

Assessing the Socio-Economic Impact

A spaza shop in Stanza Bopape,



Mamelodi,
Pretoria,
South Africa

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This paper provides practical indicators and field methods for assessing the impact of urban and peri-urban agriculture in social and economic terms (employment, income, added value, and food supply). In a context of growing advocacy for policy support in favour of urban agriculture, and while public resources are shrinking, it is necessary that researchers provide rigorous assessments of the contribution of agriculture to the city's policy objectives (Ellis and Sumberg 1998).

The geographical coverage of urban and peri-urban agriculture must first be defined. The practical way is to consider the administrative boundary of the city (*commune*) to be the urban area, while the adjacent provinces or *départements* which have been identified as the food suppliers for the city, with their numerous flows of people, products, and resources, are termed the peri-urban area (Mougeot 2000). It is also convenient to determine an approximate distance beyond which agriculture does not present the typical features of urban and peri-urban agriculture anymore (i.e. perishable commodities, use of organic and/or chemical inputs, consumption in the city, pressure on land), which from our observations, is beyond 50 kilometres from city centre.

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This paper is based on the author's fieldwork in West and Central Africa, with a focus on vegetable production and marketing (Moustier 2000), as well as on a literature review. The proposed indicators on the impact of urban and peri-urban agriculture take account of the numerous fieldwork constraints related to the unstable character of its production in terms of space allocation and seasonality, and to the common absence of units of scale. These simple indicators and collection methods have proven to be efficient in demonstrating the importance of urban agriculture as a means of income for poor families and for its role in supplementing fresh products supplied by rural areas.

INDICATORS

❖ *Indicators of employment* distribution relate to the share of women, young people and migrants within the total population involved in urban agriculture. The size of the population involved should be estimated and presented in absolute terms, and as a percentage of the total popu-

lation of the considered urban and peri-urban area.

❖ *Direct indicators of income* refer to income generated by the different urban agriculture activities, income from farmers, traders and others such as transport and processing enterprises. Indicators of the productivity of economic factors must be calculated and compared to alternative uses of capital, labour and land, as income per unit of *land* (income/ha); income per unit of *labour* (income/workday), and income per unit of *invested capital*. Revenues generated by urban agriculture can be compared with alternative activities requiring the same amount of qualifications; for example, retailers' incomes are comparable to relatively unskilled handicraft workers. Incomes can also be compared with a minimum subsistence household budget, calculated by taking the average household size in the city under consideration. Indicators of income distribution include: the ratio between producers' and traders' incomes; the ratio between male and female producers' incomes; and the ratio

of incomes between different age groups.

Continuity is another important feature of *incomes*, to be assessed in addition to their global amount, for households to regularly be able to provide for their daily livelihood expenses. This regularity or *Cash readiness* depends on the following two variables: the length of the cycle between beginning of production and first sale; and the degree of risk undergone for the activity. The degree of risk is assessed by calculating the standard deviation of monthly incomes for one or several years of business.

The contribution of urban and peri-urban agriculture to the national economy must be measured through the *added value* of the different activities of production, marketing, transport and input supply.

❖ *The contribution to the urban food supply* through the *consumption* of urban produce is measured *directly* in quantitative and monetary values; and *indirectly* by the number of months per year that a family consumes its own produce and does not rely on the market.

A direct indicator for the *contribution to the urban food supply* through the *market* is the *share of market* flows originating from urban and peri-urban areas in the total consumer purchases (quantities, nature of products, time of the year). An indirect indicator is the *percentage of market retailers selling* products from urban and peri-urban areas.

METHODS

❖ *Methods to collect employment indicators*

In all countries of the South, population censuses are regularly organised and include data on employment in the different economic sectors. Data from population censuses do not provide

information on people indirectly employed in urban and periurban agriculture, including traders.

A direct enumeration of people involved in agriculture involves the following information: production areas; information on existing producer groups or associations (including the number of members); or for unorganised production, information on producers. As agriculture is often seasonal, a correct time of the year must be chosen to estimate the number of people involved – directly, by counting people working in the field, and indirectly, by asking informants in the area about the people not present on the day of the survey.

The people involved in the marketing of urban agricultural commodities can be identified by following the produce from the farm-gate to consumers, and identifying the different markets and the nature of intermediaries. Another way is by tracing back the origin of the produce by interviewing retailers and wholesalers in the marketplace. The number of traders selling the different food products from an urban origin needs to be assessed at different periods of the year to take account of seasonal patterns of production.

❖ *Methods for identifying income indicators*
To arrive at an estimation of incomes generated by urban and peri-urban agriculture implies the use of traditional accounting with a debit and a credit column. The credits encompass the products of the sales, and may also include the value of “own-produced” consumption (in terms of savings related to the cost of the product if bought in the market). The debits include all the expenses related to agricultural inputs, transport, labour, taxes, investments, etc. For traders, debits might include the costs of purchasing goods, and transport, storage and packaging expenses.

A typology of farmers should be first established, to account for the variability of incomes relative to size of land, nature of commodities, age, sources of incomes, etc. Likewise, a typology of traders should be established to account for the

variability of incomes relative to the position in the marketing chain (wholesaler or retailer), the nature of commodity, and the nature of customers (poor versus wealthy), which varies according to the location of the market. Added value is calculated by adding salaries, financial costs and taxes to incomes.

❖ *Methods to calculate contribution to urban food supply*

The information on the quantitative and monetary value of **consumption of people's own products** can be obtained from household surveys, which are usually regularly conducted in cities to get data on the economic situation of a country, often with donor support (e.g. the World Bank). The results of these surveys are available in the statistical units generally held by the Ministry of Planning. Some other ad hoc surveys may be available on the amount of own-production consumption in one district but it may not be possible to extrapolate them to the whole urban population as they are often conducted in districts where urban agriculture is common.

The contribution of agriculture produced in the city, to the urban food supply, can be estimated by collecting information from **urban markets** and by estimations using **production data**.

In calculating urban markets, the following steps are suggested to overcome the problems of diversity of food products and production areas: 1) *make a selection of the products* to be taken into account, and 2) *make a market investigation on the origin* of products.

The most common market *products* are: vegetables, fruits, eggs, milk, poultry meat, fish. As a substantial share of commodities flow directly from producers to retailers without a wholesale stage, it is recommended that the investigation first take place in retail markets, then in wholesale locations as identified by retailers' interviews. A representative sample of retailers should be interviewed on the origin of produce in terms of location of production, if known (which is generally the case), or in terms of the location of pur-

chase if the product has not been directly purchased from producers. The production locations as declared by traders should be mapped and classified as urban, peri-urban or rural production areas. This investigation provides an approximation of the percentage of products originating from urban agriculture, considering that the differences in quantities traded by individual traders compensate each other when added. When possible, coming to an estimate of the quantities traded by the interviewed traders allows for getting more reliable indicators of the share in the market.

There may also be specific points of sale of urban agricultural products in a city, where producers sell to retailers, generally at night or early in the morning; this is the case along some specific streets of Hanoi, or near the Total market in Brazzaville. It may be possible to estimate quantities sold in such markets if the units of sale are quite homogeneous, for instance, if it is easy to translate bags of leafy-vegetables into kilograms, then counting the number of bags available in the market.

Given the variability in vegetable availability, all estimations of quantities should be done at different times of the year and of the day (or night).

Crop *production* is usually obtained from the following calculations: “average area x average yield”, or “number of farmers x quantity produced/farmer”.

When production-data are available, it is useful to analyse from which type of data collection they originate. Very often, official statistics do not take into account some crops which are not cultivated in pure stands, like leafy vegetables, and are limited to officially registered production areas like recorded producer groups. Measuring yields directly should take account of harvests taking place all year round, sometimes every day as in the case of leafy vegetables. Measurements should also take into account the frequent association of crops.

As regards areas, they are difficult to estimate due to the heterogeneity of plots. Aerial photographs enable the estimation of the cultivated areas and the nature of crops.

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