were more stable and showed gentler upward trends.

Among the costs of producing livestock, expenditures per farm showed no clear trend up to 2009, but since then have risen quite sharply, by in the region of €2,000 per farm for both grazing livestock and for pig and poultry farms.

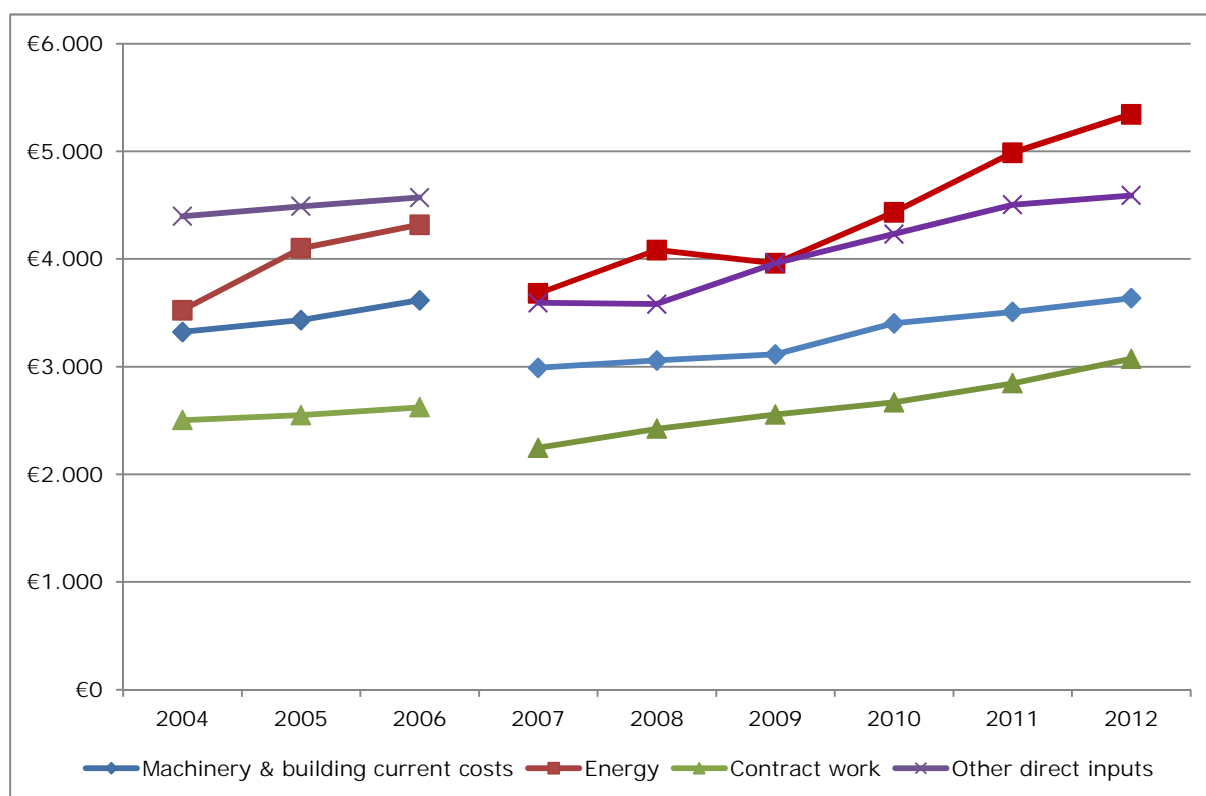
Figure 34: Evolution of specific crop and livestock costs per farm, EU-25 2004-06, EU-27 2007-12



Source: DG AGRI EU-FADN.

Turning again to overheads, energy costs stand out as being the least stable and showing the sharpest absolute rise (Figure 35). Not only was there a sharp increase in EU-25 for the period 2004-2006, but since enlargement to EU-27 these has been an addition to costs of some €1,500 per farm between 2007 and 2012. The rises of the other components have been persistent, but steadier.

Figure 35: Evolution of the elements of total farm overheads, EU-25 2004-06, EU-27 2007-12



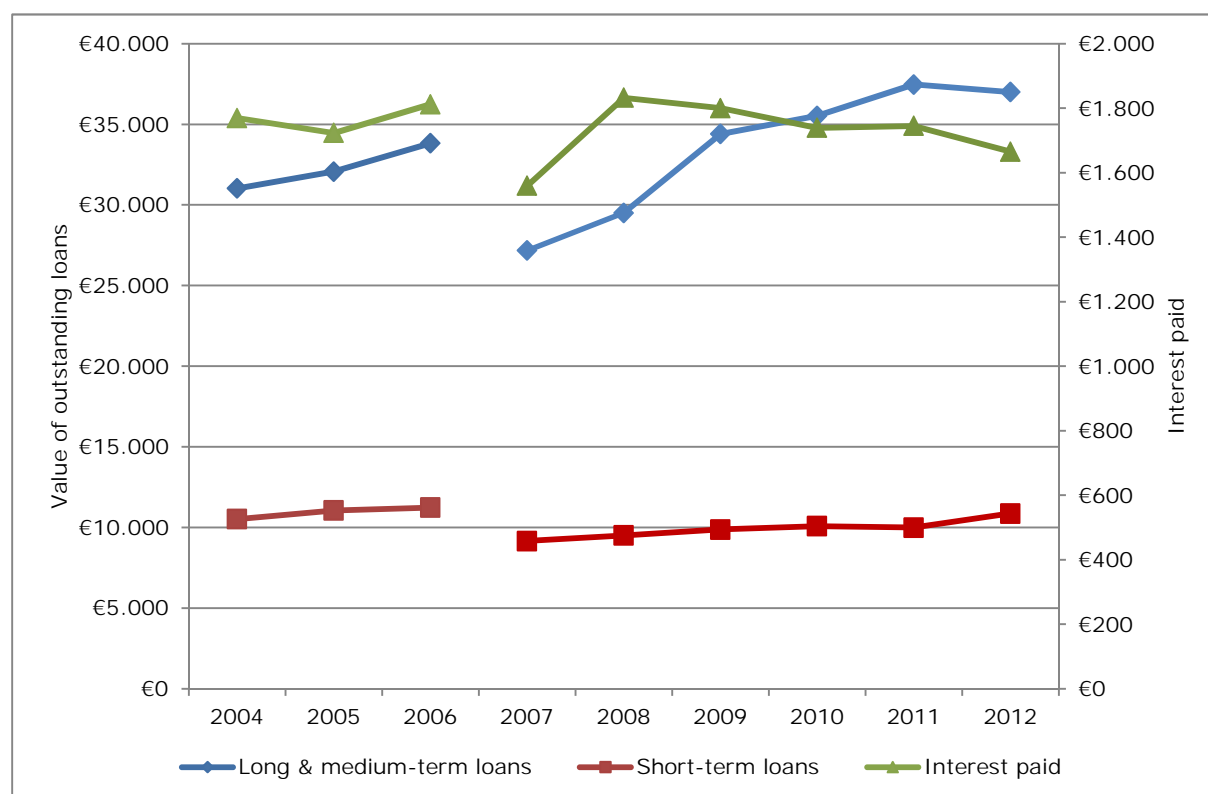
Source: DG AGRI EU-FADN.

#### 4.2.8. Interest costs

As might be expected, costs of the so-called ‘fixed factors’ (hired labour, borrowed capital and rented land) tend not to be major short-term drivers of income. Rents change so slowly that they can be ignored as drivers of income change at group level, though or course for individual farmers a rent increase can be a significant event.

A ‘fixed factor’ that carries the potential for cost changes that are volatile and unpredictable is borrowed capital, in that, while the size of loans taken for land purchase and other investments is unlikely to vary much in the short-term, this does not necessarily apply to short-term loans taken to finance working capital and to assist farmers dealing with fluctuation in their profitability. Also, interest rates are generally determined by factors outside the control of farmers, and even outside the influence of agricultural policy; interest rates may, in some circumstances shift in unpredictable and potentially damaging ways. However, the evidence from FADN farms is that, over the period under study interest costs have not been placing increasing pressure on the incomes from farming. This has happened despite rises in level of borrowing. On average, the average size of long and medium-term loans has been trending upwards, both before and after enlargement (Figure 36). So too have short-term loans, though at a much lower level per farm. However, after a sharp rise between 2007 and 2008, the overall amount of interest paid per farm has been in decline.

Figure 36: Evolution of value of outstanding loans and annual interest per farm, EU-25 2004-2006, EU-27 2007-2012



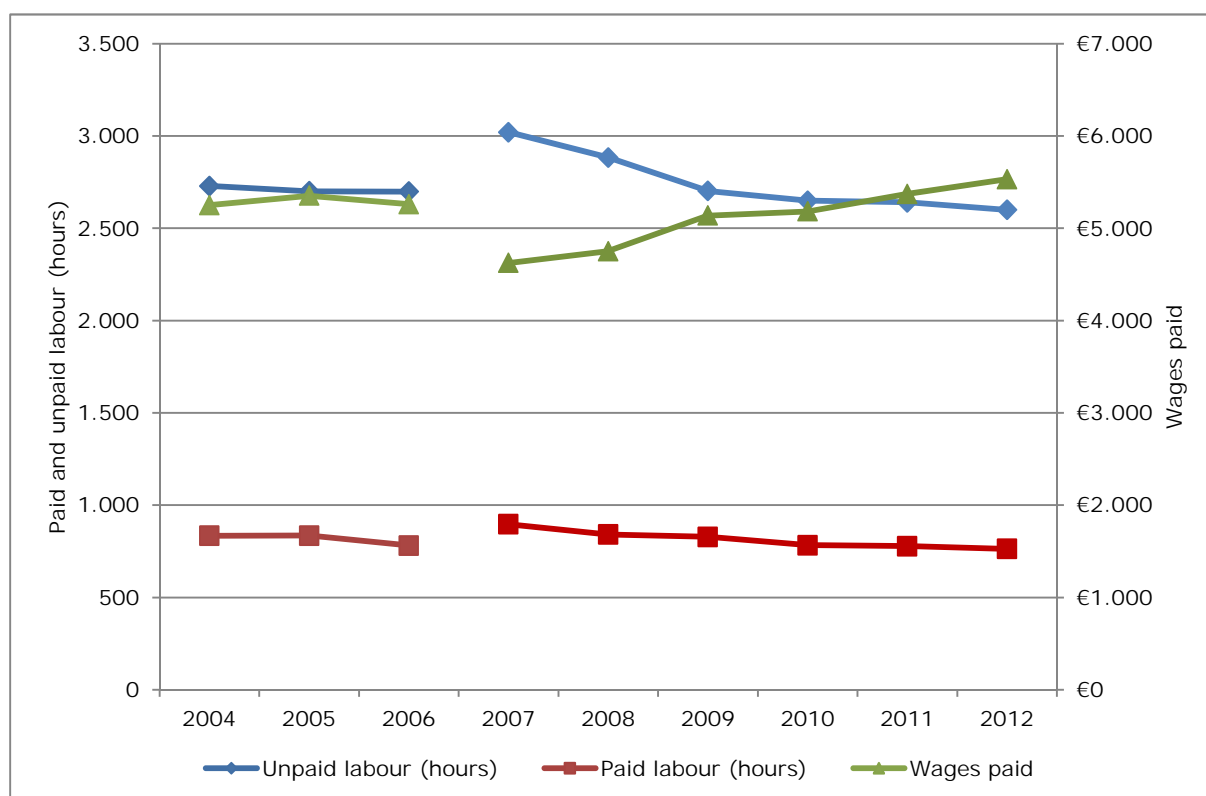
Source: DG AGRI EU-FADN.

#### 4.2.9. Labour costs

Costs of hired labour are not a particularly major driver of the incomes of farms for EU agriculture as a whole, though they can be important for some types of farming, such as horticulture and granivores. Some countries will be more sensitive to changes in labour costs than others because of their greater dependence on hired labour.

Labour as a factor of production can be important as a driver of farm income change for two main reasons. First, there is the cost that farm businesses have to pay for hired labour. Second there is the number of hired workers. Analysis of FADN results shows that the volume of paid labour used on the average FADN farm (measured in hours of input) is much smaller (less than a third) than the amount of unpaid ('family') labour (Figure 37). Both categories have been declining, but the wages paid to the hired labour had been rising, the result of increases in wages more than offsetting falling numbers of employees. The average cost per farm has risen by almost €1,000 between 2007 and 2012. However, at EU-27 level the change is gradual.

Figure 37: Evolution of labour use and wages paid per farm, EU-25 2004-2006, EU-27 2007-2012



Source: DG AGRI EU-FADN.

Another critical influence of the volume of labour is in the construction of income indicators. As has been shown earlier, at both aggregate and farm levels, the most cited income indicators are expressed per work unit (total or unpaid 'family' labour), depending on the indicator. It is quite possible that income per farm or for the agricultural sector is declining over time, but income per work unit will increase if the volume of labour declines sufficiently quickly, as has commonly been found. This makes the accurate measurement of labour inputs critical, though the ability to quantify it, especially the unpaid labour of self-employed farmers and their families, is notoriously difficult, especially in the short-term.

## 5. DIFFERENCES BETWEEN MEMBER STATES

### KEY FINDINGS

- A Common Agricultural Policy does not result in a common absolute level of income for the average farm in different Member States. Belgium, Denmark, Germany, France, Luxembourg, the Netherlands and the UK stand out as having high farm income. Amongst the EU-N10 Member States, only in the Czech Republic, Estonia and Hungary do farm income indicators exceed or come close to the EU-27 average.
- The main reason for this is the size of farms; the mix of farm types also plays a role. However, when farms of the same size and type are compared, performance is often equivalent throughout the EU-28 and sometimes higher in the EU-N10 and EU-N2 than it is in the EU-15.
- The influence of farm structure is also important at the regional level with farm incomes varying widely within Member States. This regional variation is especially noticeable in France and Germany.
- In terms of the growth in farm incomes between figures averaged for the 2004-2006 and 2010-2012 periods, EU-N10 Member States have outperformed EU-15 Member States as a result of higher market prices, access to the single market and increased public support. The increase in farm income per unit of labour in these Member States also reflects decreases in total labour use. Despite these increases, farm income in the EU-N10 and especially the EU-N2 lags behind that in the EU-15.
- Within this overall trend, farm incomes are highly variable from year to year, but farm incomes in different Member States move in different directions and by different magnitudes, partly the result of structural difference in farm type.
- Some Member States have higher levels of income variation than others. Again this is partly structural with income in the granivore and fieldcrop sectors relatively instable while income in horticulture and permanent crops is relatively stable. The relatively low variability in farm income seen in Greece, Spain and Italy reflects the substantial proportion of other permanent crop farm types in these Member States.
- There is a tendency for EU-N12 Member States to have higher coefficients of variation than EU-15 Member States, but this is partly the result of the general upward trend in farm incomes that these Member States have experienced.
- Farm income levels differ between Member States within farm type, although this is partly the result of the structure of farms within FADN. A key factor in differences between Member States by farm type is actually farm size within the FADN sample.
- As economic size increases, it becomes more common for farms from the EU-N10 to show higher FFI/FWU than farms in the EU-15. For the largest size group, only farms in Italy and the UK from the EU-15 have farm income higher than the EU-27 average.
- Agricultural wages differ markedly between Member States. In Denmark, the Netherlands and Sweden wage levels average more than €15 per hour while in Bulgaria, Greece, Latvia, Lithuania, Poland and Romania the average is €3 or less.
- Agricultural wages vary little within Member States, although there are some exceptions with wages higher in Champagne than in the rest of France and higher in the east of Germany where the wages of company farm managers and administrators are included in the figures.

Comparisons between Member States with regard to the incomes of farmers from agriculture can be based on differences in a number of parameters. The most useful are specific levels, directions of change and variability. While the focus of attention must be on the rewards of self-employment in farming, the earnings of hired workers should not be ignored as they are also seen as members of the agricultural community in some Member States.

As in earlier chapters, there are two main source of information: Eurostat's income indicators based on the aggregate Economic Accounts for Agriculture, and the European Commission's Farm Accountancy Data Network EU FADN). Both are used here.

### 5.1. Differences in income levels

The main conclusion when comparing absolute incomes across Member States is that a Common Agriculture Policy does not result in a common absolute level of income in an average farm in different Member States, largely because size structure differs by Member State. Using FADN results<sup>28</sup>, absolute levels of FNVA/AWU and FFI/FWU in Member States, averaged of for the years 2010-2012 to allow for short-run changes at group level, are shown in Figure 38. Seven Member States stand out as having relatively high levels of both indicators during this period - Belgium, Denmark, Germany, France, Luxembourg, the Netherlands and the UK. FNVA/AWU was considerably higher in Denmark than in any other Member State<sup>29</sup>. The Czech Republic, Estonia and Hungary were the only EU-N10 Member States where farm income indicators exceeded or were close to the EU-27 average.

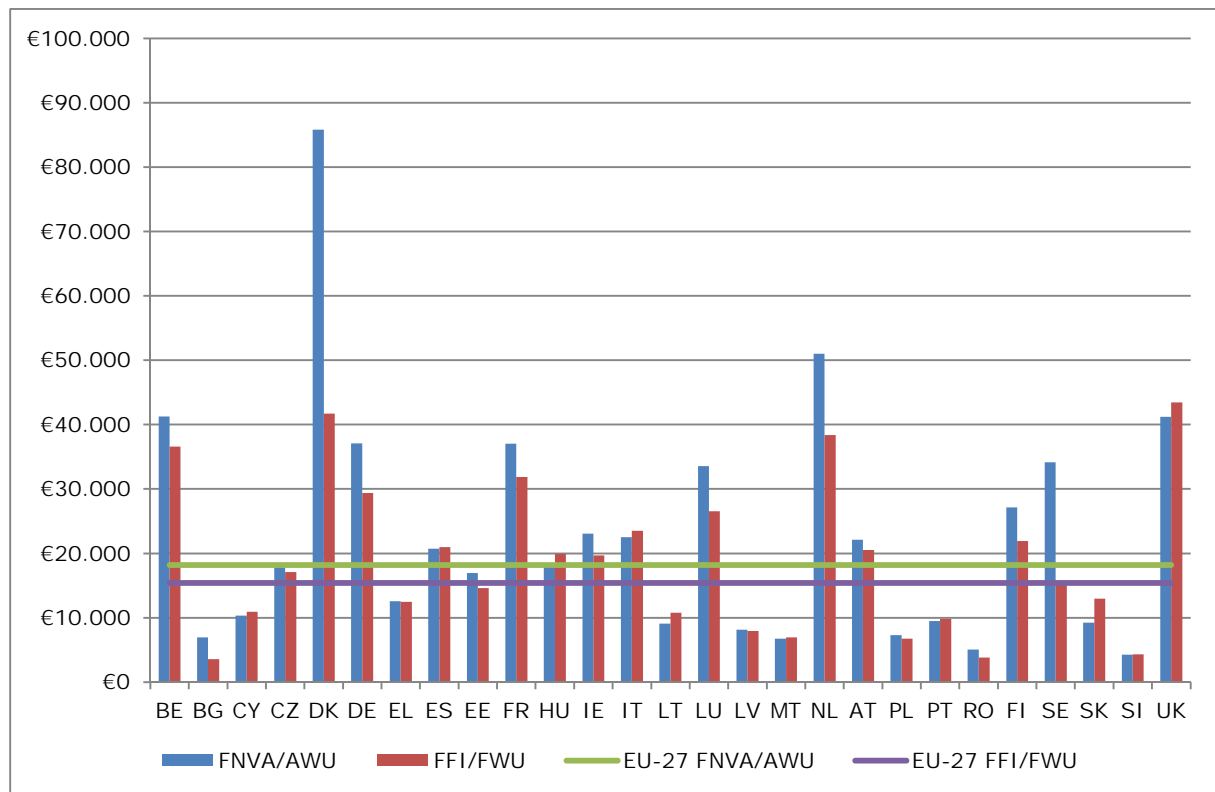
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<sup>28</sup> The reader should recall that the field of observation of FADN differs by Member State meaning that in some Member States small farms are not included in the results (see Annex 1). This has implications for EU level results.

<sup>29</sup> The difference between FNVA/AWU and FFI/FWU in Denmark (FNVA/AWU is more than twice FFI/FWU) reflects the unusual dominance there of an approach to inter-generational transfer that involves children borrowing from financial institutions to buy the farm from parents. This provides an asset which can provide a pension for the parents but results in substantial interest payments which are included within FNVA, but are removed in the FFI calculation. Heavy interest costs are often a stimulant to seeking off-farm jobs.



Figure 38: FNVA/AWU and FFI /FWU by Member State (2010-2012 average)

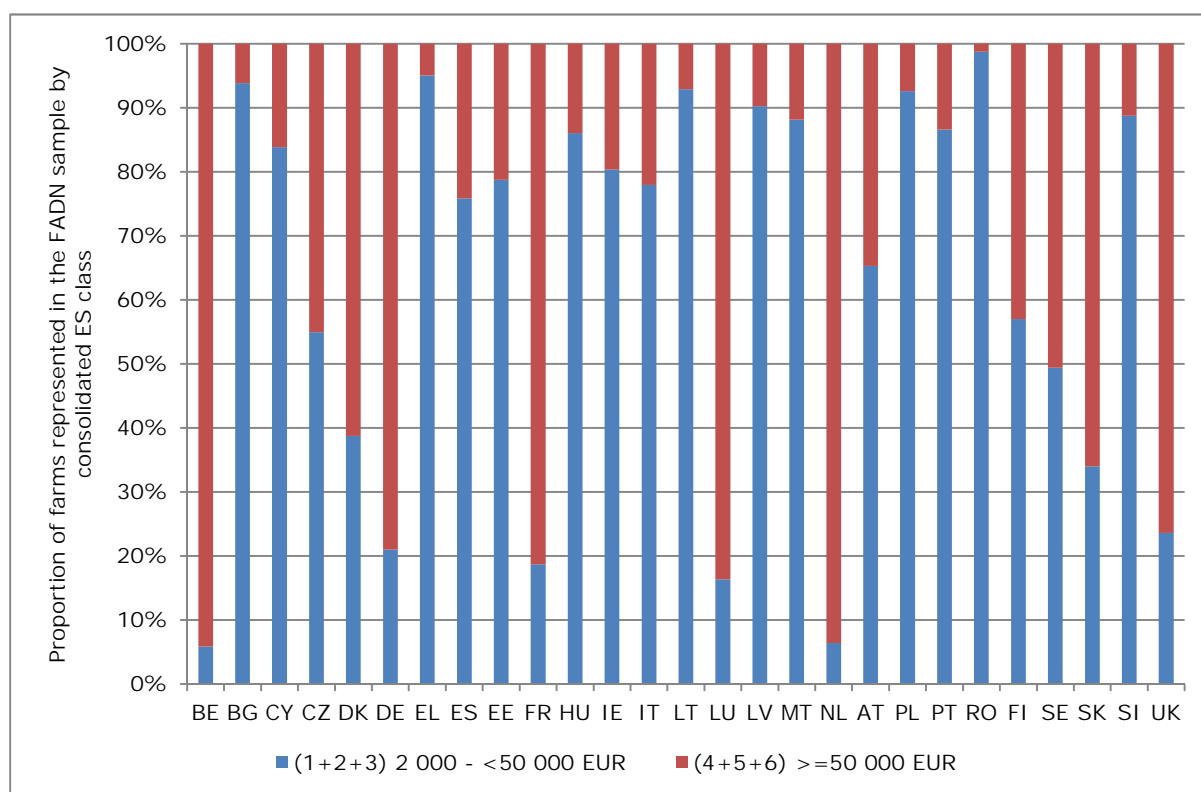


Source: DG AGRI EU-FADN.

The explanation for these differences will include factors such as the predominant types of farming and the market situation these faced in the period 2010-2012; it will also be a function of management skill and other determinants of productivity. However, the main factor will be the distribution of farms by size (and hence the average farm size). The clear relationship between farm size and income levels (both FNVA/AWU and FFI/FWU), which applies both generally and within types of farming, has already been commented upon (Chapter 1). Those Member States that have predominantly large farm business in FADN tend to have the highest incomes in Figure 39, and those with predominantly small farms (Bulgaria, Romania, Greece and Portugal) are among the countries that have the lowest incomes (see Map 1 for distribution by farm size within the FADN sample). Supplementary analysis has shown that for farms of the same size and type, farm performance is often equivalent throughout the EU-28 and sometimes higher in the EU-N10 and EU-N2 than it is in the EU-15<sup>30</sup>.

<sup>30</sup> For example, FFI/FWU averaged for the three years 2010-12 in the Romanian milk sector was €58,561 and €55,388 in the Latvian milk sector compared to values between €26,473 in France and €50,709 in Ireland and encompassing Belgium, Germany, Spain and the UK, amongst others.

Figure 39: FADN coverage of economic farm size (ES) by Member State, 2010-2012

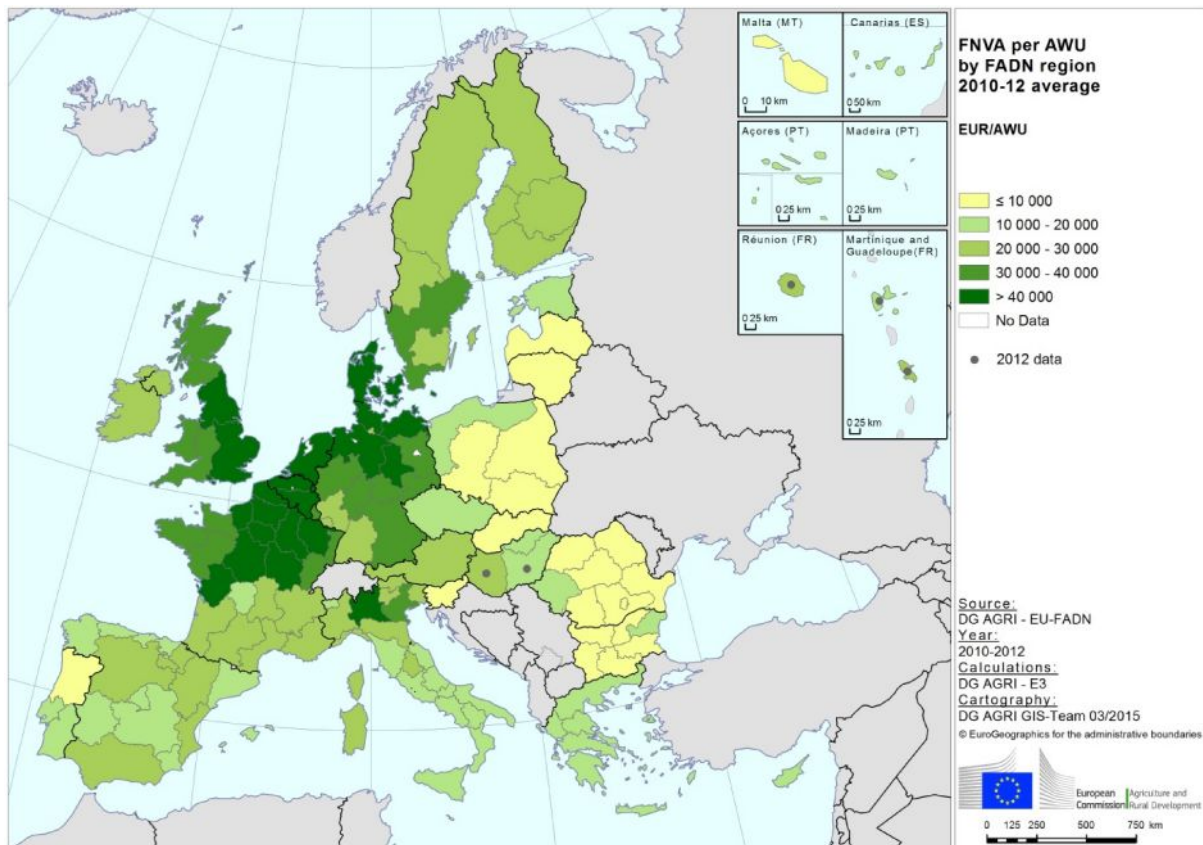


Source: DG AGRI EU-FADN.

In countries that have a regional FADN structure there are often differences between regions in absolute income levels, reflecting the geographical distribution of types of farming and, to some extent, farm sizes (for example, Germany). Thus care has to be taken, when comparing Member States in terms of absolute incomes, to recognise that a single country average can hide substantial regional variations.

In terms of FNVA/AWU in the years 2010-2012 incomes were relatively high (>€40,000 per AWU) in Belgium, the Netherlands and Denmark but also in most of England (not the South West or West Midlands) much of northern France (Nord Pas de Calais, Picardy, Normandy, Ile de France, Champagne, Lorraine, Centre, Burgundy and Poitou-Charentes) and northern Germany (Schleswig-Holstein, Mecklenburg-Vorpommern, Niedersachsen and Sachsen-Anhalt), and in the Lombardy region of Italy. France and Germany demonstrated a particularly wide range of regional comparisons. In term of the lowest levels of FNVA/AWU, these typified Latvia and Lithuania and many, though not all, of the regions of Poland, Bulgaria and Romania, together with the Norte region of Portugal.

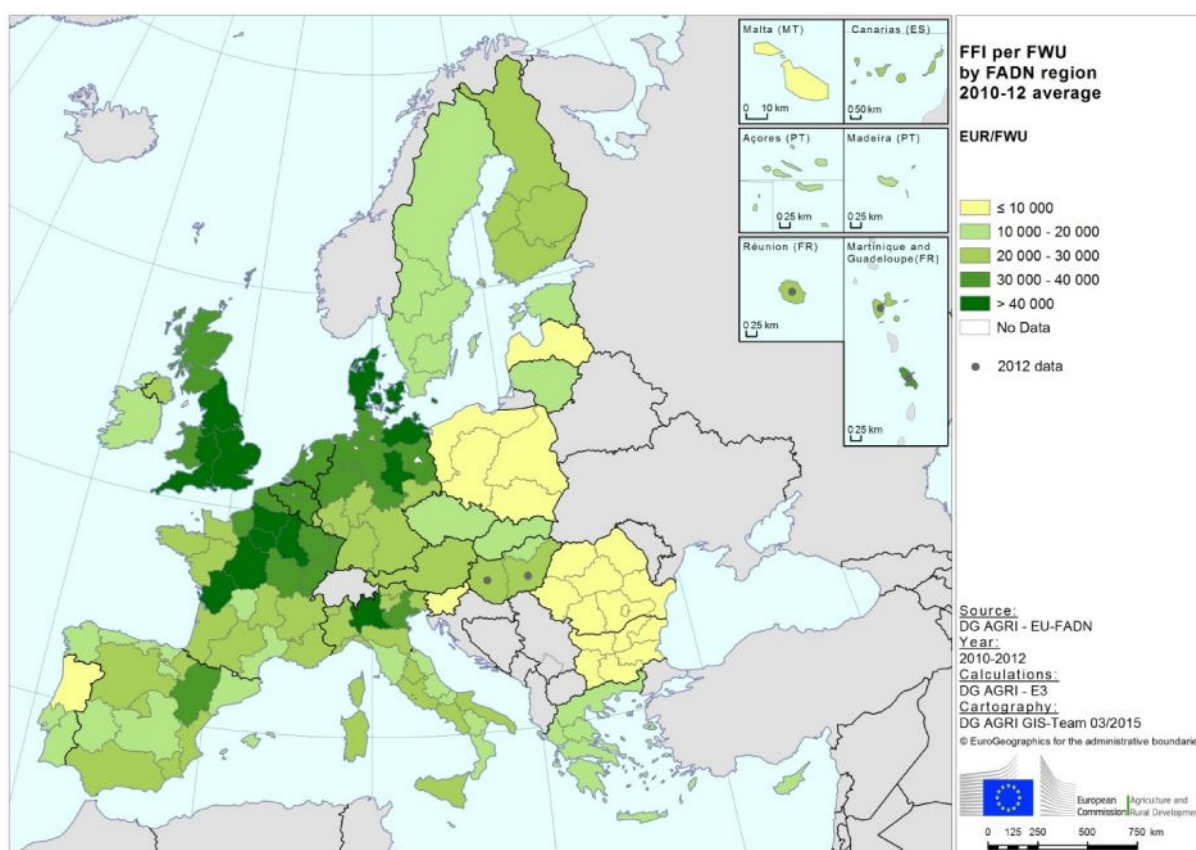
Map 1: FNVA in Euro per AWU by FADN region, 2010-2012 average



Source: DG AGRI EU-FADN.

When turning to our preferred income indicator (FFI/FWU) for 2010-2012 a pattern emerges that, while echoing that shown by FNVA/AWU, has substantial differences (Map 2). The highest levels of income are no longer in Belgium and the Netherlands though they are still found in regions of England, France and Denmark. In Germany the higher incomes are concentrated in fewer regions (Mecklenburg-Vorpommern and Sachsen-Anhalt), and in France there is a greater degree of regional differences than shown by FNVA/AWU with the highest FFI/FWU in Picardy, Ile de France, Champagne, Centre and Poitou-Charentes. The locations of regions with the lowest levels of income are broadly similar using either indicator.

Map 2: FFI in Euro per FWU by FADN region, 2010-2012 average



Source: DG AGRI EU-FADN.

## 5.2. Differences in direction of change

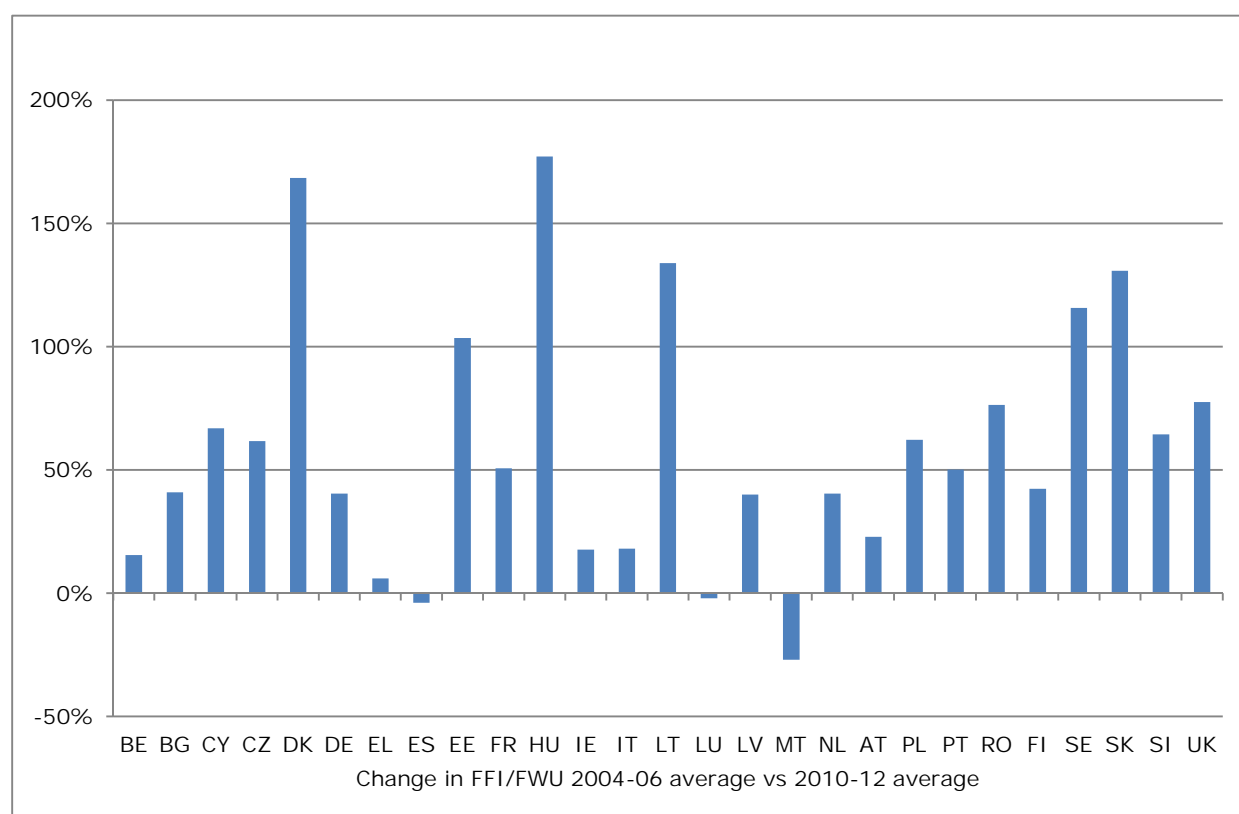
The second income issue to examine is the way that income levels have changed over time. In doing this it is important to bear in mind the potentially misleading impression that can be gained by focusing on specific years. By using FADN's FFI/FWU indicator averaged for the 2004-2006 and 2010-2012 periods we have reduced the risk of presenting a misleading impression somewhat (Figure 40). The data within FADN are nominal, so in real terms increases would be rather less than suggested.

The average increase in FADN's FFI/FWU between the two periods of 2004-2006 and 2010-2012 was 59%. Only a small number of Member States saw a decrease in nominal terms (Spain, Luxembourg and Malta). Belgium and Greece saw very small nominal increases which in practice probably reflect a static real position. Most of the largest increases came in the EU-N10, as might be expected given their lower starting point. Hungary, Lithuania, Slovakia and Estonia all saw FFI/FWU more than double. Eurostat (2014) points to the positive effects on these new entrants of an increase in public support granted to the farm sector, higher market prices and access to the single market. The growth of incomes in these countries reflects not only what is happening in the NVA (or FFI) per farm, but also in the shedding of labour that was typical over this period. Eurostat (2014) also points out that despite this positive performance, income in the EU-N10 still lags that in the EU-15; income in the EU-N2 is further behind (see also Figure 6 in Chapter 3.2.3.1).

The large increase in FADN's FFI/FWU in Sweden is the result of an unusually low starting base while that in Denmark is a mixture of a very low value in 2004 and a very high one in 2012 which, despite the use of averages, has a substantial impact.

Other Member States saw growth in FADN's FFI/FWU that was far smaller than typical; most of the six with least growth were EU-15 countries (Luxembourg, Ireland, Belgium and Finland), though two were EU-N10 (Malta and Hungary). However, Eurostat also points out that, despite the successive income boosts experienced by the EU-N12, agricultural income per AWU in 2014 for this group of countries came to an average around €5,800 compared to about €24,500 for the EU-15.

Figure 40: Change in FFI /FWU, average 2010-2012 vs average 2004-2006



Source: DG AGRI EU-FADN.

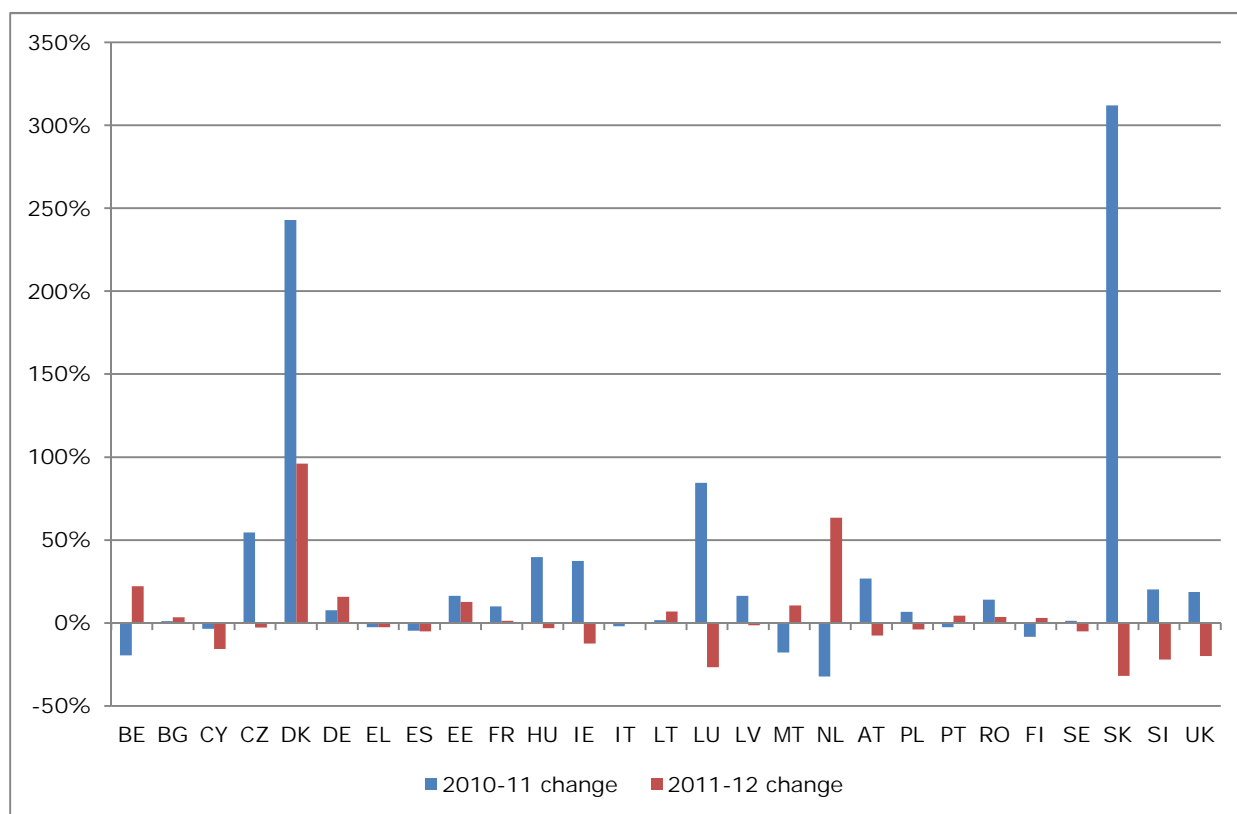
Note: Bulgaria and Romania compare 2010-12 with 2007-09.

### 5.2.1. Changes: short-term

Income levels and trends in income over a period do not insulate farmers from short-term income movement. Though these may be anticipated and to some extent counteracted at the farm level by steps such as choice of and mix between enterprises, informal and formal insurance and other risk-reducing strategies, to which CAP and Member State policy interventions may add further stability, nevertheless large short-term shifts in income will place strain on the ability of farms to cope. Some indication of year-on-year change in FFI/FWU is given in Figure 41. This shows that in any one year, while some Member States saw a fall in FFI/FWU, others saw an increase. Member States which saw an increase (decrease) in one year frequently saw a decrease (increase) in the next (17 Member

States). Of course, some types of farming and some sizes of farm will have experienced shifts that are both greater and lesser than the national averages, and individual farms (rather than the group averages shown here) will have shown a further degree of instability.

Figure 41: Annual change in FFI /FWU, 2010-11 and 2011-12



Source: DG AGRI EU-FADN.

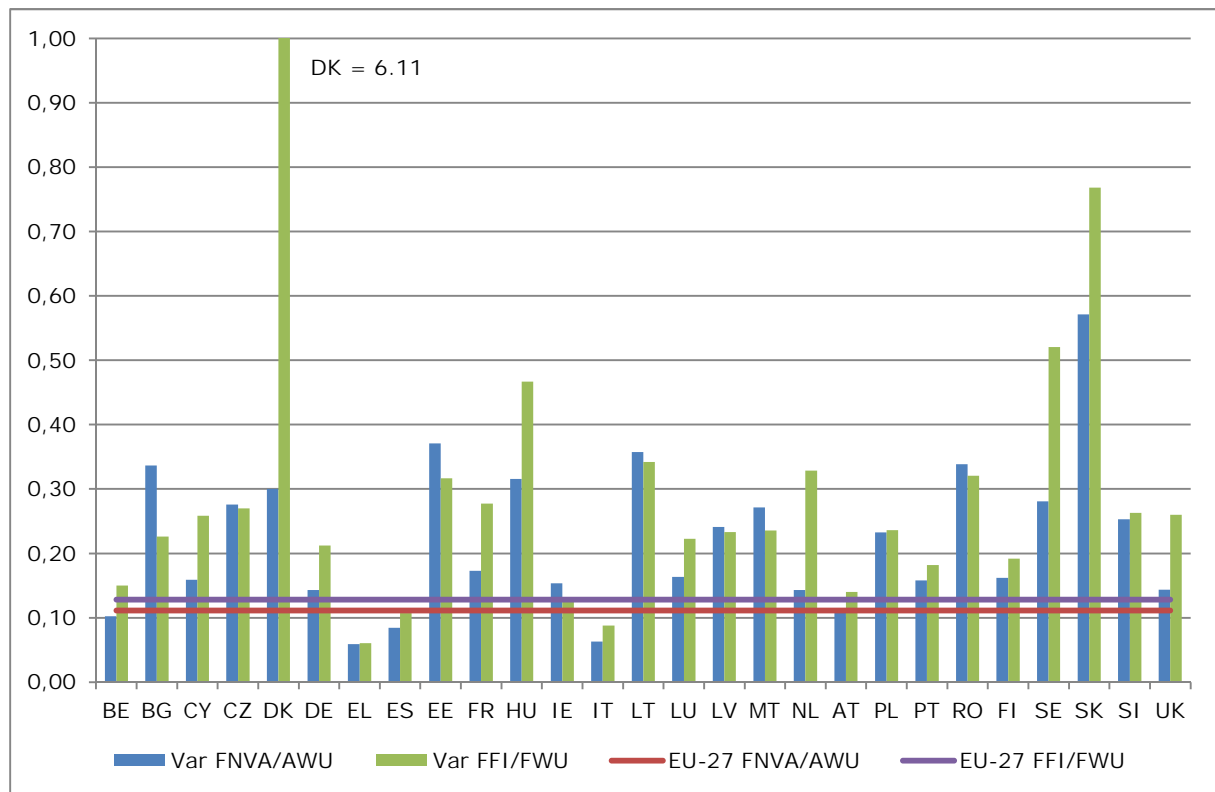
However, as has been noted repeatedly, looking at changes between individual years is not a reliable guide to the typical level of income variability within a country, even at national level. For this, it is necessary to consider the variation over a run of years and the conventional way of expressing this is as a coefficient of variation (described in Chapter 3.2.3.8). The key point is that this takes into account the different absolute levels of income. The coefficients for the period 2004-2012 are shown in Figure 42.

The most noticeable feature is that some countries have far higher levels of income variation than others, though this does not necessarily apply equally to both of the income indicators chosen. In particular, Denmark shows an extraordinary degree of instability in FFI/FWU (also seen in Figure 41); this reflects primarily the small margin left from NVA after its typically high interest charges are deducted<sup>31</sup> (as well as rent and wages) and hence small changes in NVA (which are not exceptional by the standards of many other Member States) are transformed into very large shifts in FFI. There is a tendency for EU-N12 Member States to have somewhat higher coefficients of variation than the EU-27 average, but in part this will reflect the general trend of increasing incomes seen in them.

<sup>31</sup> See, for example, van der Veen, et al. (2002) who explain that this is partly a function of family farm transfer between the generations using credit.

Attention has already been drawn to what appears to be inherent instability over time in some types of farming (granivores and fieldcrops) and stability in others (horticulture and other permanent crops), and variability at Member State level will reflect their relative composition by type. The relatively low variability seen in Greece, Spain and Italy reflects the substantial proportion of other permanent crop farm types in these Member States (28% to 44% c.f, EU-27 average of 14%). Cyprus also has a high proportion of permanent crops (42%), but incomes appear to be less stable because they have risen steadily over the period.

Figure 42: Coefficient of variation of farm income indicators by Member State, 2004-12



Source: DG AGRI EU-FADN.

### 5.3. Comparisons between Member State incomes for each main farm type (FADN data)

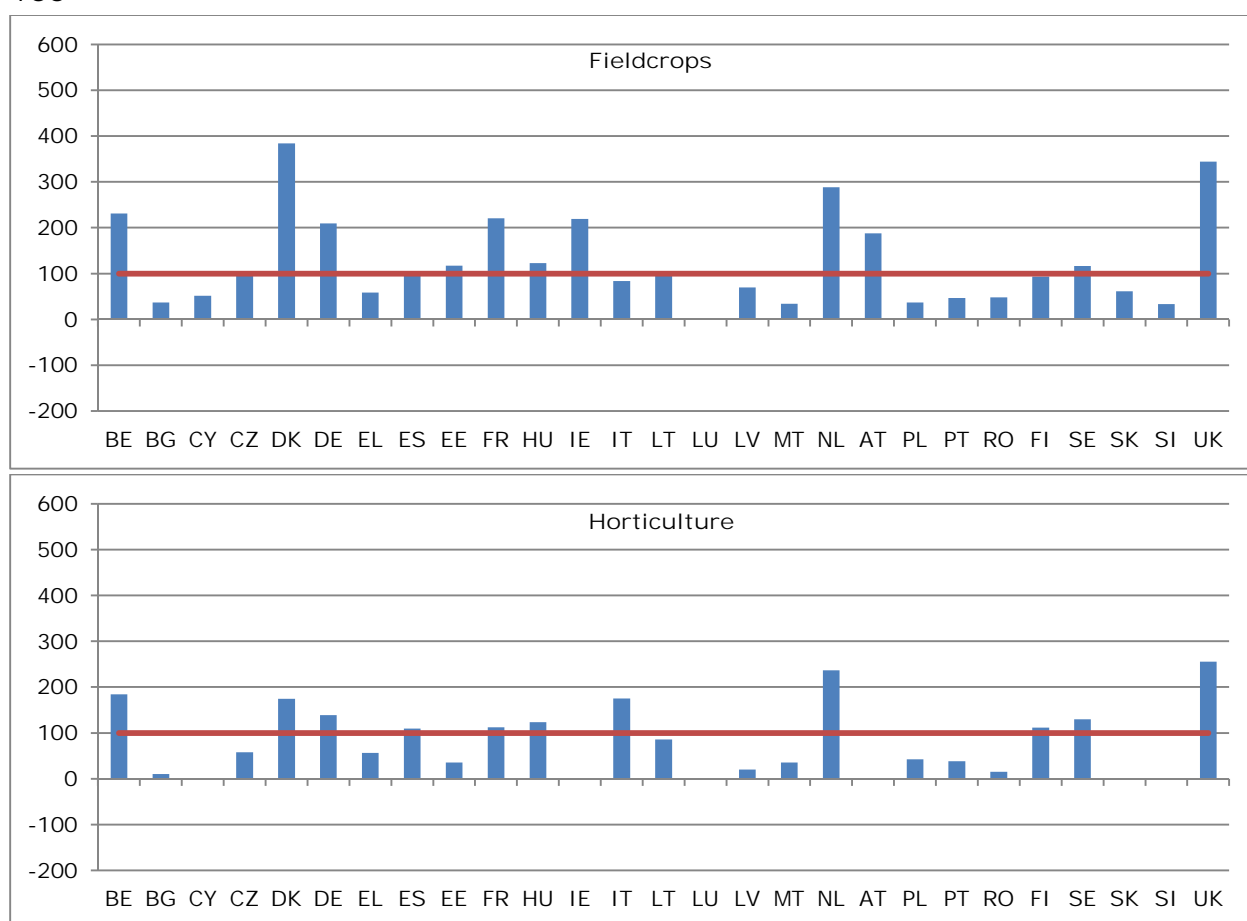
Figure 43 presents a comparison between FFI/FWU in all Member States for the main eight farm types. This is presented in index form (EU-27 = 100) to facilitate comparisons between farm types. Zero values (for example Fieldcrops: Luxembourg) indicate no data. To a large extent the data reflect different national farm income levels such that for all farm types incomes tend to be highest in EU-15 Member States.

For fieldcrops, the highest incomes are seen in Denmark, the UK and the Netherlands. The Member States with above EU-27 average incomes are all from the EU-15. For horticulture the largest incomes are found in the UK and Netherlands; FFI/FWU in Hungary exceeds the EU-27 average. In the wine sector FFI/FWU is highest in Luxembourg followed by France. Incomes in the Romanian wine sector are relatively low in FFI/FWU



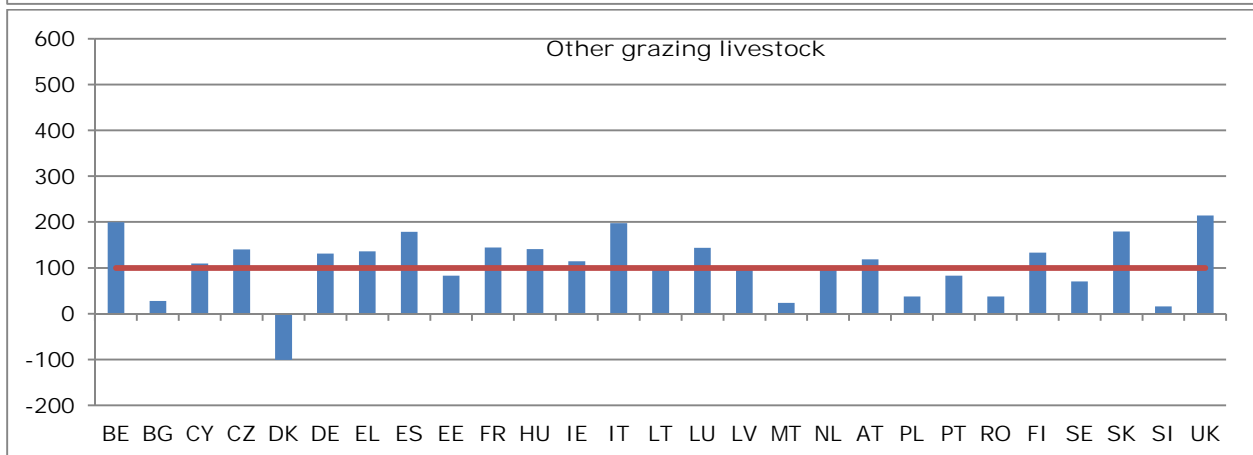
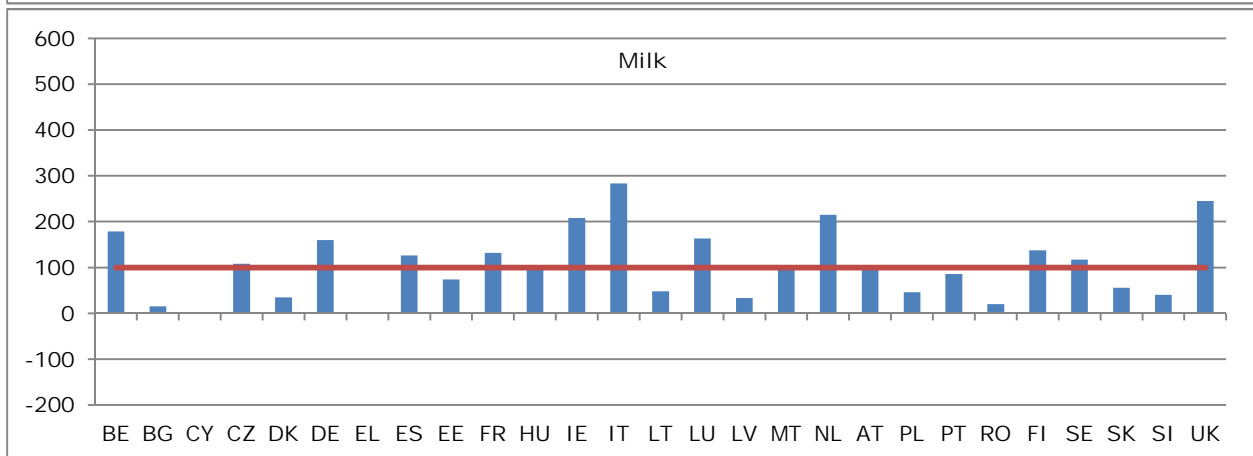
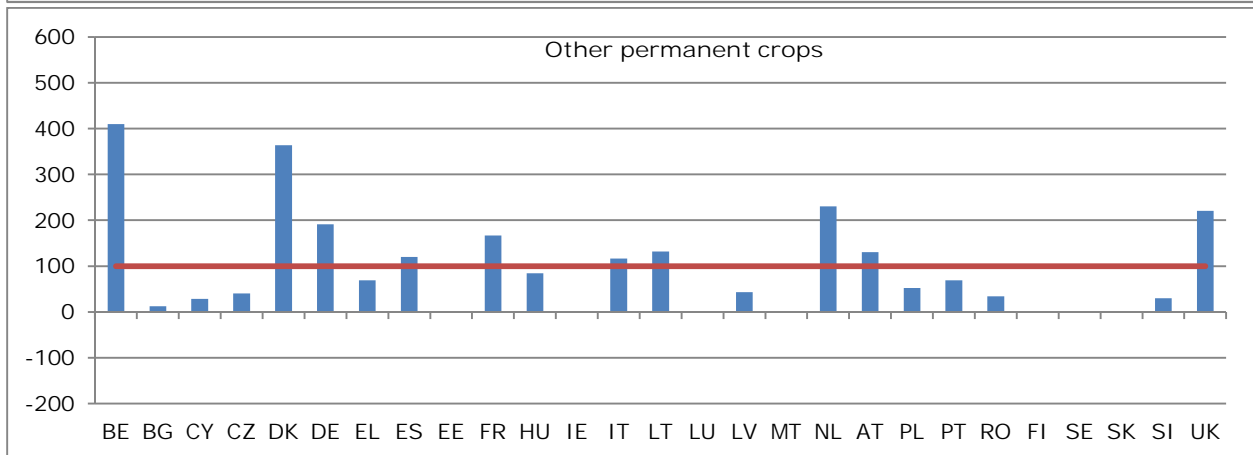
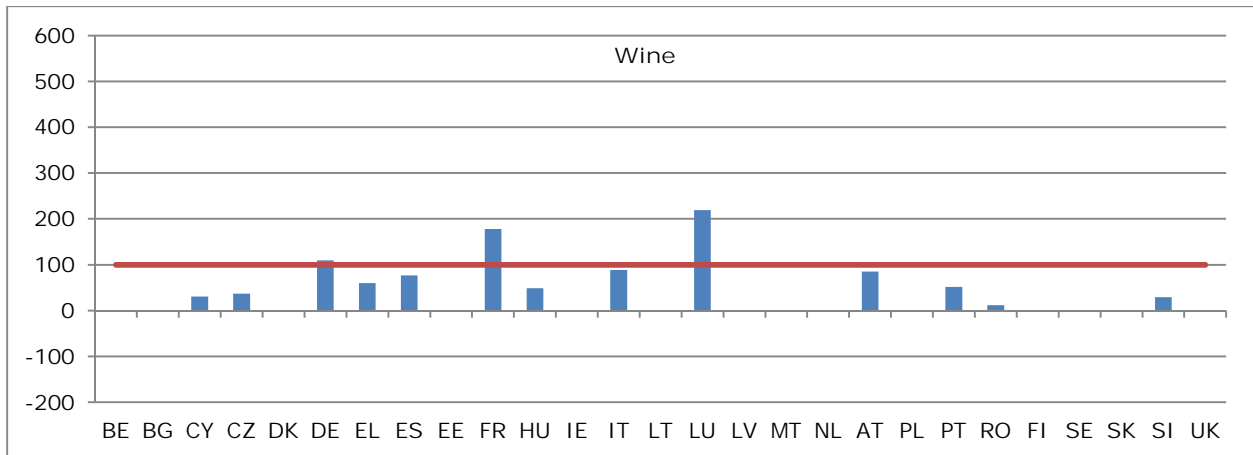
terms. For other permanent crops FFI/FWU is again relatively high in EU-15 Member States, in this case Belgium and Denmark. Incomes in Greece and Portugal are below the EU-27 average and comparable with the level in many EU-N12 Member States. In the milk sector FFI/FWU is highest in Italy, with high levels also seen in the UK, Netherlands Ireland and Belgium. The Czech Republic, Hungary and Malta all have approximately average FFI/FWU in this sector. FFI/FWU in the other grazing livestock sector appear less heterogeneous than in many other sectors and a number of EU-N12 Member States have incomes at or above the EU-27 average (Cyprus, Czech Republic, Hungary, Latvia and Slovakia). Denmark stands out as having had negative average FFI/FWU for the 2010-12 period<sup>32</sup>. FFI/FWU in the Italian granivore sector is more than three times the EU-27 average; this indicator is more than twice the EU-27 average in the UK. FFI/FWU in Bulgaria, Malta and Romania is very much lower than is typical. FFI/FWU is more than five times higher than the EU-27 average in the Belgian and UK mixed farm sectors and more than four times the average in France and Netherlands. However, this result is partly the result of the structure of farms within FADN. Some 29% of mixed farms in the sample are in Poland and 44% in Romania and, because incomes are low in these Member States, largely as a result of the number of small farms, this reduces the EU-27 average considerably. FFI/FWU in Sweden was on average negative over the 2010-2012 period in Sweden.

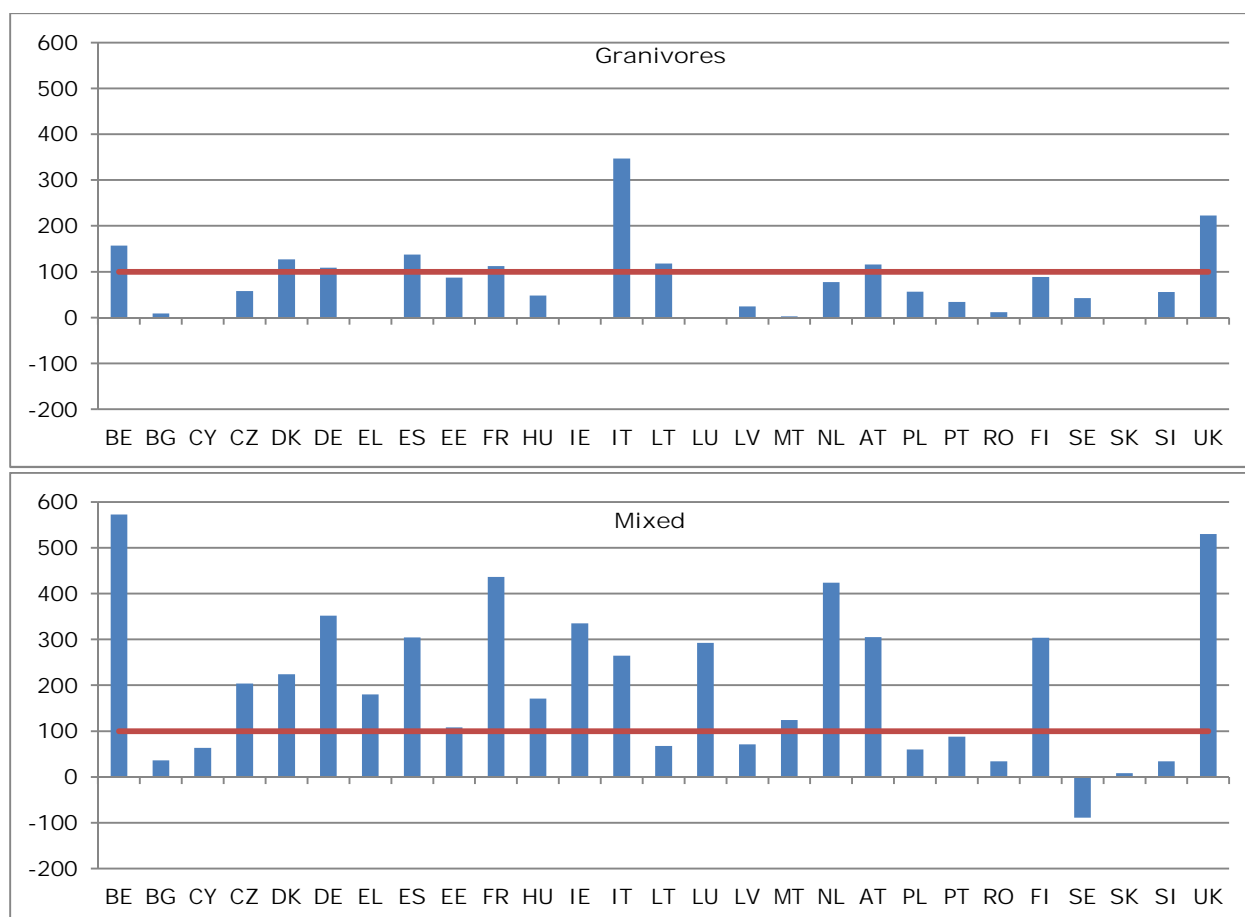
Figure 43: FFI /FWU by farm type and Member State, 2010-2012 average, EU-27 = 100



<sup>32</sup> This is largely explained by the high borrowing and interest charges associated with inter-generational land transfer which is a characteristic of this country.







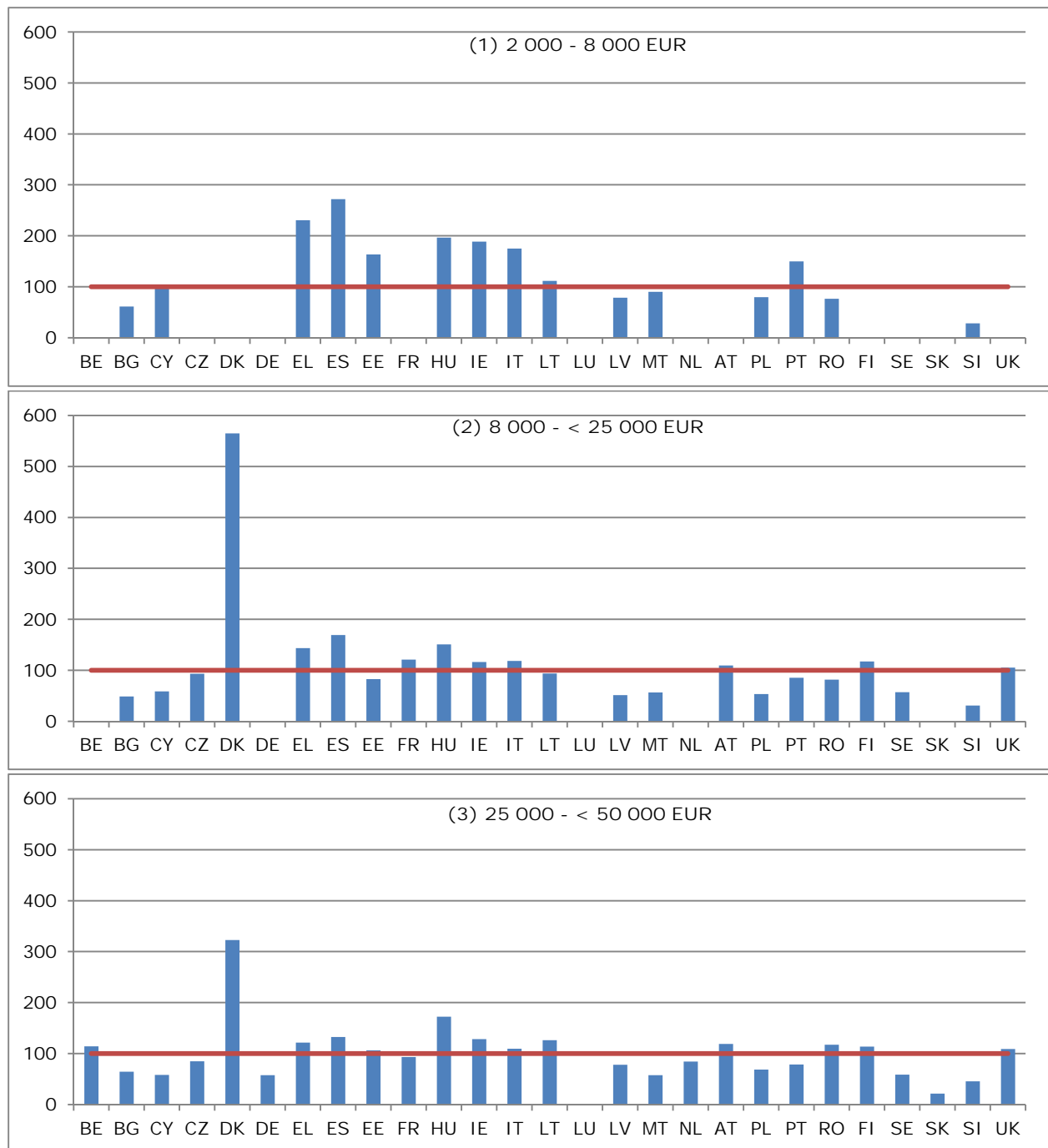
Source: DG AGRI EU-FADN.

#### 5.4. Comparisons between Member States of farms by economic size group

Figure 44 presents a comparison between FFI/FWU in all Member States for the six farm size groups as defined by Economic Size. This is presented in index form (EU-27 = 100) to facilitate comparisons between size groups. Zero values indicate no data as a result of the minimum size thresholds in use. A key difference from the investigation by farm type is that there is much less difference between Member States suggesting that a key factor in differences between Member States by farm type actually reflect the different size structure which itself is influenced by the size thresholds used in FADN. In other words, a comparison between Member States of a specific farm type is confounded by the difference in size structure.

That said, FFI/FWU in Bulgaria and Romania is below the EU-27 average for the smallest two size groups, although farm incomes in Slovenia were lowest in both cases. From the 25,000-50,000 EUR size group upwards, farm incomes in Romania start to be higher than the EU-27 average and for farms in the two groups in excess of 100,000 EUR this is also true for Bulgaria. In fact, as economic size increases, it becomes more common for farms from the EU-N10 to show higher FFI/FWU than farms in the EU-15. For the largest size group, only farms in Italy and the UK from the EU-15 have farm income higher than the EU-27 average (farm incomes in Portugal equal the EU-27 average in this size class).

Figure 44: FFI /FWU by Economic Size and Member State, 2010-2012 average, EU-27 = 100





Source: DG AGRI EU-FADN.

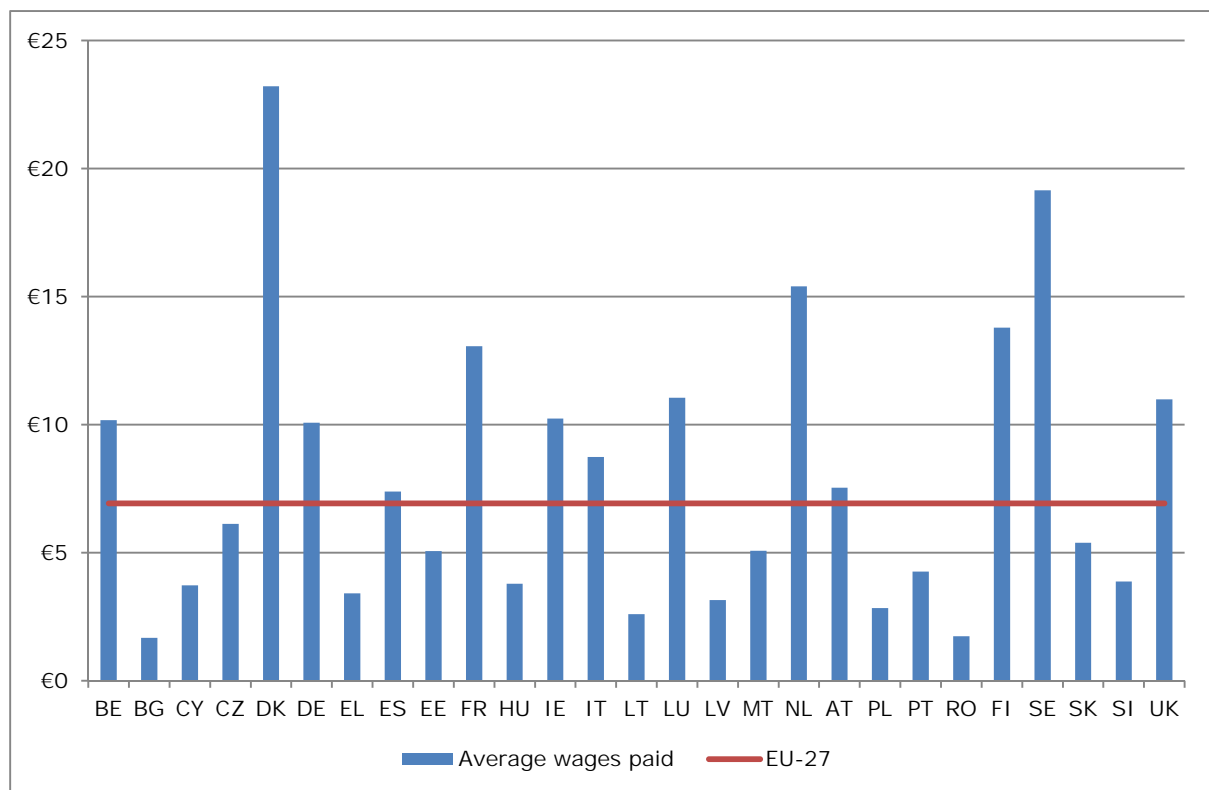
## 5.5. Agricultural wages in Member States

For reasons that have been given above, agricultural wages are not treated alongside the entrepreneurial incomes of farmers in this analysis. However, in view of the opinion among some that they constitute part of the agricultural community for agricultural policy purposes, they are included here. That said, it should be recalled that the determinants of wage levels for hired workers are radically different from those that determine the residual incomes of independent farmers. In particular, the level of wages paid in the rest of the local economy will be a major determining factor.

Comparisons between countries (and regions) have been made in terms of the average calculated wage rate within FADN (the average amount spent on hired labour in the national FADN sample divided by the average number of hours of labour supplied); this may differ from other metrics (such as average wages or that found by national surveys of hired employees working in agriculture).

The average of annual figures for the years 2010-2012 are shown in Figure 45. The degree of difference between the highest wage countries and the lowest wage ones is very large – the ratio between wages per hour in Denmark and in Bulgaria is in the order of 10:1. Three countries (Denmark, the Netherlands and Sweden) have wage levels averaging more than €15 per hour, whereas in six (Bulgaria, Greece, Latvia, Lithuania, Poland and Romania) it is €3 or less.

Figure 45: Paid wages per hour (2010-12 average)

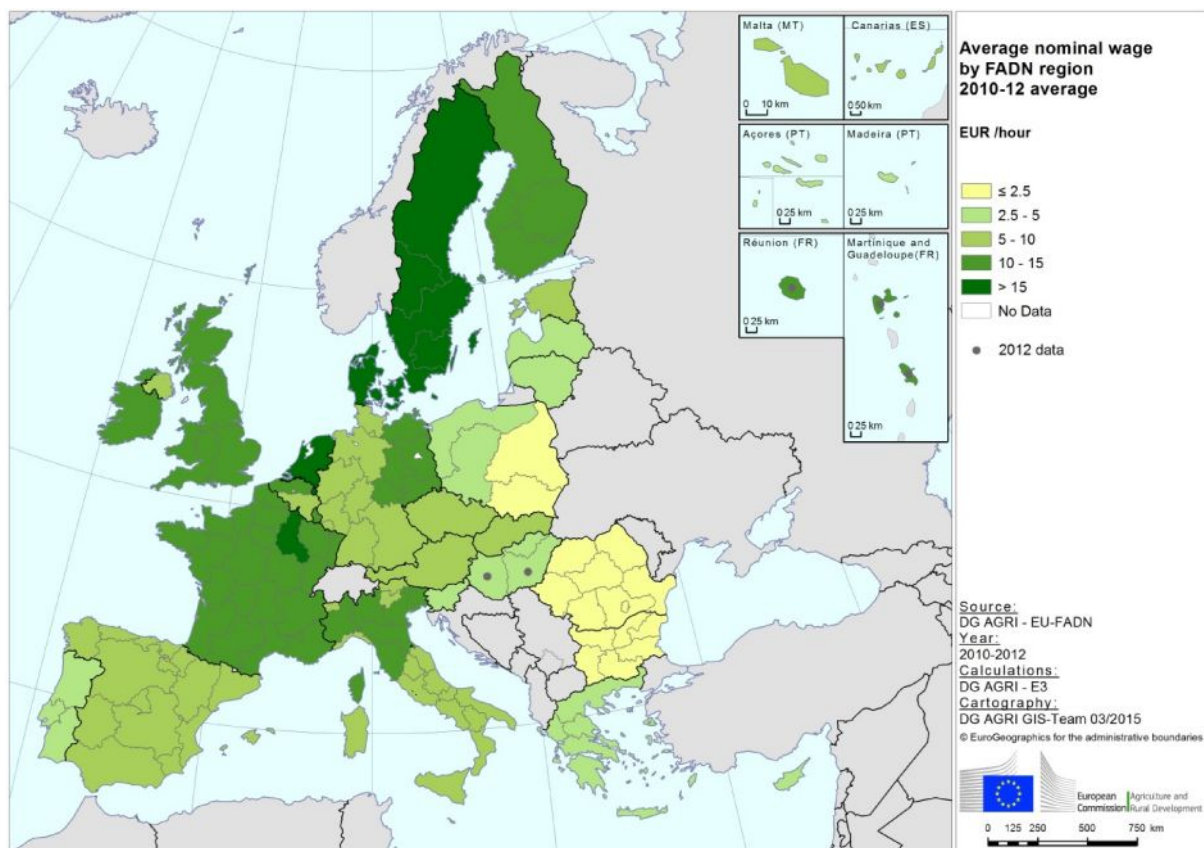


Source: DG AGRI EU-FADN.

#### 5.5.1. Regional differences in wages paid

The regional variation of wages paid within countries is noticeably less than was observed with the income of farmers (Map 3). For example, in France only one region (Champagne) appears to have wages that are outside the range €10-15 per hour, whereas FFI/FEU was spread over four different levels. Wages in Germany are similarly more homogeneous, although are higher in the East where farm managers and administrators on large farms are included which increases the average. This is in line with the hypothesis that the wages paid are generally determined more by wages levels in the general national economy than by the profitability of farming in particular regions (the Champagne region of France may well be an exception).

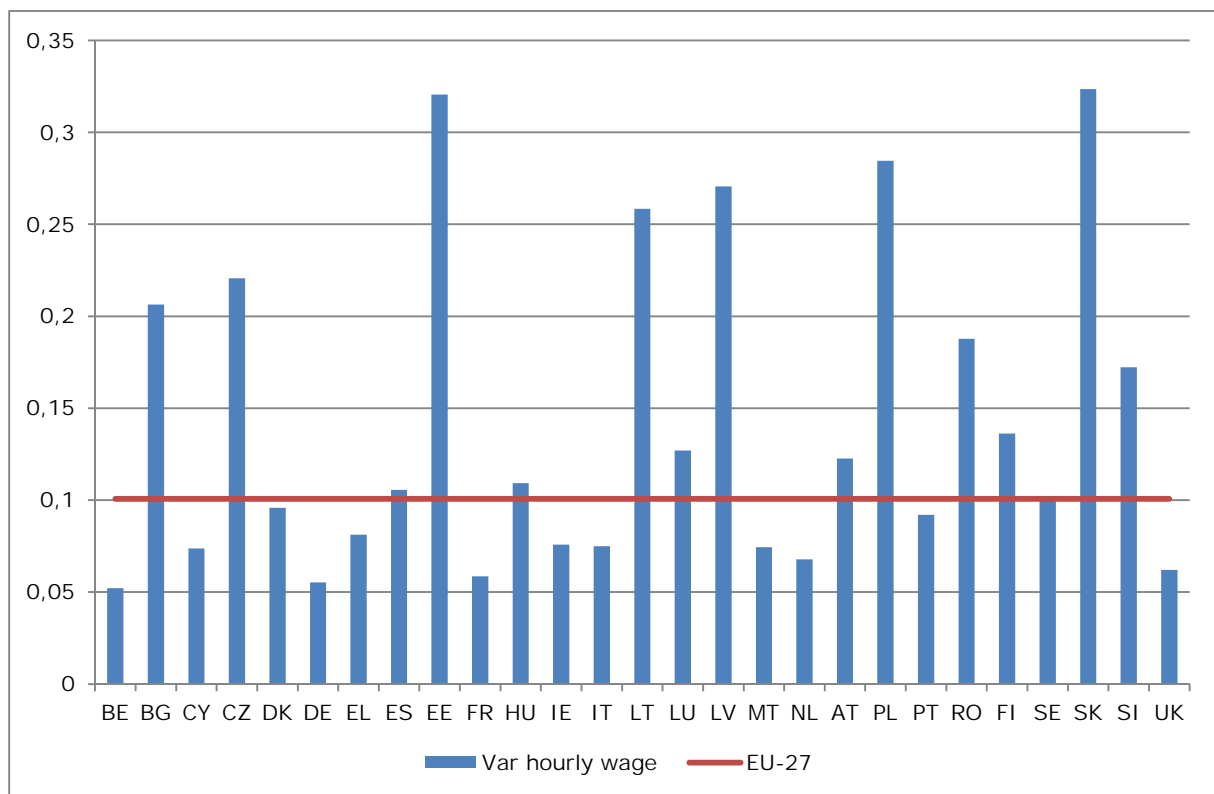
Map 3: Average nominal wages paid by FADN region, 2010-12 average



Source: DG AGRI EU-FADN.

An analysis of the variation of wages paid per hour was carried out along similar lines to that applied to the income of farmers (Figure 46). This is difficult to interpret because the level of wages has been rising relatively quickly in the EU-N12 Member States which is included within the variation (whereas in the EU-15 they have been far steadier suggesting less volatility). The countries with the seven highest coefficients of variation are all new Member States. That said, Spain, Luxembourg, Austria and Finland are countries among the EU-15 that have displayed relatively high coefficients of variation in the wages levels.

Figure 46: Coefficient of variation in paid wages by Member State, 2004-2012



Source: DG AGRI EU-FADN.





## 6. RECOMMENDATIONS FOR FUTURE INCOME SUPPORT UNDER THE CAP

### KEY FINDINGS

Based on our analysis the recommendations to the European Parliament are that:

- Further consideration is given to the re-establishment of IAHS statistics, since they are needed to assess the extent to which the CAP is achieving this core objective of a fair standard of living.
- Data sources that relate to the entire economic activities of the households (and other institutional units) that operate farms should be encouraged.
- A study be undertaken to assess the relative attributes of a safety net for the incomes of farm households for the EU, including its costs, and the necessary technical conditions that would be required for it to operate successfully.
- When considering the need for support of incomes, the wealth of agricultural holdings should be taken into account.
- Suitable caveats should be used when FADN data are reported to make clear the impact of the field of observation on the results.
- Consideration should be given to the need to represent people (farm holdings) rather than production. A suitable balance needs to be struck between the current production/land use focus of FADN and the social impact of the CAP.
- Attention should be diverted away from interventions that attempt to combat instability directly at the farm level and towards risk management schemes that prepare farm operators to better anticipate and cope with instability. This could involve further studies.
- Consideration should be given as to how the occupiers of small farms can enhance their economic prospects by building their skills and other forms of human capital.
- We recommend that policies that increase market participation and ease the adjustment of farm businesses and households should be further supported and that current impediments to access be examined.

In the terms of reference for this study on 'Comparison of farmers' incomes in the EU Member States' the European Parliament pointed out that the central aim of the CAP is to support the incomes of farmers. It drew attention to Article 39(1)(b) of the TFEU which, carried over the words of the earlier Treaties concerning the aims of the CAP specifically the objective of ensuring a 'fair standard of living for the agricultural community, in particular the individual earnings of persons engaged in agriculture'. As noted in previous chapters, neither the 'fair standard of living' nor the 'agricultural community' have been officially defined in the policy context. However, it is clear that, where farm families have income sources additional to what they receive from farming, these can be important in determining their overall standard of living.

### 6.1. The need for reliable statistics on agricultural household incomes

Our ability to describe and comment on the central components of the 'farm problem' in the EU – poor comparability of incomes between farmers and other groups in society, poverty

among farm households, and income instability (or volatility) is severely hampered by poor data availability. As has been established earlier in this analysis, in many Member States data do not currently exist by which the disposable income of agricultural households (proxies for their standards of living) might be assessed.

Although Eurostat has in the past attempted to set up statistics on this subject (Income of the Agricultural Households Sector – IAHS – statistics), currently no operational official EU monitoring system exists by which the total household incomes of farmers can be assessed and compared with other groups in society or their evolution monitored. This represents a major gap in information relevant to the performance of the CAP. While a feasibility study has been made to rebase the Eurostat statistics on a uniform basis in Member States, following comments by the European Court of Auditors (2004) and endorsed by the Council, and potential data sources by which this could be done have been identified, no action has been taken since it reported in 2007. A recommendation to the European Parliament is that further consideration is given to the re-establishment of IAHS statistics, since they are needed to assess the extent to which the CAP is achieving this core objective of a fair standard of living.

The EU system of monitoring incomes at the farm level (FADN) does not currently collect data on incomes received by farm operators from non-farm sources, though in some Member States the national survey that contributes to FADN does cover this other income. At national level there is often little or no information on the numbers of farm households that are considered to be in poverty<sup>33</sup>. Also, variability of household income is likely to be less extreme than that seen in the profits from farming because of the more stable other sources of income that many farm families receive. This lack of farm household data is for a range of reasons but primarily because farmers in many countries are not taxed according to their accounted income but on other bases; in many instances these special treatments provide benefits ('tax expenditures' or concessions) that are not usually counted when measuring the public support of agriculture, but can form part of the explanation why some operators remain in agriculture (Defra, 2012; OECD, 2005). In such countries taxation records are not a source of relevant information on incomes. A second recommendation, closely allied to the first, is that data sources are encouraged that relate to the entire economic activities of the households (and other institutional units) that operate farms. In addition to assisting with income measurement, such data are highly likely to be relevant to understanding issues such as the viability, sustainability and resilience of farm firms<sup>34</sup>, their intensity of land use, investment levels and succession patterns. In other words, the sort of issues which are addressed through the second pillar of the CAP (although take up of specific measures, such as risk management tools, is a decision for Member States<sup>35</sup>).

Although the picture is currently imperfect and incomplete, from the fragmented statistics it appears that, as a group, farmer households in most Member States are not a particularly

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<sup>33</sup> A rare exception is Ireland where there are special payments for landholders whose incomes fall below specified thresholds (the so-called 'farmers dole'). Some 20-25% of holders seemed to qualify in the 1980s. A sharp rise was noted between 2008 and 2010 in numbers who actually received the means-tested benefit (the Farm Assist Scheme), a period over which incomes from farming dropped sharply; in the latter year about ten thousand farmers had their income poverty means tested and were paid, about 10% of the total number of self-employed farmers. It was evident that this benefit was regarded as a last resort by farm households and, according to the farming press, many more who might have qualified did not apply (quoted in Hill (2012) *Farm Incomes, Wealth and Agricultural Policy*, CABI p. 49.)

<sup>34</sup> For example, see Defra (2012).

<sup>35</sup> Under Commission Delegated Regulation (EU) No 807/2014 and Implementing Regulation (EU) 808/2014, the detail of the risk management tools to be used is largely left to the Member State which means that they will not be uniform across the EU.

low income sector in society. This finding potentially eases the path of CAP reform. If approximate parity can be assumed, attention could then be focused on other aspects of the income problems that agriculture faces, such as instability, including the provision of (stable) policy payments for the provision of environmental services and risk management tools. Of course, change to the current support system might threaten the relative income position of the farming community in the short-term, but action to counter this could not be justified without the sort of evidence that a robust monitoring system, currently lacking but which has been proposed, could provide. Sector-average figures would not be enough, and information necessary to enable targeting on low-income cases would be needed. Whether the problem of low disposable incomes among certain types of farmers is addressed through the CAP or through general policies on poverty is a matter that would need debate.

When considering policy alternatives it would be wise to look beyond the current poor statistical situation. Data availability can change. Thus it would be wrong to ignore a radical 'social' approach to supporting the income of poor farmers that identified farm households that had incomes below some level deemed to be the minimum 'fair' level and provided payments to bring them up to that level (supplying a household safety net). Though no assessment of the impact and costs of such a system for the EU or any individual Member State seems to have been published, analysis for the US (Gundersen et al., 2000) suggests that such payments directly targeted at low-income farm households could not only achieve the living standard objective more effectively than the current system but that the total public cost would be lower than under the present support arrangements (Box 9). In the US there would be an unmistakeable redistribution so that, while low income households would receive more than at present, many of the recipients of large payments would experience falls; this is probably a factor that caused the attention in the US to shift over the first few years following the publication of this ERS analysis from the notion of a safety net applying to farm households to one applying to the revenues or profits from the farm business.

Box 9: Safety net for farm households (based on Gundersen et al., 2000)

Government assistance to the US farm sector provides relatively little to small farms. Instead, most government assistance through traditional farm program instruments is to larger farms. This report looked at the issue from a different perspective, one which might have reduced government spending and ensure that all full-time farmers received an income to meet basic needs. It applied the concept of a farm household safety net based on a set of standards commonly used in the economics literature and in Federal assistance programs for low- to moderate-income households.

The report considered four safety net scenarios that would assure farm households a certain level of income or consumption:

- Income equal to that of the median non-farm household in the region.
- Income equal to 185% of the poverty line.
- Income equal to the average nonfarm household's annual expenditures.
- Income equal to the median hourly earnings of the non-farm self-employed (\$10 per hour).

The analysis estimated the distribution effects and costs of the four scenarios for two time periods: 1993-97 and 1999-2003. Under any of the four safety net scenarios all very small farm households would receive payments and payments per recipient to other small farms would be more than twice as high as under existing programs. Larger farms would lose in the new system. In terms of the total cost the new system

would result in lower public expenditure as long as the safety net threshold was less than about \$30,000. Of course, this mechanism could be combined with the continuation of some programs (such as environmental ones), in which situation the overall cost would reflect that mix.

Given that evidence for the EU points to a similar distribution of benefit under the CAP, with the bulk of payments going to the larger farms and small farms getting relatively little, the general findings are likely to apply too (although it should be noted that there is a greater element of redistribution under the 2014-2020 CAP, see European Parliament (2015b)). However, the absence of adequate data on household income of farmers in many Member States currently prevents detailed assessment. Nevertheless, a further recommendation is that a study be undertaken to assess the relative attributes of a safety net for the incomes of farm households for the EU, including its costs, and the necessary technical conditions that would be required for it to operate successfully.<sup>36</sup> It should be noted that our use of the term “safety net”, which relates to the household, differs from that in Agrosynergie (2013) where the term relates only to the transformation of market intervention under Council Regulation (EC) 73/2009.

Moving from incomes to wealth, from the perspective of social equity it does not seem reasonable that the assets held by farm families, and real gains made on them, should be ignored when considering support for their standards of living. Current income measurement, whether of household incomes or of the income from farming alone, ignores wealth and capital gains (or losses), yet such factors are important to strategic decisions, such as that to stay in or exit from farming. One of the drivers of land prices is the preferential treatment given in taxation systems in many Member States to wealth in the form of agricultural assets, particularly to capital gains on agricultural land and on its transfer between generations (OECD 2005). A recommendation is that, when considering the need for support of incomes, the wealth of agricultural holdings should be taken into account. A step in this direction would be a comprehensive inventory of the way in which Member States treat agricultural assets in capital taxation.

## 6.2. Statistics based on people rather than production

One of our main sources of data from which we have calculated results is FADN. It is worth noting that this dataset is oriented towards covering production rather than individual farmers. A consequence of this is that Member States apply thresholds based on Economic Size that vary between countries. As an outcome, the smallest sizes of farms only contain data from a limited number of Member States. Only when an economic farm size of €25,000 is reached are all Member States present in the data.

This can lead to some misconceptions when discussing the situation among small farms and also means that average income in those Member States where data from small farms are included is biased downwards. However, it is still the case that average farm incomes in Member States with a large proportion of small farms will be lower than in Member States with fewer small farms, even though these are excluded from FADN.

<sup>36</sup> It is worth noting that such a ‘social approach’ to support was outlined, and roughly costed, by the Commission in its 1985 Green Paper Perspectives for the Common Agricultural Policy (Commission 1985c). Thought to concern some 1 – 1.5 million farmers at the time and imply a cost of 1,000 million Ecu per year at the beginning, it could be limited to the existing generation of farm holders and thus become self-eliminating.

We therefore recommend that suitable caveats be used when FADN data are reported to make clear the impact of the field of observation on the results. A related recommendation is that consideration be given to the need to represent people (farm holdings) rather than production. A suitable balance needs to be struck between the current production/land use focus of FADN and the social impact of the CAP.

### 6.3. Income stabilisation

The issue of income stabilisation can be considered at the level of the farm household or of the farm business. The two are, of course, related, since the main cause of household variation between years is likely to be the profits from farming<sup>37</sup>. Instability (volatility) at the farm business level may lead to inefficiencies in resource use and (in extreme cases not seen for some time in the EU) threaten security of supply. Chapter 1 presented evidence on the extent of income variation at the group and individual farm levels, the latter being the larger, and the case for averaging over three years as a norm when assessing farm incomes. It is clear that income instability is greater in some types of farming than in others, and that the main driver of short-term variation is price volatility in the markets for farm products. It is also clear that, in retrospect, concerns over income levels in single years and shifts between years can give an exaggerated impression of longer-term movements; for example, 2009 proved to be a passing experience of depressed income levels rather than a precursor of persistent low incomes. It is also apparent that the incomes from farming are relatively less stable among small farms than among large ones.

Knowing about income instability is one thing. Taking action to combat it, with the intent of producing a net benefit to society, is quite another. Some EU countries (UK, Ireland and the Netherlands) already achieve a degree of smoothing of year-on-year income fluctuations by means of averaging in the tax system. France enables farmers who are taxed on their accounted income to deduct as an expense payments deposited in a 'professional savings account' that can be drawn down in circumstances such as a sharp decrease in income. Sweden has a similar arrangement.

At the EU level, since Agenda 2000, an explicit aim of the CAP has been to contribute to the stability of farm incomes. Reforms, notably the introduction of the Single Payment Scheme and now the Basic Payment Scheme, have changed the economic environment of farming with support now more targeted<sup>38</sup>. Opinion is not uniform on the impact of direct income support on farm income stability. However, it is clear that farmers are now expected to take prime responsibility for coping with market-related risk and uncertainty. This has led to a much increased level of policy interest in risk management initiatives by the European Commission, which published or sponsored several important studies on the management of risk and uncertainty between 2001 and 2009 (European Commission, 2001, 2005a, 2005b; JRC 2006, 2009; LEI, 2007)<sup>39</sup>. It concluded that successive reforms to the CAP, while encouraging European farmers to be more market oriented, left agriculture open to crises caused by natural disasters, livestock diseases or plant pests, or economic crises such as caused by the unexpected closure of important export markets. These may endanger a farm's viability or even affect the economic stability of an entire rural area.

<sup>37</sup> Incomes from OGAs and on-farm diversification may also be variable, but data are not yet available through FADN, although information on diversification will be collected in the future. If income from these activities is unrelated to agricultural income then it will stabilise household income, although if it varies in the same way as agricultural income it could make household income more volatile.

<sup>38</sup> For a review of the latest CAP reform, see European Parliament (2015b).

<sup>39</sup> Other, more recent, work on this subject includes European Parliament (2015a) and Meuwissen, et al. (2008).

Among the options considered by the European Commission (2001) as potential 'fields of action' for intervention using public funds were:

- Providing the conditions in which private markets in risk reduction instruments can work (such as the legislative framework, or training on risk management tools for farmers)<sup>40</sup>.
- Lowering the costs of risk-management tools, such as by providing subsidies for insurance or re-insurance (see more recently European Parliament, 2015a). Subsidies could also be justified on a temporary basis to encourage the development of market solutions. This might include assistance to setting up mutual support schemes, or tax concessions for establishing reserve funds.
- Providing public risk coverage, e.g. by providing disaster aid payments, public insurance and re-insurance, or a specific safety net in which payments are made direct to farmers, the last being a new form of instrument within the CAP.

The OECD has also issued a number of studies on risk in agriculture (OECD 2000, 2008a, 2008b, 2009). Points made that are significant in the present context are (a) the widespread lack of information on whole-farm income instability; and, (b) the ability to tier risks into layers, though their margins are rather blurred. The layers comprise, first, normal commercial risk that farm operators could be expected to shoulder and cope with by traditional means such as diversifying their business (a move that runs counter to the trend towards greater specialisation seen among EU farms) or entering into contracts with buyers or more sophisticated financial instruments such as hedging. Second, there are risks for which market insurance is available (such as fire). Third, there is market failure risk, where, for reasons including lack of information, private insurance solutions do not present themselves. Examples of the last include catastrophic drops in income caused by prolonged droughts, outbreaks of animal disease that disrupt normal patterns of trade, and historical incidents and events. Typically these depress incomes in a widespread way, perhaps of all the farms in a particular region.

The distinction between periods of low incomes flowing from natural disasters and those resulting from other causes is important, as different sets of rules apply under international trade agreements as to what can trigger government intervention and the degree of support that can be offered. Safety-nets, applied to the farm business (as opposed to the household, discussed earlier), whereby direct payments ('counter-cyclical payments') are made to individual farms suffering low incomes, are superficially attractive in that they give support only when needed and not when incomes are satisfactory, thereby improving the efficiency of public spending. Rules under the Agreement on Agriculture that forms part of Uruguay GATT Agreement of 1993 (formally signed in 1994 and carried forward into the World Trade Organisation rules) have the effect of constraining the amount of safety net support. These say a farm can only be eligible for safety-net payments if its income (the definition of which is not specified) from agriculture becomes less than 70% of its average income of the preceding three years (or an average of three out of the previous five, leaving out the highest and lowest, the so-called 'Olympic average'). Moreover, the payments must not be greater than 70% of the shortfall between the income of the particular year and the three-year average.

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<sup>40</sup> See European Parliament (2014a) on the limits of EU regulation on agricultural derivatives and the issue of competence for this topic within Commission Services.



A few non-EU countries have used safety-net scheme following these trade rules (the main examples being USA and Canada)<sup>41</sup>. Though the EU has not operated schemes along the lines used in the US or Canada, simulation exercises have been conducted by the European Commission using FADN data. In 2001 the Commission published estimates of the cost of topping up income (Family Farm Income) of the individual farm to 70% of the average income in its previous three years. In 1997, 20% of FADN farms (EU-12) would have qualified for safety net payments and cost a total of €3.5 billion. In the UK in 1996 some 12.5% of farms would have received payments, but this rose to 24.5% in 1997.

A similar exercise using FADN (EU-15) was carried out as part of the Impact Assessment of the 2008 CAP Health Check. The period covered was 1989 to 2003. Eligibility for stabilisation payments was again restricted to farms that had suffered an income fall of greater than 30% compared with its historical average, but Farm Net Value Added (FNVA) was this time the preferred income indicator. The largest shares of expenditure for the period as a whole, if such a programme were introduced, were found to be Italy (20%), Spain (18%), France (15%) and Germany (14%). Total cost varied from €8 billion to €12 billion per year, averaging €9.3 billion (which might be compared with Pillar I spending in 2007 of €43 billion).

The Commission has revisited this issue in the context of the 2013 CAP reform. European Commission (2011a) examined extending the current framework for insurances and mutual funds; an Income Stabilisation Tool (IST); and, a crisis fund. The annual cost of the IST was estimated at €7 billion on the assumption that about 20% of farmers were compensated for a 30% income loss. This compares to an appropriation of between €36 billion and €40 billion on direct payments in the 2014 to 2020 programming period (European Parliament, 2015c). The Commission concluded that insurances and mutual funds could contribute to both increasing the stability of income and mitigating the effects of production risks, although care would be needed to avoid distorting production decisions. The Commission also concluded that a "one size fits all" solution would not be appropriate given the heterogeneity of risks faced.<sup>42</sup>

Though the budgetary cost of making countercyclical direct payments to farms specifically to help them cope with income instability, up to the limits permissible, is low compared with that of Single Payments/Basic Payments<sup>43</sup> which gives support irrespective of income need, such safety nets have some substantial drawbacks as far as the Commission is concerned. These include the wide variability from year to year in the number of farms qualifying for payments and in the aggregate cost<sup>44</sup>, an unwelcome feature when generally the move has been towards making the costs of the CAP more rather than less predictable; some additional tool to limit the expenditure might be needed. Differences between the relative amounts of benefit going to particular Member States compared with what they receive under the present arrangements could be a political stumbling block. From the perspective of the farmer, support may be available only when the most pressing need for support has passed and possibly too late, though a system of interim payments may circumvent this disadvantage.

<sup>41</sup> In the US 'Agricultural Gross Revenue' and 'Agricultural Gross Revenue-Lite' were introduced in a pilot capacity in 2001 and 2003 respectively. In Canada the Income Stabilisation (CAIS) programme, introduced in 2003. The later scheme – AgriStability – retained the essential characteristics of its predecessor. These are reviewed in Hill (2012).

<sup>42</sup> Mary, et al. (2013) investigated the impact of an Income Stabilisation Tool and concluded that the impact would vary from farm to farm.

<sup>43</sup> See European Parliament (2013a) for details at the Member State level.

<sup>44</sup> Variability in annual cost would also be an issue given that annual (rather than multi-annual) payments form a principle of the EU Budget.

Most recently, Article 39 of Regulation (EU) No 1305/2013 on support for rural development provides Member States with the option of supporting an income stabilisation tool in the form of financial contributions to mutual funds and providing compensation to farmers for a severe drop in their income. Under this measure, up to 70% of lost income can be reimbursed by a mutual fund if income drops by at least 30% below a three-year average figure<sup>45</sup>. For every €1 paid in by the farmer, an additional €0.65 is to be added from the CAP's second pillar. Direct payments and all other public support are considered as 'income' under the rules. At the time of writing it is not clear how farmers will demonstrate their income levels, especially where they are not required to keep an account. European Commission (2015) reports that, as of 21 May, 2015, 13 Member States had taken up the risk management option in 15 RDPs. Some €2.7 billion of public funds will be spent and 675,000 holdings will participate. Almost all the funds (€2.2 billion) will be allocated to insurance premiums, €417 million to mutual funds and €130 million to income stabilisation.

A key factor that apparently rules out the use of a comprehensive income safety net within the CAP is the lack of a data system to enable it to operate<sup>46</sup>. Information of high quality from each individual farm in the EU would be needed. Both the US and Canada base their safety nets on data supplied by farmers from their accounting systems to their national taxation authorities. There are severe penalties for false accounting. The data therefore has a good degree of quality assurance, within the conventions used for the purposes of taxation. As has been pointed out, in many EU Member States some or all farmers do not have to submit income accounts for taxation, being assessed on a flat-rate (area-linked) basis. Though income data will be available for holdings that happen to be in the FADN sample, these form only a small minority. The lack of reliable income data for a large number of EU farms rules out the possibility of introducing a safety net along the lines allowed under international trade rules. To set up a special system to enable a CAP safety net to work would take time and involve a large administrative burden, both on national governments and on individual farms, factors which make it highly unattractive. Also because personal taxation is something over which Member States retain sole competence, there is no practical possibility of all EU countries adopting tax systems that compel their farmers to keep tax accounts that might supply the income data necessary to implement an income safety net.

We therefore recommend that attention is diverted away from interventions that attempt to combat instability directly at the farm level and towards schemes that prepare management on farms to better anticipate and cope with instability.

## 6.4. Support for small farms

One feature of the CAP reforms agreed in late 2013 and to be applied from 2014 or 2015 was the special support system for small farms (the Small Farmers Scheme - SFS). Optional for Member States, any farmer claiming support may decide to participate in the Small Farmers Scheme and thereby receive an annual payment fixed by the Member State of normally between €500 and €1,250, regardless of the farm size. Member States may choose from different methods to calculate the annual payment, including an option whereby farmers would simply receive the amount they would otherwise receive. The Commission claimed that this will be an enormous simplification for the farmers concerned

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<sup>45</sup> Either the farmer's average income in the past three years or a three year average from the preceding five years excluding the highest and lowest values.

<sup>46</sup> See also European Parliament (2015a) for other complicating factors.



and for national administrations. Participants will not be subject to cross-compliance controls and sanctions, and will be exempt from greening. The related impact assessment (quoted in European Commission, 2011b), showed that approximately one third of farms applying for CAP funding have an area of 3 hectares or less, but this accounts for just 3% of the overall agricultural area in the EU-27.

Evidence presented in this report suggests a clear link exists between the economic size of farm business and the income per Work Unit received. Also, farms of economic size greater than €25,000 of Standard Output in Member States that joined the EU in 2004 and 2007 seem to perform at levels similar to those seen in EU-15, and in the largest size groups farms in N-2 appear to outperform those in other countries. If there is a problem of a low income level from farming activity, the strategic solution is to facilitate the growth of farm sizes, and specifically the exit of operators who currently depend on the farm for their incomes, but whose scale of operations are too small<sup>47</sup>. This will enable remaining farms to absorb the released land, though history suggests that this may not go primarily to enable small farms to expand, but may be absorbed by larger units that are in a strong position to bid for it by purchase or rent.

The appropriate policy response is to put in place forms of support that assist households with small farms to develop other sources of income, either on the farm or elsewhere in the economy (this is distinct from the Small Farmers' Scheme under the 2014-2020 CAP). Rural Development Programmes, funded in part by the CAP's Pillar 2, often already have schemes to provide vocational training, but the strategic need is for a broader range of enabling skills. While diversification frequently requires business training, factors such as the general level of education may also be important, together with the ability to work in sectors that are often little connected with agriculture, but which can be carried on in combination with farming. In Member States where there are fewer non-agricultural employment opportunities, these require creation, something that Rural Development Programmes can assist with. History and empirical evidence suggests that there is almost no professional or commercial activity that cannot be found in combination with farming, lending important attributes to the farm operator's existence that often goes beyond additional incomes, such as financial stability, resilience in times of adversity, more social contacts and other benefits.

A recommendation for policy is that consideration is given as to how the households that occupy small farms can enhance their economic prospects by building their skills and other forms of human capital.

## 6.5. Balance between support and market orientation

Our analysis has established that subsidies (which include the increasingly important payments to farmers for the provision of public goods such as environmental services) are not the main source of revenue of EU farms, and sectors that generate the highest incomes (FFI/FWU) for their operators tend to be those where subsidies have the least relative significance. This greater market orientation, and the flexibility to respond by adjusting size and other characteristics, seems to be an important characteristic of successful farms.

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<sup>47</sup> There is a small incentive under the second pillar of the CAP for farmers who are eligible for SFS to transfer their holding permanently to another farmer. The value of this incentive is 120% of the eligible payment. However, this is only a weak incentive and may lead to the creation of notional transfers that will not impact on operational structure.

Discussions on support have been conducted primarily with direct payments under the CAP's Pillar 1 in mind (these have accounted for the main expenditure). However, this is often a too narrow approach. Provision of assistance to structural adjustment has already been mentioned above, but there are several other measures within Pillar 2 that are important in supporting indirectly the incomes of farm occupiers and in facilitating their development, thereby assisting in achieving the CAP's central objective of a fair standard of living for the agricultural community.

Rural Development Programmes frequently aim to increase farm productivity and competitiveness by measures that facilitate knowledge transfer, develop management capacity, encourage better marketing and the establishment and maintenance of cooperation. The assistance they offer to the development of on-farm diversification and to off-farm occupations, mentioned above in the context of small farms, is, of course, more generally relevant and applicable across the size spectrum. We recommend that policies that increase market participation and ease the adjustment of farm businesses and households should be further supported and that current impediments to access be examined.

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## ANNEX: DATA SOURCES ON THE REWARDS FROM AGRICULTURAL PRODUCTION

The two main data sources are the Economic Accounts for Agriculture (Eurostat) and the Farm Accountancy Data Network (FADN) operated by DG AGRI.

### The Economic Accounts for Agriculture

Aggregate economic accounts for agriculture have been published within the EU since 1964, and from 1969 onwards the six original Member States adopted the common definitions and procedures of the EU's Economic Accounts for Agriculture (EAA). For long operated by a 'gentleman's agreement' between the statistical authorities in Member States, the EAA was given its own legal basis in 2004 (Regulation (EC) No 138/2004), which served to underline at the time of EU enlargement the national responsibility to apply the agreed methodology and to supply data based on it to Eurostat.

An important feature of aggregate accounting for agriculture is that information used in building the account mostly comes from industry-level sources and not from grossing up the results of surveys of the accounts of individual farms (though survey data will be used to fill in gaps). This means that all agricultural production is covered (including non-agricultural activities which are not separable in the data sources). For example, the value of output is estimated principally from data on the area of crops and average yields (to give a volume of crop production) and numbers of livestock, each multiplied by appropriate prices found from market reports and from the relatively small number of first users/purchasers (such as dairies). The values of inputs, such as feedstuffs, fertilisers and seeds, are derived principally from sales from other industries to agriculture, something possible because of the largely agricultural nature of many of these inputs (animal feedstuffs and agro-chemicals, etc. being mainly taken by farmers). Similarly, labour costs can be estimated from multiplying the numbers of workers taken from censuses by annual average earnings found by surveys.

Data sources vary between Member States and, although the methodology is harmonised, detailed inventories of how Member States generate information have shown differences that undermine the appearance of comparability of results, though probably not seriously when changes over time are the focus of attention.

The advantage of this approach is largely one of speed; the estimates of the aggregate value of outputs and costs of inputs can be more quickly produced than if reliance were to be placed on surveys of sets of farm accounts. Preliminary calculations of the income from agricultural production based on aggregate accounts can be available in Eurostat before the end of the calendar year to which they relate. For policy-makers, rapid availability of estimates is important, though perhaps less so now than when the CAP operated principally using commodity support prices which were adjusted annually.

A substantial revision of the EAA methodology was made in 1997 and applied from 1999 (Eurostat 1997). First, a change of presentation was made. In line with changes in the UN System of National Accounts and the European System of Accounts (SNA93/ESA95) the EAA97 was split into a series of three current transactions accounts:

- The Production account, with its balancing item of Net Value Added.
- The Generation of Income account, with its balancing item of Operating Surplus (termed Mixed Income where unincorporated businesses are concerned because it includes the rewards both for self-employed labour and for capital (this term is used in the SNA93)).
- The Entrepreneurial Income account, with its balancing item of Entrepreneurial Income (which is equivalent in the previous Eurostat methodology to Net Income from Agricultural Activity of Family Labour Input).

Within the conceptual framework of the EAA97 there is also a Capital account, not dealt with here because it cannot yet be compiled on a complete basis and because it attracts relatively little attention among policy decision-makers.

Second, and more important than the change in presentation, are the revisions that concern substance. In addition to many adjustments to individual items (such as the timing of transactions, the calculation of own-account capital formation and the inclusion of computer software as capital assets) there were some fundamental changes to the EAA with regards to the basic unit, the measurement of output, the method of valuation and to the calculation of capital consumption. These are explained fully in Hill (2012, Chapter 4). Perhaps the most significant was the broadening of coverage to allow the value of production to include not only that of strictly agricultural commodities but also non-agricultural activities that could not be separated in the basic data sources (for example, small-scale food processing and retailing on farms). However, it must be emphasised that diversified activities on the farm that kept separate accounts and off-farm businesses run by farms were still excluded. Furthermore, some long-established problems were continued, including the issue of how to allocate the interest costs incurred by institutional units (household-firms and companies) between agriculture and other activities that might be carried on by the business (and in the case of households, their borrowings for consumption purposes).

Table 1: Economic Accounts for Agriculture: current transactions accounts from 1999

PRODUCTION ACCOUNT	GENERATION OF INCOME ACCOUNT	ENTREPRENEURIAL INCOME ACCOUNT
Output	Net Value Added	Net Operating Surplus (Mixed Income)
Minus Intermediate consumption	minus compensation of employees	minus interest paid
Minus consumption of fixed capital	minus other taxes on production	minus rent paid
	plus other subsidies on production	
= Net Value Added	= Net Operating Surplus (Mixed Income)	= Net Entrepreneurial Income

Source: Eurostat (1997).

The EU also revised its previous indicators of income from agricultural production as part of the EAA97 methodology. Bearing in mind that the coverage of output and basis of valuation are both changed from the previous system, and that other detailed alterations took place, the indicators applied since 1999 are as follows:

- Indicator A: Index of the real income of factors in agriculture per annual work unit. This is calculated by taking the Net Value Added at basic prices that appears in the Production account and adjusting it by adding 'other subsidies on production' and deducting 'other taxes on production', dividing by the labour input, and expressing in deflated and index form. Without these adjustments, NVA (at basic prices) would be sensitive to the classification of subsidies as being 'on products' or 'other subsidies on production'<sup>48</sup>. NVA in this form is referred to as being at Factor Cost.
- Indicator B: Index of real net agricultural Entrepreneurial Income per unpaid annual work unit. Entrepreneurial Income contains the same broad elements as the former 'net income from agricultural activity of family labour input', though the label is now more appropriate. It is retained for countries where agriculture is organised almost totally as unincorporated holdings.
- Indicator C: Net Entrepreneurial Income of agriculture. This aggregate is given in absolute terms, but may also be expressed in index form. The important point is that it is not calculated per unit of non-hired labour and so is suitable for uses involving countries where the output from corporate farms is an important part of the total.

Despite the revisions, it is clear that the approach embodied in each of the present Indicators remains essentially one of trying to gauge the rewards to a hybrid bundle of factors used in the production of agricultural commodities. NVA at Factor Cost is a long way from the personal incomes of the agricultural community (unless there is no borrowing, no renting of land, no hired labour and no other sources of income to the household). While Entrepreneurial Income coincides broadly with what might be seen as profit, it only relates to that originating from agricultural activity and excludes that which might come from other activities carried on within the farm business, unless these are very minor and inseparable in the basic data sources.

#### The Farm Accounts Data Network (FADN)

At EU level, the farm accounts surveys of all the Member States are brought together under the co-ordination of the Commission's Directorate-General for Agriculture and Rural Development (DG AGRI) as the Farm Accountancy Data Network (FADN), also known by its French acronym RICA. This was established in 1965 'with the specific objective of obtaining data enabling income changes in the various classes of agricultural holding to be properly monitored' (Commission, 1982). The justification for FADN was rooted in policy, in that '...the development of the Common Agricultural Policy requires that there should be available objective and relevant information on incomes in the various categories of agricultural holdings and on the business operation of holdings coming within categories which call for special attention at Community level' (EEC Regulation 79/65). FADN is

<sup>48</sup> Decoupled payments under the Single Payment Scheme (now the Basic Payments) are an 'other subsidy on production'. While such payments could be easily handled within an accounting system based on the institutional unit, they caused a difficulty in activity accounts. Treating them strictly would have resulted in them not being included in the value of agricultural production or in Value Added at basic prices. This would have shown a major fall in statistics on the Value Added from agricultural production at the point of revision of the methodology, which was deemed to be unacceptable. Their inclusion in the calculation of Indicator A preserves a degree of continuity with the preceding set of 'income indicators'.

therefore not a single survey but is an amalgamation of national surveys carried out by Member States. In some countries these predated RICA, as in the UK, but in others they were started from scratch. The nature of FADN is in part a reflection of the approaches inherited from these pre-existing surveys. Ways of collecting the data vary from country to country, but there is a fundamental harmonised methodology which applies to the concepts of income employed and, increasingly, to the selection of the sample (Commission, 1989).

FADN focuses on agricultural holdings deemed to be commercial, in the sense that they are large enough to provide a main activity for the farmer and a level of income sufficient to support his or her family (Commission, 1985a). The interpretation of what is commercial has changed. The original Council Regulation 79/65 stipulated that the field of survey should cover those agricultural holdings, which (a) are run as market-oriented holdings, and (b) provide the main occupation of the operator.

During the first three years, data were taken only from agricultural holdings having an area exceeding five hectares, with the exception of holdings producing wine, fruit, vegetables and olives. In 1972 this was amended. In addition to being market-oriented, and providing the main occupation of the operator, it was to be of a size capable of employing at least one worker (1 work unit) over a year, though this threshold could be reduced to 0.75 work units. (Hyvönen, 2004). These criteria implied a discrimination against part-time farmers in the sample, but this was justified by the belief that 'main-living' farms constituted the most important target for agricultural policy measures, an interpretation which should not go unnoticed. However there was a revision of this thinking in 1981, and from 1982/3 selection thresholds have been made only in terms of size in Economic Size Units (which are based on Standard Gross Margin). No notice is to be taken when selecting the sample of any other gainful activities in which the operator may engage.

There is a minimum size threshold that varies between Member States, reflecting their different farm size structures as shown in the periodic EU Farm Structure Survey. In particular, Belgium, Germany, the Netherlands and the UK (excluding Northern Ireland) have imposed size thresholds that exclude many holdings that would be eligible for inclusion in FADN in the other Member States. Thresholds are periodically revised. Users of published results at EU level should be aware that not all countries are presented in the smallest size groups.

Consequently, while the overwhelming majority of farming activity falls within the FADN field of observation, only 42% of the EU's agricultural holdings found in its farm structure survey are represented (2015). Figures vary widely between countries. For example, in Slovakia only 17% of farms are covered by FADN, but these represent 96% of the economic activity, whereas in Ireland 75% of the farms are covered, with 98% of the activity. Though numerically important, holdings below the FADN size thresholds contribute very little in terms of agricultural activity. In many Member States, especially more recent additions to the Union, it is likely that the coverage of holdings within FADN is even lower because some farms are small that they fall below the size for qualification for inclusion in the Structure Survey. Altogether the FADN sample consists of just under 87,000 holdings (2014), corresponding to about 1.7% of all holdings within the FADN's field of observation.

Table 2: FADN field of observation

Member State	Farms in the Farm Structure Survey	Farms in the FADN field of observation	FADN field of observation			
			Farms %	SO %	UAA %	AWU %
Belgium	42,850	31,010	72	98	95	87
Bulgaria	370,490	115,390	31	91	96	51
Czech Republic	22,860	14,820	65	99	98	93
Denmark	42,100	29,340	70	99	96	89
Germany	299,130	196,520	66	97	93	87
Estonia	19,610	8,080	41	98	89	76
Ireland	139,890	105,170	75	98	92	84
Greece	723,010	341,180	47	90	85	79
Spain	989,800	597,970	60	98	92	84
France	516,100	317,360	61	97	91	85
Italy	1,620,880	838,740	52	97	91	82
Cyprus	38,860	10,530	27	92	76	70
Latvia	83,390	21,940	26	91	73	52
Lithuania	199,910	53,440	27	86	78	54
Luxembourg	2,200	1,610	73	98	97	90
Hungary	576,810	107,250	19	90	93	46
Malta	12,530	3,080	25	93	56	54
Netherlands	72,320	52,220	72	99	93	90
Austria	150,170	95,150	63	97	86	85
Poland	1,506,620	730,880	49	93	85	68
Portugal	305,270	114,170	37	93	89	53
Romania	3,859,040	1,042,570	27	83	78	59
Slovenia	74,650	41,300	55	92	85	74
Slovakia	24,460	4,260	17	96	95	76
Finland	63,870	42,630	67	97	89	90
Sweden	71,090	29,050	41	94	84	72
United Kingdom	186,660	94,640	51	96	82	75

Source: DG AGRI EU-FADN.

Altogether the FADN sample consists of about 81,000 holdings (EU-27, 2007), corresponding to about 1.5% of all holdings within the FADN's field of observation. The sample is stratified by economic size (in European Size Units), by farming type and by region and all published results are weighted appropriately. In the strict sense, the sample is not random, since it is drawn from holdings that keep accounts and participation by farmers is voluntary. However, the representative nature of the sample is under constant scrutiny.

Another feature of the sample is that its composition changes a little from year to year as holdings enter or leave the survey. There are good statistical reasons why a turnover is required; the experience in some national surveys is that the greater information that becomes available to co-operating farms enables their performance to improve so that they are no longer typical of the generality of farms. Part of any difference in results from year to year can be laid at the door of this changing sample, though the impact is unlikely to be substantial in countries where FADN is well established and the sample is of stable size. Nevertheless, the gradual drift up in average size must be borne in mind when interpreting income movement over time.

A comprehensive set of data relating to many aspects of the farm business is collected. The items are specified on a standard Farm Return, which is established in Community legislation (the latest of which is Commission Regulation (EC) 868/2008, operating from the financial year 2009). This contains detailed instructions on how the Farm Return is to be completed and provides definitions of the terms used. Though having the advantage that Member States are obliged to provide this data, the legal basis of the Farm Return makes any major changes to it a cumbersome process. Currently data are collected covering the physical and value details of animal and crop output, the costs of crop variable inputs (such as seeds and fertilisers), of animal feedingstuffs, labour, interest and land charges, details of spending and receipts from livestock, deadstock and machinery, the debt situation, grants, subsidies and Value Added Tax (VAT). The data relate to the whole farm, so that, for example, it is not at present possible to allocate the input of fertiliser between the various crops on the holding and to calculate measures of enterprise profitability. This has severely limited the ability of FADN to monitor the impact of the CAP's main policy instruments at farm level.

The data collected relate only to farming activity on the holding (though for national purposes some Member States collect additional information). For the FADN the borderline between agricultural and non-agricultural is based on the standard industrial classification used within the EU. Agricultural activity is deemed to include agricultural contracting (primary stage activity, such as ploughing and harvesting for other farmers). Thus, if the resources of the holding are used in food manufacturing or any other non-farming activity which contributes to the income of the farmer and his household, in principle these are not covered in the FADN. This exclusion also applies to any building activities which the farmer may undertake himself rather than by employing a builder. However, it is clear that FADN does not collect information on any off-farm activities which the farmer or his family may engage in (as hired workers or as self-employed), or on pensions, property extraneous to the agricultural holding, personal taxation or private insurance.

FADN's main income measures are Farm Net Value Added, expressed per farm or per Annual Work Unit (FNVA/AWU) (that is, per full-time person equivalents working on the farm) and Family Farm Income (FFI), per farm or per Family Work Unit (FFI/FFU). For farms with no family labour the residual is termed Farm Net Income and this is expressed per unit of total labour input. Figure 47 shows how these are calculated. There are also Cash Flow indicators.



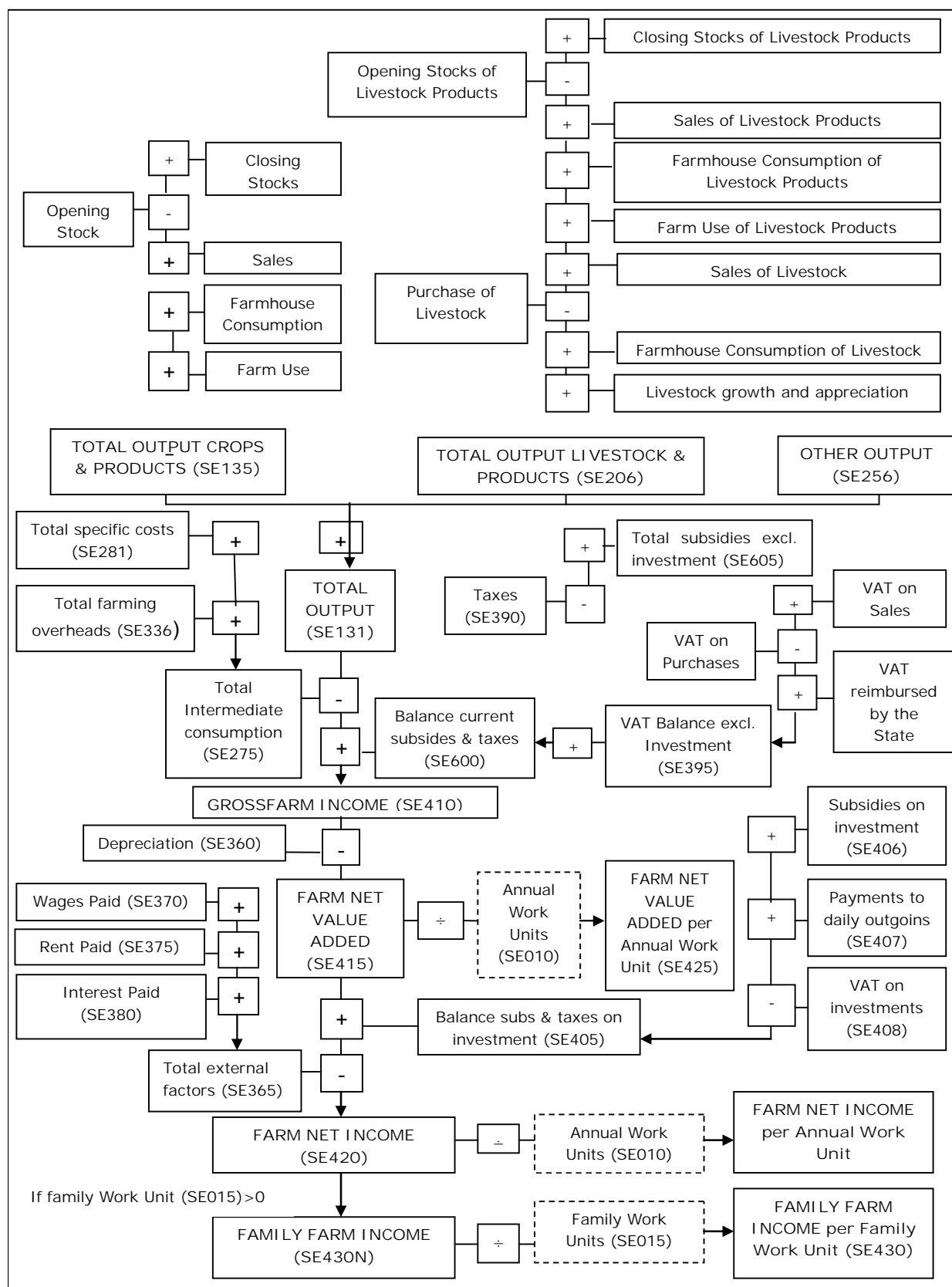
NVA is the difference between the value of farm output and the variable inputs purchased from other sectors of the economy, after adjustment for subsidies and taxes on production and for the consumption of capital (in the form of a depreciation allowance). Produce consumed by the farm household is valued as part of output. Changes in stocks of output and inputs are taken into account. As a concept it is close to Net Value Added as used in the aggregate Economic Accounts for Agriculture (described previously in this chapter), though there are differences in detail. FNVA is the sum that is available for rewarding all the fixed factors of production, that is, all the labour, land and capital used on the farm irrespective of who owns them. As with the industry-level indicator, the reason why NVA per AWU is used without distinguishing between farmer labour and hired workers seems to do with interpretation of the intentions of Article 39 of the Treaty of Rome as relating to all people working in agriculture (employed, self-employed and family help). However, such a figure can mask marked differences between the rewards of hired workers and of farmers and their families.

FNVA is capable of being distributed in a variety of ways. In the earlier phase of the FADN attempts were made to calculate a Labour Income by deducting costs for all other inputs, including imputed rents for owned land and a notional interest charge for the working capital of the business. Such calculations were eventually abandoned because of the difficulties of settling on the levels of imputed costs (Hill, 1991). However, a measure called the remuneration of family labour has been reported recently (European Commission, 2014a) that once again involves imputation; it is calculated by deducting from FNVA the costs of wages, rent and interest paid (as FNI below) and the opportunity costs of own land and capital. This is expressed per family work unit (FWU). It is debateable whether the old difficulties have been overcome or just forgotten.

As a measure of income, FNVA falls short of what most farmers would perceive as their profit because no deductions are made for interest payments on loans, for rents on tenanted land and for the cost of hired labour. In the early stages of FADN some Member States experienced difficulty in obtaining reliable information on some of these fixed factors, particularly interest payments, so FNVA was the most convenient common measure which could be adopted.

For a time, FNVA tended to be replaced as a measure of income by Family Farm Income (FFI). The same concept is now called Farm Net Income, a reflection that enlargement has increased the proportion of farms that do not have the family-run structure that dominates the EU-15, though the term FFI is still used in situations where family (unpaid) labour is greater than zero and in the FADN definition of variables (European Commission, 2014c). FFI is a concept first used in the 1984 report on incomes covering the years 1978/9 to 1981/2. This is the residual remaining to the farmer and the other unpaid labour of the household after the deduction of interest payments, rent payments and the costs of hired labour. It represents the reward to the farmer and his family from using their owned land, capital and labour input in agricultural activity on the holding. In practice it accords broadly with the notion of profit from farming which is available for consumption spending, for saving and investment or for other calls on personal income (such as taxation). Of course, there may be other income sources which contribute to this spending and saving, but they are not derived from farming the holding and are therefore outside the coverage of FADN. Capital gains (and losses) on land and other assets do not form part of FFI, though they too might be considered as elements in the long-term rewards from farming and might form the basis of borrowing for consumption and investment purposes. More recently the Commission appear to have once again focused on FNVA.

Figure 47: The calculation of Economic Indicators in the FADN



Source: European Commission (2014b)

Again, FNI/FFI is often expressed per annual work unit of unpaid (family) labour (Family Work Unit, or FWU), including the farmer, in order to reflect the varying amounts of such



labour used. As long as its definition is borne in mind, FNI/FFI is a very useful measure on two counts: first, it represents what would generally be accepted as being entrepreneurial income (or profit) derived from farming; and, second, by excluding the hired labour force, it covers only those people whose welfare the CAP is in practice primarily aimed – farmers and their families.

FFI is conceptually close to Eurostat's aggregate Net Income from Agricultural Activity of Family Labour Input and, when expressed per unit of family labour input, to Indicator B. A number of additional income indicators have been proposed and investigated by FADN (Hill, 1991).





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