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CHAPTER 8

OF THE HANDBOOK ON RURAL HOUSEHOLD, LIVELIHOOD AND WELL-BEING: STATISTICS ON RURAL DEVELOPMENT AND AGRICULTURE HOUSEHOLD INCOME.

Paper submitted by the Task Force
on Statistics for Rural Development and Agriculture Household Income*

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VIII CONCEPTUAL FRAMEWORK – INTRODUCTION

VIII.1 Matching indicators to policy needs in countries at different levels of economic development

Indicators do not exist in a vacuum but are created to serve a purpose. A guiding principle in the design of statistical systems at all levels of economic development is that indicators should reflect the policy purposes for which they are needed. Writers on statistics typically identify many of the same features of "good" quality, though the terms used may vary. Accuracy, coherence, consistency, continuity, timeliness, accessibility and presentation, comparability over time and space are normally mentioned.[1] All these may be classed as "intrinsic" properties of statistics. "Relevance" is another key characteristic, although this differs in nature from the other "intrinsic" characteristics, in that it is dependent on the validity of the link between what decision-makers need on which to base their choices and actions, and what statisticians actually measure.

The relevance of indicators of income and wealth for agricultural households comes in large part from the aims of agricultural policy, though there is also a range of other reasons why such information is useful. Within the public sector, policies on deprivation, on economic development, sustainability, trade liberalisation and environmental quality would find such statistics useful if their aims are to be properly serviced and the performance of policy interventions to be assessed. Others groups also needing the information include academics studying the issues addressed by public policies and commercial firms, such as the industries upstream and downstream from farming.

Two types of policy are involved. Firstly there are the government interventions concerned directly with the well-being of people in the agricultural sector and secondly those for which there are important indirect links between other aims and the incomes of farmers. Among the former, some industrialised countries have had explicit targets for the incomes of their farm operators, others express aims in a generalised way (such as the the EU's Common Agricultural Policy objective of ensuring a "fair standard of living for the agricultural community"), while yet others are more concerned with creating the economic conditions in which competitive firms can generate a satisfactory income (for a review see Hill 2000[2]). In less developed economies the emphasis is more likely to fall on poverty among the farming community. Among the latter group of policies, enhanced rewards have been used as a way of encouraging a range of responses from farm operators, such as to expand the

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[1] *Brackstone, G. (1999). "Managing Data Quality in a Statistical Agency," Statistics Canada, Survey Methodology, Catalogue No. 12-001-XPB, Statistics Canada, Ottawa.*

de Vries, W. F. M. (1998). How are we doing? Performance indicators for national statistical systems. Netherlands Official Statistics *13, 5-13.*

Elvers, E. and Rosen, B. (1998). Quality concepts for official statistics. In *"Encyclopaedia of Statistical Sciences, update volume 3", pp. 621-29. Wiley-Interscience, New York.*

Holt, T. and Jones., T. (1998). Quality work and conflicting policy objectives. In *"84th DGINS conference, 28-29 May". Office of National Statistics, Stockholm.*

[2] Hill, B. (2000) *Farm Incomes, Wealth and Agricultural Policy* 3rd ed. Ashgate Publishing, Aldershot. ISBN 0-7546-1132-9

supply of farm commodities for reasons of food security or trade enhancement or, more recently in heavily populated industrialised countries, to provide more environmental services. A common result of such incentives has been to increase the personal incomes of farmers, something that makes difficult the removal of the incentives if circumstances change and policy aims shift.

Income and wealth are only partial indicators of well-being, for which there are other determinants that reflect the level of economic development (in industrialised countries the ability to control one's own environment, quality of working conditions, independence etc. and in less developed ones the more fundamental issues of life expectancy, food security, health etc.).[3] Here we are concerned primarily with *economic welfare*, that is those economic causes of utility in the form of goods and services and the command over their consumption that income and wealth provides. Other causes of satisfaction - so-called "psychic income" - are beyond our consideration here but should not be ignored. For example, the general lack of success of various publicly funded schemes aimed at encouraging farmers to retire by compensating them for the money income they would forego can be explained in part by their failure to recognise the importance of the loss of non-pecuniary rewards from farming.

Observation of the documentation, rhetoric and practice of policy suggests that farmers and their households caught up in income problems that are widespread and characterise the agriculture industry, at least in periods of relative peace in international relations. While these are expressed here in relation primarily to the agricultures of industrialised market economies, there is much in common between countries at all stages of economic development.

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

(b) The variations of income of the individual unit (farm household) over time (the *instability issue*). Again this may vary between region, type and size of farm and will be more of a pressing issue among low income farmers, where periods of low income will result in poverty. While incomes from agricultural activity are inherently unstable, the presence of other income may dampen the impact on total household income.

(c) The general levels of rewards of those engaged in farming compared with earnings in other sectors (termed the *parity issue*). This is often expressed in terms of the incomes of people working in agriculture compared with those in other groups in society or the national average. However, for self-employed farmers these incomes are a mix of rewards to labour, capital and land and the issue of parity includes the return to investments in land and capital assets as well as to labour. A major factor in explaining the apparently low reward to land is that its value is determined in a market,

[3] The OECD has developed a list of social indicators.

typically very small in terms of the total stock, that is often dominated, on the demand side, by existing farmers trying to expand. By spreading fixed costs, a possibility often opened up by technical advances that require larger-scale production, they can reap the benefits of lowering average costs. However, expanding farmers bid up land prices to levels that are determined by their margins over variable costs, not by total costs, and thus land appears very expensive in relation to average profits.

(d) Partly as a result of this last point, and because in market economies public support to farm incomes tends to be capitalised into higher land prices, income problems are often seen among farm occupiers that are often also owners of substantial amounts of wealth. Wealth is even more unequally distributed than are incomes, and farmers who own land are likely to have a markedly different economic status from those who are tenants or where land rights are poorly defined.

The first three of these points are the same trio of central components of "the farm problem" that have been identified in the USA and summarised by Gardner (1992).[4]

The assumption is that when policy makers act, they do so primarily with the intent of improving the incomes of farmers. There would be little reason for taking action unless the potential beneficiaries were seen to be disadvantaged in some way - that without assistance they would be unacceptably poor or that there would be an unfair gap between the position of farmers and other members of society. It goes without saying that in the parity issue farmers are typically perceived as the relatively disadvantaged group, though empirical evidence shows that in many industrialised countries they compare well with or exceed the national average income. The wealth of farm households is usually ignored when discussing the issue of income support.

Parity and poverty are concerned essentially with the welfare of farmers and their dependants. Instability is somewhat different. Low farm incomes in single years do not necessarily throw the recipients immediately into the poverty category; reserves will be drawn on or borrowings made to maintain living standards through times of temporary financial setback. Thus in industrialised countries it is important to distinguish between those farm households that have to contend with occasional periods of low income and those that suffer hardship from incomes that are persistently low. However, when year-to-year fluctuations are anticipated the level of consumption by farmers and their households may have to be curtailed in order to set aside reserves for years of low incomes or to pay for past borrowing in lean years. Farmers may have to be content with generating a safer but lower income, with consequences both for consumption possibilities and the potential for the business to grow. However, the implications for farm families of sudden falls in income may be far more serious in a low-income country than in a developed one, so the issue of instability is likely to be viewed differently.

[4] Gardner, B. L. (1992), 'Changing Economic Perspectives on the Farm Problem', *Journal of Economic Literature*, 30 (March 1992), pp.62-101.

Secondary to these three main strands are other issues, some of great importance, which are believed to be related to a significant extent to incomes from farming. Among the most prominent of these are beliefs that incomes of farming households have a substantial impact on the following;

(i) The level of general economic activity and employment in rural areas, especially in those suffering from unfavourable natural conditions, such as hill and mountain areas, where alternative employment opportunities also tend to be limited. Support for farming in these areas is seen as a way of promoting the viability of the rural economy. In less developed countries this line of reasoning is stronger than in many industrialised ones where farming now often accounts for only a small part of the economy, even in rural areas.

(ii) The pursuit of practices to conserve the natural environment, with the assumption that adequate incomes are a prerequisite for conservation at the farm level. While is might be expected that this income would come from farming, situations can arise in which the ability to undertake environmentally beneficial actions comes from off-farm sources.

(iii) The rate of technological advance. Though not an argument heard so loudly in industrialised countries in times of agricultural surpluses, the notion that a prosperous agriculture was necessary to encourage the development of new technology and its uptake through rising levels of investment and capital stocks was built into the thinking of post-war agricultural policy in the UK and in Europe more generally. A prosperous farming sector produced thriving support industries, with more jobs and income arising from exports of modern machinery and chemicals. But again there is evidence that the on-farm investments can be funded by resources earned in other sectors.

With each of these income-related issues there are alternative ways of bringing about the desired ends other than through changing the incomes of farm operators. There may be superior ways of stimulating rural employment or of conservation than by using farming and farm operators as vehicles.

In addition to these underlying aims, the implementation of policy many throw up requirements. By no means the least significant reason why income information is needed is the need to be able to facilitate policy reform. It is clear that, at least in industrialised countries, the present array of policies has had some impact on the incomes of farmers and their households. If, as an operational objective resulting from budgetary constraint or international agreements on world trade, it is necessary to change the present pattern of support to agriculture, the reforms will carry implications for the economic situation of people operating agricultural businesses and other working in this industry. The assessment of the extent of the change in income from farming may be offset by the greater allocation of factors of production to other sources of income, some of which may be assisted by publicly-funded diversification grants, training schemes, creation of other jobs for farmers and their families etc..

VIII.1.1 Types of income and wealth statistics needed

To service such aspects of policy mentioned in the previous sections, statistics on agricultural household income and wealth are needed. A guide to what is needed, at least in a European context, can be taken from the methodology handbook of Eurostat's Income of the Agricultural Household Sector (IAHS) [5]. which states that the objective of its sector level statistics was to generate an aggregate income measure, using harmonised methodology, in order to:

(i) Monitor the year-to-year changes in the total income of agricultural households at aggregate level in Member States.

(ii) Monitor the changing composition of income, especially income from the agricultural holding, from other gainful activities, from property and from welfare transfers.

(iii) Enable comparisons to be made in the development of total incomes of agricultural households per unit (household, household member, consumer unit) with those of other socio-professional groups.

(iv) Enable comparisons to be made between the absolute incomes of farmers and other socio-professional groups, on a per unit basis (Eurostat 1995)

To this list can be added objectives that relate to the distribution of incomes and wealth that only microeconomic results can furnish

(v) Describe the distribution of the above in terms of policy-relevant breakdowns, including by size and type of farm, by region, by socio-economic composition of household, by professional nature of the household, by income and level of wealth and other parameters of the farm and the agricultural household that need for which may become apparent. This will include, for example, households deeded to be operators of commercial farms, of subsistence producers, hobby farmers etc..

(vi) As a subset of the above, to provide information on cases whose low-incomes can be deemed to place them in poverty (the criterion for which may be determined in various ways).

(vii) Provide information on the levels and distributions of the wealth of farm households (assets, liabilities, net worths) and how these relate to the income situation of the same households.

[5] Eurostat (1995*), Manual of the Total Income of Agricultural Households (Rev.1),* Theme 5 Series E, Eurostat, Luxembourg. This is packaged on a CD together with publications on results and other studies as Eurostat (2002) *Income of the agricultural households secto: 2001 report.* Eurostat, Luxembourg. ISSN 1725-1605.

VIII.2 Households as economic, social and cultural units and as agents for environmental change and conservation – controllers of resources and users of services

The focus of this Handbook is on the income and wealth of agricultural households, in most countries the most numerous type of producing unit of agricultural commodities. Even though the proportion of output and resource use that households account for is somewhat smaller, their response to economic signals is critical to supply and to the use of factors of production, including land. Households, however, are more than units of production, which may be combined with other forms of economic activity between which the boundaries are permeable. They are also units of consumption, with a somewhat hazy margin between what is production and what is consumption, exemplified by the use of the farm dwelling as both a business and a domestic asset. The standard of living is, essentially, to do with the level of consumption that takes place, in the measurement of which the household is a prime unit and income a key determinant. As noted above, the standard of living of the agricultural community is a matter of central concern within agricultural policy, though precisely which households form this community has rarely been set out explicitly and is thus capable of various interpretations,

Agricultural households are also social units and important to the cultural identity of rural areas. The "family farm" is a potent if imprecise concept that shapes the direction of much policy towards agriculture. Different countries have their own ideas of what it comprises, with family operation and management being important features, but also with size, the opportunity for family members to work together and continuity by succession featuring. Certainly the desire to pass on a farm business to the next generation is a major aim of many farmers, particularly where its size allows it to be a viable business. While the precise nature of the sort of society that policy is intending to promote or preserve is, again, not often articulated in a precise way, it is nevertheless clear that in many countries there is a belief that conserving the present structure of agriculture, dominated by household-firms, is an effective way of protecting the social fabric. Often this extends to the cultural attributes that are associated with small-scale farming, such as local traditions and languages, especially in the more remote rural regions. In that the main threat to farm structure comes from incomes that are under pressure, there is often political will to support the incomes of farm families as a way of achieving cultural aims. In the EU this forms part of the rationale of rural development policy and the subsidies provided to farmers, especially in disadvantaged areas (mostly hill and mountain regions), with the incomes of farms seen as a key indicator. Many industrialised countries also have special legislation in place, especially on taxation, to facilitate inter-generational transfer of land.

Agricultural households, through their occupancy of land, and frequently their ownership of it, are also important agents of environmental character and change. As a major category of land user, the agricultural household through its management decisions can affect countryside appearance, biodiversity and environmental quality. Financial incentives are commonly offered to manage land in particular ways, such as agri-environmental agreements. These will feed through to the income situation of the household, providing a link between its functions as an environmental and an economic unit. There are also strong links between the social and environmental

functions, in that major land use changes are often associated with the time at which control passes from one generation to the next.

In developing statistics on agricultural households care has to be taken to acknowledge its complex nature. The notion of a "triple bottom line" may be helpful in this respect – meaning that, when dealing with households, their economic, social and environmental significance must be borne in mind. The income and wealth of farmers and their families certainly have links to all three.

VIII.3 Concepts of income and wealth and related indicators

In the information system that generates statistics, before the data on which they are based can be collected, there are the crucial stages of "conceptualisation" and "operationalisation". "Conceptualisation" involves developing concepts that are "capable of portraying and reducing the nearly infinite complexity of the real world in a manner that can be grasped by the human mind" (Bonnen 1975) As concepts cannot be measured directly, "operationalisation" involves defining variables that are as highly correlated as possible with the aspect of reality that is being examined. In the US, Bonnen has stressed the significance of adequate conceptualisation if the agricultural information system is to perform satisfactorily (Bonnen 1975, 1977).[6] In the United Kingdom this concern has been expressed in relation to national accounts; Holt and Jones (1998)[7] pointing out that "It is rare for the concepts that we strive to measure to be driven by a well defined theoretical construct". However, only if this first step is reliable can "operationalisation" be undertaken adequately, leading on to the stages of measurement, data analysis and the production of statistics; ".. no matter how well one manipulates the numbers, one may still be measuring the wrong thing" (Bonnen, 1975). "Conceptualisation" is the responsibility of both statisticians (who constitute a major part of the "data system") and of members of the "inquiry system", outsiders who are not involved in the routine of actual statistics production and who therefore can contribute a more detached view (consultants, academics etc.).

Conceptualisation is not easy even in static conditions. In the dynamic economic and technical environment of the 21st Century, the changing nature of agriculture has presented a moving target, opening a gap between the conceptual basis of existing statistics and reality. Such shortcomings in statistics can be more insidious than failure in the "intrinsic" characteristics (inaccuracy because of poor response rates etc.) because conceptual obsolescence is not readily quantified and because it usually creeps in gradually. The need to generate statistics on a regular basis may

[6] Bonnen, J. T. (1975), 'Improving Information on Agriculture and Rural Life' *Amer. J. agric. Econ*., 57, 753-63. Bonnen, J. T. (1977), 'Assessment of the Current Agricultural Data Base: an Information System Approach.' in Martin, L. R. (1977), *A Survey of Agricultural Economics Literature. - Vol. 2. Quantitative Methods in Agricultural Economics, 1940s to 1970s,* University of Minnesota Press, Minneapolis.

[7] *Holt, T. and Jones., T. (1998). Quality work and conflicting policy objectives. In:* 84th DGINS conference, 28-29 May,. *Office of National Statistics, Stockholm. See also Holt, T. (2001). Official Statistics and their Contribution to Public Policy. In:* Information and Knowledge: The role of statistics. *Proceedings of the 86th DGINS Conference, Porto, June 2000. Theme 1 General Statistics. Eurostat, Luxembourg.*

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divert attention from any widening gap, while the protection of institutional interests and human capital in existing concepts and systems of measurement will tend to marginalize any gaps that are allowed to surface. This Handbook represents an attempt to fill an important gap in the existing statistics on agriculture by facilitating the development of statistics on the wealth and income of agricultural households.

Several indicators of income and of wealth are pertinent to the purposes for which they needed, outlined in the previous section. The two most obvious income measures are *total income* and *disposable income.* The details of both a considered later, but they can be introduced here in general terms. **Total income** would be used to describe the composition of the resources flowing towards household from their engagement in agriculture and from a range of other sources and how this different over time, place and between different groups of agricultural households. These resources comprise both income in money terms (profits, cash wages, interest received, social benefits etc.) and in kind (goods and services).

Disposable income bears a more direct relationship with economic welfare as it relates more closely to the command over goods and services, what is left over being saved. Certain deductions take place from total income over which the individual or household has no short-term influence, such as income tax and social insurance payments. Only after these have been met is the household able to spend on consumption. Disposable income is thus what is of interest to analysts concerned with poverty and the distribution of incomes available for consumption and saving. It may be adjusted to take into consideration items that the state often provides in kind, such as education and health care, thereby permitting an improved comparison between countries that differ in the level of public provision of these benefits in kind.

Within countries comparisons between farm households and those of other socio-professional groups an important step in meeting the frequent policy requirement that farm families should have a standard of living comparable with that of other groups. This would thus be expected to be on the basis of disposable income but with precautions that there is a fair treatment of the different types of income that the groups receive. Examples include the adequate identification and valuation of income in kind that farm households can enjoy by being occupiers of land (such as cheaper food that they produce themselves) and, in the other direction, the extra costs of consumer goods, higher travel costs and reduced availability of goods and services that are (sometimes) faced in rural areas

However, as will become clear in chapter X, the details of both concepts are by no means straightforward. For example, are the costs of travel to work to be treated as a negative item when calculating disposable income, as without them no earning would take place? Farmers generally avoid this cost but it can be important to people who do not work at home. In addition, the availability of data may be a serious handicap. Thus there may be difficulties of making satisfactory comparisons, particularly between the households of farmers and other socio-professional groups, and between farm households in different countries. Sometimes a trade-off will be needed between what is in theory a preferable basis for making comparisons and the practicalities of measurement.

Among the indicators relating to wealth, primacy is usually given to the stock measure of **net worth** (the value of assets less borrowings) of the household. Again, there are many issues of detail, discussed in a later Section. For example, among the assets while private property presents some problems of valuation, difficulties expand over things like pension entitlements. Where farms are partnerships, or where the land is owned by different mixes people that those who own the farm business, the idea of the net worth of a single household may be difficult to establish.

A further major issue, that links (current) incomes and net worth, concerns changes in the real values of assets and liabilities. These can be very important in agriculture. While accumulation of capital can come from saving out of disposable income, and gifts and inheritance can play a part, changes in assets values can also come from (real) capital gains and losses, and reductions in the real value of liabilities (in times of inflation) can achieve a similar result. Accounts for income and capital are linked, and it is sometimes a matter of choice whether, for example, capital gain is included or excluded from the measures of income or whether non-regular items in the resources flowing towards households, such as bequests of money or lottery wins, should be seen as income or as capital transfer. A measure of "economic status" is available in theory that combines income and wealth into a single measure that represents the combined potential command over goods and services, but this has rarely been used in an agricultural context. These issues are explored further later in this Handbook and practical recommendations made.

VIII.4 Households and other forms of institutional units within accounting and statistical systems

A distinction central to this handbook is that between the activity of agricultural production and the institutional units that are responsible for it, of which the agricultural household is the most numerous example in the agricultural industries of many countries (though they often account for a smaller share of overall production). This distinction between the activity and the institutional unit reflects the accounting framework within which income statistics are generated, of which the internationally-agreed system of national accounting forms a foundation. For readers unfamiliar with national accounting principles some introduction is necessary.

VIII.4.1 Accounting frameworks

To be internationally comparable, statistics on the income and wealth of agricultural households have to share a common conceptual framework. Departures from this base are possible for reasons of circumstance, which may be both theoretical and practical, but the framework nevertheless can act as a reference to which these variations may be reconciled by bridges. The United Nations' System of National Accounts (SNA), in its latest (1993) versions (hereafter referred to as SNA93) is

probably the most universally accepted set of international accounting conventions.[8] It forms the basis of much of what statistics already exist for agriculture in countries at all levels of economic development and contains guidelines for areas of statistics not yet well developed, such as for agricultural households. The FAO's *System of Economic Accounts for Food and Agriculture* of 1996 (SEAFA96) is based on it.[9] The SNA93 thus constitutes the starting point for this section of this present Handbook.

The SNA93 contains guidelines relevant to the development of statistics on households, principally through its consideration of the households sector of the economy. However, the central focus of the SNA is on national accounting and economic aggregates. Thus for many purposes to do with policy connected with agriculture and rural development, which are often primarily concerned with what happens at the level of the individual agricultural household, the concepts and approach of the SNA93 need modification before they can be applied in the context of microeconomic statistics. For example, the concept of disposable income of the agricultural household sector contains items in its estimation (both positive and negative) that would not be included in household-level studies or would be treated differently; this issue is taken up in a later section. Similarly, some large institutional social units (such as religious communities) are treated in the SNA93 as being within the households sector, though they would not normally be seen by policymakers as typical targets for agricultural income support, nor are they usually included in household budget surveys.

In practice differences may exist between aggregate and microeconomic estimates of what appears to be the same concept (for example, household disposable income when measured at national level by grossing up figures measured at household level). Reconciliation is possible given the information on the definitions used, though the existence of what are apparently different figures may be confusing for the non-expert. Thus macro-micro disparity is a common feature of official statistics. While the SNA93 forms the background here, attention is also drawn to other frameworks, mainly microeconomic ones, where necessary.

Within the EU there is a network of family budget surveys and Eurostat has published multi-national tables of results. While a fully harmonised methodology has not be developed and published (along the lines, for example, of the EU Farm Accountancy Data Network for the results of farm businesses in the EU) nevertheless inventories have been compiled of how Member States interpret key aspects, such as the definition of a household, and recommendations laid down.[10] Countries were

[8] UN (1993), *System of National Accounts 1993*, Commission of the European Communities - Eurostat, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, World Bank, Brussels/Luxembourg, New York, Paris, Washington, D.C., ISBN 92-1-16352-3.

[9] FAO (1996), *A System of Economic Accounts for Food and Agriculture,* FAO Statistical Development Series 8," Food and Agriculture Organisation of the United Nations, Rome

[10] Eurostat (1980), *Methodology of Surveys on Family Budget,* Eurostat, Luxembourg.

Eurostat (1981), *The 1979 Harmonised Family Budget Surveys: Review of the Methodological Aspects of the Questionnaires in the ten Member States,* Eurostat, Luxembourg.

Eurostat (1990c), *Family Budgets: Methodological handbook*, Theme 3 Series C, Eurostat, Luxembourg.

Eurostat (1993), *Family Budget Surveys in the EC: Methodology and Recommendations for Harmonisation,* Theme 3 Series E, Eurostat, Luxembourg (see also under Verma and Gabilondo, 1993).

found to adopt differing approaches to details (such as whether domestic servants living with their employers were treated as part of the household or as separate household) while maintaining broad conformity to the main concept. Indeed, it might be argued that such flexibility of detail is needed to reflect differing socio-economic conditions.

A recent major step in developing a methodology for use at household level has been the final report and recommendations from the Expert Group on Household Income Statistics (the Canberra Group), published in 2001.[11] This group contained representation from the statistical offices of some sixteen countries and many international organisations, including Eurostat, the International Labour Office, the OECD and the World Bank. Experience of existing projects to improve and use household-level statistics were included, notably the Luxembourg Income Study (LIS); this is not an EU project although Eurostat and the OECD are partners in it. The Canberra Group's recommendations acknowledge the SNA93.

It should be noted that neither the SNA93 nor the Canberra Group recommendations are specific to agricultural households and their measurement of income and wealth. The SNA93 gives general recommendations by which the households sector might be broken down into sub-sectors, of which agricultural households could form one. In practice few countries attempted to do this (Germany and France being exceptions) before Eurostat took an initiative in the late 1980s to encourage a general disaggregation of household sector accounts as a means to develop income statistics for the agricultural households (sub)sector in manner that automatically generated comparable results for a range of other socio-professional groups.

Household budget surveys have commonly grouped households by the occupation of the head of household, as have other microeconomic studies based on tax data. The issue of sub-sectoring is not tackled by the Canberra group report. This is perhaps surprising given that a main driver of the Canberra Groups' activities was the use of household income data in the assessment how the distribution of income is changing over time and, in particular, the issue of poverty. There is an obvious overlap between this and the aim of agricultural policy. However, the issue of what is an agricultural household is clearly a central one in the development of the present handbook, as are the particular problems associated with income and wealth measurement of this group, such as the potential for consumption from own production and the high amounts of capital involved because of the significance of land as an input

Two main approaches towards accounting for agriculture can be found within SNA93 conceptual framework:

- Accounts for the activity of producing commodities (goods and services) deemed to be agricultural, together with their residual "income" concepts

[11] Canberra Group (2001) *Expert Group on Household Income Statistics – The Canberra Group. Final Report and Recommendations*. Ottawa. ISBN 0-9688524-0-8

- Accounts for institutional units that engage in agricultural production, of which the household (in its role as a unit of production) is numerically dominant in many countries. The other main form of institutional unit is the corporation, though other institutions (such as charities or the government) may also act as producer.

Of course, as these are part of a single system, they relate to each other. Figure VIII.1.1 shows this relationship in an agricultural context. Agricultural activity (represented by the operating surplus arising from this activity, which will be described later) is divided between the various types of institutional units that are involved in entrepreneurial activity: These fall into three main types:

(i) **Households** in their role as units of production, and for which agricultural activity is one (possibly the only one) form of independent activity that the household engages in. The household may also engage in dependent activity and may also receive resources in other ways (from welfare transfers, property income, etc.). The independent agricultural activity may account for various shares of the total resources available to the household

(ii) **Corporations,** at least part of whose activity involves agricultural production. (Strictly these are non-financial corporations, as the SNA93 also provides for financial corporations as a separate category)

(iii) **Other types** (including government and Non-Profit Institutions)

The nature of what constitutes an agricultural household (or an agricultural corporation) is critical to the generation of statistics and receives detailed attention in a later section.

The SNA93 described a full sequence of accounts for households as institutional units, including not only current accounts for production but also capital accounts and balance sheets. This sequence is set out in a slightly simplified form in figure VIII.1.2. Though conceived within the framework of national accounts, the sequence can be applied at microeconomic level with some modifications to the coverage of items. When applied to agricultural households, this sequence allows for the calculation of many items that are relevant to agricultural policy, including *inter alia* their

- value added from production
- operating surplus from production,
- residual entrepreneurial income from production,
- income from all sources, including entrepreneurial income, wages, property in its various forms, social transfers etc.
- disposable income, after the deduction of non-optional payments (such as direct taxes and social contributions)
- consumption spending and saving
- investment
- balance sheets - stocks of assets, liabilities and net worth

While the complete sequence can, in theory and given adequate data, be drawn up for agricultural households as institutional units, activity accounts are strictly only applicable down to the level of operating surplus. To go further in the sequence requires assumptions about the extent to which the institutional unit (household) is mono-active in agriculture and on the separability of consumption activity and production, both of which are increasingly subject to question, although such assumptions are often made by the array of indicators commonly in use. Dissatisfaction with these assumptions constitutes one reason why it is necessary to develop indicators that relate to the household as an institutional unit, which is the aim of this part of the Handbook.

Figure VIII.1.1
The relationship between agricultural activity and the institutional units that generate it

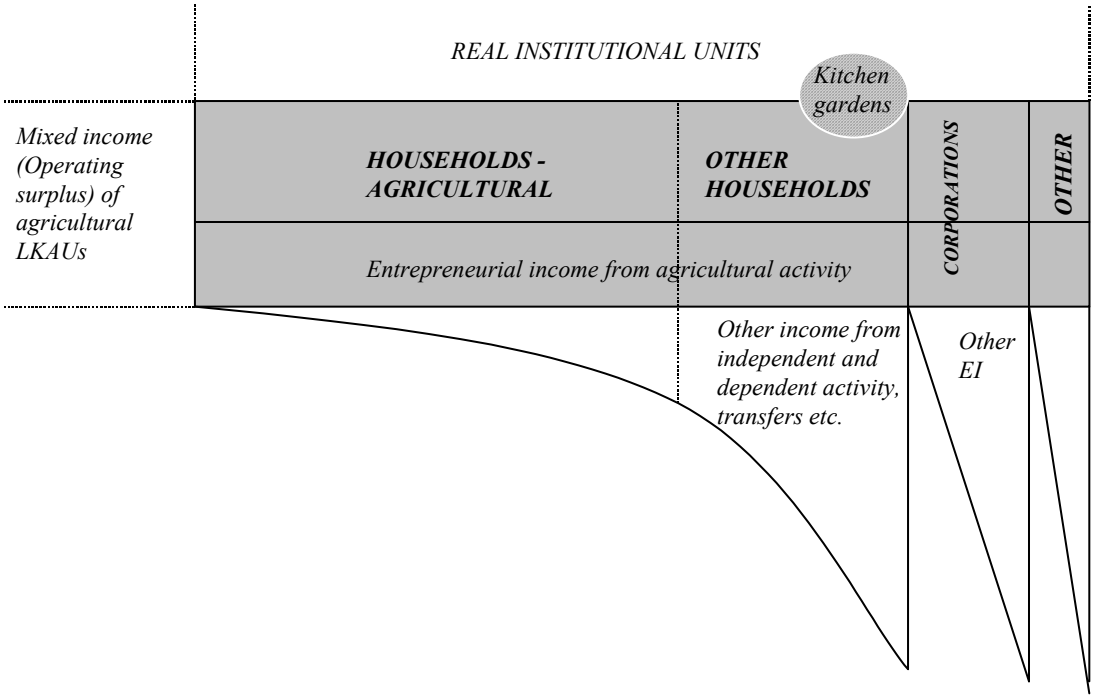

Figure VIII.1.2
The full sequence of accounts for households in the System of National Accounts
(from SNA93 Table A.V.6)

I: Production account

Uses		Resources	
P.2	Intermediate consumption	P.1	Output
		P.11	Market output
		P.12	Output for own final use
B.1g	*Value added gross*		
K.1	Consumption of fixed capital		
B.1n	*Value added net*		

II: Distribution and use of income accounts

II.1: Primary distribution of income account

II.1.1: Generation of income account

Uses		Resources	
D.1	Compensation of employees	B.1	Value added
D.11	Wages and salaries		
D.12	Employers social contributions		
D.121	Employers' actual social contributions		
D.29	Employers' imputed social contributions		
D.29	Other taxes on production		
D.39	Other subsidies on production		
B.2	*Operating surplus*		
B.3	*Mixed income*		

II.2: Allocation of primary income account (which can be subdivided into two)

II.1.2.1 Entrepreneurial income account

Uses		Resources	
D.4	Property income (connected with market activities)	B.2	*Operating surplus*
D.41	Interest	B.3	*Mixed income*
D.45	Rent		
		D.4	Property income (connected with market activities)
		D.41	Interest
		D.42	Distributed income of corporations
		D.421	Dividends
		D.422	Withdrawals from income of quasi-corporations
		D.44	Property income attributed to insurance policyholders
B.4	*Entrepreneurial income*		

II.1.2.2: Allocation of other primary income account

Uses		Resources	
D.4	Property income (not connected with market activities)	B.4	*Entrepreneurial income*
D.41	Interest		
D.42	Rent	D.1	Compensation of employees
		D.11	Wages and salaries
		D.12	Employers' social contributions
		D.121	Employers' actual social contributions
		D.122	Employers' imputed social contirbutions
		D.4	Property income (not connected with market activities)
		D.41	Interest
		D.42	Distributed income of corporations
		D.421	Dividends
		D.422	Withdrawals from income of quasi-corporations
		D.43	Reinvested earnings on direct foreign investments
		D.44	Property income attributed to insurance policyholders
		D.45	Rent
B.5	*Balance of primary income*		

II.3: Secondary distribution of income account (simplified)

Uses		Resources	
D5	Current taxes on income, wealth etc.	B.5	*Balance of primary income*
D.61	Social contributions	D.61	Social contributions
D.611	Actual social contributions		
D.612	Imputed social contributions		
D.62	Social benefits other than social transfers in kind	D.62	Social benefits other than social transfers in kind
D.7	Other current transfers	D.7	Other current transfers
D.71	Net non-life insurance premiums	D.72	Non-life insurance claims
D.75	Miscellaneous current transfers	D.75	Miscellaneous current transfers
B.6	*Disposable income*		

II.4: Redistribution of income in kind account

Uses		Resources	
		B.6	*Disposable income*
		D.63	Social transfers in kind
		D.631	Social benefits in kind
		D.6311	Social security benefits, reimbursements
		D.6312	Other social security benefits in kind
		D.6313	Social assistance benefits in kind
		D.632	Transfers of individual non-market goods and services
B.7	*Adjusted disposable income*		

II.5: Use of income account

II.5.1 Use of disposable income account

Uses		Resources	
P.3	Final consumption expenditure	B.6	*Disposable income*
P.31	Individual consumption expenditure		
		D.8	Adjustment for the change in net equity of households on pension funds
B.8	*Saving*		

II.5.2 Use of adjusted disposable income account

Uses		Resources	
P.3	Actual final consumption	B.6	*Adjusted disposable income*
P.31	Actual individual consumption		
		D.8	Adjustment for the change in net equity of households on pension funds
B.8	*Saving*		

III. Accumulation accounts

III.1: Capital account (simplified)

Changes in assets		Changes in liabilities and net worth	
P.51	Gross fixed capital formation	B.8n	*Saving, net*
K.1	Consumption of fixed capital	D.9	Capital transfers, receivable
		D.92	Investment grants
P.52	Changes in inventories	D.99	Other capital transfers
P.53	Acquisitions less disposals of valuables		
		D.9	Capital transfers, payable
K.2	Acquisitions less disposable of non-produced non-financial assets (land etc.)	D.91	Capital taxes, payable
		D.99	Other capital transfers, payable
B.9	*Net lending / borrowing*	B.10.1	*Changes in net worth due to saving and capital transfers (Total of the above)*

The other accounts (not detailed here are as follows)

III.2: Financial account

III.3: Other changes in assets accounts
- III.3.1: Other changes in volume of assets account
- III.3.2: Revaluation account
  - III.3.2.1: Neutral holding gains/losses account
  - III.3.2.2: Real holding gains/losses account

IV: Balance sheets

IV.1: Opening balance sheet
IV.2: Changes in balance sheet (within which the change in net worth is attributed to savings and capital transfers, other changes in volume of assets, and nominal holding gains/losses)
IV.3: Closing balance sheet

VIII.4.2 Activity accounts – agriculture as an activity

Before moving statistics based on accounts for agricultural households and their related methodology it is necessarily to describe briefly the activity accounts that form the basis of most of the indicators used internationally to monitor the economic situation in agriculture. Activity accounts are commonly found calculated at both the level of the entire agricultural industry and the level of the individual farm business. The basic methodologies of each level were established in the 1930s, though some elements of farm level studies go back further. Historical precedent is important in explaining the present form of this approach and its dominance hitherto.

Many industrialised countries construct industry-level accounts for the activity of producing agricultural commodities, as does Eurostat for the EU as a whole. Known in the EU as the Economic Accounts for Agriculture (EAA), they and their associated industry-level income indicators have for long been used to guide policy. The OECD has used the EAA methodology as basis for its collection of comparable statistics for a wider range of countries. The aggregate activity accounts are complemented by accounting systems at the microeconomic level (farm or holding). For an outline of activity accounts in the EU see Box VIII.1.

Activity accounts at aggregate level have a major advantage that in industrialised countries they can often be built up from data at national level, without the need to carry out representative surveys of farm accounts. For example, the value of crop output may be estimated from censuses or surveys of crop areas multiplied by average yields and prices. Their results can therefore be produced in a timely and relatively economical way, important features of statistical quality. However, some important drawbacks of (current) activity accounts are that:

Box VIII.1
Activity accounts in the EU

The EU publishes aggregate (industry-level) activity accounts for the EU using data provided by the individual Member States. Eurostat has established an agreed methodology (Eurostat 1997[12] and updates) and harmonised results are published annually for the EU and for individual countries. Though based in National Accounts methodology (SNA93), the EAA depart in a number of ways to make them more in line with the perceived needs of policymakers in terms of the coverage of commodities (small adjustments are made, for example, to include Christmas trees the production of which would otherwise be classed as forestry) and units of production (in effect, output from hobby gardening is no longer included). Since the revised version of the methodology was introduced (EAA97) to be compatible with the revised SNA93 (and its European manifestation, the ESA95[13]), the nature of these departures has been made transparent, with a bridge table provided in the methodology (though not always actually calculated) between the ESA and the SNA. Many individual governments apply this EAA97 methodology (or with small variations) in the creation of accounts and indicators for national purposes. .

The industry-level activity accounts are complemented by accounting systems at the microeconomic level (farm or holding). Again, many industrialised countries carry out surveys of the accounts of individual farm businesses, including the income generated from production, to inform policymaking. In the EU the survey is known as the Farm Accountancy Data Network (FADN, or the French acronym RICA) and is made up of national surveys that supply data to the European Commission which acts as a coordinating and regulating agent. Again, the methodology is agreed by Member States and thus the results are harmonised and comparable[14]. Farm level data is needed to study issues such as distribution of rewards, of productivity, of stability etc.

- In their traditional form at both industry and farm levels they relate only to the production of a list of agricultural commodities. Though the list of what constitutes an agricultural commodity is agreed internationally and is not highly contentious, there are difficulties at the margin. With the broadening of activities undertaken by farmers (such as the provision of agri-tourist accommodation and adding value in food processing) there are increasing problems in separating the value of output into agricultural and non-agricultural (only the first being covered) and, more especially, the isolation of the inputs used in agricultural production where these are shared, such as the use of a tractor for agricultural production and for forestry or for snow clearing. When data are drawn from microeconomic sources, accounts for

[12] Eurostat (1997), *Manual on the Economic Accounts for Agriculture and Forestry (Rev.1)*, Eurostat, Luxembourg.

[13] Eurostat (1996a), *European System of Accounts: ESA 1995*, Eurostat, Luxembourg.

[14] Commission of the European Communities (1989), *The European Rarm Accountancy Data Network: an A-Z of Methodology,* Directorate General for Agriculture, Unit A-3, Analysis of the situation of Farm Holdings, The Commission, Brussels.

agricultural production have to be carved out from transactions of real businesses by separating off any non-agricultural activities, something that is increasingly difficult to achieve satisfactorily[15].

- In accounts for activities there are problems in going beyond the calculation of NVA or Operating Surplus to achieve an indicator that corresponds to what would be regarded as the profit from farming (for example, Entrepreneurial Income in the EAA or Family Farm Income in FADN/RICA). Interest and rent relate not to activities but to institutional units, in agriculture mostly the household and its members. Interest paid will relate to the entire borrowing of a household and will encompass that for consumption and, where a household-firm engages in other forms of production, these too. It partition into interest for agricultural and for other purposes is theoretically objectionable (because of the fungible nature of loans) and practically difficult. Rent paid may suffer from similar problems where there is a degree combined consumption and production or several forms of production on the same real estate.
- Particular difficulties arise with the inclusion in accounts for agricultural activity of payments for non-production. Normally payments are in the nature of a transaction, and a flow of goods and services can be identified that correspond with the money flow. While something of this nature could be argued in the case of payments for undertaking production in particular ways that result in a flow of environmental services, there are some financial flows (such as the "compensatory payments" associated with the 1992 and subsequent reforms to the EU's Common Agricultural Policy) for which no obvious corresponding flow of goods and services exists.
- By convention in the latest form of EAA applied in the EU (ESA97) activities of very small producing units, such as kitchen gardens attached to domestic dwellings, are excluded. In contrast, under the previous methodology the activity on these units was included in the EAA. In practice the border between subsistence and hobby production is somewhat arbitrary and indistinct In some countries subsistence output from household plots is a significant source of food supplies, so cannot be ignored.
- The 'income' concepts of activity accounts are (in essence) factor rewards and do not correspond with the personal incomes of their operators. These 'income' concepts are difficult to interpret by non-specialist users (especially when divided by labour input, which is only one of the contributing factors). The outcome is that the indicators are often used inappropriately as a proxy for the standard of living of the agricultural community, a purpose for which they are manifestly ill-suited.
- The activity accounts exclude capital gains and losses on most assets (including real estate and liabilities), items that should appear later in the sequence among the capital accounts. By not taking these gains and losses into account, items are being left out that form a component of the longer-term personal rewards of farm operators and that may be important in influencing decisions to stay or quit the industry.

[15] In aggregate activity accounts the basic unit of production is the fictional agricultural Local Kind of Activity Unit (LKAU – equivalent to the *Establishment* in SNA93 terminology).

- Capital balance sheets and net worth cannot, strictly, be calculated for the activity of agricultural production. Balance sheets only apply to institutional units, such as households or other bodies with legal status that can enter into contracts, obtain loans etc.. While it may be possible to classify some capital assets as agricultural and thus build up a partial picture on that side of the balance sheet, the nature of liabilities means that a reliable list of equivalent validity cannot be drawn up. While some countries have calculated balance sheets for agriculture, these are open to criticism for their coverage and potential bias (there is a tendency to include all borrowings of farm households as agricultural but not to include all their assets).

VIII.4.3 Accounts for institutional units – accounts for farm household-firms

The essential features of a system of accounts based on institutional units (in the case of agriculture, unincorporated household-firms, with other accounts for corporations etc.) are as follows:

- They are based on complete units, without need to separate off activities
- Complete series of current and capital accounts are possible dependent on data availability – for households down to disaggregation of disposable income into consumption and saving
- The series potentially extends to capital accounts and balance sheets (equivalent to the net worth of households)
- The accounts cover all flows of resources; for households this includes from independent activity in agriculture and other industry groupings, dependent activity (wages), property income, welfare transfers etc.. It should be noted that public payments for the supply of (non-marketed) environmental services and compensation for non-production (the latter a particular problem for activity accounts) are accommodated without difficulty in the institution / household unit approach
- The inclusion of the flows are not dependent on classification by function (e.g. from production of goods and services), though the origins may be used to divided up the total flow
- Sector and income concepts are more easily understood by users, as they apply to real units and do not involve assumptions about separation off of the agricultural components in outputs and inputs
- Integration of sector and micro levels accounts and indicators is better, as the sector is taken as comprising collections of complete institutional units
- A possibility exists of sub-accounts for selected groups of institutional units, such as
    - Corporation
    - Other non-household forms (co-operatives etc.)
    - Households, with (for example)
        - some agricultural production

- agricultural production above a given level (which might be that deemed to comprise subsistence production in contrast to hobby gardening, or some other threshold that is deemed to be the lower limit of 'serious' or 'commercial' or 'professional' production, for which holding size might be the criterion).
- agriculture-dependent for current income, which may be assessed in terms of the entire household or of a reference person, such as the head of household
- regionally disaggregated, or divided into those that are in rural and in non-rural parts of the country.

Despite these positive attributes, this approach demands data to be collected at the level of the institutional unit - the household-firm or corporation. This may be an expensive activity. Furthermore it may be difficult to accomplish if farm households have become used to supplying data about their farming but might be less willing to reveal their overall income and wealth positions. Clearly an adequate explanation by the collecting authority as to why this information is needed should be available, especially for existing co-operators. This should not be difficult to construct once it becomes evident that the adequate explanation of on-farm behaviour (land use, investments etc.) requires a fuller picture the interaction between the farming interest of the household-firm and its other activities to be available.

From a statistical point of view it is important to ensure that statistics on income are linked with the appropriate institutional unit. As the US's AAEA Committee on Economic Statistics stated in 1972:

> *"Only when the basic economic structure of the industry can be described accurately by our data system will analytical accuracy be possible in dealing with the performance and behavioural characteristics that are the focus of most economic analyses".*[16]

VIII.5 Where we are in the provision of income indicators taken from institution-based accounts for household-firms

Activity accounts (current) and related income indicators at aggregate and microeconomic levels are long-established at EU level and can be found in many other OECD countries. In contrast, accounts and indicators for agricultural households and other forms of institution are far less well-developed. Commentators on agricultural policy (summarised in Hill 2000) have concluded that the lack of institution-based accounts is a major gap in statistics needed to assess its performance. A recent report by the European Court of Auditors found that the aggregate and microeconomic activity accounts in use in the EU (the EAA and FADN/RICA) "do not provide sufficiently exhaustive information on the disposable incomes of agricultural households and do not allow an assessment of the living standard of the

[16] AAEA (American Statistical Association - American Agricultural Economics Association Joint Committee on Agricultural Statistics) (1972), 'Our obsolete data systems: new directions and opportunities', *Amer. J. agric. Econ*., 54, 867-80.

agricultural community to be made" (para 79).[17] Some explanation for the poor availability of statistics based on the agricultural household are given in Box VIII.2. Accounting and income measurement on this basis is not confined to relatively developed countries. The FAO's 1996 *System of Economic Accounts for Food and Agriculture,* which has general applicability but is directed especially at less developed economies, recommends that accounts based on institutional units (in effect, households) as the preferred approach. This also corresponds with the way that statistics are built up in less developed countries, which relies heavily on surveys of households.

Statistics that take the agricultural household as the basic institutional unit, while being less well-developed than activity accounts, nevertheless exist to some extent. At sector level, for the EU Eurostat's IAHS statistics partially fills this gap. A methodology has been devised, based in national accounts and incorporating ideas on disaggregation of the households sector taken over from France and Germany, but when applied there have been rising problems in maintaining the calculation of results because of data availability and quality[18]. Nevertheless the development of the methodology has encountered a number of issues of definition that have proved valuable when applied in other circumstances and levels of aggregation. At micro-level, there is no workable EU system in place for measuring the income of agricultural households on a harmonised basis, constituting a large gap in the coverage of agricultural statistics and a potent stimulant for the methodology set out in this Handbook.

The OECD has collated a large number of studies of the income situation of agricultural households, many of which are microeconomic in nature (OECD 2002)[19]. However, the results contain data that involve a range of definitions, so that generalisations of findings and comparisons across countries are hazardous. At present comparisons are usually restricted to rates of change rather than to levels. In particular the results (both in terms of numbers of cases in the sector and the average level and composition of income) are sensitive to the definition of what constitutes an agricultural household. The need to develop basic recommendations for a methodology is self-evident.

The consequences of this imbalance between accounts for agricultural activity and for agricultural institutions are that activity accounts are being stretched beyond what can be justified by the present structure of the agricultural industry. The indicators derived from them appear to be put to inappropriate uses and hence policy decisions are likely to be based on inappropriate statistics (OECD 1997, 2002).[20] The

[17] Court of Auditors (2003) *Measurement of farm incomes by the Commission (Article 33(1)(b) of the EC Treaty.* Special Report No 14/2003. Luxembourg, Court of Auditors of the European Communities

[18] Eurostat (2002) *Income of the Agricultural Households Sector 2001 Report.* Theme 5. 2002 Edition. Eurostat, Luxembourg. ISSN 1725-1605 (published as a CD with results, methodology and background studies)

[19] OECD (2002) Farm Household Income Issues in OECD Countries: A synthesis report. AGR/CA/APM(2002)11/FINAL

[20] OECD (1997), *Future Developments of Economic Accounts Statistics: Issues and Directions,* OCDE/GD(97)108., Organisation for Economic Co-operation and Development, Paris.

Box VIII.2

Some explanation for the lack of statistics for agricultural households

Given that indicators relating to the income situation of agricultural households are generally seen now as being of importance, how is it that they have received so little attention from statisticians in the past? Why in those relatively few countries, including the US, where data have existed for a considerable time, has information on the income and wealth position of farmers as a group not made the substantial impact on domestic policy that might be expected, especially when their income and wealth situations are good compared with other groups in society? In the EU (and in many individual OECD countries) there seems to be a number of explanatory factors:

Lack of political demand. Politicians have not requested this information, perhaps because of a too-simple perception of the agricultural industry, or a fear of the electoral consequences of drawing attention to it.

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

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

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

Self-interest of bureaucracies. Government departments for agriculture have often taken a pro-farmer stance and might therefore not wish to draw attention to anything that might lead to a reduction in support for the industry, as might be revealed by statistics on household income. Also, in countries where it has not been conventional to ask questions on non-farm income, agencies that collect data have been reluctant to ask new questions about non-farm income for fear of harming response rates. There is also an understandable aim of wishing to maintain continuity with long-established systems of activity accounting.

Data availability. Lack of basic data of suitable quality in some countries is a major constraint in the development of statistics. . on the complete activities of farm businesses and their households, and resistance in some quarters to improving this situation.

implication is that costly policy mistakes may have been made, and may still continue to be made unless the information gaps are filled. As long ago as 1933 there were warning about using inappropriate indicators (Peterson 1933[21]) and the debate resurfaced in the 1970s.

In many countries the main limiting factor is the availability of suitable basic data. Such data should come in three main forms

- surveys of farms that take a broad, household approach and collect data on more than just the output and inputs used in the farming process, covering other income and other assets and liabilities
- general surveys of households that cover income and expenditure, that have a sufficient number of cases that turn out to be agricultural households, and where the income data is of sufficient quality
- taxation records, where self-employed farmers can be identified as a trade group within the industrial classification. These records may be combined with other administrative records to construct and income statistics register

In addition, there are various other sources, regular or occasional (see Hill 2000). Here emphasis is given to the regular sources.

Farm accounts surveys take place in all EU Member States and many other OECD countries. However, as suppliers of data on the total income of farm households they are of limited value. As was pointed out above, in the EU FADN only requires from its contributing national surveys information that relates to the farm business. A few national surveys go beyond these narrow limits and regularly collect data on the farm household's non-farm income; among the EUR 15 countries this only applies to Denmark, Germany, Netherlands, Austria, Finland and, since 1989, the United Kingdom (though in the latter's case using a banding system rather than precisely determined and verified figures). As an example of "good practice" the US has a valuable data source on the overall economic activities of the households of farm operator families via its farm accounts survey (the Agricultural Resource Management Survey – ARMS), the latest report of which demonstrates how useful such information can be to revealing the nature of the problems facing agricultural households. [22]

Family (household) budget surveys take place in all EU countries and in many others. One of their prime purposes is to provide information for the weighting of price indices, and emphasis has traditionally fallen on the expenditure side. In the EU the amount of information collected on incomes has gradually been expanding, though there is variation in the amount of detail between countries. This flows from the fact that income data are collected primarily to obtain a classifier for the study of patterns of consumption rather than to study income in its own right (Eurostat 1993).[23]

[21] Peterson, G. M. (1933), 'Wealth, Income and Living', *Journal of Farm Economics,* 15(3), 421-51.

[22] Mishra, A. K., El-Osta, H. S., Morehart, M. J. , Johnson, J. D. and . Hopkins, J. W. (2002) I*ncome,Wealth, and the Economic Well-Being of Farm Households.* Farm Sector Performance and Well-Being Branch, Resource Economics Division, Economic Research Service, U.S. Department of Agriculture. Agricultural Economic Report No. 812

[23] Eurostat (1993), *Family Budget Surveys in the EC: Methodology and Recommendations for Harmonisation,* Theme 3 Series E, Eurostat, Luxembourg (see also under Verma and Gabilondo, 1993).

Nevertheless, in countries with a substantial proportion of their population still engaged in agriculture these surveys are a potentially valuable source of information on the total income of farmer households. But in many industrialised developed countries the number of farmer households is too small for its household budget survey to be regarded as a reliable source of data.

The main disadvantages of household budget surveys are, first, that they are expensive to carry out, with the result that they are conducted only occasionally - typically at 5 to 7 year intervals. This creates the problem of how their findings should be updated in non-survey years. Analysis of the mass of data also tends to be rather dated when it is published. These surveys are therefore best at providing detailed information when time is not of the essence. Second, the reliability of data on incomes is not high. This comes from the under-representation of self-employed households in voluntary surveys (there may be difficulty in making contact and a high non-co-operation rate), and also the understatement of real income levels from self-employment. This may not be deliberate but arise from the uncertainly which households have about the amounts they are earning, even of what constitutes income (van der Laan, 1999). [24]

In an attempt to circumvent the problem of unreliable survey income information for farmers, the latest Irish household budget survey for which results are published (1987, the 1994 and 2001 surveys are still being processed) used as agricultural household cases holdings that were already co-operating in the Irish farm accounts survey (Hill, 1988). In Germany, incomes are estimated indirectly by summing consumption spending with the level of savings.

Related to the household budget surveys in approach is the *European Community Household Panel (ECHP)*, a survey involving periodic revisits to a panel of households. This was initiated in 1993 with the intention of establishing a European database of comparable statistical information for all Member States (EUR12) on the income and living conditions of households. However, with the exceptions of Greece, Ireland and Portugal (where there are over 300 agricultural cases) the sample is too small for the ECHP to be useful in throwing light on the income situation of agricultural households in the EU as a whole. In addition, the ECHP is expected to suffer from the same well-known problems as household surveys in its attempts to gather reliable its income data from self-employed people, especially those in agriculture.

[24] van der Laan, P. (1999), 'The Problematic Measurement of Income from Self-Employment', paper to the *Eurostat Seminar on Income Methodology for Statistics on Households*, Luxembourg 13014 December 1999, Statistics Netherlands, Voorburg, The Netherlands.

Box VIII.3
An example of using household budget survey data

An important example of an attempt to use household budget surveys to identify poverty was the general micro-based research study of poverty published by Eurostat in 1994 (Hagenaars, de Vos and Zaidi, 1994).[25] Both income and expenditure approaches to assessing poverty were considered, using poverty lines set at various national levels. However, the usefulness in a CAP context is reduced, firstly, by the amalgamation of the households headed by farmers with those headed by agricultural workers. Secondly, the authors conceded that the quality of the survey-based income data was frequently poor; in that self-employed people typically understate their incomes, the degree of poverty will be overestimated. For farmers, data on expenditure might also be highly misleading as to real consumption and standards of living. The percentage of the households of agricultural workers and farmers shown to be in poverty in each of the EUR 12 countries was typically higher than that of other economically active household groups but lower than the unemployed and of a similar order to the retired. By way of example, in France 25 per cent of the agricultural group were in poverty (below half the arithmetic mean national household expenditure, corrected using a modified OECD equivalence scale), compared with 11 per cent of private sector manual workers, 8 per cent of other self-employed, 22 per cent of retired households and 35 per cent of the unemployed. However the problem of data quality, and some surprising internal inconsistencies, suggest that study's figures should be treated with great caution.

Mention must me made of special household surveys directed at agriculture. For example, in Italy the Institute for Studies on Agricultural Markets (Ismea) has designed and analyzed, in collaboration with the *Microsimulation-Unit* based at the University of Verona, a survey aimed to collect data on the socio-economic conditions of Italian agricultural households and their incomes with the objective to meet the most qualified demand for information requested by the design and implementation of rural policies. A multi-topic questionnaire was designed to collect data on many dimensions of the farm and the household well-being, including consumption at the individual level, income, savings, financial wealth, governmental and intra-household transfers, education and housing. The design of the Ismea questionnaire was inspired by those in use for the collection of data on farm production (for example that used by the EU RICA-FADN), those on the consumption of household members (such as the one used by ISTAT), by the EU time budget, and by the questionnaire used by the Bank of Italy to collect data on household incomes. The final result was a set of questions very close to those

[25] Hagenaars, A. J. M., de Vos, K. and Zaidi, M. A. (1994), *Poverty Statistics in the Late 1980s: Research based on micro-data,* Theme 3 Series C, Eurostat, Luxembourg.

suggested by the Living Standards Measurement Study to assess the welfare of rural households.[26]

Taxation records*,* another potential source of microeconomic data on total personal incomes, have their usefulness hampered in many countries by farmers not being taxed on their actual incomes but according to some standard - typically dependent on farm area - or by their falling below the tax threshold. In the EU Belgium, Greece, Spain, France, Ireland, Italy and Portugal are particularly affected this way[27]. Assessment on an actual income basis can only happen if the farmers keep accounts for their businesses, and in agriculture this is by no means universal. Taxation records typically reflect tax conventions on matters like capital allowances, offsetting losses and so on, and these may not accord with the treatment appropriate for assessing personal incomes an economic context. There may also be under-reporting. Comparison of the income of farmers with other sectors of society using tax data also has to contend with the problem that, even if all the farmers are caught by the tax net, this will not be the case for many low earners in other socio-professional groups.

A more detailed country-by-country review of what income statistics for agricultural households are currently published and the potential of national data sources is given in chapter XIII of this Handbook

[26] See Castagnini, Menon, Perali (2003) DETAILS NEEDED….

[27] In the Commission's Agricultural Situation in the Community report of 1980 only 15 per cent of EUR 9 holdings kept accounts, with book-keeping being the norm only in the Netherlands, Denmark and the UK. (The percentages were Germany 9, France 5, Italy 8, Netherlands 98, Belgium 8, Luxembourg 11, UK 83, Ireland n.a., Denmark 70).