

Chapter 11

**HOUSEHOLD PRODUCTION FOR OWN FINAL USE**

11.1. Introduction .....	179
11.2. Household Production of Goods for Own Final Use .....	179
<i>Agricultural production for own consumption</i> .....	180
<i>Other production of goods for own consumption</i> .....	180
11.3. Household Production of Services for Own Final Use .....	181
11.4. Data Sources .....	181
<i>Household income-expenditure surveys</i> .....	181
<i>Time-use surveys</i> .....	182
11.5. Estimation Methods .....	182
<i>Agricultural production: crops</i> .....	182
<i>Crop storage</i> .....	183
<i>Agricultural production: livestock and livestock products</i> .....	183
<i>Food processing</i> .....	183
<i>House-building</i> .....	183
<i>Checking consistency of basic data</i> .....	184

## 11. HOUSEHOLD PRODUCTION FOR OWN FINAL USE

### 11.1. Introduction

11.1. Production of goods and services for own final use by household members is a significant part of total production in many countries. It comprises:

- household production of goods for own final use, including crops and livestock, production of other goods for own consumption, and own-account fixed capital formation;
- owner-occupied dwelling services; and
- paid domestic services, *i.e.*, by employment of paid domestic staff.

### 11.2. Household Production of Goods for Own Final Use

11.2. In defining the production boundary, the 1993 SNA (Para. 6.25) recommends that the production of a good for own final use should be measured when the amount produced is believed to be quantitatively important in relation to the total supply of the good in the country. It provides (Para. 6.24) an illustrative list of the most common types of goods that should be included, namely:

- the production of agricultural products and their subsequent storage; the gathering of berries or other uncultivated crops; forestry; wood-cutting and the collection of firewood; hunting and fishing;
- the production of other primary products such as mining salt, cutting peat, the supply of water, etc.;
- the processing of agricultural products; the production of grain by threshing; the production of flour by milling; the curing of skins and the production of leather; the production and preservation of meat and fish products; the preservation of fruit by drying, bottling, etc.; the production of dairy products such as butter or cheese; the production of beer, wine or spirits; the production of baskets and mats; etc.;
- other kinds of processing such as weaving cloth, dress making and tailoring, the production of footwear, the production of pottery, utensils or durables, making furniture or furnishings, etc.

11.3. Although not exhaustive, this list is enlightening in two respects. First, it makes clear that, in developing countries especially in Africa, production for own final use may account for an important share of the primary and secondary sectors, insofar as they are actually measured. Second, many if not most of these activities are undertaken by women, they are undertaken as secondary activities and, in most cases, the corresponding labour input is not captured in labour force statistics. Thus, their measurement in the national accounts is important, and all the more so during economic crises or periods of structural adjustment when these activities may play a major role in maintaining living standards. For example, when the CFA Franc was devalued in 1994, the purchasing power of the population was halved in francophone African countries. Dramatic falls in monetary incomes in real terms were also experienced in many transition countries in the early 1990s, leading to sharp increases in own-account production of crops and livestock in order to survive.

***Agricultural production for own consumption***

11.4. Subsistence agriculture has long been the major part of non-market household production. Blades (1975) reviewed the national accounts estimates of 70 developing countries in Africa, Asia and Latin America and showed that virtually all of them included subsistence crop and livestock production in their accounts, and that over 70% also included subsistence fishing and forestry production. Subsistence agriculture is usually excluded from the scope of informal sector surveys not only because they tend to exclude agriculture, but also because they exclude enterprises solely involved in non-market activities.

11.5. For data collection and estimation purposes, two situations must be distinguished. In developing countries, subsistence agriculture was very large a few decades ago, but now pure subsistence farmers have become more and more scarce. In the most common situation, and this is not limited to developing countries, farmers keep and store a part of their production for their own consumption and sell the rest. (Here *farmers* is used in the broad sense, including those engaged in animal husbandry, fishing, hunting, forestry, and so on.) However, more and more frequently, farmers have to sell their whole crop at the time of the harvest and to buy again as and when needed. The part kept for own consumption is usually estimated in the national accounts by use of appropriate ratios. Production as a whole is obtained from agricultural production surveys, based on the measurement of areas and yields by major crop, and the respective shares of commercialised and stored production are obtained from responses to production or income-expenditure surveys.

11.6. In transition countries, garden plots play an important role in household consumption. In the Russian Federation, for example, more than 90% of estimated household production is for own consumption. Its measurement requires specific supplementary surveys or extra questions added to household surveys, especially where the production is a secondary activity by household members.

11.7. Generally, the valuation of primary production for own consumption is based on market prices that are usually collected and available for primary products in rural markets as well as in urban markets. It is radically different for collection of firewood and supply of water, because even if there is a market for such goods in urban areas, there is not one in rural areas. Therefore, monetary valuation at market prices of the output, which is the preferred method according to the 1993 SNA (Para 6.84 and 6.85), is artificial, and all the more so as the time spent in these activities may be better known than the quantities involved, thanks to the recent development of time-use surveys.

***Other production of goods for own consumption***

11.8. As previously noted, most of the processing activities of agricultural products are typically carried out by women. Often undertaken as secondary activities, such non-market household production is rarely measured in production or household surveys. Most labour force surveys underestimate female secondary activities, and household income-expenditure surveys usually record self-consumption for primary products only. The information available does not provide data on quantities and monetary valuation at market prices of the output is therefore difficult. Here again, time-use surveys may be particularly useful for a valuation at cost of inputs, labour being the major input.

11.9. Although valuation at market prices is easier for household production of goods other than processed agricultural products, and although data collection on quantities of such goods is also easier, information may still be lacking. Hence, estimates may be derived indirectly from the compilation of supply-use tables. For example, the State Department of Statistics of Uzbekistan recently decided to include the household production of bread for own consumption because of a huge imbalance between production and consumption. Such a solution is consistent with the 1993 SNA because bread can be prepared a week ahead and consumed during the week, and can thus be considered as a manufactured good whose production and consumption go beyond the preparation and consumption of meals.

11.10. Own-account construction is also a kind of household production for own final use that has long been included in the measurement of GDP. Monetary valuation of the output raises the same issues as for other non-primary goods. Where there is a local market, the value of dwellings is known. In the

absence of markets, in rural areas of developing countries for instance, production costs consist mainly of individual and collective labour. The free provision of other inputs and materials – building poles, sun-dried bricks, thatch or leaves for roofing – has to be estimated in terms of the time spent in gathering and processing the materials. Thus time-use surveys can play a central role in estimation and valuation.

### 11.3. Household Production of Services for Own Final Use

11.11. Household production of services for own final use is outside the SNA production boundary with two exceptions: paid domestic services and owner-occupied dwelling services.

11.12. As regards paid domestic services, two cases may be distinguished. In many developed countries, domestic servants work part-time for several households and may be considered as self-employed persons (enterprises) supplying services to the households. It has been agreed by the Delhi Group that these workers are a component of the informal sector if they meet the criteria of the informal sector definition. In developing countries, on the other hand, domestic servants usually work full-time in a single household. In some developing countries of Africa and Asia, many domestic servants are unpaid workers, often children, living in the same premises as their employers. Sometimes they are indentured workers who have been either sold into service by their legal guardians or who are working to repay debts. Although such workers do not receive cash payments, they are fed and housed by their employers. They are, therefore, receiving a form of income in kind and should be treated in the same way as domestic servants who are paid cash wages.

11.13. Estimates for owner-occupied dwelling services have always been included in the national accounts, as described in Chapter 5. The methods are not further elaborated here except to note that most population censuses and household surveys collect data on the ownership of the premises where the household lives. Also, whilst monetary valuation can be easily made in urban areas where a market for renting services exist, it is more difficult in rural areas, especially in those countries that are predominantly rural.

### 11.4. Data Sources

#### *Household income-expenditure surveys*

11.14. Household surveys variously described as *income-expenditure*, *budget-consumption*, *household budget*, *living conditions*, or *living standards* are undertaken in many developing countries on a regular basis (at least every 10 years) and fill a major gap in the national accounts.

11.15. For most types of production for own final use by rural households, reliable data can be obtained only by direct surveys of consumption. To estimate the output of subsistence agriculture, it is better to measure consumption of their own production at the time it actually occurs, rather than to ask farmers to forecast or remember the eventual disposal of their output. The same is true for other primary production, such as hunting, fishing and firewood collection. In addition, household surveys are often the best source of basic data on subsistence food processing, handicrafts, house building, and other construction and building activities.

11.16. To measure subsistence food production, all items used should be weighed and their origin established at the time meals are being prepared. Since consumption patterns usually vary from one region to another and from season to season, a nation-wide sample of households should be used, with interviews spaced evenly over a full twelve-month period. Surveys of this sort require a fairly large team of trained enumerators and supervisors, and the transport, data processing, and other administrative costs involved may also be considerable. Unfortunately, the countries where subsistence production is particularly important are those least able to undertake such large-scale household enquiries. Nevertheless, surveys of this sort provide the only sure basis for estimating the major part of subsistence output. At a very minimum they should be carried out every ten years. No major

improvements in the reliability of subsistence estimates can be achieved without establishing a programme of regular surveys of rural households.

### ***Time-use surveys***

11.17. Time-use surveys are carried out on a regular basis in many developed countries and, with the support of UNDP programmes, they have recently been tested in a number of developing countries, for example, Benin and Morocco in 1998, Nigeria, India, Nepal and Philippines in 1999, and South Africa in 2000. In the context of developing countries, one of the major aims of time-use surveys is to obtain better measures of female participation in the labour force by providing estimates of the respondents' involvement in secondary activities, which are not usually recorded by regular labour force surveys.

11.18. Where available, information from time-use surveys can be of great help in the implementation of the 1993 SNA in countries where household production for own final use is widespread but where market prices for such goods exist only in urban areas and do not apply to the rural areas where the majority of the population live. In these countries, monetary valuation of the cost of production may be a more reliable method than the valuation of output at market price where labour is the main input into the production process and the time spent is known.

11.19. There are, however, some potential problems with this approach. First, the volume of labour devoted to an activity may not be the only factor determining output. Even when the link between the two is close, for example in activities like collecting firewood where labour is the only input of any kind, there may be other factors affecting output. The time spent by households collecting firewood may change without any change in output simply because firewood is getting harder or easier to find.

11.20. The second problem is to valuing the time spent on subsistence activities. The normal procedure is to use average rural wage rates on the grounds that these measure the opportunity costs, *i.e.*, the income foregone by choosing to perform a particular subsistence activity instead of working as a paid labourer. Often, however, it is quite unrealistic to assume that any such choice exists. In remote regions there may be no opportunities at all for paid employment, while elsewhere the wage levels may have been administratively fixed at levels where the supply of labour far exceeds the number of jobs available. This does not necessarily mean that no opportunity costs are involved in performing subsistence activities, but rather that income from paid employment may not be a suitable way of measuring them. It is likely that the opportunity costs of devoting labour to a particular subsistence activity can be measured realistically only in terms of other subsistence activities.

## **11.5. Estimation Methods**

### ***Agricultural production: crops***

11.21. In most countries, peasant farmers produce an enormous range of grains, tubers, green vegetables and fruit. It is not feasible to make proper estimates for each of these items individually. Usually a relatively small number of crops – perhaps a dozen or so – account for the bulk of total subsistence output and the aim should be to get good quantity and price data for these items.

11.22. Household surveys of the size and complexity needed to make proper estimates of subsistence crop consumption cannot usually be undertaken on an annual basis. They are generally used to collect benchmark data, and current year estimates are obtained by extrapolating base year per capita consumption using an index of rural population growth. This is reasonable since subsistence consumption per head of farm population tends to remain fairly constant. However, some considerations can be given to making the estimates more realistic:

- In countries where the population is growing fairly rapidly the average age of the population is generally falling. Therefore, in the short term at least, food consumption on a per head basis, including consumption from own production, can be expected to fall.
- Subsistence food production per head or per household is related in some way to the level of total household income. In general, subsistence becomes relatively less important as total

income rises. Some estimate of this relationship can be obtained from cross-sectional analysis of household income and expenditure data, with total household income taken as the independent variable.

11.23. Crop prices normally vary both from one area to another and during the course of the year, thus the question arises as to what weights should be used to calculate average prices. Few developing countries have enough information on crop production for very elaborate weighting systems. In practice fairly simple procedures may give satisfactory results. In most countries, the major part of each crop is produced, *i.e.*, harvested, over a relatively short period in a few well-defined areas. In such cases, national annual average prices can be satisfactorily calculated as the simple average of producer prices recorded in the main growing areas during the peak harvesting season.

### ***Crop storage***

11.24. In most developing countries, storage of subsistence crops is an important activity. Peasant households often have several buildings for storing different crops from one harvest to the next. The regular inspection of these stores and their contents, fumigation and pest control, and repair and maintenance work are vital services in a subsistence economy. For the most part, however, storage activities are either excluded completely from the national accounts, or are covered only by accident through the valuation of crops at prices that implicitly include storage costs. It is generally better to use harvest time prices for valuing crop output and to make separate, explicit estimates for the gross output and value-added of crop storage.

11.25. The gross output of storage activities could be defined as the difference in the value (at producer prices) of subsistence crops on removal from the store for consumption from their value on entering the store at harvest time. This gross output consists of intermediate consumption – pesticides, repair and maintenance costs for example – and value-added – mainly labour costs and depreciation of storage buildings.

### ***Agricultural production: livestock and livestock products***

11.26. A common weakness of livestock estimates arises from the use of fixed ratios for estimating growth rates and slaughtering. The ratios used may reflect long-term trends reasonably well, but ignore short-term variations, which may be quite substantial. Disease can cause sharp annual fluctuations in the numbers of poultry and small livestock. In bad harvest years farmers may try to maintain the level of their cash receipts by selling more cattle for slaughter, while in subsequent years the take-off rate may fall as farmers replenish their herds. Few countries have accurate data on short-term variations of this sort, but it is often possible to make some rough adjustments to reproduction and take-off rates for year-to-year changes on the basis of partial information on licensed slaughtering, meat and cattle imports, or trade in hides and skins.

### ***Food processing***

11.27. For most countries the main activity in this area consists of basic processing of staple food crops – husking and polishing rice, drying and pounding cassava, or milling maize and wheat. Since virtually all crops must be processed in some way, data on quantities may be obtained directly from the estimates of crop consumption. The main problem is to find a suitable valuation procedure. Most countries make use of cost data obtained directly from commercial grain mills. When this sort of direct information is not available, a possible alternative is to compare producer or retail market prices for crops before and after processing.

### ***House-building***

11.28. For this activity, most countries calculate physical output by applying replacement and growth rates to the estimated stock of houses in a base year. In the absence of direct information on house-

building activities this is a reasonable procedure, but often the rates of growth and replacement are very crudely estimated and in some cases not much is known about the housing stock either.

11.29. The growth of the stock of dwellings can be assumed to be some function of the growth of population. In countries with high population growth rates, it is reasonable to suppose that the average size of households is increasing. This implies that the housing stock is growing more slowly than total population, and half as fast seems a reasonable guess in the absence of more specific information. In practice, the growth rate assumption is usually much less important than the assumption made about the rate of replacement. Three per cent is about the highest credible rate for the growth of the housing stock whereas, depending on the durability of the construction materials, up to ten per cent of existing houses may need replacing each year, and the rate of replacement may be even higher in the event of recurrent natural disasters (earthquakes, typhoons, floods, etc.).

11.30. Even with accurate information on replacement and growth rates there is still the problem that they reflect only the underlying trend in house building. There may be substantial year-to-year changes in the level of activity. In bad harvest years, replacements of rural dwellings may be postponed. In good years, they may be brought forward. Some information about short-term changes of this sort may be obtained from imports of metal roofing sheets, sales of window frames, production of building poles, and cement consumption.

#### ***Checking consistency of basic data***

11.31. The data for many subsistence activities are deficient both in terms of quantity and quality. Thus, it is vital to use all available information to check the consistency and credibility of the basic assumptions. In the case of agricultural output, for example, estimates of crop consumption must obviously be consistent with whatever information is available on crop production, and must, in addition, imply a realistic diet in terms of protein and calorie content. Data from annual livestock censuses must be credible in the light of what is known about reproduction and take-off rates; estimates of the number of animals slaughtered can be checked against data on hides and skins traded; and assumptions about reproduction rates, milk yields, egg-production and so forth must be consistent with the estimated sex and age-structure of national herds and flocks. Data on fish production can be checked against estimates of the total number of boats or nets in use. Official statistics on hunting activities can be partly verified by data on imports of hunting cartridges, licences issued, or trade in hunting trophies.