Working Party on Agricultural Policies and Markets

FARM HOUSEHOLD INCOME ISSUES IN OECD COUNTRIES:
A SYNTHESIS REPORT

Contact persons: Catherine Moreddu [Tel. (33 1) 45 24 95 57; Email: catherine.moreddu@oecd.org]
and Bong Hwan Cho [Tel. (33 1) 45 24 95 27; Email: bong.cho@oecd.org].
Foreword

This synthesis report describes the income objectives attributed to agricultural policies; reviews the levels, sources and distribution of farm household incomes in recent years; examines the extent to which policies contributed to the observed situation; assesses the effectiveness and cost-efficiency of policies in achieving their income objectives; and suggests policy instruments that would transfer income to farm households more effectively and more equitably.

The main authors are Catherine Moreddu and Bong Hwan Cho of the Directorate for Food, Agriculture and Fisheries, but the report draws on previously declassified reports prepared by Catherine Moreddu (OECD, 1999a and 2000), Bong Hwan Cho and Yasuhiko Kurashige (OECD, 2001a), Joe Dewbre (OECD, 2002b) and on on-going work by Jesus Anton (OECD, 2003). It was declassified by the Working Party on Agricultural Policies and Markets in October 2002.
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EXECUTIVE SUMMARY

1. The range of concerns described as motivating policy interventions in agriculture is wide and growing. Among them, in most OECD countries, concerns about farm household incomes figure prominently. References to the level, variability or distribution of farm household income can be found in framework documents, legislation and political speeches, but such references are usually quite imprecise concerning the target populations or the target levels of the variables mentioned. Although there is significant government intervention leading to high levels of support and protection in many countries, it is difficult to identify which policies are designed and put in place to address income problems specifically. This creates considerable difficulty in programme evaluation, difficulties that are compounded by a lack of appropriate data.

2. The focus of this report is on the income situation of farm households and the influence of agricultural and other (tax and social security) policies on the observed outcomes. It is recognised that support may be targeted to, and impact on, many other variables. These include the technologies used, production levels, the quality of the environment, the production of agriculture-related public goods and the role of the sector in the rural economy. This report does not cover the effects of policy on these or other aspects.

3. Based on available national information, the analysis presented in this report shows that, in most OECD countries, farm households enjoy, on average, income levels that are close to those in the rest of society. In fact, farm households derive a significant share of income from off-farm sources, mainly other gainful activities but also social transfers and property income. In addition, they often possess significant wealth, in particular from farm assets. At the aggregate national level, farm household income does not appear to exhibit strong variability because government intervention and the diversification to off-farm sources of income have reduced annual variations. Income variability can, however, be a problem at the individual level. Although average income levels are often "comparable", there is a higher incidence of low income among farm households than among other households and the low-income gap (between low incomes and average incomes) is wider for farm households than for others. In fact, there can be disparities in farm household income by farm size, type and region, but they are smaller than disparities in farm income.

4. In most OECD countries, large amounts of support are transferred to producers. This support has raised average farm household income to some extent, and has reduced income variability, but it has been at a very high cost to consumers and taxpayers and with significant leakage to unintended beneficiaries. The main problems relate to targeting – the great bulk of the measures used are generic in nature and go to farm households who do not need it, to equity – because the measures are still predominantly based on production or factors of production they fail to change the income distribution in any significant way and to leakages – much of the support is transferred to unintended beneficiaries.

5. From an income transfer efficiency point of view, budgetary payments that are decoupled from agricultural activity altogether would transfer income to selected farm households most efficiently. Such measures minimise economic distortions and distributive leakages because the effects on production decisions are minimal. In addition, they can be targeted and delivered to those households that are deemed to warrant assistance. In order to improve economic efficiency, it is important to make a correct assessment of the problems and needs of the sector. The order in which different remedies are applied is also important. Firstly, efforts should be made to develop and implement market-based solutions where these are feasible, including through investment to general services to the sector that improve the functioning of
agricultural markets and allow farmers to increase their competitiveness. Targeted measures to correct market failures linked to the provision of public goods in the agricultural sector should then be applied, as they will affect income. Agricultural safety nets could then be envisaged to address risk management failures. Any outstanding income problem could finally be addressed; best through general tax and social systems that would ensure equal treatment vis-à-vis other households. In order to do so, income objectives should be clearly defined and comprehensive information on the economic situation of farm households should be collected in a flexible way to allow an assessment and monitoring of income deficiencies.
FARM HOUSEHOLD INCOME ISSUES IN OECD COUNTRIES:
A SYNTHESIS REPORT

6. In recent years, several OECD studies have looked at income issues in the agricultural sector. This synthesis report combines and updates material from recently published reports\(^1\) to produce a comprehensive study of farm household income issues in OECD countries. The background is one of significant government intervention in the agricultural sectors of many OECD countries that has led to high levels of support and protection, often justified in terms of a need to support the incomes of farmers and their families. This report first presents income objectives in OECD countries and discusses measurement problems. Without attempting cross-country comparisons, it then reviews the income situation of farm households in OECD countries for which data are available, and examines the role which agricultural policies, whatever their objectives, have played in determining the observed outcomes. Finally, policy solutions are proposed that would improve farm household income more effectively and equitably.

1. What are the income objectives?

7. OECD countries have multiple and sometimes contradictory agricultural policy objectives. Incomes of farm households have traditionally featured prominently but in recent years objectives related to the environment, sustainability, rural development and food safety have also become important. Despite changing emphasis among the objectives, support to agriculture remains dominated by broad measures such as price support, output and input subsidies or area payments\(^2\). These measures for the most part are implemented in undifferentiated or untargeted ways. It is often difficult to associate a policy with a specific objective, and in particular, to identify the policies that are designed and put in place to address income problems.

8. While income objectives are relatively common in OECD countries, they are not often clearly expressed. Income concerns are sometimes reflected formally in contemporary policy statements, with various degrees of precision. In other cases, the declaration of an income objective goes back several decades, to when support programmes were initiated. More commonly, however, policy-makers make informal references to their concerns about the level and/or stability of farm incomes, or more broadly about the financial situation\(^3\) or the welfare of farm families\(^4\). OECD Member countries have typically

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2. They accounted for 90% of the Producer Support Estimate (PSE) in the OECD area in 1999-2001.
3. The financial situation of a farm family reflects a combination of its income and wealth. Little work has been undertaken at the OECD on this latter aspect. However, these questions are examined for the United States in USDA (2002).
4. Welfare is often measured in terms of consumption. However this measure is not considered in the present report, nor was it considered in the reports on which this report is based. This is because a main focus is on the efficiency and effectiveness of agricultural policy and not on farm household welfare per se, more
framed income objectives in terms of distribution or equity (that is farm household income levels relative to those of households in the economy as a whole).

9. In some countries, income objectives are or were explicitly stated. The guiding statement contained in the Treaty of Rome (1957), establishing the European Community, refers to the desire to "ensure a fair standard of living for the agricultural community". The Treaty has been amended several times but this statement has been retained. However, as the agricultural situation has developed the range of concerns has been expanded to cover new issues such as environment, sustainability and rural development, although measures specifically targeted to these objectives still only account for a relatively small share of total support. On the other hand in the context of the reforms of the Common Agricultural Policy that have taken place in 1992 and in 2000, the budgetary payments that were introduced to compensate farmers for the reduction in intervention prices (so-called “compensation payments”) had clearly the objective of offsetting the negative effects of the reform on agricultural incomes.

10. In some countries, income objectives have become less explicit in more recent policy statements, although concerns with regard to farm household income remain. In Sweden, up to the reform of 1990, the objective was that "farmers shall have a standard (of living) which is equal to that of other comparable groups". In Japan until recently the key policy statements described the main objective of agricultural policy as being to "enable farmers through increased farm income to enjoy equal standards of living with workers in other industries". However, there is no such statement in the text of the Basic Law adopted in 1999.

11. Some countries, such as Greece and Turkey, in which agriculture is relatively important in the economy, express income objectives more explicitly. The main element of interest for Greek agricultural policy is "farmers’ income". The aim of rural development projects in Turkey is to "increase farmers’ income". In some countries like Poland, even though income objectives are not explicit in policy statements, it is pointed out that "very low and declining farmers’ incomes" are one of the main agricultural problems.

12. Reflecting the joint objective of ensuring that farm incomes are 'comparable' and 'less volatile', Canadian policies emphasise the protection of the incomes of efficient producers from market price instability. This is in addition to the goal of providing farmers with a standard of living comparable to that in the rest of the economy. There are similar concerns in the United States. On the other hand, policy documents for Australia and New Zealand emphasise the competitiveness and efficiency of the sector through policy reform. The government role with respect to income issues is explicitly mentioned as being to protect incomes from sharp and unexpected decreases, as with disaster relief measures.

13. Despite their prominence, income objectives are seldom well defined, either in terms of the income variable being targeted, or the intended recipients. Some policy measures, such as income safety nets for income vulnerable groups or direct payments for disadvantaged areas suggest that at least in a few cases there has been a clarification of what income objectives mean, but there are rather few examples of such measures.

14. This report focuses on income issues and does not attempt to evaluate the effectiveness of agricultural support and protection in achieving other stated objectives. Governments justify their intervention in the agricultural sector both on equity grounds and on market failure grounds specifically with respect to risk management and to the provision of agriculture-related public goods. The risk broadly defined. Policy impacts are more directly captured by looking at income (and wealth if the data were available) than by looking at consumption.
management rationale assumes that, in the absence or incompleteness of contingency markets\(^5\), uncertainties affect producers’ decisions regarding production and the use of resources, and lead them to produce below the level of output that would maximise profit in the absence of risk. Safety net measures that protect farmers against downside risks can thus be envisaged. Regarding equity concerns, sector-wide income support was introduced at a time when rural areas and farm households were lagging behind. Is there evidence that the income situation of farm households is currently systematically worse than that of other types of households? An attempt will be made to answer this question in Section 3.

2. **How can achievement of the different income objectives be measured?**

15. The vagueness of policy statements, the different interpretations given by countries, and the ambiguities concerning just what is being targeted makes it difficult to measure the performance of policy relative to income objectives. Because it is rarely the case that clear criteria are given concerning the targeted households and the measure of income of interest, analysts have had to engage in a certain amount of interpretation of what is meant by the objective and to propose indicators to be used to gauge progress towards it.

16. Farm income provides only a very partial view of the income situation of a farm household. First, farm income, as reported in farm accounts, varies depending on the share of profit that is allocated to current income versus investment. Moreover, farm households derive a significant share of their income from sources other than farming. In order to reflect the income situation of farm households all sources of income should be taken into account. For a full assessment of the economic situation of farm families, farm and household assets should also be considered in combination with income, but because of data and resource constraints, this report focuses only on the income situation of farm households (Box 1 briefly discusses the issue of wealth).

17. Another problem concerns availability, quality and access to the relevant data. Do the data collected in OECD countries allow progress towards income objectives to be systematically and accurately measured? For many countries the answer is no. Sometimes the data are seriously out of date. Additional difficulties are created by the fact that in many countries the definitions adopted – of households, of income, etc. – are too narrow to allow the real income status of farm households to be evaluated. The number of farm households in economy-wide income surveys is often too small to be representative, which makes it difficult to compare the situation of farm households with that of other households. Finally, farm household income can be underestimated. Income in-kind is often not taken into account and there can be problems linked to confidentiality and asymmetric information with reporting income in surveys. Farm self-employment income, in particular, might not be fully captured. The types of data available to analyse the income situation of farm households are described in Box 2 and some information on data sources and definitions is given in Annex 1.

\(^5\) Examples of contingency markets are futures markets, options, insurance markets, the bond market and the stock market.
In addition to total or disposable household income, it is important to consider wealth to assess the financial situation of a household, in particular in the case of farm families who own part or all of the factors of production farmed. The wealth of an individual can be defined as his total stock of tangible or intangible possessions which are capable of being exchanged for money or other goods (Hill, 1996). Not only does wealth give rise to income but it provides security and financial leverage. It therefore affects the ability to consume and, in the case of farms, the viability of the activity. Wealth is often measured by net worth, which is the difference between assets and liabilities.

Farm assets include current assets such as crop and livestock for sale and stocks of input, and long term assets such as farmland, buildings, machinery and equipment, breeding livestock, property rights and quotas. The value of farm assets and liabilities is reported in farm structural surveys. Low-income farm families often possess significant net worth and the net worth of farm households is usually more equally distributed than their total income (see graph below and Annex Graph A4). But farm assets and liabilities are an imperfect guide to the wealth or net worth of farm households, who often also own non-farm assets. Non-farm assets can be the result of a strategy to diversify sources of income (see Section 3). Only a US survey (Agricultural Resource Management Study, ARMS) reports the value of non-farm assets of farm households.

Average income and net worth of farms in the first quartile (25% smallest farms) as a ratio of the average of all farms

See Diagram 1 for a definition of income indicators.

Source: OECD structural database.
Box 2. Farm household data sources: macroeconomic versus microeconomic data

Macroeconomic accounts of the agricultural sector provide an aggregate measure of farm income (OECD, 1999b). In most cases, these data do not include non-agricultural incomes. A EUROSTAT project collects macroeconomic data on the total income of agricultural households for European Union (EU) member countries (EUROSTAT, 1999) and these data are used in this report for some countries. However, they often refer to a narrow definition of farm households (main occupation farms of a minimum size for example). Consequently, whenever possible, national statistics that define farm households more broadly are used, in order to give a wider picture of the sector. With national account/macroeconomic data, the level and composition of the total income of farm households can be examined and compared to that of other sectors.

To look at the distribution of income or the incidence of low income among farm households compared to other households, at the change in income over time, and the impact of agricultural, social and taxation policies, microeconomic data are necessary. They either come from specific surveys (farm, household expenditure, or income surveys), or from tax and social transfers files. Economy-wide surveys allow comparison between farm households and other households. In many cases, however, the sample of farm households proves to be too small to allow a detailed and representative distributional analysis. The LIS (Luxembourg Income Study), which contains micro data from national household surveys, allows such a comparison for at least some countries and has been used in the analysis of the incidence of low income in different categories of households reported in OECD (2001a) and summarised in this report. Specific farm surveys provide useful structural information on farm households, allowing the income situation to be related to structural characteristics, but they do not permit direct comparison with other households (unless linked with an economy-wide survey). The OECD structural database, which has been used to analyse the impact of support on the distribution of income, contains such data.

18. It is not surprising therefore that even greater difficulties are experienced in comparing the income situation of farm households across countries. First, the definition of farm households varies both with respect to who constitutes a household (which family members) and with respect to what constitutes a farm household (what level of sales, amount of land farmed, share of income from farming or other indicator qualifies a household as a farm household). There are enormous differences among countries with respect to these variables. Second, there are differences in the indicators of income that are reported although with detailed information on farm accounts a common definition of farm income can be adopted. The coverage of income sources often differs. In particular, there are still many countries in which off-farm sources of income of farm households are not reported. For these reasons, comparisons across countries have not been attempted in this report. For each country where data are available, income components are compared between farm and non-farm sectors and across various groups in the agricultural sector.

19. For the purposes of this study, the broadest definition of farm households and their income sources has been retained. Total household income includes all earned income both from farming and non-farm activities, property income from investments, and social transfers from pension, health, unemployment schemes and various social safety nets. Disposable income is the total income available to households after taxes have been deducted (see Diagram 1 for a definition of the income indicators used in the report).
Diagram 1. Components of farm household income

\[ \begin{align*}
+ \text{Market receipts} & \quad + \text{Budgetary payments} & \quad + \text{Other receipts} & = \text{Gross receipts} \\
- \text{Cash expenses} & \quad - \text{Depreciation} & & = \text{Net operating income} \\
+ \text{Gross wages and salaries} & \quad + \text{Property income} & \quad + \text{Social transfers} & \quad + \text{Other income} & = \text{Farm income} \\
\text{Farm income} & \quad + \text{Off-farm income} & & = \text{Total farm household income} \\
\text{Total farm household income} & \quad - \text{Taxes and mandatory contributions} & & = \text{Disposable farm household income}
\end{align*} \]

20. Finally, there are a number of statistical indicators to describe the level and distribution of income. Different benchmarks for comparison can be retained: all households, other (than farm) households, rural non-farm households, other similar households (self-employed workers, salaried workers’ households, etc.), or urban versus rural households. Various indicators of dispersion such as the income gap, the Lorenz Curve, the Gini coefficient, the low-income rate, and the Sen index, have been used in the studies reported here. To measure low income, the relative approach ("having less than others" or under 50% of the median income), which is mostly used for comparative international studies, has been adopted (OECD, 2001a).

21. Issues related to farm household income data availability and quality are not just, or even primarily of interest to analysts. The principal beneficiaries of improved information would be policy makers and the public they serve. Until the coverage, timeliness and consistency of national microeconomic data is improved, policy measures, ostensibly aimed at improving the incomes of farm households, will be implemented without adequate knowledge of the nature, incidence or even existence of the problem that they are attempting to solve.

3. What is the income situation of farm households?

22. The picture that will be presented here is that emerging from national statistics. In this section, farm household income will be first compared to that of other households and the composition of farm household income will be examined. Disparities within the sector and the question of income variability will then be considered and finally, the incidence of low income will be reviewed.

How do the incomes of farm households compare on average with those in the rest of society?

23. In most OECD countries for which data are available, the average income of farm households is close to the economy-wide average (Graph 1). For the average of the three most recent years (when available), farm household incomes are significantly higher (by over 15%) in the Netherlands, Denmark, France, Finland and Belgium, and significantly lower (by over 15%) in Greece, Korea, Turkey and

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6. See note at the end of the main report.
Switzerland. In the few countries where the data were available to observe the longer-term trend, the relative income position of farm households often deteriorated in the late 90s compared to the mid-90s. However, except in the case of Korea, farm household income remained higher than that of other households (Graph 2).

**Graph 1. Total income of farm households as a ratio of that of all/other households**

*Graph 1 shows the income ratios for various countries. The ratios range from 0.00 to 2.50.*

All households except for Japan, where it is workers’ households and Korea, where it is urban households.

*Source: Secretariat’s calculation based on national statistics and EUROSTAT database (EUROSTAT, 1999 and 2002).*

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7. It should be noted that some of the data in Graph 1 are seriously out of date.
Graph 2. Evolution of the total income of farm households as a ratio of that of all other households
(from the mid-90s to the late 90s)

All households except for Japan, where it is workers’ households and Korea, where it is urban households.

Source: Secretariat’s calculation based on national statistics.

24. Reporting the same type of income comparison in the late-80s and mid-90s respectively, OECD (1995 and 1995a) and OECD (1998) already found that, in most countries for which data are available, farm household income was, on average, at the same level or higher than that of other households. The conclusion drawn at the time, that there was no widespread income problem in agriculture, still holds in view of the most recent data.

What are the sources of farm household income? How important is agricultural income?

25. Farm households derive a significant share of income from off-farm sources (Graphs 3 and 4), even when a very restrictive definition of farm households is adopted. When a broad definition of farm households is adopted, farm income is not even the main source, reflecting the diversity of farm households, which include pluriactive, pension or hobby farm households.

26. Other income sources include salaries and wages from other activities, investment income such as interest, dividends or rents, and social transfers from health, pension, unemployment and/or child allowance schemes. Regardless of definition, in three-quarters of the countries examined, wages and salaries were the main source of off-farm income. Often, the farm operator himself is employed outside the farm but increasingly the spouse may also have off-farm employment. In countries where the household is defined more broadly than the nuclear family, i.e. includes more than one generation of adults and/or adult siblings, the share of labour income is higher than it would otherwise be (e.g. Japan). Cases where social transfers are higher than salaries and wages are found among countries restricting the definition of a farm household to the operator, whose main occupation is farming, and the spouse. Finally, property income is the primary source of off-farm income in the United Kingdom only but comes next in importance in close to a third of the cases reviewed.

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8. A more restrictive definition involves the exclusion of smaller farms (based on gross sales or area) and part-time farmers, for whom farm income is not the main source of income or agricultural activity is not the main activity.
27. These results also confirm and reinforce the findings of OECD (1995) and OECD (1998). The share of off-farm income has increased in many countries for which data are available (Graph 4), the most notable exceptions being Japan where the share of off-farm income has been constantly high over the period and some EU member countries where the definition of farm households is narrow. For these countries in particular it is not always possible to track the evolution of the share of off-farm income in total farm household income because once off-farm income reaches a certain share, those households are omitted from the data. Except for a small number of countries where farm income is variable, the broad picture of income composition does not depend on the year chosen. For example, the variation in the share of the different types of income did not exceed 10% when the most recent year was used rather than the three-year average of the most recent years.

**Graph 3. Percentage share of farm income in total income of farm households**

*(average of the three most recent years available)*

1. Income from independent activities.
2. Agricultural households in rural areas.

*Source: Secretariat’s calculation based on national statistics and EUROSTAT database (EUROSTAT, 1999 and 2002).*
How stable are farm household incomes? How did they evolve in the 90s?

28. Agricultural activity is subject to different risks, some natural or biological in origin, others economic. These risks affect production volumes and prices and are thought to result in receipts and incomes that are more variable than in many other sectors. Farmers adopt strategies to reduce the variability of their total income. A number of market-based tools are at their disposal, like diversification of income sources, capital and debt management, marketing techniques, hedging on futures markets and insurance. In most countries, agricultural policies, whatever their objective, also shield farm households against large losses of income (see Section 4 on policy impacts). Social policies play a role in providing a safety net and fiscal arrangements can help to smooth annual income variations (OECD, 2000, Box 7). For example, some fiscal arrangements allow a farm household to defer a share of taxable income from a high-income year to a subsequent year when income is lower.

29. As a result of this combination of factors, aggregate farm income at the national level does not appear to exhibit strong variability. At the individual level, excessive farm income variability can, however, be a problem, in particular for farms that have not been able to adopt basic income risk strategies and, as a result, are too dependent on one source of income or do not have sufficient savings or capital raising capacity.

30. Farm household income is generally more stable than farm income as non-farm income, which accounts for a significant part of total farm household income, is often more stable than farm income (Table 1). As a result, the total income of farm households is generally not significantly more variable than that of other households, with the notable exception of Australia where natural conditions are very variable and farmers are not shielded from world price variability (Annex Graph A1).

9. These strategies are reviewed in OECD (2000).

10. Coefficients of variation calculated in Table 1 measure variability around the average for the period without taking into account trends.
Table 1. Income variability in selected OECD countries
(in national currency, deflated by the GDP deflator, 1995=100)

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm income</td>
<td>0.49</td>
<td>0.12</td>
<td>0.16</td>
<td>0.13</td>
<td>0.14</td>
<td>0.14</td>
<td>0.28</td>
</tr>
<tr>
<td>Total income of farm households</td>
<td>0.31</td>
<td>0.06</td>
<td>0.08</td>
<td>0.03</td>
<td>0.06</td>
<td>0.07</td>
<td>0.14</td>
</tr>
<tr>
<td>Total income of all households ²</td>
<td>0.12</td>
<td>0.01</td>
<td>n.a.</td>
<td>0.04</td>
<td>n.a.</td>
<td>n.a.</td>
<td>0.08</td>
</tr>
</tbody>
</table>

n.a.: not available.
See Diagram 1 for a definition of income indicators.
1. The coefficient of variation is the standard deviation divided by the average for the period.
2. Except for Japan, where it is workers’ households.
Source: Secretariat’s calculations based on national statistics; GDP deflator from OECD National Accounts database.

31. In a number of countries, farm income was lower at the end of the 90s than during the first half of the decade due to a decline in world commodity prices (Table 2). However, the total income of farm households actually increased in most countries for which data are available. In Australia and some EU member countries for which data are available, farm income increased during the period, sometimes by a higher percentage than the total income of farm households. As pointed out in Frawley et al. (2000) reported in OECD (2001a) (see section on low income) farm income improvements in Ireland can be explained by changes in the agricultural policy mix and the long-term decline in the actual number of farm households. A report by the French Ministry of agriculture (Blogowski and Pingault, 2002) on adjustments in the field crop sector in the 90s finds that higher farm incomes were totally attributable to increases in farm size.

32. As shown in Annex Graph A1, in most countries for which time series are reported, the total income of farm households has been increasing since the mid-80s. This is generally not the case for farm income which generally fluctuates without following any clear trend. Norway is the only country where farm income is declining all through the period.
Table 2. Percentage change in average income per household between the first half of the 90s and the end of the 90s (deflated by the GDP deflator, 1995=100)

<table>
<thead>
<tr>
<th>Country</th>
<th>Period</th>
<th>Farm income</th>
<th>Total income of farm households</th>
<th>Total income of all households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>1999-98 / 1992-94</td>
<td>7</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Finland</td>
<td>1998-99 / 1994</td>
<td>19</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Ireland</td>
<td>1999/2000 / 1987</td>
<td>12</td>
<td>41</td>
<td>45</td>
</tr>
</tbody>
</table>

See Diagram 1 for a definition of income indicators.

Source: Secretariat’s calculations based on national statistics; GDP deflator from OECD National Accounts database.

**How large are income disparities?**

33. Many factors such as region, the structural characteristics of the farm and the household, and the economic environment, in particular the opportunities for off-farm earnings, affect the total income of farm households. Differences in average income by farm size and farm type in selected OECD countries are presented here, based on structural farm account data for selected countries\(^{11}\). In most countries reviewed, the average net operating income (NOI)\(^{12}\) of farms in the top quartile\(^{13}\) is two to three times bigger than that of all farms (Graph 5). The exceptions are Switzerland where farm income inequalities are smaller and the United States where they are much larger. In all cases, the distribution of income reflects that of gross receipts, which, in part, depends on the definition of farms included in survey data. The distribution has been truncated when minimum limits on farmland, the value of commercial sales, or the share of income from farming or time spent on farming activities are placed on survey farms.

34. In all countries where off-farm income is known, its inclusion narrows the dispersion of income by farm size and the total income of farm households is therefore more equally distributed than that of farm income\(^{14}\). Also the disposable income of main occupation\(^{15}\) farm households, which are more

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11. See OECD (1999a) for a description of the characteristics of national farm account data. Whenever possible, the analysis reported here has been updated to most recent data available.
12. See Diagram 1 for a definition of income indicators.
13. The top quartile contains the 25% largest farms, based on gross sales.
14. Graphically, the Lorenz curve of the total income of farm households is closer to the equality line than the Lorenz curve of farm income.
15. Main occupation farm households are farm households, which derive more than half of their income from agriculture, or whose head is occupied by agricultural activities more than half his working time.
dependent on farm income, is more unequally distributed than the disposable income of more broadly defined farm households\textsuperscript{16} (OECD, 2001\textsuperscript{a}).

\textbf{Graph 5. Average gross receipts, net operating farm income and total income of the top quartile (25\% largest farms) as a ratio of the average of all farms}

![Graph showing the ratio of average gross receipts, net operating farm income (NOI), and total income of the top quartile of farms to the average of all farms across different countries.](image)

NOI: Net operating income. See Diagram 1 for a definition of income indicators. 
Source: OECD structural database. Updated from OECD, 1999\textsuperscript{a}.

35. Owing to differences in farm size, in productivity and in levels of support between commodities, there are also income disparities between farm types although they are not as large as between farms classified by gross sales. For example in the European Union, the average farm income of dairy farms and pig/poultry farms, which account respectively for 12\% and 2\% of all farms, is respectively 50\% and 30\% higher than that of all farms, while in crop and cattle farms, average farm income is 20\% lower than the average of all farms (Graph 6). In Canada, the average farm income, before depreciation, of dairy farms (9\% of all farms) is almost three times higher than that of all farms, while the average for grain and oilseed farms (40\% of all farms) is the same as for all farms. Cattle farms (29\% of all farms) report farm incomes less than half the overall average. Differences in farm income between farm types are relatively lower in Australia and much higher in the United States. In all cases where off-farm income is known, differences in total household income are lower than in farm income. This is particularly obvious when looking at US data: the average farm income of cash grain farms and dairy farms is several times higher than that of all farms but their total income is close to the average of all farms.

36. Similarly, we could look at income differences by region, as was done briefly in OECD (1999\textsuperscript{a}). They stem from regional variations in the economic size of farms, type of farming and rate of support for each commodity, and depend on how widely regions are defined. For example in Denmark, differences in income across regions were less than across farm types or size classes. In the case of Switzerland, the average farm income in lowland areas was 11\% higher than the average of all farms while that of mountain farms was 21\% lower. As was the case across farms of different size and type, when non-agricultural incomes are taken into account, regional differences in income are reduced.

\textsuperscript{16} The Lorenz curve of the former is further from the equality line than the Lorenz curve of the latter.
Graph 6. Comparison of income between farm types:
average income of each farm type as a ratio of the average of all farms

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>NOI</td>
<td>NOI</td>
</tr>
<tr>
<td>Total income</td>
<td>Farm income</td>
</tr>
<tr>
<td>Crops</td>
<td>Grain and oilseeds</td>
</tr>
<tr>
<td>Dairy</td>
<td>Dairy</td>
</tr>
<tr>
<td>Cattle</td>
<td>Cattle</td>
</tr>
<tr>
<td>Sheep</td>
<td>Pigs</td>
</tr>
<tr>
<td>All farms</td>
<td>All farms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>European Union, 1999</th>
<th>United States, 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOI</td>
<td>NOI</td>
</tr>
<tr>
<td>Farm income</td>
<td>Farm income</td>
</tr>
<tr>
<td>Crop</td>
<td>Cash grains</td>
</tr>
<tr>
<td>Dairy</td>
<td>Dairy</td>
</tr>
<tr>
<td>Cattle</td>
<td>Cattle</td>
</tr>
<tr>
<td>Pig/poultry</td>
<td>Pigs</td>
</tr>
<tr>
<td>All farms</td>
<td>All farms</td>
</tr>
</tbody>
</table>

NOI: Net operating income. See Diagram 1 for a definition of income indicators.
Source: OECD structural database. Updated from OECD, 1999a.

**Is low income more pervasive among farm households than in the rest of society?**

37. The incidence of low income\(^{17}\) is examined here with three indicators: the low-income rate, the low-income gap and the Sen index\(^{18}\), as was done in OECD (2001a) using the LIS database. In many countries, all three indicators suggest that, in the mid-1990s, the incidence of low income was higher among farm households than among non-farm households. The low-income rate was higher for farm households than non-farm households in 9 out of 14 countries, slightly lower in three (Canada, the Czech Republic and Finland) but significantly better in two (Norway and the United States) (Graph 7). The low-income gap was bigger for farm than for non-farm households in all the examined countries (Graph 8).

---

17. In the analysis presented below, the term income refers to disposable household income (see Diagram 1).

18. The low-income rate is the share of individual farm households with incomes falling below the low-income line (50% of median income of all households). The low-income gap is the difference between the average income of the low-income farm households and the low-income line (the average income gap). The Sen index combines the first two measures with an index of the dispersion of income (the Gini coefficient) among the low-income farm households. The smaller the Sen index, the better the income situation of households.
When the analysis is repeated using a narrow definition of the farm household inequality is greater. In other words farm households who rely more on farm activities are more frequently included in the low-income category. This confirms the importance of off-farm activities. The results from the calculation of the Sen index also show that the incidence of low income is higher in agriculture than in other sectors for 8 out of 11 countries (Graph 9).

**Graph 7. Low-income rate**

![Graph 7](chart1.png)

*Source: OECD, 2001a (LIS data).*

**Graph 8. Low-income gap**

![Graph 8](chart2.png)

*Source: OECD, 2001a (LIS data).*
Graph 9. Sen index

<table>
<thead>
<tr>
<th>Farm versus non-farm households</th>
<th>Farm households: mid-80s and mid 90s</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Graph" /></td>
<td><img src="image" alt="Graph" /></td>
</tr>
</tbody>
</table>

Source: OECD, 2001a (LIS data).

38. Moreover changes in the Sen index from the mid-80s to the mid-90s suggest that the low-income situation of farm households has not improved in many countries (Graphs 7, 8 and 9). The low-income gap also widened during the same period (in four out of the five countries examined, with the notable exception of the United States). Compared with the low-income rate, income distribution, estimated by the Gini coefficient has not changed very much over time (OECD, 2001a).

39. Some countries have seen an improvement in the low-income situation of farm households over the review period. For example, according to an Irish study (Frawley et al., 2000), data from 1997 indicate a decline in the incidence and risk of poverty for farmers in Ireland. While households headed by farmers made up 12% of all poor households in 1987, it was 4% in 1997. The study says that the decline in farm poverty in the late 90s reflects partly improvements in basic levels of farm household income from both the current mix of farm support policies, and the long-term decline in the actual number of farm households. Similar conclusions would apply to other OECD countries.

40. Both farm and total income tend to increase in accordance with farm size. However, the smallest farms do not always have the smallest total incomes, reflecting the importance of off-farm incomes, in particular non-farm earnings. A higher incidence of low income in farm households suggests that opportunities for off-farm activity may be restricted for some farm households. In general, the opportunities for off-farm activities are relatively limited in remote rural areas, for persons with lower education levels, and for older people.

41. The share of households whose head did not receive post-secondary education is generally higher among farm households than among non-farm households. In most cases, this percentage is higher again among low-income households. Generally the older age groups have the lowest level of earnings. However, they receive the largest share of social transfers. The incidence of low income is also high for the younger age group (OECD, 2001a).
4. What is the impact of agricultural support policies, fiscal and social policies on farm household income?

42. The previous sections have briefly reviewed the income situation of farm households, but what can be said concerning the impact of policies, whether agricultural or non-sectoral, on the incomes of farm households and their distribution? These questions are asked irrespective of the implicit or explicit objectives associated with the policies in question.

How important is government support in farm income?

43. This question is rather difficult to answer, although in static terms, the share of support in total agricultural receipts can be estimated. The Producer Support Estimate (PSE) expressed as a percentage of gross receipts explains the share of gross receipts that comes from government support. For example, in the OECD area, one third of gross receipts resulted from support in 1999-2001, down from 38% in the mid-80s (OECD, 2002a). Support levels vary by country and by commodity depending on policies in place and are summarised in Annex Graph A2. For selected OECD countries, Graphs 10 and 11 show the relative share of market receipts and different types of support in gross receipts, for the average of all farms, and by farm type in Canada and the European Union. In Graph 12, support is compared to net operating income for all farms and for the top quartile (25% largest farms based on gross sales).

Graph 10. Percentage share of support in gross receipts in selected OECD countries

<table>
<thead>
<tr>
<th>a. Selected countries</th>
<th>b. EU member countries, 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>![Graph Image]</td>
</tr>
<tr>
<td>National databases</td>
<td>Farm Accountancy Data Network (FADN)</td>
</tr>
</tbody>
</table>

MPS: Market price support.
Support includes market price support and budgetary payments to producers.
Source: OECD structural database and PSE/CSE database.
Graph 11. Percentage share of support in gross receipts by farm type

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Market receipts</td>
<td>MPS</td>
</tr>
<tr>
<td>Cereal farms</td>
<td>Dairy farms</td>
</tr>
</tbody>
</table>

MPS: Market price support.
Support includes market price support and budgetary payments to producers.
Source: OECD structural database.

Graph 12. Support in relation to net operating income, all farms and top quartile

Support includes market price support and budgetary payments to producers.
1. 25% largest farms, based on gross sales.
Source: OECD structural database and PSE/CSE database.

44. We cannot deduce from the PSE that farm household incomes would fall by an equivalent percentage if all government support was removed. The concept relates to gross receipts and is static by nature. In the absence of support, world prices would increase, domestic incentive prices would decrease in formerly supported countries in the short term, and farm households would adjust their farming practices
and their off-farm activities to the new situation. However, a large share of the transfers generated by agricultural policy and included in the PSE does not necessarily translate into net income gains for farm households.

45. The OECD has measured and compared the income transfer efficiency of different policy measures (OECD, 2002b). The income transfer efficiency ratio captures the share of support raised either from consumers or taxpayers, which actually raises the net income of farm households. There are two sources of transfer losses that limit the income transfer efficiency of policy measures. The first is economic costs, which result from distortions in the use of resources and its incidence on production and trade patterns. The second source of loss is distributive leakages, whereby some of the benefits of support accrue to groups other than the intended beneficiaries. This latter category includes the costs of administering farm programmes, the extra payments that farmers are required to make to input suppliers or downstream industries, additional payments to landlords and income transfers to (or from) other countries.

46. These losses can be compared across instruments. According to OECD estimates of income transfer efficiency, no support policy linked to agricultural activity succeeds in delivering more than half the monetary transfers from consumers and taxpayers as additional income to farm households. In the case of market price support and deficiency payments, the share is one fourth or less, for input subsidies it is less than one-fifth. Graph 13 shows OECD estimates of where the money goes for each of these policy instruments.

47. In the case of market price support and deficiency payments, the stimulus to output, and hence to input demand, means that much of the increase in receipts is paid back out to input suppliers or capitalised into land values. Not surprisingly, input suppliers reap most of the benefits of input subsidies. In the case of area payments, nearly all the benefits are absorbed in increased land values. This raises costs for farmers buying or leasing land. Farmers that own land do benefit, but this increase in wealth should not be interpreted as additional income, since it does not improve the long-term economic welfare of farm households as a whole.

**What is the impact of agricultural policy on income risk and income variability?**

48. Government intervention affects income risk for farm households at different levels (OECD, 2000). In addition to providing a stable economic environment and social safety nets for all households, governments in many OECD countries support their agricultural sector. Whatever their objective, many agricultural policy measures affect risk either by reducing farm income variability through stabilising input and output prices and quantities, or by raising income level and therefore modifying the attitude of farmers towards risk (the wealth effect increases the sense of security of risk averse farmers) (OECD, 2000 and 2001b). As a result, support affects the adoption of other risk management tools by farmers and could prevent the development of market solutions (OECD, 2000).

49. Support linked to output or input use encourages the use of inputs such as irrigation and pesticides that tend to make yields more stable. They may also lead farmers to produce in riskier conditions, e.g. on more fragile land or in drought prone areas. In many cases, support to producers contains devices to stabilise farm receipts (e.g. minimum guaranteed prices, deficiency payments or insurance schemes). Governments intervene to reduce risk faced by farmers more specifically by providing disaster payments, insurance programmes or agricultural safety nets. Governments also intervene to facilitate access by farmers to market-based mechanisms to reduce income risk such as futures markets or privately run insurance schemes, by providing information, training and by subsidising premiums and administrative costs.
Graph 13. Where does the money go? The income transfer efficiency of agricultural support

<table>
<thead>
<tr>
<th></th>
<th>Deficiency payment</th>
<th>Market price support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20.9%</td>
<td>28.2%</td>
</tr>
<tr>
<td></td>
<td>11.5%</td>
<td>10.4%</td>
</tr>
<tr>
<td>Farm household labour</td>
<td>40%</td>
<td>35.7%</td>
</tr>
<tr>
<td>Non farming landowners</td>
<td>14.0%</td>
<td>13.2%</td>
</tr>
<tr>
<td>Resource costs</td>
<td>14.0%</td>
<td>12.6%</td>
</tr>
</tbody>
</table>

Source: OECD, 2002b.

50. The analysis reported in OECD (2003) shows the contribution of different categories of PSE measures to reducing the variability of farm receipts from crops over the period 1986-2000. In order to do so, it compares the variability of gross receipts from crops induced by each category of support measure included in the PSE to that of gross market receipts at world prices. Again, this analysis is static and does not consider adjustments that would take place if support was removed. For almost all the countries and crops considered, almost all PSE categories of support contribute to reducing the variability of farm receipts. The reduction in the variability of receipts due to support measures can be as high as 72% as in the case of wheat in the European Union. In countries with low levels of support, the impact is very small but there is, in general, no proportionality between the level of support and the reduction in receipt variability. In most countries and for most commodities, the total reduction in receipts variability is mainly explained by the impact of market price support, reflecting the lack of price transmission between the world markets and domestic markets, especially in countries using explicit border mechanisms to isolate domestic markets (e.g. European Union, Japan, Korea, Norway and Switzerland). In other countries,
various types of budgetary payments also play a significant role in reducing farm receipts variability, either in addition to market price support (Norway and Switzerland), or alone (Canada and the United States). 19

**What is the distributional impact of support?**

51. As explained in the previous section, there are leakages, sometimes very significant ones, which mean that much of the benefit of support is distributed to economic agents up and down the supply chain who were not necessarily the intended beneficiaries of the support. But what is the impact of the support on the distribution of income within the farm sector? This is an important question given income objectives generally and the observed higher incidence of low income among farm households more specifically. The static comparison between the distribution of support and that of gross receipts indicates the direction of the impact support has on the distribution of income 20. Distributions by farm size, farm type and region have been examined for selected countries. Using the same methodology as in OECD (1999a), the distribution of gross receipts, support and income by farm size is compared graphically in Annex Graphs A3 showing Lorenz curves for a number of OECD countries and numerically in Table 3 showing Gini coefficients 21.

### Table 3. Gini coefficients

<table>
<thead>
<tr>
<th>Year</th>
<th>Australia</th>
<th>Canada</th>
<th>Denmark</th>
<th>European Union</th>
<th>Finland</th>
<th>Japan</th>
<th>Korea</th>
<th>Netherlands</th>
<th>Switzerland</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999/2000</td>
<td>0.59</td>
<td>0.61</td>
<td>0.74</td>
<td>0.73</td>
<td>0.64</td>
<td>0.70</td>
<td>0.32</td>
<td>0.54</td>
<td>0.27</td>
<td>0.91</td>
</tr>
<tr>
<td>1998</td>
<td>0.48</td>
<td>0.88</td>
<td>0.75</td>
<td>0.78</td>
<td>0.73</td>
<td>0.67</td>
<td>0.31</td>
<td>0.52</td>
<td>0.03</td>
<td>0.99</td>
</tr>
<tr>
<td>1996/97</td>
<td>0.33</td>
<td>0.55</td>
<td>0.54</td>
<td>0.54</td>
<td>0.66</td>
<td>0.10</td>
<td>0.00</td>
<td>0.34</td>
<td>0.83</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>0.48</td>
<td>0.75</td>
<td>0.67</td>
<td>0.70</td>
<td>0.61</td>
<td>0.67</td>
<td>0.31</td>
<td>0.50</td>
<td>0.27</td>
<td>0.88</td>
</tr>
<tr>
<td>1994</td>
<td>0.66</td>
<td>0.76</td>
<td>0.09</td>
<td>0.64</td>
<td>0.62</td>
<td>0.71</td>
<td>0.42</td>
<td>0.47</td>
<td>0.18</td>
<td>n.c.</td>
</tr>
<tr>
<td>1999</td>
<td>0.44</td>
<td>0.02</td>
<td>0.33</td>
<td>0.84</td>
<td>0.62</td>
<td>0.62</td>
<td>0.78</td>
<td>0.50</td>
<td>0.58</td>
<td>0.17</td>
</tr>
<tr>
<td>1999</td>
<td>0.07</td>
<td>0.46</td>
<td>n.a.</td>
<td>n.a.</td>
<td>0.07</td>
<td>0.46</td>
<td>0.32</td>
<td>0.13</td>
<td>n.c.</td>
<td>0.03</td>
</tr>
<tr>
<td>1995</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
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</table>

n.a.: not available. n.c.: not computable because of negative averages for some quartiles.
See Diagram 1 for a definition of income indicators.

1. Gross receipts are the sum of receipts from sales of crop and livestock products, direct payments, receipts from agricultural activities off the farm and, in some countries, on-farm use.
2. Market price support is calculated by applying the ratio of market price support to the total value of gross receipts to receipts of each commodity for which an individual market price support is calculated in the PSE database and by applying an average ratio of all PSE commodities to remaining receipts.
3. Direct payments are budgetary transfers to farmers from agricultural policy. In the case of the European Union, subsidies for intermediate consumption are included.

*Source: OECD structural database. Update from OECD, 1999a.*

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19. For more detailed explanations about the measurement method and a more detailed description of results, see OECD (2003).

20. It should be noted that support is included in the value of gross receipts.

21. See Note at the end of the main report for a definition of Lorenz curves and Gini coefficients. It should be noted that when based on group averages, as here, the Gini coefficient is undervalued, especially since there are very few groups. The Gini coefficients used in this report and based on quartiles should therefore be viewed only in relative terms, between variables for the same country.
52. The distribution of support by farm size is similar to the distribution of gross receipts. This is because a large share of support in the OECD area is linked to the level of production but also because in many cases, support accounts for a significant share of gross receipts. The largest farms, and often the most prosperous ones, are therefore the main beneficiaries. In this sense, support is inequitable. On average direct payments are more equally distributed than market price support and gross receipts but the difference is generally small. Among EU member countries, a notable exception is the Netherlands where direct payments are equally distributed because many of the larger farms are specialised in horticulture which receives little in the way of CAP payments. This also explains why the level of payments received by Dutch farmers is low. In Switzerland, direct payments are also relatively equally distributed as their attribution is subject to many constraints related to size and farming conditions. We can conclude overall, that in most countries, support has a rather small redistributional effect by farm size because it is only slightly less unequally distributed than gross receipts. Exceptions are Canada, where support is more unequally distributed than gross receipts because dairy farms, which on average, receive eight times more support than the average of all farms, are concentrated in the largest quartile; and Switzerland, where support has the same distribution as gross receipts (1995 data).

53. The impact of support on income disparities by farm type depends on how wide differences in support level are in the country and how narrowly farm types have been defined. In Canada, as shown in Graph 14, support has accentuated inequality between dairy and cattle farms. In the European Union support has widened disparities between dairy and intensive livestock farms on the one hand and field crop and cattle farms on the other. In Denmark, support has increased the income gap between crop farms and intensive livestock (OECD, 1999a). There are, nonetheless a few cases where support narrows disparities, for example, between cereal and cattle farms in Finland or pig farms and all farms in the Netherlands, but the effect is relatively small. Overall, support increases income disparities between farm types (Graph 14).

54. There are also regional differences in the distribution of support. While support linked to output automatically goes to larger farms, direct payments can be targeted to less favoured areas. This is done to some extent in Switzerland. Here some payments are higher in mountainous areas, and even though lowland farms receive more support in absolute terms the overall effect is to reduce income inequality between lowland and mountain farms. Inequality nonetheless persists (OECD, 1999a). In Denmark, off-farm income reduced income differences by region, but total support increased them despite a small redistributive impact of direct payments.

55. In all cases, the total income of farm households is less unequally distributed than farm income, although the extent of this effect varies greatly among countries. Significantly, the distributional impact of off-farm income is larger than that of support (Table 2).

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22. Seventy per cent of the PSE in the OECD area came from market price support measures and payments based on output in 1999-2001.

23. In 1999-2001, payments based on area planted or animal numbers and payments based on input use accounted respectively for 12 and 8% of the PSE for the OECD area.

24. As shown in Graph 5, the average total income of farms in the top quartile (the largest farms based on gross sales) is higher than the average income of all farms (or, in fact, higher than the average income of farms in any of the other quartiles). However, there could be cases where smaller farms that derive most of their income from off-farm activities receive a higher total income than farms with larger gross sales.
Graph 14. Gross receipts, support and farm income: average of each farm type as a ratio of the average of all farms

<table>
<thead>
<tr>
<th>United States, 2000</th>
<th>European Union, 1999</th>
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<tbody>
<tr>
<td><img src="image" alt="Graph" /></td>
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<table>
<thead>
<tr>
<th>Finland, 1999</th>
<th>Netherlands, 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Graph" /></td>
<td><img src="image" alt="Graph" /></td>
</tr>
</tbody>
</table>

NOI: Net operating income. See Diagram 1 for a definition of income indicators.
Support includes market price support and budgetary payments to producers.
Source: OECD structural database and PSE/CSE database.

**What is the impact of taxation and social policies on the relative income situation of farm households?**

56. Many countries grant preferential tax arrangements to farmers (e.g. Australia, Czech Republic, Hungary, Mexico, Norway, Sweden and the United States). In Australia and Sweden for example, the purpose of the concession is to smooth income over a number of years and therefore help farmers deal with income risk.

57. Available evidence suggests that in many countries, the situation of farm households relative to other households improves after taxes are deducted i.e. when disposable income is used for comparison rather than total income (OECD, 1995). Using more recent data, Graph 15 confirms that in the majority of countries examined, the tax system is lighter on farm households than on other households. According to LIS data, it is even true for similar levels of income (OECD, 2001a). In most cases where farm households were taxed more than the average of all households, farm household income was higher than the total income of all households in the given year.

25. Mainly from the PSE database. It should, however, be noted that there may be tax exemptions in other countries that are not covered in the database because the information is not available.
Graph 15. Percentage share of social transfers and taxes in the disposable income of farm and non-farm households

a. Broad definition of farm households

For each country, the first bar corresponds to farm households and the second bar to non-farm households.

Source: OECD (2001a), LIS database.

b. Narrow definition of farm households

For each country, the first bar corresponds to farm households and the second bar to non-farm households.

Source: EUROSTAT database.

58. Social security systems usually aim to extend an adequate level of social protection to all members of society. They mainly include pension, health and unemployment schemes. Some countries offer special terms to farmers. This is the case in one third of the OECD Member countries with respect to old age pensions. The government may contribute through an appropriation from general revenue, or pay a subsidy to make up any deficit in the insurance fund. In some countries, regulations allow farmers to contribute less, for the same coverage, than other citizens.
59. As indicated in Section 2, social transfers are often the second source of off-farm income for farm households after earnings from non-agricultural activities. In some countries, they are the most important source of non-farm income. In the mid-90s they accounted for around 10% of all farm household income in countries where farm households are broadly defined and from 5 to 25% in countries were farm households are narrowly defined (OECD, 2000). The impact of social transfers on the disposable income (total income minus taxes) of farm households is significant (OECD, 2001a). Low-income rates for farm households of between 20 and 40% before tax and social transfers fall to 10-20%. Social transfers have been effective in reducing the incidence of low income, especially for households with an older head. These households receive the highest benefits from social policies, mainly in the form of pensions.

60. Nonetheless, social transfers have a greater effect on the disposable income of non-farm households than on that of farm households (OECD, 2001a). In fact, in all the countries surveyed except Poland, the share of social transfers in total income is relatively smaller for farm households than for other households (Graph 14). This could be explained by the fact that farmers are mostly self-employed. Unemployment benefits are therefore less important. However, with the increase of income from non-agricultural activities in total farm household income, unemployment benefits may begin to contribute more to the alleviation of low income among farm households in the future.

5. Are policy measures effectively achieving the set objectives in terms of the level, variability and distribution of farm household incomes?

61. Governments explain intervention to support the income of farm households both on equity grounds and on market failure grounds specifically with respect to risk management and the provision of agriculture-related public goods. The objectives of policies with regard to income in agriculture are not always explicitly stated but concerns are expressed in terms of adequate levels of income, income stability and equity, within the farm sector and compared to the rest of society.

62. When all sources of income are taken into account, farm households have, on average, incomes that are close to those of other households in most countries for which data are available and up to date. In some countries, agricultural support accounts for a large share of gross agricultural receipts and therefore is an important determinant of farm income. Nevertheless, it is increasingly other earned income, revenues from investments (property income) and social transfers that generate adequate levels of income for farm households.

63. Increasingly, farm households derive a significant share of their income, sometimes more than 50%, from off-farm sources, mainly other gainful activities but also significant social transfers. As a result, farm income is not an accurate measure of the income of farm households. Off-farm income not only raises the total level of income for farm households but also lowers its variability and partially offsets the inequality of the distribution of farm income. There are many complex factors behind the diversification that has taken place in farm household income. It seems, however, that despite heavy intervention from governments and significant support levels of all kinds, large numbers of farm households have not been able to earn adequate income from their farming activities alone.26

26. It should, however, be noted that in some cases, low farm incomes are not the result of a failure to earn adequate income from farming, but can be part of a strategy (for example, hobby farming). Recent analysis of farm households in Canada and the United States, for example, classify farms according to various criteria such as gross sales or revenue, age or main occupation of operator, business organisation, etc., to obtain more homogenous groups and better understand their behaviour and reaction to agricultural policy (AAFC, 2002; USDA, 2001).
64. In most countries examined, the various tools and instruments available to farmers to reduce income risk, government intervention more generally and the diversification to off-farm sources of income, have reduced annual variations in farm household income at the national level. In four out of five countries for which data were available, the total income of farm households was not significantly more variable than that of other households. In most OECD countries, market price support was found to have the biggest impact in reducing the variability of crop receipts reflecting partly the size of this type of support compared to other types of measures and partly the lack of price transmission in domestic markets.

65. Although in many countries farm households enjoy income levels that are, on average, close to those in the rest of society, there is a higher incidence of low income among farm households than among other households. In addition, the low-income gap (between low incomes and average incomes) is wider for farm households than for others. This would indicate that despite the complex array of agricultural policy measures there are still significant numbers of farm households that do not seem to have an adequate income. Clearly, the current set of agricultural policies is not sufficiently targeted to reach these households. The addition of social transfers alleviates the income inadequacy in many cases, especially for households where there are pensioners, but does not eliminate the problem.

66. In fact, the distribution of support is rather unequal. Because the distribution of support mirrors closely the distribution of gross receipts, most support goes to larger farms, often the richer ones. Support has only a very slight redistributive effect on income by farm size and, while some forms of direct payment are targeted to less favoured farms, they account for a small share of total support. In some cases, support has even increased income disparities, for example by farm type. Overall, large disparities in income remain in the farming sector, although here again, off-farm income has been effective in reducing them, in particular when farm households have had the opportunity to engage in other gainful activities.

67. Large amounts of support are transferred to agricultural producers (close to USD 250 billion in 1999-2001 for the OECD area). Is this support efficient in reaching the farm households who need it? Overall, in OECD countries, most support is linked to production levels or input use. It is therefore provided to all farmers, whatever their income situation. Moreover, much of the support leaks away to other economic agents such as absentee landowners and input suppliers. Even the support that remains in the sector is often capitalised into the value of land, quota or other fixed assets owned by the farm household. In this case the benefits can only be realised when the assets are sold and do not alleviate current income deficiencies. It is therefore not surprising that support does not seem to address the specific needs of farm households with income problems.

68. Overall, support policies, whatever their objectives, have raised farm income to some extent, and have reduced income variability, but it has been at a very high cost to consumers and taxpayers and with significant leakage to unintended beneficiaries. Most of the support that reaches the sector goes to larger farm households, who do not usually need it. Income risk management programmes have often provided unnecessary and unintended support because of adverse selection, moral hazard and rent seeking from producers whose objective is to maximise their benefits (Skees, 2000). Moreover, most of these risk reducing policy measures do not take account of all sources of income. Such programmes have probably discouraged the development of private mechanisms. In many cases, the continuation of high support level has slowed adjustment to more viable and sustainable types of farming, or to other activities.

27. Adverse selection and moral hazard occur when information is asymmetric. Moral hazard refers to the fact that farmers, who know more about their own risk than programme managers or subsidised insurance companies, are encouraged to adopt a riskier behaviour to obtain more indemnities. Adverse selection occurs because farmers are better able to judge whether they will benefit from a programme. As a result, the level of risk in the subscribing population is higher than in the total population.
69. Much of the support in OECD countries is linked to production or input use and therefore has significant international spillover effects. Production enhancing support raises domestic farm income but contributes to lower world prices, which in turn depress farm income in other parts of the world. Policies that reduce income risk faced by farmers also affect production decisions, often to the same extent as price support. In addition, by reducing adjustment in the domestic market, they transfer domestic instability to the world market and therefore switch the burden of adjustment to other countries (OECD, 2003).

70. The evidence presented here suggests that there are significant problems in delivering income support to farm households through the types of sector specific measures and policies that have been pursued to date. The main problems relate to targeting – the great bulk of the measures used are generic in nature, to equity – because the measures are still predominantly based on production or factors of production they fail to change the income distribution in any significant way and to leakages – much of the support is transferred to unintended beneficiaries. The policies do raise farm income levels to some extent and reduce their variability, but this would seem to be achieved at probably significantly greater cost than necessary. The next section asks which measures would be more effective in meeting declared income objectives.

6. Which policy instruments would transfer income to farm households more effectively and more equitably?

71. To design and implement efficient policies, income objectives have to be clearly defined in the national policy process. In particular, some income criteria needs to be developed to define and identify the targeted households. All sources of income should be taken into account in identifying the households to be targeted, as well as household wealth. For example, criteria could be set concerning the aggregate level of income of the sector or the individual level and variability of individual farm household income that would trigger intervention, if indeed the prevailing policy concerns involve those criteria.

72. There are several possible policy responses to low-income problems among farm households. Government should first consider ways to develop market solutions. It is important to understand the cause of low income to find the most effective remedy. If governments are unwilling to see less efficient farmers leave the sector because they provide economic and social benefits that are not, and cannot be, rewarded by the market, the optimal policy would be to give farmers the appropriate incentive to provide for these benefits, using for example decoupled and targeted payments, rather than redistribute support only on the basis of lower incomes.

73. Similarly, regarding income risk management, government should encourage the development of contingency arrangements such as insurance and futures markets, for example through the collection and transmission of information to reduce problems created by information asymmetry; or training programmes in the use of futures markets to reduce income risk. Agricultural safety nets could then be envisaged to address any remaining risk management failure.

74. From an income transfer efficiency point of view, support that is decoupled from agricultural activity and targeted specifically to income would be much better as a way to transfer income to farm households. Such direct income payments minimise economic distortions and distributive leakages because their effects on production decisions are minimal, and they can be targeted and delivered to those households that are deemed to warrant assistance.

75. More generally, government could invest in general services for the sector, such as expenditures on infrastructure, training, research and development, that improve the functioning of agricultural markets and allow farmers to increase their competitiveness. Low income may be experienced by farm households
that are resource-poor and located in areas where there is also a problem of lack of viable economic alternatives. The solution in this type of situation is not necessarily a sector-specific income support scheme. Investment in infrastructure to make rural areas more attractive to investors and transitional assistance to more viable economic activities may be of greater benefit.

76. Sequencing is important. As policies to address market failures in the agricultural sector will have an impact on the income of farmers, there is a logical case for applying measures that first correct market failures and then address any outstanding concerns about incomes, using the types of measures indicated above. Finally, general tax and social security systems are in place in most, if not all, OECD countries. These structures are well placed to identify remaining low-income problems among agricultural households and ensure equal treatment vis-à-vis other classes of households.

77. It is important, in order to assess the problems and needs of the sector and to implement targeted measures, that comprehensive information on the economic situation of farm households be available. Such information should be collected in a flexible way to allow assessment and monitoring of income deficiencies. More detailed information on the sources of non-farm income would also help to understand the various strategies adopted by farm households and the relationships between agricultural, fiscal and social policies. Available statistics, however, show that in many countries, income support policies have been designed and implemented in the absence of adequate information on the income situation of farm households. This fact must, in part, explain their poor performance.
Note

A Lorenz (or concentration) curve represents the cumulative proportion of a variable as a function of the proportion of the population contributing to (accounting for) this variable. Axes vary between 0 and 1 and the equality line is the first diagonal. The distance between the Lorenz curve for the variable and the equality line indicates the degree of inequality of distribution for the variable. The further the distance, the more concentrated the variable and the more unequal the distribution. This distance can be measured by Gini coefficients (Table 3). These are twice the area between the Lorenz curve and the first diagonal. The greater the inequality, the higher the coefficient. The Gini coefficient ($I_g$) can be calculated as follows:

$$I_g = \frac{\sum \sum |x_i - x_j|}{2n(n-1)x_m} \quad \text{for } i = 1 \text{ to } n \text{ and } j = 1 \text{ to } n$$

where $x_i$ and $x_j$ are the average of group $i$ and group $j$ respectively, and $x_m$ is the average of the whole population.

When based on individual data and when all observations are positive, it ranges from 0 to 1. When there is a large number of negative observations, this formula does not apply.
BIBLIOGRAPHY


Annex 1.

DEFINITION AND SOURCES

OECD (1995), *A review of farm household incomes in OECD countries* [OCDE/GD(95)97] contains a description of available surveys and a detailed definition of income indicators published in national statistics. Annex 1 in OECD (1999a) describes the different sources and coverage of data in the OECD structural database. OECD (2001a) contains information on the Luxembourg Income Study (LIS) database. Data sources and definition used in this report are summarised in this annex and a detailed description can be found in the referenced original reports.

1. Income indicators published in national statistics

Graphs 1, 2, 3, 4 and 15b, Annex Graph A1, and Tables 1 and 2 mainly report data on household income from published national statistics. Data from EUROSTAT’s “Income of the Agricultural Households Sector” are used for Belgium, Greece, Italy, Spain and Sweden, and for income comparison by socio-economic groups for Denmark and the Netherlands.

**Australia:** Data on farm household income are published in ABARE, *Australian Farm Surveys*. They come from the Australian agricultural and grazing industries survey described in Section 2, which uses a broad definition of farm household income. These data are compared to the average gross income of all households published in the *Statistical Yearbook of Australia* published by the Australian Bureau of Statistics.

**Austria:** *Grüne Bericht* contains data on the total income of main occupation farm households. [http://www.awi.bmlf.gv.at/gb/tabellen/Tab_6.1.01.xls](http://www.awi.bmlf.gv.at/gb/tabellen/Tab_6.1.01.xls).

**Belgium:** see EUROSTAT.

**Canada:** The average income of family units with one individual reporting some net farm income and the average income of all family units are provided by Statistics Canada from the Survey of Consumer Finances for long time series up to 1997 (Graph 4, Annex Graph A1 and Table 1). For most recent years (1997-99), the Survey of Labour and Income Dynamics (SLID) is used (Graphs 1 and 3) as the Survey of Consumer Finances was discontinued.

**Denmark:** See Section 2 below for a definition of farm household income ([http://www.sjfi.dk/](http://www.sjfi.dk/)). See EUROSTAT for the income comparison between households.

**Finland:** Mean income of households by socio-economic group published in *Income Distribution Statistics* and *Statistical Yearbook of Finland* by Statistics Finland. From 1996, the income from agricultural activities is estimated based on the income from independent activities. A narrow definition of farm households is used.
France: The French Statistical Institute (INSEE) matched FADN data with taxation data to obtain the total income of agricultural households. Farm households are defined narrowly as main occupation farmers’ households as in FADN. Income comparison between socio-economic groups comes from an INSEE document, Compte de revenu par catégorie socio-professionnelle.

Germany: Agrarbericht contains data on the total income of full-time farm married couples, published by the Federal Ministry of Consumer Protection, Food and Agriculture. Total incomes for main occupation farm households and all households were published by the Federal Office of Statistics up to 1993.

Greece: see EUROSTAT.


Italy: see EUROSTAT.

Japan: See Section 2 below for a definition of farm household income. Workers’ household income published in MAFF’s Statistical Yearbook comes from the Monthly Report on the Family Income provided by the Management and Coordination Agency.

Korea: See Section 2 below for a definition of farm household income. Farm household income data published in Major Statistics of Agriculture and Forestry come from the Farm Household Economy Survey. Urban household income data come from the Household Income and Expenditure Survey. Both surveys are implemented by the Korea National Statistical Office.

Netherlands: See Section 2 below for a definition of farm household income. See EUROSTAT for the income comparison between households.

Norway: Data are reported in Jordbrukstatistikk (Agricultural Statistics) published by Statistics Norway based on data managed by the Norwegian Agricultural Economics Research Institute. They come from a survey of farmers’ income and wealth based on taxation records and on an annual sample survey of agriculture. Farm households are broadly defined (low minimum farm size) but only pensionable income is taken into account thus capital income and pensions are excluded from income sources.

Poland: Data are published in the Statistical Yearbook of the Republic of Poland by the Central Statistical Office. They come from a sample survey of household budgets. The average income of self-employed farmers is compared to the income of all households. A farm household is a household where income from the use of a private farm is the exclusive or primary source of income. A narrow definition is thus adopted.

Spain: see EUROSTAT.

Sweden: see EUROSTAT.

Switzerland: Data were provided by the Swiss Office fédéral de la Statistique. They come from the Swiss Income and Consumption Survey. Farm households are narrowly defined by the main activity of the reference person.

**United Kingdom:** DEFRA publishes farmers’ total income assessed for tax in the United Kingdom. Data are derived from the Inland Revenue’s Survey of Personal Incomes. A broad definition of farm households is used. [http://www.defra.gov.uk/esg/Work_htm/publications/cf/fiuk/current/Chapter2/c2t2.4_2.7.xls](http://www.defra.gov.uk/esg/Work_htm/publications/cf/fiuk/current/Chapter2/c2t2.4_2.7.xls)

**United States:** See Section 2 below for a definition of farm household income. Data are published in USDA/ERS, *Agricultural Outlook*. Farm household income is compared to the US average household income from the CPS.

**EUROSTAT:** The IAHS statistics, formerly known as the Total Income of Agricultural Households, (TIAH) statistics, present an aggregate picture of the overall income situation of agricultural households. For the purpose of income comparisons, households are grouped according to the main income source of the household reference person, typically the head of household. An agricultural household (“narrow definition”) is thus one where the reference person has farming as their main income.

Details of the methodology of IAHS statistics are contained in TIAH Manual of Methodology (Rev.1). Three broad approaches (“models”) to making estimates are encountered, representing points on a spectrum between microeconomic and macroeconomic methodology. In Model 1, estimates of the disposable income of the agricultural household sector can be obtained by grossing-up microeconomic data collected in household budget surveys, taxation records, farm account surveys, etc. Model 2 (macroeconomic approach) consists of subdividing the Distribution of Income Account for the households sector of the Member State to separate sub-accounts for agricultural households. Model 3 combines a macroeconomic approach for deriving the income from agricultural activity of agricultural households with a microeconomic approach towards the other components of disposable income.

### 2. OECD Structural Database

Graphs 5, 6, 10, 11, 12 and 14, Annex Graphs A3 and A4, and Table 3 use data contained in the OECD structural database. This database includes data from the national surveys described below. The individual data are aggregated by quartiles based on gross sales.

**Australia**

**Source:** ABARE, Australian agricultural and grazing industries survey and Australian dairy industry survey.

**Coverage:** The first survey includes farms engaged mainly in growing cereal grains, coarse grains, oilseeds and/or pulses; farms engaged mainly in running sheep or beef cattle and growing cereal grains, coarse grains, oilseeds and/or pulses; farms engaged mainly in running sheep; farms engaged mainly in running beef cattle; and farms engaged mainly in running both sheep and beef cattle. The second survey includes farms engaged mainly in dairying. Both surveys cover establishments with an estimated value of agricultural production of AUD 22 500 or more at the time of the 1996 census.

**Sample:** The sample consists of 1 600 farms representing 2% of the population. Sample weights are calculated so that sample estimates of numbers of farms, area of crops and number of livestock in various geographic regions and industries correspond as closely as possible to known Australian Bureau of Statistics data (Agricultural Census). A greater proportion of large, as opposed to small, farms is sampled.
Canada

Source: Agriculture and Agri-Food Canada, Taxation data.

Coverage: The data include only farms with total revenue of CAD2 000 or more.

Sample: 235 000 farms are represented.

Definition of farm types:

Grain and oilseed farms: Grain and oilseed farms are those on which more than 50% of gross agricultural revenue is from the sale of wheat, small grains, oilseeds, grain corn, dry field peas and beans, and field crop combinations.

Cattle farms: Cattle farms are those on which more than 50% of the gross agricultural revenue is derived from the sale of cattle.

Dairy farms: Dairy farms are those on which more than 50% of the gross agricultural revenue is derived from the sale of dairy products -- milk and cream for example. This category includes farms with 40% or more of gross agricultural revenue derived from the sale of dairy products and 10% or more of the agricultural revenue from raising and selling dairy cattle.

Pig Farms: Pig farms are those on which more than 50% of the gross agricultural revenue is derived from the sale of pigs and/or feedlot operations.

Denmark


Coverage: All farms which according to the agricultural and horticultural census by the Danish Statistical Office have a standard gross margin (gross value of agricultural production minus main proportional specific costs) from agricultural production of 50% or more of the total standard gross margin originating from agricultural and horticultural production and which have a total cultivated area, excluding woods and gardens, of 5 ha or more. The population may, however, include holdings of less than 5 ha if their economic size is 4 ESU (European Size Unit = EUR 1 200) or more.

Sample: The total sample consists of approximately 2 000 farms representing 3% of the whole population. The rate of sampling varies according to groups.

European Union

Source: Commission of the European Communities, Farm Accountancy Data Network (FADN) database.

Coverage: This database covers commercial farms. The exact definition varies according to countries but the general definition of a commercial farm is a farm which is large enough to be the main activity of the farmer and to provide a level of income sufficient to support his or her family. In order to be classified as commercial, a farm must exceed a minimum economic size.
Sample: The sample consists of 57 000 farms representing 1.6% of the population. Weights applied to sampled farms to extrapolate to the total population are equal to the share of the group they represent in the total population. Groups are defined by region, specialisation and size.

Definition of farm types:

Field crop farms:

Specialist cereals: More than 2/3 of the total SGM (Standard Gross Margin) from cereals.

General field cropping: More than 2/3 of the total SGM from general crops; cereals, oilseeds, pulses and fallow land subject to set-aside incentive schemes with no economic use no more than 2/3 of the total SGM.

Mixed cropping: More than 1/3 and not more than 2/3 of the total SGM from cropping; no other single production contributes more than 1/3 of the total SGM.

Cattle farms:

Specialist cattle - rearing and fattening: More than 2/3 of the total SGM from cattle, but not more than 1/10 from milk cows.

Specialist cattle - dairying, rearing and fattening combined: More than 2/3 of the total SGM from cattle and more than 1/10 from milk cows; excluding specialist dairying (see below).

Sheep, goats and other grazing livestock: More than 2/3 of the total SGM from cattle, sheep and horses, but not more than 2/3 from cattle.

Dairy farms:

Specialist dairying: More than 2/3 of the total SGM from dairy cattle and more than 2/3 of the dairy cattle’s SGM from milk cows.

Pig and poultry farms:

Specialist granivores: More than 2/3 of the total SGM from pigs and poultry.

Finland


Coverage: Since 1993, forestry is no longer included. Holdings with two hectares or more of arable land under cultivation and which are subject to taxation under the income tax legislation on agriculture.

Sample: The Farm Register is used as the sampling frame. The sample consists of more than 10 000 farms representing around 12% of the farming population. The sample design is based on stratified simple random sampling. In 1998 and 1999 data gathered from tax forms have been supplemented using statistical forms sent direct to the farms.
Japan

**Source:** MAFF, *Agricultural Yearbook,* Farm Household Economy Survey.

**Coverage:** Commercial farms only. A commercial farm is a farm household with 0.3 ha or more, or with a smaller area but with sales of agricultural products exceeding 500 000 yen.

**Sample:** The number of households in the 1994 sample is 10 000 representing 0.35% of the population (2.8 million farms). The same rate of sampling is applied to each group by region, farm type and size.

Korea

**Source:** MAF, *Agricultural Yearbook and Major Statistics of Agriculture and Forestry,* Agricultural Statistic Survey and Farm Household Economy Survey.

**Coverage:** Farmers who cultivate farm land over 0.1 ha or engage in farming activities including livestock husbandry more than 90 days a year. Or farmers who have sales of agricultural products exceeding KRW 1 million.

**Sample:** The survey sample consists of 3 140 households from sampled farm household enumeration districts. It represents around 0.23% of the farming population (1.4 million).

Netherlands

**Source:** LEI, Dutch FADN.

**Coverage:** Main occupation farms. This definition covers 75% of all farms and 94% of total production.

**Sample:** Panel of more than 1 500 farms representing about 83 000 farms.

Switzerland

**Source:** Station fédérale de recherches en économie et technologie agricole (1997), *Rapport principal 1995 sur les exploitations-témoins,* Tänikon.

**Coverage:** Full-time farms fulfilling specific criteria concerning minimum size (0.25 ha or more, 1 UGB or more), maximum size (less than 50 ha), maximum share of non-agricultural income in total income depending on size, and minimum labour input. In addition, one member of the farm household must have followed an agricultural training programme. According to the 1990 Census, these farms represented 27% of the total, i.e. 29 500.

**Sample:** The survey contains 3 419 test-farms representing 11% of the farming population. The share of farms surveyed among the total number of test-farms varies according to region, farm type and size.
United States

Source: USDA, ERS, Agricultural Resource Management Study (ARMS), Phase 3.

Coverage: Operators associated with farm businesses representing agricultural production in the United States (excluding Hawaii and Alaska). A farm is defined as an establishment that sold or normally would have sold at least USD1 000 of agricultural products during the year. The farm operator is the person who runs the farm, making most of the day-to-day decisions about operating the farm.

Sample: The 1996 ARMS, Phase 3 is a multiple frame survey consisting of a list frame of known farm operations and a complimentary area frame to insure complete coverage of the target population. The list frame is stratified by farm size and type. The area frame consists of land segments stratified by land use characteristics. All farm operations within selected land segments are contacted for the survey. Simple random sampling is used to select sample farms within the individual strata. Each sample farm is assigned a weight reflecting its coverage of farms with similar characteristics in the farm population. The 1996 sample included 7 316 farm operations representing a population of about 2 million farms.

3. Luxembourg Income Study (LIS) database

Graphs 7, 8, 9 and 15a report data from the LIS database.

The Luxembourg Income Study (LIS) project began in 1983 under the joint sponsorship of the government of Luxembourg and the Centre for Population, Poverty and Policy Studies (CEPS). It is mainly funded by the national science and social science research foundations of its member countries. The main objective of the LIS project is to create a database containing social and economic data collected via household-based surveys in different countries. (See LIS web site, http://www.lisproject.org)

The LIS database contained information for 26 countries by the end of 2001, of which 23 are OECD countries. Participating countries mostly have provided data from the mid-80s. The data are updated at four or five-year intervals. At the end of 2001, the most recent data referred to the mid-90s.

The LIS database consists of micro data collected by member countries through household income surveys. At the household level, there are more than 100 socio-demographic and 50 income variables available for each household in each country. The demographic variables include information such as number and age of persons, of earners, and of children in the household.

Three definitions can be used to identify farm-related households: households having farm self-employment income (definition 1), occupation of head is farm-related (definition 2) and industry of head is farm-related. In this report the broad definition of Definition 1 was selected, i.e. households whose farm self-employment income is not zero.
Annex 2.

ADDITIONAL GRAPHS

Annex Graph A1. Evolution of farm income, total income of farm households and total income of all households in selected countries in real terms as a % of the total income of farm households at the beginning of the period (average of the first three years)

**Australia, 1986-99**

![Graph showing farm income, total income of farm households, and total income of all households in Australia from 1986/87 to 1999/00.](image)

**Belgium, 1987-99**

![Graph showing farm income and total income of farm households in Belgium from 1987 to 1999.](image)
Annex Graph A1. Evolution of farm income, total income of farm households and total income of all households in selected countries (cont.) as a % of the total income of farm households at the beginning of the period (average of the first three years)

Canada, 1986-97

Italy, 1986-95

Japan, 1986-2000
Annex Graph A1. Evolution of farm income, total income of farm households and total income of all households in selected countries (cont.) as a % of the total income of farm households at the beginning of the period (average of the first three years)

**Korea, 1986-2000**

1. Incomes decreased in 1998 following the financial crisis that struck Korea at the end of 1997.

**Norway, 1986-99**

**United States, 1991-99**

Source: National statistics; GDP deflator from OECD National Accounts database.
Annex Graph A2. Producer Support Estimate as a percentage of gross receipts, by country and by commodity, 1999-2001

a. by country

b. by commodity

For each country and each commodity, the first bar corresponds to 1986-88 and the second to 1999-2001
1. For the Czech Republic, Hungary, Poland and Slovakia, 1986-88 is replaced by 1991-93.
2. For 1996-88, the Czech Republic, Hungary, Poland and Slovakia are excluded.

Source: OECD PSE/CSE database.
Annex Graph A3. The distribution of support, gross receipts and net operating income for selected OECD countries

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<td>Gross receipts</td>
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<td>Total support</td>
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<td>Net operating income</td>
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European Union, 1999

Netherlands, 1999

See Diagram 1 for a definition of income indicators.
MPS: Market price support. Support includes market price support and budgetary payments to producers.
Source: OECD structural database and PSE/CSE database.
Annex Graph A3. The distribution of support, gross receipts and net operating income for selected OECD countries (cont.)

Korea, 2000

United States, 2000

See Diagram 1 for a definition of income indicators.

MPS: Market price support. Support includes market price support and budgetary payments to producers.

Source: OECD structural database and PSE/CSE database.
Annex Graph A4. The distribution of income and net worth for selected OECD countries

Australia, 1999/2000

Japan, 1994

European Union, 1999

Netherlands, 1999

See Diagram 1 for a definition of income indicators.

Source: OECD structural database and PSE/CSE database.
Annex Graph A4. The distribution of income and net worth for selected OECD countries (cont.)

Korea, 2000

United States, 2000

See Diagram 1 for a definition of income indicators.

Source: OECD structural database and PSE/CSE database.