X DEFINITIONS OF INCOME

X.1 Income as factor rewards and as source of consumption spending

A distinction has already been made (Chapter VIII) between drawing up accounts relating to an activity and accounts relating to institutions, of which households are of particular interest here. This is reflected in two approaches to income in agriculture. One approach sees income as a reward that the owners of fixed factors of production receive as a result of allowing their land, capital and labour to take part in production. The other sees income as the flow of resources that households receive that may be spent on consumption and on saving.

The traditional way of monitoring the economic situation in agriculture has been by means of indicators of factor reward. These can relate to all the fixed factors (land, labour and capital) irrespective of who owns them (as reflected in Net Value Added). Alternatively, by deducting charges for hired labour, borrowed capital and rented land, only those factor rewards belonging to the farmer and other family labour are revealed. This residual is often taken to be the income accruing to farmers and the unpaid members of their households for working in agriculture and using their land and capital in this industry.

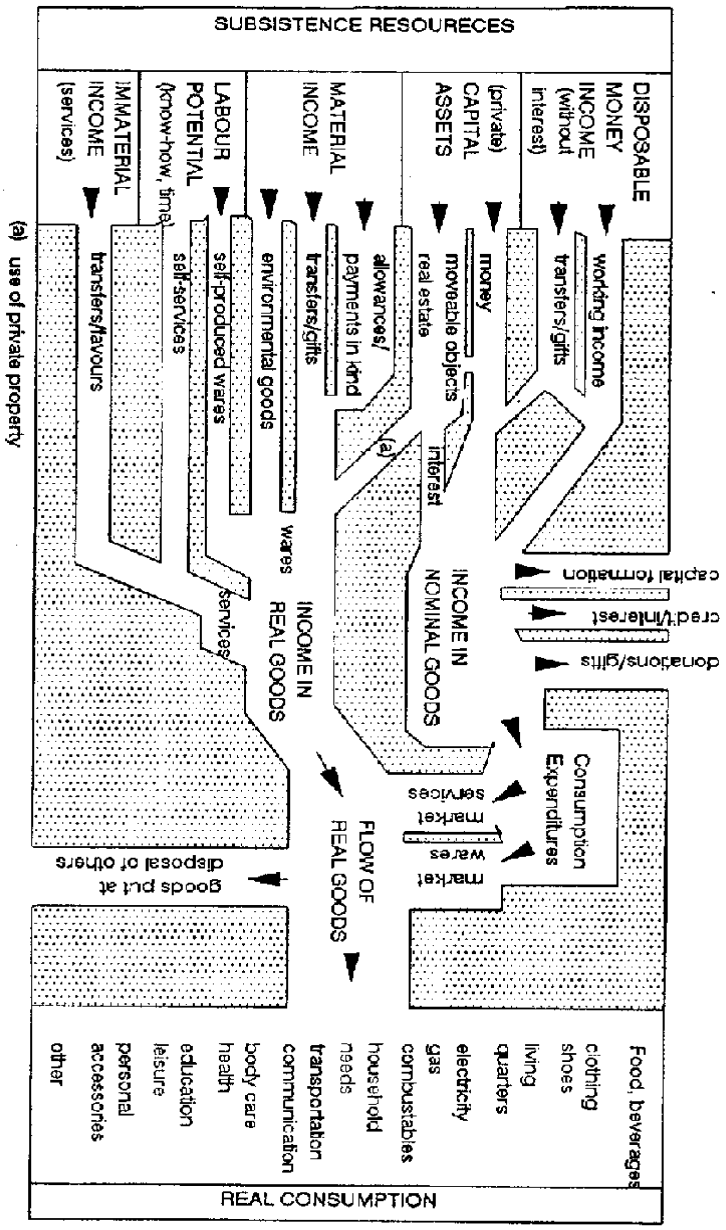
However, households that operate farms often receive, in addition to their rewards from farming, income from running non-agricultural businesses, from waged employment, from social transfers etc. It is important when assessing the welfare of agricultural households not to assume that these other sources are unimportant. Empirical evidence suggests that they can be of great significance in many countries at all levels of development (OECD, 2003). For example, in the United States over four fifths of the household income of farm operator households regularly comes from non-farm sources and in 2000 this was over 95 per cent (Mishra *et al.,* 2002). In 2000, on only 11 per cent of United States farms did the occupiers make more than half of their household income from farming. Evidence over time suggests that these other forms of income are becoming more important in many countries. However, the relative dependency on the farm for income varies widely among agricultural households, reflecting a number of factors including farm size. However, it is particularly sensitive to the definition of what constitutes an agricultural household.

Not all the resources flowing towards farm households are available for spending or saving. Some allowance has to be made for maintaining the stock of productive capital by reinvestment. In addition, some payments have to be made that are not optional or discretionary, such as direct taxation and contributions to social insurance schemes.

X.2 Relationship between household resources, income and expenditure

In considering the economic situation of agricultural households it is instructive to first take an overall view of the resources flowing to these households and the way in which these resources are used for acquiring the means for living. Figure X.1, adapted from Cecora (1986) comprehensively demonstrates the resources used to support the "subsistence" of private households.

Figure X.1
The "subsistence" of private households



Note: This figure has been redrawn and modified from Cecora (1986).

Resources take both monetary and material forms and are derived from a variety of sources (from work, from property, from private or public transfers etc.). Resources are also used in several ways, including the acquisition of consumption goods and services. It follows that this flow can be measured at various points and with various degrees of completeness. Most practical income measurement concerns that part of the flow that comprises "nominal goods" in Figure X.1. However, as will be demonstrated, some forms of income in real goods are normally included (especially the housing services provided by owned dwellings). Having said this, there is also a need to consider other activities that might be deemed to constitute part of income, such as what happens in the home, and whether resources that arrive irregularly, such as inheritances of money or assets, should be treated in the same way as regular earnings from economic activities and social benefits. It is important to remember that the assessment of income usually involves the drawing of rather arbitrary boundaries in the overall flow of resources, the suitability of which will depend on the particular circumstances.

The measurement of personal income constitutes a subset of this flow. A widely accepted definition of personal income is that given by Simons:

> *Personal income may be defined as the sum of (1) the market value of rights exercised in consumption and (2) the change in the store of property rights between the beginning and end of the period (Simons, 1938).*

It is important to note that these consumption rights include those that could be exercised in addition to those which are actually used; otherwise a high earner who spent little might be grouped with a low earner who spent everything.

Income is only numerically identical to consumption when the store of rights, in the form of savings, remains constant. We would expect the low spending high earner to accumulate savings over the period.

This notion of personal income also corresponds to that put forwards by John Hicks (1946), who described an individual's income as the maximum value he could consume during a period and still be as well off at the end of the period as he was at the beginning. The concept of income set out in the System of National Accounts 1993 (SNA93)(UN, 1993) is closely aligned with that described in Hicks. In the SNA93, the theoretical view of disposable income is defined as "*... the maximum amount that a household or other unit can afford to spend on consumption goods or services during the accounting period without having to finance its expenditure by reducing its cash, by disposing of other financial or non-financial assets or by increasing its liabilities*." (SNA93, para 8.15). It follows that increases in "the store of property rights" arising from capital gains constitute positive contributions to personal income while losses are negative items.

X.2.1 Income from self-employment

When measuring income according to the approach to personal income outlined above, the flow of resources towards households comes in three main forms:

- from gainful activities (mainly employment and self-employment);
- from the ownership of property (rent from land, interest from financial assets); and
- from transfers (mostly social transfers organized by government but also private ones, such as from family members working abroad).

Each has its own set of technical issues and it is not possible in this Handbook to explore every one in detail. However, of particular concern is the measurement of income from self-employment as, by

definition, agricultural households are involved with self-employment (independent activity) in operating a business. Depending on which definition of an agricultural household is applied, the farm business may be the only source of self-employment income, the main source or a minor source (see Chapter IX) but it will always contribute a part of the total.

For self-employed operators of unincorporated businesses income is measured by the net surplus accruing from the production process. This may be labeled **Entrepreneurial Income**. It can be formulated at its simplest as follows, based on the SNA93 (UN, 1993):

	Value of output (sales plus own consumption)
Minus	Cost of intermediate consumption (inputs purchased)
Equals	Gross Value Added
Minus	Capital consumption
Equals	Gross Value Added
Minus	Cost of paid labour (wages and other costs)
Equals	Operating Surplus[1]
Less	Interest paid and rent paid
Equals	Entrepreneurial Income

Similar formulations are used in aggregate (industry-level) and microeconomic (farm-level) accounting systems. However, there are differences of detail, such as the treatment of subsidies and the basis of valuation (market prices or basic prices). At the microeconomic level, Entrepreneurial Income corresponds to the residual profit generated by the business from its outputs after the costs of production have been met (including both the purchase of variable inputs and the rents, interest charges and hired labour costs relating to the "fixed" factors).

- Income from self-employment has some characteristics that set it apart from income from employment (after ILO, 1997). As noted above, for self-employed people who operate businesses that use assets (in contrast with those who only supply services), Entrepreneurial Income comprises a mix of returns to the fixed factors (land and capital owned by the operators and both their manual and managerial labour input). This prevents simple comparison with the income of employees, which does not contain any elements of return to capital or land.
- It is a residual, not determined in advance, which depends on the profits of the production activity. This may have implications for the practicality of measurement and data collection, as calculation is only secure once the accounting process is complete. This may be some time after the end of the period to which the income relates.
- By definition, Entrepreneurial Income includes the rewards to any unpaid labour, which in agriculture often comprises members of the farm family. The implication is that there will be some financial reward received by these unpaid workers. However, in microeconomic accounting in agriculture, a wage is sometimes imputed for non-paid labour other than the farmer and spouse (for example, a wage is deducted for sons or daughters working on the farm, even when no wage is paid or where only a nominal payment is made). This provides for greater comparability between farms operating with different proportions of hired to family labour.

[1] SNA93 describes Operating Surplus of unincorporated businesses as "mixed income". Operating Surplus is not a concept often used at the microeconomic level.

Calculating the profit from the farm business is not without areas of contention. For example, the valuation of biological assets that last beyond one accounting period (such as dairy cows or plantations) is an issue that may impact the residual income. Similarly, the estimation of capital consumption is possible in various ways (for example, valuation at historic cost, replacement cost, different assets lives etc.). When appraising investments, an *ex ante* view of capital consumption may take a different approach from that appropriate to the *ex post* calculation of income. Another approach is that an operator might be allowed to deduct from income that which is viewed as necessary for business reinvestment to maintain viability. In a dynamic environment this might be more than the estimate of capital consumption based on the existing stock and asset lives (ILO, 1997). The treatment of capital consumption (depreciation) and other conventions used in the measurement of business profits for the purpose of taxation may well differ from those that would be adopted in an economic measurement. Although accounting on an accrual basis may be the norm, some tax systems allow farmers to calculate their incomes on a cash basis (OECD, 2003). Such issues have been a concern in the development of an International Accounting Standard for agriculture (IAS 41) which is now in the process of being adopted in many countries.[2]

In estimating the residual income from farming activity for the purpose of assessing agricultural household income, a valuable resource exists in the form of the methodology developed in existing farm accounting systems. For the EU, the European Commission, in association with Member States, has developed an accounting methodology for its Farm Accountancy Data Network (FADN/RICA). Evolving since the mid-1960s, its details are now readily available.[3] A research network (PACIOLI) has developed in association with FADN/RICA (see, for example, PACIOLI (2004)). The FADN/RICA methodology includes a list of the items that lead to various income indicators, of which Farm Family Income is the most relevant in the present context; it describes the residual as "remuneration to fixed factors of production of the family (work, land and capital) and remuneration to the entrepreneur's risks (loss/profit) in the accounting year" (European Commission, 2002). Family Farm Income is similar to (but not identical with) the Entrepreneurial Income of the SNA93. As the harmonized basis for microeconomic accounting for farming, including income indicators, in 25 European countries, FADN/RICA will be influential in any international system of farm household income measurement. The equivalent survey in the United States (the Agricultural Resource Management Survey – see Chapter XII.4.1) uses a similar approach but calls its residual concept Net Farm Income.

X.2.2 Income in kind

Income in kind is a part of the rewards from self-employment. In agriculture, this issue is especially problematic because of the enhanced opportunities that farm households have to consume from the outputs or inputs of the business. In attempting to express income as a magnitude of money, it will be necessary to attach monetary values to these goods and services, the relevant question being "How much would the farm family have to pay to consume these items if they did not come in a physical income form?" The problem involves, first, identifying the non-monetary income and, second, choosing an appropriate method of valuation. Some examples of income in kind are straightforward. If a farmer's wife is given eggs in exchange for working on a neighbour's holding for a few hours each week, then these eggs clearly form part of her household's income. The method of valuing them may be open to argument, but there would be little doubt that the eggs should be included. The use of petrol paid for by the farm business but used for private

[2] IAS 41 was approved by the International Accounting Standards Committee (IASC) in December 2000 and became effective on 1 January 2003. The objective of IAS 41 was "to establish standards of accounting for agricultural activity - the management of the biological transformation of biological assets (living plants and animals) into agricultural produce (harvested product of the enterprise's biological assets)." It is anticipated that IAS 41 will become IFRS 41 under the revised framework of International Financial Reporting Standards issued by the International Accounting Standards Board (IASB). The IASB superceded the IASC in 2001. (www.iasplus.com/standard/ias41.htm)

[3] http://europa.eu.int/comm/agriculture/rica/index_en.cfm

outings would also qualify. These are both items that can be substituted by articles bought in the marketplace - shop bought eggs and petrol bought at the pumps. Others, however, are far more problematic.

Income in kind is of particular importance in an agricultural context because of the fringe benefits associated with farming. The description "fringe" is perhaps unfortunate since it gives the impression that these benefits are unimportant and might be ignored, yet it is precisely these "fringe" elements in the rewards enjoyed by farmers and landowners that those outside the industry frequently find the most attractive. Benefits such as domestic environments divorced from unwanted encroachments by noisy people and traffic, the ability to pursue space demanding activities like horse riding and the opportunity for direct involvement in the protection and conservation of wildlife seem to be precisely the attributes of farming which potential new entrants with adequate fortunes made in other businesses are keenest to secure. They are also those that are protected most vigorously when some external change, such as a motorway development, threatens them.

In an agricultural context there are two important examples of income in kind where some valuation by imputation is required. The first is the farm household **consumption of food materials produced on the home farm** (often termed own consumption). Food consumed by farm families which they grow themselves involves costs of production borne by the business (fertilizer, tractor fuel, machinery hire purchase charges and so on) which are debit items in calculating income from self-employment. In assessing the total income to the farmer from his business the value of all these own-consumption goods have to be accounted for. A way of looking at home consumption of farm production is that, in the case of any other household, the food would have to be bought for cash, so the real value of the farm household income is greater than it appears nominally by the extent of the household's own consumption. Consequently, farm families would be expected to spend less on purchased meat, milk, eggs etc. than other types of households. Choices have to be made on the method of valuation, the options being to use retail prices, wholesale (or farm gate) prices, or some estimate of the costs of production. A retail valuation was adopted by Bellerby (1956; p.57) in his seminal work on the relative income position of the agriculture and non-agriculture sectors. However, the practice in the European System of Accounts (Eurostat, 1979, 1995) in its household sector account has been to use farm gate prices, with the justification that on farms the foods consumed from own production do not receive the benefits of packaging, processing and presentation, all of which are reflected in the retail price. Though this particular income adjustment is probably of little importance when comparing the incomes of one group of farmers with other farmers, there could be a substantial impact when ranking farmer incomes against those of other groups in society.

The second example concerns the **services provided by owner-occupied dwellings**. Typically the buildings on a farm include a domestic house for the farm family. Sometimes there is more than one such building. If the house were let it could command a rent, and by occupying the house the family is in effect receiving the benefit in kind. Consequently, an imputed rental value should be added to the income of the farm household. Similar reasoning would apply, of course, to housing of other socio-professional groups who have accommodation which goes with the job or business, including clergy. Indeed, all owner-occupiers of domestic houses are receiving a flow of services in kind from their property, and a full assessment of their income should take the value of these services into account.

In addition to these two examples of income in kind that are particularly relevant in the agriculture context, a third type, applicable more generally, should be mentioned. These are **social benefits in kind**. These are the goods and services consumed by individuals that are provided in kind by the state and financed from taxation, such as health care and education. As will be seen later, the disposable income of households is sometimes adjusted by these benefits (to form "adjusted disposable income"). While for some items (dental treatment, perhaps) evaluation of these benefits is relatively straightforward because a market price exists for similar services (for example, the costs of private dentists), for others there may be no parallel market from which values can be taken, or the markets may be so marginal that the prices in them are not

satisfactorily representative of the whole. In such cases the average cost of providing these items may have to be substituted as values. Though there are practical problems of identification and valuation, these forms of income in kind should not be ignored, especially where comparisons of household income are made between countries that have different levels of state activity in the health and education sectors or over time when changes in the level of state provision take place.

X.2.3 Living costs

When comparing levels of disposable income between agricultural households and other groups, and in particular when implying that these can be used as an indicator of potential consumption, it may be important to note differences in the amount that farmers and their families have to pay for certain goods and services. Food produced on the home farm and consumed by the farm family may be (net) less expensive than if purchased from off-farm sources, and this may also apply to fuel and some land-demanding recreational activities. On the other hand the costs of other goods and services may be greater in rural areas than in urban ones, reflecting remoteness and sparseness of population. Transport costs are a particular issue; some farm households (and other self-employed people) may be able to spread vehicle expenses between production and consumption activities, whereas this may be denied to others, including both urban and rural dwellers. Thus, caution has to be exercised when drawing comparisons based on disposable income.

X.3 Individual and household incomes

The focus of the second part of this Handbook is the income of the household, which is assumed to relate to the well-being of its members. While for both practical and theoretical reasons this Handbook assumes the predominance of the household as the basic measurement unit, this section draws attention to the limitation of the whole household approach and the need for caution when using income indicators for this multiperson unit.

It is necessary to explore briefly the relationship between the household and the individuals of which it is constituted, something that bears on the validity of measuring income at the household level and, by extension, the usefulness of the resulting statistics. Much of this discussion could have as easily fitted into Chapter IX, where the definition of the household was considered.

In Chapter IX the concept of the household was based on the assumption of income pooling and shared expenditure within this unit (especially in its *single budget household* form). A feature of agricultural household incomes is that they are usually only meaningfully defined at the household level because, typically, they comprise rewards that are earned, at least in part, by members working as self-employed labour on the farm operated by the household.

However, for some purposes, it is important to know more about the economic situation of the individuals. For example, a fundamental welfare question involves knowing how much money is needed to make *each household member* as well off as they were before a change in living conditions. Compensations should be defined on the basis of *individual* rather than *household welfare.* The measure of individual income sought here corresponds to individual welfare after the redistribution of both monetary and non-monetary resources has taken place within the family.

In general, income surveys report individual measures of income. But incomes of individuals can only be measured directly when household members are the employees (i.e. not self-employed) of some third party institutional unit and provide their time to their employer at an objective market wage. Clearly, the

derivation of the incomes of individuals within farm households presents challenges because of the nature of the family operation of the income generating activity. Reconstructing the incomes of household members and consequently revealing associated individual welfare requires knowledge of individual utilities that are only derivable from the identification of the rules governing the intra-household allocation of resources.

Asking how household endowments of both goods and time are allocated within the household is an interesting behavioural question. It is also a crucial welfare issue, since measures of poverty and inequality, based on the assumption of equal treatment of family members, may grossly underestimate reality. Some members of the household may be relatively more or less poor depending on the allocation rule. Knowledge of how resources are shared within the household may be relevant, for example, to the devising of eligibility rules for benefit schemes or to ranking households in terms of the equality of the intra-household distribution process. The definition of the consumer unit (discussed in Chapter IX) is founded on the notion of including all individuals pooling a given total income. According to Seneca and Taussig (1971), determining the income unit is the most intractable problem that must be resolved in estimating equivalence scales appropriate for tax policies.

When looking at how far models of household behaviour take us in our understanding of the behaviour of households, a particular difficulty arises from the general assumption that the household acts as one entity (Imperial College, undated). Theories such as the profit-maximizing peasant (based on neo-classical theory); the risk-averse peasant; the drudgery-averse peasant (Chayanov and Nakajima models); and the farm household peasant (Barnum-Squire, and Low models) have two common assumptions, namely that the household acts as one decision-making entity, and that its objective is to maximize something, whether profit or utility. In other words these theories assume that the household has a single utility function and that the utility of each individual household member is integrated into this single function. This assumption poses a number of problems. Traditional models describing household decisions in a unitary fashion are inadequate to properly describe the intra-household decision process.

On the other hand, the collective models of household behaviour, which try to take account of the objectives and behaviour of individual members of the household by relaxing the assumption that the household acts as one decision-making entity, enable a discussion of intra-household relations and gender issues to take place (Imperial College, undated). The collective representation of family behaviour (Chiappori, 1992), where each family member is characterized by a utility function and decisions are assumed to be Pareto efficient outcomes, is appropriate since it makes the intra-household decision process endogenous. Chiappori's "collective approach" permits the estimation of individual incomes and the associated utility levels of individual household members. In welfare terms it would be possible to determine how much money is needed to make each household member, be it an adult or a child, as well off as they were before the change. It would then be appropriate to refer to inter-personal rather than inter-household comparisons. Further, the knowledge of the welfare levels of *individual household members* makes it possible to account for gender and inter-generational differences in the evaluation of policy impacts. Ultimately, it would be possible to answer fundamental questions such as whether it is better to be a poor child in a rich household or a rich child in a poor household.

Income statistics are usually computed without using knowledge about the intra-household allocation of goods and power and without giving special consideration to the fact that goods that are private at the aggregate household level are public within the household (Gronau, 1988, 1997). This knowledge, though deducible (Deaton, 1988; Gronau, 1988; Chiappori, 1992), is usually constrained by the fact that only information at the household level is available in expenditure surveys. The neglect of intra-household inequality may have consequences for the measurement of society's level of poverty and inequality (Haddad and Kanbur, 1990), or it may generate paradoxical results of the type reported by Glewwe (1991) according to which transfers from the poor to the rich could decrease inequality.

In this regard, Sen (1983) points out that "A much more articulate family welfare function is needed to relate the collection of unequaled levels of well-being of family members to an aggregate measure for the family as a whole. This will, of course, involve a "mini social choice problem...". The approach of "equivalence scales" "…has to be integrated more fully with *intra-family allocation* and theories of aggregation of unequal well-beings." Gronau (1997) reinforces this point by asserting that "... the effect of children on consumption patterns depends on the intra-household redistribution of resources and consumption technology, and that in discussing "children welfare indices" (which adult equivalence scales presume to be) one has to ask: *whose welfare do we have in mind*?".

In general, the households living in poverty have a single income earner. These households often live in disadvantaged areas where job opportunities are scarce, especially for low skill workers. The degree of dependency of the household upon the resources brought home by the primary breadwinner, generally a male, varies with the life cycle of the family and across social strata. In these households, the dependency upon the income received by the single worker implies that the welfare of the members depends upon the man's allocation rule of his wage among personal expenses and expenses for the care of the dependent members of the household and the housekeeping budget, generally handled by his wife. This is not always either a smooth or a fair division.

Because the distribution patterns of wages within the family is an informal matter that has not been adequately studied, it is difficult to know which pattern of wage allocation prevails across the households of different societies. According to Seccombe (1993), three broad variants may be distinguished: 1) altruistic, 2) fair, and 3) egoistic and despotic. In the altruistic model, men hand the salary in its entirety to their wives while keeping a modest amount for personal needs at their spouses' discretion or by mutual agreement. Within the fair model, probably the dominant pattern, the working men hand over a housekeeping allowance, colloquially known as the wife's 'wage.' In poor households, in a relative sense, when the allowance barely covered the regular weekly expenses of food and rent, it was almost impossible to set aside funds for children's boots, new clothes or unexpected medical bills. In the egoistic and despotic variant, extremely pernicious but not uncommon, the cash wives obtained was a random residual corresponding to the amount left over after their *callous* husbands had satisfied their wants: visiting the pub or betting shop. Working men who '*drank their pay*' caused serious negative externalities to the other members of the household.

Finally, in this section we turn to the implications of the relationship between individual and household incomes for data systems. The implementation of the collective approach to the analysis of the household enterprise, permitting the recovery of individual behaviour and welfare levels, requires the collection of information about the private consumption of goods and time use. This information is crucial when the policy analyst is interested in gender issues or the well-being of children. Social accounting matrices, both at the household and society level, can maintain the gender or adult/children differentiation, thus permitting the analysis of intra-household distributive issues. The researcher responsible for the questionnaire design should therefore ensure that the information outlined in Box X.1 is included. On a practical level, the degree of detail and the recovery of incomes of individuals to which it gives rise can enable datasets to be linked where, for example, some are on an individual basis and other use the household as the basic unit.

Box X.1
Recommendations to data systems for implementing a collective approach

The questionnaire design should provide for the following information to be collected:

Consumption spending and Labour
- Clothing for male, female and children, toys, school material and other education expenses, baby food, personal care items, alcohol, tobacco.
- Individual specific time-use.
- Off-farm work opportunities and wages.

Income and wealth
- The sources of non-labour income should be assigned, when possible, to each household member.

Production
- Who does what in the farm and in the household, distinguishing, when possible, the activities Undertaken by the father, mother, children, other adult members of the household and hired labour.

X.4 Shadow wage and the non-observed economy

Income of agricultural households, in the sense used so far, is a hybrid of factor rewards (to physical and intellectual labour input, to the other fixed factors – land and capital – owned by the farm household) and transfers of various kinds. In conventional accounting systems, "unpaid" family labour does not usually appear as an explicit cost of production. Consequently there is no explicit "wage" paid to the labour that the farmer and his family for their contribution to production. Yet the decisions made at household level on how to allocate labour to agriculture and other activities will reflect the implicit reward ("wage" or "income") in alternative uses and from using time for leisure.

The shadow evaluation of family labour can be estimated using three different approaches.

Accounting approach: the value of family income can be obtained as a residual, subtracting from net income the remuneration of all other factors of production. The remuneration of land can be taken as either its rental value or it can be imputed adopting an interest rate (typically greater than 2%). The cost of using owned operating capital could be evaluated by applying the prevailing rate in the credit market. Individual labour implicit wage income is then obtained by dividing the residual by the number of household labour units. Note that this criterion compensates both the physical and intellectual labor. Furthermore, labour is evaluated uniformly across working family members.

Objective market wage under competitive conditions: this approach evaluates an hour of household labour at the prevailing market wage supposing that the labor market is at a competitive equilibrium and the farmer is indifferent between working in the farm and in the off-farm market. In this situation, the subjective evaluation (by the farmer) and the objective evaluation (from the market) of the opportunity cost of working inside or outside the household coincide. This "opportunity cost" approach may differentiate the contribution of the different working household members when accounting for the individual characteristics such as age, sex, education, and location of the farm as a proxy for off-farm market conditions within an econometric estimation (Huffman, 1996). The derived wage corresponds to the

potential compensation that a farmer endowed with a specific level of skills could have potentially obtained if he/she had found off-farm employment.

Shadow wage: when labour markets are not competitive, as it is often the case in both developed and developing countries, the family "unpaid" labour can be evaluated as the marginal product of labour, corresponding to the subjective evaluation of the disutility associated with an extra hour of work. This approach requires the estimation of a production or a cost function from which the marginal productivity can be evaluated. It is important to realize that the application of this approach implies the following assumptions:

Assumption 1. *The farm household economy is non-separable*[4].

Assumption 2. *Adult (and child) family labour are quasi-fixed factors in the short run.*

The knowledge of shadow wages is fundamental in order to explain individual labour choices. Farmers decide to work on the farm by comparing the shadow wage with the market objective wage, when the subjective perception of the probability of finding a job, either in agriculture or in other sectors, and the objective probability of being hired are equal to 1. If subjective and objective probabilities diverge, then the proper wage comparison is between shadow wages and expected market wages which thus incorporates information about the probability of finding a job conditional on the level of education, age, experience and, more generally, skills of the farmers.

Shadow wages from agricultural activities can be estimated on an individual basis if data are collected *about who does what in the farm*. Still, the derivation of individual incomes incorporating also an assessment of the change in the household's net worth during the accounting period requires that non-labour income is assigned to each household member given the knowledge of the rule governing the allocation of resources within the household. Note that the shadow wage approach is often the only one available when evaluating child labor.

In developing countries child labour may represent an important component of the input to the production of agricultural commodities and a source of income to the household as a whole. There may be a requirement to estimate the shadow wages of this child labour. This is a specialist issue that later versions of this Handbook may wish to develop.

X.5 Various income concepts and relationships between them

The accounting frameworks in which income measurement normally takes place, described in Chapter XIII, draw a somewhat arbitrary border around the items that are included. Flows from market activities are included, whereas non-market ones (including unpaid domestic work by household members) is not. This was also apparent from Figure X.1 (from Cecora, 1986) where it was clear that only some flows of resources towards households are measured. The definitions of income that are recommended in this

[4] Under separability, the general equilibrium program of the household is recursive. Production decisions are not affected by the household's endowments, preferences, characteristics or decision processes. On the other hand, consumption decisions are affected by production choices since profits are part of the budget constraint. However, under non-separability implies jointness in decision-making. This can happen when the same input, such as time, is shared across the household and home production processes, and in the presence of home consumption of the household marketable product. Under these conditions, farm production and household consumption decisions are non-separable and leisure/labour demand on the household is not independent from the on-farm demand of family labour.

Handbook do, for practical reasons, mainly respect conventional accounting boundaries. For agricultural households this flow of resources will come not only from independent (self-employed) activity on the farm, but also from other types of self-employment, from wages, from property (rents and interest) and in other money (or near-money) forms. Some imputed items are within the conventional boundary (especially the imputed rental value of owner-occupied dwellings). Various formulations of these flows are possible (for example, cash flow, total household income, disposable income etc.). This will be dealt with later in this Chapter. Information about off-farm paid employment permits the derivation of total and disposable farm household income (Hill, 2000; Eurostat, 2002; OECD, 2003; Smeeding, 1997; Smeeding and Weinberg, 1998).

However, it is worth noting that other concepts of income exist that, in some circumstances, may be preferable. This section illustrates the methodology used in computing extended income and full income, both at the household and individual level, for a sample of Italian farm households and compares the distribution of these incomes across genders.

X.5.1 Extended and full incomes

The notion of extended and full incomes is important both to understand differences in family organization and to describe how households respond to policy changes by reallocating labour among the farm, the home, and the off-farm opportunities.

The family portfolio of labour choices includes not only gainful activities but also employment in domestic activities. This form of self-employment is valued at the "unpaid" equilibrium shadow wage, and, if a competitive environment is assumed, corresponds to the opportunity cost of time. The incorporation of this implicit source of income in the computation of household incomes gives the *extended* income (Lazear and Michael, 1988; Jenkins and O'Leary, 1996; International Research and Training Institute for the Advancement of Women (INSTRAW), 1996). The sum of extended income and the value of leisure time forms the Beckerian notion of *full* income (Becker, 1981).

According to Becker's (1965) definition of full income, there is no distinction between an hour spent on pure leisure and an hour spent looking for job opportunities. Jenkins and O'Leary (1996) suggest that this may be a problem if one considers the case of involuntary unemployed people as well. As a consequence, most of the studies on full income restrict the estimation to extended income by setting the value of leisure to zero. However, because the members of farm households can allocate their working time with certainty on the farm, it is plausible to assume that there is no involuntary unemployment. Therefore, pure leisure of farm households can be taken as genuine leisure (Wales and Woodland, 1977). In view of the certainty of being able to work on one's own farm, the opportunity cost of time devoted to pure leisure can assumed to be equal to the implicit on-farm earnings. Jenkins and O'Leary (1996) stress that it is implausible to set the value of leisure time equal to the market wage rate.

A more detailed consideration of extended and full income is given in Annex 7.

X.5.2 The importance of time to income measurement

Income is a flow concept rather than a stock. The notion of a time period over which income is received and measured is integral to the concept and is explicit in the Simons definition of personal income. However, there is no specific period over which income must be measured. By convention, a year is commonly taken as the relevant accounting period; this is not sacrosanct and there may well be other lengths of time which are more appropriate for particular circumstances. Importantly, it is unlikely that a detailed

definition of income which is appropriate for one length of time will be equally appropriate for a shorter or longer period.

Looking back over a lifetime and assessing the personal income of a farmer, a full assessment of the personal income could take a very broad view. Not only would the income in cash and kind be covered, but also any capital gains or losses would need to be ascertained. This *ex post* view of income is related to the notion that consumers, in this case farmer households, can have a longer-term expectation of their income, which would encompass all income forms, and on which their consumption pattern is determined - the "Life Cycle - Permanent Income Hypothesis" put forwards by Freidman (1957). This is dealt with in greater detail in the following section. Here it is sufficient to note that, while little work has been done on the relationship between spending and perceived incomes of a longer-term nature in agriculture, evidence on the personal expenditure of farmers (using data from Denmark and Norway, referred to in Hill (2000), suggests that they do not substantially adjust their annual consumption to accommodate shifts in the profits generated by their farms, at least not within the same accounting period.

There are well-established empirical links for the population as a whole between age and income. Low yearly incomes are found particularly among the young and elderly, and higher levels somewhere in the middle. Farmers as a group tend to be relatively old compared with the rest of society. On an annual basis some of these older farmers would have a low-income, but in former times their earnings may well have been substantial. Their present position might simply reflect changed priorities and the assurance of accumulated savings and other forms of wealth. In other words, their ability to consume may be quite adequate. Taking a longer view would reduce the inequallity of incomes within the farming community. This is a conclusion applicable to many occupations but it is particularly appropriate in farming where quite large year-to-year variations are regarded as normal (Atkinson, 1975).

The longer the period chosen, and the more disparate the groups for which comparison is required, the broader the income concept needed for a satisfactory outcome. In the shorter term it may be appropriate to narrow the definition of income to suit the problems in hand. Much of the purpose for income policy, and therefore of income measurement, hinges on poverty (an issue tackled in more detail in Chapter XI). In this situation it may be satisfactory to put on one side those constituents of income that do not, in the short run, impinge significantly on the amount of cash a household has to meet its immediate needs. Thus capital gains and imputed rental values might be excluded.

Another aspect of time and income measurement, even when the conventional period of a year is used, concerns the way that transactions relate to the period in question. Financial years covering twelve months may, in principle, start at any point in the calendar, though surveys of accounts (such as the EU's Farm Accountancy Data Network - FADN/RICA) would clearly prefer their cases to share a common year-end (or a narrow band of year-ends) as a wide spread makes interpretation more difficult. In agriculture, the production cycle has often led to a crop-year being used. However, adjusting across different crop-years to fit the calendar years used by national accounts can be a source of rather arbitrary year-on-year variation. Data for the different types of income received by agricultural households may not be available on a consistent basis. Perhaps more significant is the preference, both within the SNA93 for national accounts and the recommendations of the Canberra Group for microeconomic measurement, for income accounting to be undertaken on an *accrual* basis (that is, when payments become due) rather than on a *cash* basis (that is, when the payment actually arrives). The difference in results for a particular year can be quite significant. However, in practice it is likely that data on many items are only available on an actual receipts (and payments) basis and thus not in accord with the accruals rule. Estimates of both total income and disposable income are likely to contain both accrual based and cash based income and be unavoidably hybrid in nature, something that must be borne in mind when interpreting them.

X.5.3 Lifetime income and permanent income hypothesis

While **life cycle theory** centres more on the explanation of the relationship between age, saving and the creation of wealth, **permanent income theory** is more concerned with the dynamic behaviour of consumption, particularly in relation to average or expected incomes. In this framework, consumption is the annuity value of current financial and human wealth. The dynamic features of consumption captured by the Life Cycle Permanent Income hypotheses, framed within the economic theory of the household (Becker 1981; Kooreman and S. Wunderink, 1997), are very useful in understanding the trade-off between current and future benefits or costs, with a special emphasis on the cultural and socio-economic determinants of subjective discount rates.

The relatively stable consumption of farmers in the face of fluctuating incomes, noted in the previous section, can be expressed more formally within the Life Cycle Permanent Income Hypothesis. This can be formulated as an observation that the farmers' marginal propensity to consume is high in relation to the level of permanent income and negligible in relation to the level of transitory income because individuals tend to smooth consumption uniformly during the life cycle. In other words, consumption choices are based on the possibilities available according to the personal income stream and level of wealth expected over the whole life cycle.

In general, current consumption is affected by the personal rate of inter-temporal preferences (which leads to anticipated consumption when high), and the interest rate that can be earned from savings (which makes an individual more patient and less prone to consume today rather than tomorrow). The price of consumption tomorrow relative to consumption today is the discount factor, which can also vary subjectively according to the personal degree of impatience.

According to the life cycle theory, saving behaviour and the evolution of the stock of assets depends on personal tastes, life cycle needs and the value of lifetime resources, but is not determined by the temporal pattern of life cycle labour income. If young households' income is low, but is anticipated to be higher later, it is not rational to stop higher consumption, because this is facilitated by the ability to borrow.

In general, the accumulation of savings is also strongly motivated by precautionary motives (both against ageing and uncertain prospects) and bequest motives (Deaton, 1992). Cautious households tend to save more in early life than would be predicted by the permanent income hypothesis. Economic uncertainty and unanticipated shocks affect the consumption plan of individuals differently depending upon the myopic or forward-looking attitude of consumers and the presence of liquidity constraints (Hall, 1978; Flavin, 1985; Zeldes, 1989). The more binding the borrowing restriction, the closer consumption follows the income path. Younger cohorts especially feel the stringency of this constraint when they are forced to limit borrowing designed to sustain current consumption even when they have the prospect of high future incomes.

For the Life Cycle Permanent Income Hypothesis to work in developing countries, credit markets needs to be sufficiently developed and must function properly. Consumption credit is especially important where access to capital markets is rationed (Eswaran and Kotwal, 1989). The existence of credit rationing that is proportionate to the land endowment of the farm household results in unequal access to the credit market. This fact explains why access to credit can be an important factor both in determining the levels of permanent incomes and in shaping the process of formation and differentiation of rural classes. These processes manifest themselves differently according to the economic, social and institutional situations specific to each society. For example, in societies where private property is a well-established institution but land redistribution is a central to agrarian reform, such as in many Latin America countries (including Peru, Nicaragua, Ecuador, Chile and Brazil), the differentiation of rural classes dominates the process that leads to the formation of new classes. On the other hand, in former socialist economies that are in transition (many in

Eastern Europe, Syria and Tanzania), it is more likely to observe the formation *ex novo* of rural classes. These aspects are not trivial, because for every class (characterized by specific combinations of wage incomes and wealth) there is a particular pattern of accumulation and formation of permanent incomes throughout the life cycle and highly differentiated behaviour with respect to precautionary motives and liquidity constraints.

Under conditions of uncertainty and credit rationing, risk-averse farmers are exposed to a higher volatility of production and household incomes. Farm households need to smooth consumption through time, using consumption credit as a form of insurance to assure the sustainability of the household. They may also use this credit to invest in new technologies that promote the growth of both production and household incomes as a consequence of the fact that production and consumption decisions are not separable within a farm household. The poorest farm households, experiencing difficulties in managing the farm and household risks because of lack of access to consumption credit and, consequently, to new technologies, are often forced to over-exploit local natural resources. These households are often compelled to move towards marginal lands with high ecological vulnerability or to extend the arable frontier at the expense of forest, causing land degradation and other ecological problems.

Interestingly, consumption can be "financed" both through the credit market and the labour market. In the latter case, this takes place through the "lending" of the farmers' time to take advantage of off-farm job opportunities. Since wealth influences the access to the credit market, this in turn affects the participation in the off-farm labour market and investments in the farming business (Serra *et al.,* 2003). Recent evidence shows that off-farm labour can be negatively associated with the accumulation of farm capital and the relative importance of farm incomes in the formation of the permanent income of the household (Ahituv and Kimhi, 2001). Interestingly, more educated farmers are able to work off the farm and still maintain a capital-intensive farm enterprise by enjoying easier access to the credit market.

X.6 Subsidies, preferential tax treatments, and income measures

Agricultural households in developed economies are the recipients of major amounts of what are commonly called "subsidies." These encompass both direct payments by the government (financed by taxpayers) and market interventions (involving transfers from consumers). In less developed countries transfers may flow in the other direction. When assessing income it is important that these resource flows are adequately captured. Transfers in the form of monetary payments made direct to agricultural households, or where they are reflected in enhanced market prices of outputs and lowered costs of inputs, are reflected in the measures of income produced by conventional accounting systems. Where they take the form of concessions in direct taxation, these tax "expenditures" will be reflected in lower deductions and thus in the level of disposable income. There remains the possibility that benefits are given that fall outside the accounting system, and these may be important when attempting to compare the economic well-being of agricultural households with those of other socio-professional groups, or between farm households in different countries.

The System of National Accounts (SNA93), which provides the conceptual framework for much of this Handbook, takes a somewhat narrow approach to what is considered to be a subsidy, and this is carried over to accounting for agricultural activity and for agricultural households. The SNA93 defines subsidies (D.3), as "current unrequited payments that government units, including non-resident government units, make to enterprises on the basis of the levels of their production activities or the quantities or values of the goods or services which they produce, sell or import" (para 7.71). Payments linked to capital (such as grants to encourage investment) are not taken into account when measuring income in the household sector of national accounts, though they are in some microeconomic systems (such as the EU's FADN/RICA survey

of farm businesses). The treatment of social benefits in kind provided free or at reduced costs to agricultural households (for example, special education for farm families) may not be satisfactorily identified or evaluated. While concessions on current taxation will be reflected in disposable income, special treatment on the taxation of transfers of agricultural land, particularly, between generations, may be important to the assessment of income measured over the longer term but will not show up in current accounting and residual income indicators (OECD, 2004).

The measurement of income should take into account the possibility that elements of this type may exist, and consideration should be given to whether steps need to be taken to include them.

X.7 Definitions in use

In considering the definition of income to be used in analysing the income situation of agricultural households it is useful to review existing practice. Examples can be found at both the level of national accounts and at the microeconomic levels. The differences of approach towards accounting and income measurement result in differences in definition. This is well expressed in a passage from Section 2.2.1 of the Report and Recommendation by the **Canberra Expert Group** on Household Income Statistics (Canberra Group, 2001).

> *"The macro-analyst is interested in the aggregate of household income as it fits into the macroeconomy as a whole, and approaches its construction in a top-down manner. Previous attempts to update the existing international guidelines on income distribution (UN, 1977) to bring them into line with the 1993 SNA have categorised income according to the type of transaction which gives rise to the flow without regard to the medium in which payment is made. The sequence is basically to measure first income generated in the course of production, then to allow for distribution of property income thus arriving at a concept called "primary income." The next stage is to account for current transfers, widely interpreted, and thus arrive at "disposable income." This is either spent on consumption or saved. Saving is used either to finance investment or leads to net borrowing or lending.*
>
> *Exhaustiveness of the definition is also very important to the macro-analyst, as is its consistency with the definitions of income of the other institutional sectors: no theoretical gaps can be left unfilled, even if in practical terms imputations and estimations have to be widely employed when actually compiling the statistics.*
>
> *The micro-analyst on the other hand is primarily interested in the measurement of income distribution. Conceptually, this means that the definitions are driven mainly by what the individual perceives to be an income receipt of direct benefit to him or herself, which results in a bottom-up approach to the construction of a definition. The means of payment is a major discriminatory factor and the rationale behind the payment is subsidiary. Practically, definitions have also to be constrained by what it is feasible to collect in household surveys or what is available at the household level in relevant administrative sources. In fact these two considerations – the conceptual and the practical – will usually result in the same choices, since if individuals perceive a receipt to be of direct benefit to them they are much more likely to be able to provide reliable data on it."*

As part of its plan to harmonize methodology across the EU Member States, Eurostat has developed the **Income of the Agricultural Households Sector (IAHS) statistics.** This provides a definition of income to be used when estimating the incomes of agricultural households (Eurostat, 1996). However, this definition is based on national accounts methodology and consequently contains some facets that are

inappropriate when applied at the farm household level. In contrast, the methodology recommended by the Canberra Group for microeconomic work using household-level data is primarily intended for application in the study of income distribution, including poverty, and the emphasis is on income as a means of improving *current* economic well-being, as reflected in the ability "today" to consume goods and services. Resource flows that result in the ability to consume "tomorrow", such as employer contributions to pension funds, interest accumulated by these funds, and capital gains, are not usually seen by households as affecting their ability to consume "today" (indeed, they may be unaware of them) and are thus of less concern to microeconomic statisticians. Moreover the Canberra Group's income definition is not specifically designed to suit the rather special characteristics of agricultural households. Households whose principal income source is wages dominate the households sector in industrialized countries in terms of numbers, and the Canberra Group's approach reflects this. In contrast, agricultural households by definition are involved with income from self-employment, heavily so when a narrow definition of what constitutes an agricultural household is adopted. Income in kind is particularly significant to farm households and, while being of special importance to farmers in less developed countries, is by no means insignificant in richer countries, especially to those occupiers whose main purpose is orientated towards lifestyle or hobby agriculture. The subsistence production on private household plots of workers in large-scale agricultural enterprises in some of the countries with formerly collectivised (socialized) agriculture practices are another example of the importance of output for own consumption and income in kind.

The headings of the various items of the IAHS definition of disposable income are shown in Figure X.2. For a detailed treatment of each item, reference should be made to the IAHS Manual of Methodology (Eurostat, 1996). An equivalent outline of the definition adopted by the Canberra Group in microeconomic (household level) studies is shown in Figure X.3, slightly rearranged from the source document to ease comparison and to reflect the importance of income from independent activity (self-employment) in the present context. Detailed descriptions of the various components in this definition appear in Appendix 1 of the Canberra Group's report. It should be noted that some items appear in the IAHS definition under unexpected labels. A good example is where, following the sequence of accounts for the households sector in national accounts, the resources from agricultural and other independent (self-employed) activity are shown as Operating Surplus (NVA less the costs of hired labour) rather than Entrepreneurial Income or profit from the unincorporated business (which also deducts rent and interest paid). In the strict national accounts/IAHS definition rents and interest are deducted under a later item (negative property income), which includes interest for private consumption loans as well as for agricultural purposes.

Figure X.2
Net Disposable Income in Eurostat's IAHS statistics

The concept which forms the centre of the IAHS sector-level income measure for agricultural households is **net disposable income**. It is defined as follows:

(1) Net operating surplus (mixed income)[5] from independent activity:

- (a) From agricultural activity
- (b) From non-agricultural activity
- (c) From imputed rental value of owner-occupied dwellings

(2) Compensation to members of agricultural households as employees, from agricultural and non-agricultural activity

(3) Property income received (rent, interest, dividends etc.)

(4) Non-life insurance claims (personal and material damage)

(5) Social benefits (other than Social benefits in kind)

(6) Miscellaneous inward current transfers

(7) Total resources (sum of 1 - 6)

(8) Property income paid

(9) Net non-life insurance premiums

(10) Current taxes on income and wealth

(11) Social contributions

(12) Miscellaneous outgoing current transfers

(13) Net disposable income (7 minus 8 - 12)

(14) Social transfers in kind

(15) Net adjusted disposable income (13 plus 14)

[5] Under the new SNA (1993)/ESA (1995), operating surplus and mixed income are alternative names for the same balancing item. Mixed income is the term used in the context of unincorporated enterprises owned by members of households in which the owners or other members of their households may work without receiving any wage or salary. Though farms are usually of this form, for the purpose of the TIAH methodology the term operating surplus is used for this item; this is done to avoid potential confusion between mixed income and other microeconomic income concepts in which interest and rents have already been deducted.

Figure X.3
Definitions of income (microeconomic) by the Canberra Group (2001)

2 Income from self-employment
Cash or near cash
2.1 Profit/loss from unincorporated enterprise
2.2 Royalties
In kind, imputed
2.3 Goods and services produced for barter, less cost of inputs
2.4 Goods produced for home consumption, less cost of inputs
2.5 Income less expenses from owner-occupied dwellings

1 Employee income
Cash or near cash
1.1 Cash wages and salaries
1.2 Tips and bonuses
1.3 Profit sharing including stock options
1.4 Severance and termination pay
1.5 Allowances payable for working in remote locations etc, where part of conditions of employment
Cash value of 'fringe benefits'
1.6 Employers' social insurance contributions
1.7 Goods and services provided to employee as part of employment package

3 Rentals
3.1 Income less expenses from rentals, except rent of land

4 Property income
4.1 Interest received less interest paid
4.2 Dividends
4.3 Rent from land

5 Current transfers received
5.1 Social insurance benefits from employers' schemes
5.2 Social insurance benefits in cash from government schemes
5.3 Universal social assistance benefits in cash from government
5.4 Means-tested social assistance benefits in cash from government
5.5 Regular inter-household cash transfers received
5.6 Regular support received from non-profit making institutions such as charities

6 *Total income* *(sum of 1 to 5)*

7 Current transfers paid 2.4.3.1
7.1 Employers' social insurance contributions
7.2 Employees' social insurance contributions
7.3 Taxes on income
7.4 Regular taxes on wealth
7.5 Regular inter-household cash transfers
7.6 Regular cash transfers to charities

8 *Disposable income* *(6 less 7)*
9 Social transfers in kind (STIK) received

10 *Adjusted disposable income* *(8 plus 9)*

In contrast, the Canberra Group's microeconomic definition deducts such payments at an early stage to reach the profit/loss from the unincorporated business run by the household. Within this income from self-employment there are some non-cash elements identified separately in the microeconomic measure that are already subsumed in the aggregate approach in the calculation of operating surplus. The main examples of unexpected items in this current account are the receipt of (non-life) insurance claims as a resource and the payment of insurance premiums as a negative item. In microeconomic accounting the former (for example, compensation for the loss by fire of a tractor) would normally be placed among the capital accounts, and the cost of insurance premiums would be treated as a cost in reaching the profit (income) from the business operated by the self-employed person. Some sub-items (not apparent from the headings in IAHS definition) are included in the national accounting approach to maintain the integrity of inter-sectoral transfers; non-cash benefits imputed to holders of insurance policies because of the performance of invested funds are an example. Similarly some items in the miscellaneous transfers category (on both the positive and negative sides) contain elements that would be regarded in microeconomic accounting as payments out of disposable income rather than items to be deducted in its calculation. As already noted, the national accounting framework requires transfers from households to charities and other non-profit institutions such as churches to be seen as leaving the households sector, so leading to their treatment as negative items. A different view is taken in microeconomic accounting, where such payments may be deemed to be made out of disposable income rather than to be deducted. A key issue seems to be the extent to which these payments are regarded as voluntary or non-voluntary. The latter might include trade union dues where membership is required (formally or *de facto*) in order to undertake a particular line of business.

Despite such differences there are broad similarities between the two in the general structure of what constitutes income, both in total and disposable forms. Both include cash (or near-cash) payments and non-cash elements. Non-cash elements pose difficulties of identification and valuation and, in particular, there is often a lack of suitable basic data by which quantification can take place. Both include the value of the services provided by owner-occupied dwellings, a particular example of a non-cash form of income. Both provide for two types of disposable income (unadjusted and adjusted). The adjustment factor is 'social transfers in kind', such as education and health services that the state finances and provides free at the point of delivery to individuals and households.

Neither the IAHS nor microeconomic definitions are entirely suitable for practical use in their complete forms. Bearing in mind both the conceptual problems associated with some of the items and the practicalities of attempting to make international comparisons in income distributions, accumulated through the work of the Luxembourg Income Study (LIS), the Canberra Group recommends a somewhat simplified form of disposable income for use in studies of income distribution where different data sources are used and international comparisons are required (see Figure X.4). This simplified approach omits some of the imputed components and some that are of an ambiguous nature. In particular, it omits the value of Social Benefits in Kind (SBIK), and thus does not attempt to estimate an adjusted net disposable income. Imputed items are much reduced, including the removal of the value of owned dwellings. The list of miscellaneous transfers is much simplified, only retaining those benefits that are obvious transfers from the state and those which constitute regular receipts from other households and charitable institutions. Among the payments, only those that are wholly or largely non-voluntary remain in the coverage; regular inter-household negative transfers are left out.

Figure X.4
Canberra Group recommended components of a simplified definition of disposable income

1	**Employee income**
	1.1 Cash wages and salaries
2	**Income from self-employment**
	2.1 Profit/loss from unincorporated enterprise
Inputed income from self-employment	
	2.4 Goods and services produced for barter, less cost of inputs *
	2.5 Goods produced for home consumption, less cost of inputs *
3	**Income less expenses from rentals, except rent of land ****
4	**Property income**
	4.1 Interest received less interest paid
	4.2 Dividends
5	**Current transfers received**
	5.1 Social insurance benefits from employers' schemes
	5.2 Social insurance benefits in cash from government schemes
	5.3 Universal social assistance benefits in cash from government
	5.4 Means-tested social assistance benefits in cash from government
	5.5 Regular inter-household cash transfers received
6	***Total income (sum of 1 to 5)***
7	**Current transfers paid**
	7.2 Employees' social insurance contributions
	7.3 Taxes on income
8	***Disposable income (6 less 7)***

* Not included in LIS DPI.
** Included in property income in LIS DPI.
Source: Canberra Group (2001) Table 4.1.

This Canberra Group's simplified list forms a useful template for estimating the income of agricultural households. Most of the simplifications are helpful when applied to agricultural households as a subsector. For example, experience in the IAHS statistics suggests that very few countries are able to estimate SBIK for agricultural households other than to distribute the aggregate for the entire households sector in a rather arbitrary way, such as per head, something for which there is little empirical support. The removal of many inter-sectoral transfers accord with what many Member States have done when supplying IAHS results to Eurostat. So too is the reduction of items in the miscellaneous inward transfers category to state payments and other regular transfers. Nevertheless, certain modifications to the Canberra Group's simplified definition seem appropriate to suit the special circumstances found in agriculture. A revised definition is proposed in Figure X.5. The main differences are shown in *italics.* However, where the amplification is simply a disaggregation of a total, this is not flagged.

Two changes to the Canberra Group's simplified list are introduced. The first relates to the inclusion of an imputed rental value of the farm dwelling (and equivalent treatments of the dwellings of other socio-professional groups if comparisons are to be made). The reasons for including this item are that (a) empirical evidence shows that it can be important in some countries to the overall level of income; (b) in some farm accounts surveys provision already exists for its calculation, so many countries will already have

experience in making the estimates; (c) most EU Member States have made calculations as part of their submissions of IAHS results to Eurostat. The second change is a more specific mention of the value of income in kind from self-employment. It should be noted that income in kind from employment is not covered; only cash income is included in the form of wages and salaries. The fact that some countries may find it difficult to provide data for one or other of these items is a handicap but not an insurmountable one. The Canberra Group notes that, as long as items are detailed separately, it is possible to make comparisons between countries or sub-sectors by omitting items for which there is poor coverage.

A third change was considered but has not been implemented. This was the deduction in reaching net disposable income of other regular negative transfers (in addition to taxes and social contributions) by the members of agricultural households as self-employed people or as employees of other businesses. This mirrored the treatment of regular outward transfers and maintains a degree of symmetry. However, this item was ruled out because of impracticality over identification and measurement.

This Handbook recognizes the simplified definition of disposable income shown in Figure X.5 for application to income measurement of agricultural households. When presenting results, information should be available for the separate items shown in this definition.

Figure X.5
Recommended definition of net disposable income for application to agricultural households

Net income from self-employment (money income and in kind)

Net income from self-employment (operation of unincorporated businesses, or incorporated businesses that can be treated as *quasi* unincorporated because of family operation and ownership) after deduction of intermediate consumption items, interest on business loans, rents on land and business property, and a depreciation allowance for capital consumption. This will include net profit or loss in money form and the value of other income in kind, such as the value of output used for barter and for own-consumption, net of cost of inputs used in their production.

Of which:

(a) Self-employment in agriculture (money income and in kind)
(b) Self-employment in other industries (money income and in kind)
(c) *Imputed rental value of owned dwelling*

+ **Cash wages and salaries**, earned from dependent activity in enterprises (institutional units) that may be agricultural or non-agricultural in nature

(= Primary income)

+ **Rent received**

(a) Net rents from the letting of property other than land
(b) Net rents from the letting of land

+ **Other property income**

(a) Net interest received (interest received less interest paid, though payments should not include interest already deducted in calculating profits)
(b) Dividends received

+ **Social transfers received**

(a) Social insurance benefits from employers' schemes
(b) Social insurance benefits in cash from government schemes
(c) Universal social assistance benefits in cash from government
(d) Means-tested social assistance benefits in cash from government

+ **Other current inflows**
Regular inter-household cash transfers received such as transfers from relatives living and working abroad)

= TOTAL INCOME

- **Current taxes on income and wealth**

- **Non-discretionary social contributions (payments to social security schemes)**

(a) By members of agricultural households as self-employed person
(b) Employee social contributions (only) relating to income from employment

= **NET DISPOSABLE INCOME** (note: this is not adjusted for the receipt of social benefits in kind)

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