

## **Urban agriculture, food security, nutrition and health<sup>1</sup>**

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### **1. Introduction**

#### *Growing urban poverty and food insecurity*

Poverty, food, insecurity and malnutrition -long thought of as predominantly rural problems- are increasingly becoming urban concerns (Atkinson, 1992; von Braun et al., 1993; Ruel, et al., 1998; Haddad et al., 1998). In general, current-status comparisons between rural and urban populations tend to portray urban populations as having better food security and nutritional status. However, the rate at which urban poverty is increasing -compounded by the rate at which urban populations are growing- indicates that food security and malnutrition are going to be critical problems in urban areas in the 21st century (Ruel et al., 1998; Koc et al., 1999; Maxwell et al., 2000).

Most cities in developing countries face enormous challenges in creating sufficient employment for the rapidly increasing population. Moreover, transmissible diseases like HIV-AIDS have eroded the income earning capacity and assets of millions of urban households. As a consequence, the urbanisation process goes hand in hand with an increase in urban poverty (“urbanization of poverty”, Baud, 2000); Actually more than 600 million urban people are living in a state of poverty, which is generally accompanied by a lack of safe water and food, poor quality housing, restricted access to education, and dangerous and poorly paid jobs. A massive 40 percent of the population of Mexico City and a third of Sao Paulo's population is at or below the poverty line. According to UN-HABITAT, slum populations in urban areas of developing countries were estimated at 870 million in 2001 and are expected to increase by an average of 29 million per year up to 2020.

Lack of jobs and income lead to poverty as well as growing food insecurity among the urban poor. Food composes a substantial part of urban household expenditures (60-80 percent for poor households) and in the city context the lack of cash income translates more directly into food

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shortages and malnutrition than in the rural areas (Mougeot, 2005). Urban consumers spend in average at least 30 % more on food than rural consumers but in spite of this, their average calorie intake is lower and in many cases insufficient (Argenti, 1998).

The growing food insecurity of the poor urban population and increasing problems to access fresh nutritious food at affordable prices used to go largely unnoticed by the Municipal authorities, among others due to a middle class bias in the urban planning, a lack of attention to urban food issues and a one sided focus on food imports to the city with neglect of access to food issues and the actual and potential role of urban food production. More recently, especially since the food crisis of 2007/8, many cities have become aware that cities have to plan strategies that aim to eradicate hunger and poverty and improve livelihoods, requiring innovative ways to enhance food security and nutrition of the urban poor and vulnerable households. Urban agriculture is one such strategy.

*“Specifically, urban and peri-urban agriculture has been recognized as having a significant contribution to food security of households, generation of jobs and income, self-esteem and environmental improvement (Report of the Minister’s Conference on Urban and Peri Urban Agriculture, prospects for food security and growth in Eastern and Southern Africa, MDP Harare, Zimbabwe, August 2003).*

### ***Urban poverty, food security, malnutrition and health.***

The right to have food has always been recognized as one of the essential human rights. *“Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food”* (Universal Declaration of Human Rights 1948).

In earlier years international and national organizations focused mainly at the supply of sufficient food from the rural areas to the city (see Argenti, 2000 for a good overview of the key issues involved in an effective supply of the urban food markets). However, food availability in the city is not enough to arrive at food security. Sufficient economic income from a paid job or other income generating activity is the main requirement to realise household food security and it is precisely this aspect that is especially problematic for the urban poor, who for the most part find themselves outside the formal labour market, performing casual, informal, and poorly paid jobs. That recognition led to a broader definition of urban food security.

The UN Food and Agriculture Organization (FAO) defined in 1996 that food security exists when “all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (FAO, 1996)

Main elements in this definition are:

- **Availability** of food: a sufficient and stable supply of food
- **Access** to food: access may be limited by lack of income and high prices of food (sometimes also called **Affordability** of food), distance to food markets (time, transport availability and price), physical limitations (due to age, handicap or illness), and related root factors that lead to inequalities in the effective distribution of food to all urban habitants (like class, gender, race, ethnicity)
- **Adequacy** of the available food (quantity/calories and quality: variety, nutritious, safety)
- **Acceptability** (is the food social and cultural acceptable?; is it produced sustainably?)

Others (e.g. Ruel et al., 1998, Yeudal 2007) have added other A-factors, like:

- **Awareness** (of the nutrition requirements of each family member, knowledge of nutritious values of various food items and of adequate food preparation methods)
- **Absence of** (an undue burden of) **chronic infections** due to a poor living environment (poor sanitation, pollution, poor health care services, etcetera) that reduce the ability of the human body to make effective use of the nutrients in the food consumed
- **Agency** to indicate the need for adequate policies and institutional programmes and coordination in order to arrive at food security for **all** urban citizens

The above indicates clearly that various factors influence urban food security, of which many are directly or indirectly related to poverty and an uneven food distribution due to social inequalities.

Some ongoing **trends in the urban food systems** tend to further reduce the access to healthy food for the urban poor (Tinker, 1998, Sustain 2000):

- The traditional intra-urban city food markets (better accessible for the urban poor) are more and more replaced by markets outside the city far away from the low income neighbourhoods (requiring transport to go there).
- Establishment of a growing number of supermarkets, less accessible for the urban poor due to price and location and creating a tough competition for the local neighbourhood stores, as well as the traditional local markets. In some cities this had the consequence that many poor urban neighbourhoods have become food retailing deserts, where access to good food shops and markets is rare.
- Time constraints due to multiple jobs of the urban poor, the influence of marketing campaigns of the food industry and the rise of supermarkets are leading to a gradual shift in urban food habits from self-preparation of food to consumption of fast food, from buying fresh products to buying packaged processed foods.
- Low income workers (often not able to go home for their lunch due to distance and cost of travel) are turning to street stands for their meals (often with less nutritious quality and higher food safety risks). In urban areas, up to 30% of the average budget of a low income family is spent in buying food prepared outside the house (Tinker 1998 )

Availability of food at the **household** level is not yet insurance that all **individuals** in the family will be well fed. Factors that may lead to insufficient and unbalanced food intake by all or some members of the family, other than lack of food or the lack of money to buy it, are the unequal distribution of the food among the family members (in many cultures men tend to get more and better food than women), a lack of understanding of the nutritional value of food, how to prepare it and the nutritional needs of the various family members of the family (e.g. the special needs of ill people, pregnant and lactating women, children).

Recently the concept has been expanded from individual and household level to include **community food security**. Community food security also includes the social, economic and institutional forces that affect the quantity, quality and affordability of food within a given community that influence household and individual food security (Hamm & Bellows 2003, OPHA, 2002).

Nutrition refers to the food eaten and how it is used by the body. Food may be categorized as a “*energy food*”: foods rich in carbohydrates and some fats (e.g., rice, wheat, potato, yams,

cassava, fats, oils, sugar) that provide heat, strength and energy; b. “food for *development and repair*”: foods rich in proteins, iron and calcium (e.g., red and white meat, liver, spinach, amaranth, beans, peas, milk, cheese, eggs); c. “*regulating food*”: foods rich in vitamins, minerals, and fibres that allow the body to function well and prevent diseases (e.g., oranges, lemons, and many other fruits, tuna, spinach, green leaves, carrot, tomato, papaya). The body needs a portion of each type of food every day. In order to balance their diet, people must supplement basic foods, such as rice or corn (rich in carbohydrates), with additional foods like meats and/or legumes (rich in proteins), in addition to vegetables (especially leafy greens and yellow vegetables) and fruit, which is very rich in vitamins and minerals.

The most critical period in the development of a human being is between conception and approximately 36 months of age, as the physical and mental development of a human being is faster during this period. For this reason it is very important for pregnant women and small children to receive the correct amount of nutritious food in order to ensure adequate physical growth and cerebral development, as well as an adequate resistance to infections.

Malnutrition may have very different meanings. In cities we may encounter cases of people that have a sufficient but unbalanced diet as well as people that have both an insufficient and unbalanced diet, especially among the urban poor. In low income areas of cities one may encounter hunger and obesity even next to each other in the same households due to the effect that households under income stress tend to reduce both the food intake (e.g. by reducing the number of meals) as well as the quality of the food eaten, leaving out foods rich in proteins, vitamins and minerals (like meat, eggs, milk, fresh fruits, green vegetables) and just eat cheap staple foods, meat offal, street prepared food and other cheap fast food and processed food (e.g. pizza's, burgers, soft drinks) that contain lots of fats and sugar (see e.g. the results of the RUA study in 5 cities on the effects of the economic and food crisis of 2007/8 in 5 major cities; Gordon Prain, 2010).

The incidence of malnutrition in urban areas is often concentrated in low income neighbourhoods and malnutrition rates closely relate to rates for unmet basic needs (UBN), due to low income, lack of access to food, many competing family needs, etcetera. Research shows that, although the poor spend a greater share of their income on food, they consume less calories and nutrients than wealthier families (Argenti, 1998). When the income increases, families tend to replace food of lesser quality for more expensive food, but not necessarily of better quality, although the families with a high income tend to eat more fruits and legumes than those with a lower income.

The urban poor also tend to live in neighbourhoods where sanitary conditions are poor and the environmental pollution is high and consequently the exposure to health hazards is high and chronic. Yeudall (2007) explains that, as a result of living in a polluted environment, part of the nutrients consumed is used to mitigate toxic effects of environmental contaminants. For example, antioxidants such as beta carotene - found in orange and dark green vegetables and fruits - are known to prevent damage from reactive oxygen species and free radicals, which are produced from exposure to airborne pollution. Several nutrients, including selenium, calcium, and zinc, are known antagonists of environmental contaminants such as mercury, lead and cadmium (Furst, 2002). As a consequence malnutrition may occur especially in children.

Chronic infections such as diarrhoea can also lead to the diversion of nutrients to support immune responses instead of anabolic processes, including growth (Solomons et al., 1997). Thus, even if nutritional deficiencies contributing to growth failure are corrected, unless the level of sanitation

in the environment is improved, achievement of full growth potential is unlikely (Campbell et al., 2003).

The above illustrates the importance of an Eco-health approach to improving nutrition and health in poor urban neighbourhoods.

At present, under-nutrition remains the primary contributor to ill health in the sub-Saharan Africa region (WHO, 2002). When persons are not fed well it is harder for them to fight diseases, especially infectious ones. Yeudall (2007) indicates that of special concern is the relationship between several nutrients (primarily vitamin A, zinc, and to a lesser extent iron, vitamin C and E, selenium) to the ability of humans to mount a successful defence against infectious disease. The downward cycle of infection and malnutrition is well recognized. Inadequate nutrient intakes lead to impaired nutritional status and increased vulnerability to infectious diseases. Nutritional status can be further compromised as a result of loss of appetite, reduced food intake, increased intestinal losses of nutrients, and increased nutrient requirements associated with infection (Martínez and Tomkins, 1995).

For example, a person who is malnourished and acquires HIV is more likely to progress faster to AIDS because the body is already weak and malnutrition may result in increased oxidative stress and immune suppression, which leads to increased HIV replication in the body (higher viral loads) which hastens the transition from HIV to full Aids and finally to death. In addition, as indicated above, the HIV-affected person is more susceptible for co-infections (like tuberculosis, pneumonia, diarrhoea) and the body's ability to absorb nutrients is reduced which leads to loss of body weight, muscle wasting and increased nutrient deficiencies (vitamin A, C, E; Selenium, Zinc) and so to a quicker progression of the disease (De Zeeuw 2004)

In addition to direct effects of certain nutrients on immune function, mild and severe vitamin A deficiency increases the morbidity (disease) and mortality (death) from diarrhoea, blindness and anaemia (Beaton et al., 1993; Huttly et al., 1997); Deficiency of iron increases the risk of anaemia, adverse birth outcomes, and reduced physical work capacity (ACC/SCN, 2000). Marginal zinc status increases incidence of diarrhoea coupled with sub-optimal growth in children (Hambidge, 2000).

The earlier mentioned gradual shift in urban food habits from self-preparation of food based on fresh products, to fast food and packaged processed food is leading to higher food costs as well as a lower quality diet, due to the large numbers of synthetic chemical additives and residues of agro-toxic products present in the food chain, an excessive consumption of proteins, salt, sugar and fats and insufficient intake of minerals, trace elements, green pigments and fibre. This trend makes that cities in developing countries, next to the traditional malnutrition related health problems, are confronted now also with "chronic life style diseases" that were typical for the developed countries like obesities, diabetes, cardiovascular disease etcetera. The problems of under- and over-nutrition may co-exist within the same populations, in some cases within the same community and household (WHO 2002).

## **2. The effects of urban agriculture on urban food security and nutrition**

It is estimated that 15-20% of the world's food is produced in urban areas (Armar-Klemesu 2000).

Table 1 shows that in many cities intra- and peri-urban agriculture is covering a substantial part of the urban demand for vegetables (especially fresh green vegetables) as well as fresh milk, poultry, eggs and –often to a minor extent- pigs, fruits and fresh water fish.

**Table 1 Food provided by urban and peri-urban agriculture**

City	Percentage of urban demand met by intra- and peri-urban agriculture						
	<i>Leafy vegetables</i>	<i>All vegetables</i>	<i>Eggs</i>	<i>Poultry</i>	<i>Milk</i>	<i>Pork</i>	<i>Fruits</i>
<b>Havana</b> (Gonzalvez Novo and Murphy, 2000)		58					39 (non-citrus)
<b>La Paz</b> (Kreinecker, 2000)		30					
<b>Dakar</b> (Mbaye and Moustier, 2000)		70-80		65-70			
<b>Dar es Salaam</b> (Jacobi et al, 2000)		90			60		
<b>Addis Ababa</b> (Tegegne et.al. 2000)					70		
<b>Nairobi</b> (Foeken and Mwangi, 2000)							
<b>Accra</b> (Cofie et al.,2003)		90					
<b>Brazzaville</b> (Moustier (1999)	80						
<b>Bangui</b> (David, 1992)	80						
<b>Yaoundé</b> (Dongmo, 1990)	80						
<b>Bissau</b> (David et Moustier, 1995)	90						
<b>Nouakshott</b> (Laurent, 1999)	90						
<b>Jakarta</b> (Purnomohadi 2000).		10					16
<b>Shanghai</b> (Yi-Zhang and Zhangen, 2000)		60	90	50	90-100	50	
<b>Hong Kong</b> (Smit, 1996)		45		68		15	
<b>Singapore</b> (Smit, 1996)		25					
<b>Hanoi</b> (GTZ, 2000; Phuong Anh and al.,	70-80	0-75 (according	40	50		50	

2004		to season)					
<b>Kathmandu</b>		30					
<b>Vientiane</b> (Kethongsa, Khamtanh and Moustier (2004))	100	20-100 (according to season)					

Sources: RUAFA (2006), Nugent (2000),

The table shows that urban agriculture has a strong focus on perishable products (like fresh mainly leafy vegetables (both indigenous as well as exotic varieties), tomatoes, eggs, milk, poultry meat) and niche products like medicinal and kitchen herbs, flowers and ornamental plants, etcetera.

Even more important than the contribution of urban agriculture to overall urban food demand is the finding that that self-production of food by urban poor represents between 20-60 percent of total food consumption by low-income urban households (East Jakarta 18%, Purnomohadi, 2000; Kampala 40-60%, Maxwell and Zziwa 1992; Nairobi 50%, Foeken and Mwangi, 2000; Harare 60%, Mbiba, 2000).

It is also found that self-producing households achieve greater food security and their nutritional status, measured by caloric and protein intake and anthropometric measurements (stunting, wasting), is better than that of non-farming urban households of the same socio-economic status.

Urban agriculture allows poor families to lower their dependence on income to obtain food while providing them with fresh nutritious foods like leafy vegetables, tomatoes, eggs, medicinal and aromatic herbs, dairy products and meat from small animals.

In Kampala children below five years in low-income farming households were found to be significantly better-off nutritionally (less stunted) than counterparts in non-farming households (Maxwell, 1998). In Cagayan de Oro, urban farmers generally eat more vegetables than non-urban farmers of the same wealth class, and also more than consumers from a higher wealth class (who consume more meat) (Potutan et al.2000). In Java, Indonesia, home gardens alone provide for 18% of caloric consumption and 14% of proteins of the urban population (Purnomohadi 2000).

In Harare households involved in urban farming had more nutritious breakfasts and consumed more protein-rich food over longer periods of the year than non-farming households (ENDA, 1997). In Nairobi it was found that average energy and protein intake was higher in the farming groups than in non-farming group and percentages of malnourished, wasted and stunted children were much lower. The farming households produced between 20 percent and 25 percent of their food requirements, and are significantly less dependent on gifts and transfers (Foeken and Mwangi, 2000).

In addition to production for their own consumption needs, as indicated by table 3 above, large amounts of food are produced for other categories of the population, of which a substantial part is bartered or sold to other lower income households in the same neighbourhoods.

Due to production close to the consumers and the short marketing chain from producers to consumers and sale as fresh products mainly, food costs are lower than the same food produce brought from the rural areas (less transport, less cold storage, less losses, less processing and packaging) leading to savings on food costs and improved access to food for the urban poor (due

to price as well as the location where the food becomes available and the way in which it is distributed)

### **3. Urban food security assessment and planning**

Urban food security assessment and planning can be undertaken at various levels: individual, household, community/neighbourhood, and city level.

Such assessments are undertaken in order to understand the functioning of the local food system, to identify and monitor vulnerable groups, to identify key factors that influence food security negatively and opportunities to improve food security (especially of the vulnerable groups).

#### **3.1. Individual and household level**

Yeudal (2007) provides a concise overview of main indicators and tools to assess and monitor food security and (mal-)nutrition at individual and household level that can be summarized as follows:

Five main types of measures may be used to examine food security and nutrition status (Hoddinott, 1999):

- a. individual intakes (dietary assessment),
- b. household caloric acquisition
- c. dietary diversity
- d. coping indices
- e. Anthropometric and Biochemical Indicators

The selection of certain methods depends on the objectives and target population in mind, the degree of accuracy required and the human and financial resources available.

##### **a. Dietary (individual intake) Assessment Measures**

Dietary assessment methods examine food consumption patterns of individuals (but may be also applied in a modified form to examine households) and can be expressed in relation to intakes of nutrients, foods and/or food groups.

Qualitative methods such as the **food frequency questionnaire** typically ask respondents to recall the frequency of consumption of specific foods -or food groups- of interest over a specified time period. Respondents can then be ranked in relation to their consumption patterns. If standard portion sizes are measured too, then a rough estimate of nutrient adequacy can be calculated. There are a wide range of food frequency questionnaires available, but it is important that they have been validated locally to ensure that data produced are reliable (Cade et al., 2002).

Quantitative methods such as the **24-hour recall method** ask respondents to recall foods consumed the previous day. A list of all foods and beverages consumed is obtained by means of a series of questions followed by probing for information on preparation methods and portion sizes, and finally for commonly forgotten foods and ingredients. A picture calendar may be used to aid recall of foods and food models (either actual foods or foam models) to assist in portion size estimation (Gibson and Ferguson, 1999).

In order to be able to convert food intake into nutrients one needs high-quality food composition data. The WorldFood 2.0 Dietary Assessment System, available for download from FAO-INFOODS ([www.fao.org/infoods/software\\_worldfood\\_en.stm](http://www.fao.org/infoods/software_worldfood_en.stm)) provides a series of six international food composition tables (Kenya, Senegal, Egypt, Mexico, India and Indonesia). Users can import and export their own food intake data (and country specific local food composition data if available) to make the conversion and analysis.

#### **b. Household Food Acquisition Measures**

Collection of household-level indicators can be less resource intensive than examining individual food consumption patterns. Household methods involve collection of socio-demographic and economic information in order to allow analysis of nutrition data in relation to income level and family characteristics. Data can be collected retrospectively by recall, or prospectively by recording (by a household member or the interviewer). All food entering a household (including food produced, received as gifts or purchased) is recorded over a specified time period. Methods vary in the degree of precision of estimates (weighed vs. estimated), in whether correction factors are estimated or calculated for factors such as plate waste, in food preparation methods, and in accounting for foods consumed outside the home (Gibson, 1990).

#### **c. Dietary Diversity Measures**

Dietary diversity, or the number of different foods an individual or household consumes, is based on the observation that more diverse diets are more likely to include a wider variety of nutrients, and thus reflect a higher quality of dietary intake than more monotonous diets. Several methods have been proposed for assessing dietary diversity. One involves compiling a list of potential foods from discussions with key informants or from previously collected data. The list is then presented to the participant, and either a sum of the number of different foods, or a weighted sum reflecting frequency of consumption is calculated (Hatloy et al., 1998; Morris, 1999). This type of method has been shown to correlate with caloric intake and identify seasonal variation in intake. The method is well suited where diets are relatively uniform, and where resource limitations do not allow or justify the more precise assessment of dietary intake from methods such as the 24-hour dietary recall (Hoddinott and Yohannes, 2002).

#### **d. Coping Index Measures**

A **questionnaire** may be used to examine perceptions and behaviours of household members with respect to their food security status. The measurement tool developed by Bickel (Bickel et al, 2000) for use in the USA includes 18 questions (which may be reduced to 6 core questions) about:

- Anxiety that the household food budget or food supply may be insufficient to meet basic needs.
- Perceptions that the food eaten by household members is inadequate in quality or quantity.
- Reported instances of reduced food intake, or consequences of reduced food intake (such as the physical sensation of hunger or reported weight loss) for adults in the household).
- Reported instances of reduced food intake or its consequences for children in the household.

In addition, a simple scale is constructed from the responses to the questions that allows one to estimate the number of households that experience food insecurity and hunger within three levels of severity:

The validity of a food security questionnaire for use in sub-Saharan Africa remains to be determined (Radimer and Radimer, 2002).

In contrast, Maxwell and colleagues (1999) have compared **indicators based on frequency and severity of coping strategies** (e.g. eating fewer meals, or selling household assets to pay for food) to more traditional indicators, such as dietary and anthropometric indicators, in several African countries. The authors concluded that measures of coping strategy provide a less expensive means of identifying food insecure households than dietary and anthropometric measures. Tools based on coping strategies, however, entail some limitations in correctly identifying food insecure households, so it is suggested that these measures should complement, as opposed to replace, more resource-intensive methods such as anthropometric measures and food consumption surveys.

#### **e. Anthropometric and Biochemical Indicators**

**Anthropometric methods** measure growth (height, weight) and/or body composition (e.g. mid upper arm circumference, skinfold thickness) and are widely used and inexpensive (WHO, 1995). Research has demonstrated that anthropometric measures reflect health, particularly where chronic imbalances exist. The main limitations of anthropometry are the inability to determine the precise causes of disturbances in growth or body composition, and the lack of sensitivity to changes over short time periods (Gibson, 1990).

Such measures can be examined on their own, however it is more useful to compare to a reference population to determine the degree of deviation from the reference and to standardize for the effects of age and sex.

The NUTSTAT program of Epiinfo allows users to compare height, weight and arm circumference to the international reference population ([www.cdc.gov/epiinfo/](http://www.cdc.gov/epiinfo/)). The program allows the user to design, enter, validate and analyse questionnaires, and the EPIMAP program allows for data to be combined with GIS functions for mapping of data.

**Biochemical indicators** are based on functional outcomes of various nutritional deficiencies that reflect responses to the body's supply of nutrients, and provide a measure of the biological consequences of deficiency. One example would be night blindness, which can occur in vitamin A deficiency (Solomons, 2002). More specific measures of nutritional deficiencies can be obtained from biomarkers that provide a predictive response to a dietary component of interest. Biomarkers are most commonly measured in blood or urine, and less commonly from hair or buccal cells. Numerous methods appropriate for use in field studies have been developed for capillary (finger prick) blood samples directly or following collection on filter paper including retinol, retinol binding protein and haemoglobin (Solomons, 2002 and the website [www.path.org](http://www.path.org)).

### **3.2 Community Food System Mapping and Action planning**

Community Food Mapping entails a participatory assessment of the food security situation in a certain neighbourhood and the functioning of the local food system, with active participation of the community and optimal use of the knowledge inherent in the community (e.g. knowledge on the key issues and what might work -or not- to resolve them).

The assessment normally includes the following **aspects** (but in each particular case one may decide to leave out one or more of these components, depending the objectives of the assessment and available resources):

- *Socio-economic profile* of the community and identification of most vulnerable groups in the neighbourhood (households without regular income, female headed households, households with many young children or sick and elderly persons)
- *Food resources*: Analysis of the location of main sources of food (including food producers, markets, groceries, supermarkets, etcetera), the types of food available at these sources (especially fresh and nutritious food) as well as prices and seasonality
- *Food security status* of the different categories of the population
- *Factors that limit local food security* (of the community as a whole and for certain vulnerable groups in particular) *and coping strategies* : Identification of main factors that limit the access to the available food sources by the community and other factors that negatively influence their food security situation as well as the strategies they apply to cope with income/food shortages.
- *Institutional support*: Identification of the organisations/institutions involved in the food sector and the services they apply (and the effectiveness of such services)

A variety of **assessment methods** may be used including:

- Collection and analysis of **available data** (e.g. health statistics, socio-economic data, Municipal registers, etcetera) and interviewing **key informants** related to the issues mentioned above.
- **Community mapping**. Topographical maps may be used to identify and locate main food sources and to discuss issues of food availability/acceptability and access to nutritious food. The map also allows a community to pinpoint particular problem areas to identify problems for example the distance to a source of fresh nutritious food, lack of public transport to go there, a physical barrier that influences the access, etcetera
- **Surveys**: Questionnaires maybe used to collect the required information. To make the surveys easier to managed and well-focussed, one often uses a combination of short specific questionnaires are used that each focus on one main topic and/or a specific type of respondents are used. Such persons are interviewed at a place they often frequent (e.g. school children at school; breastfeeding women at local clinic, young unemployed men at local bar or the place where the try to offer their labour, elderly people where they often sit and talk, etcetera) (See e.g. Prehm and Stuart, 2005)
- **Focus group meetings**: Focus group meetings are organised to analyse and discuss food security issues with different categories of the local population that have certain characteristics in common that are of high relevance for the assessment. For example, the FAO community food assessment in Buj India identified through key informant interviews the most vulnerable groups within the local population and subsequently organised focus group meetings with each of them as well as one with a mixed group with a composition representative for the diversity in the local population.  
The people invited to participate in a focus group should be selected with care. For best results, the focus group should not be too big (between 8 and 20 people).  
The facilitator supplies the topics and assist the group to analyse and discuss each topic systematically often with help of a set of key questions that are open-ended and will provoke discussion among the participants. There is never a right or wrong answer, and all participants are encouraged to recount their experiences or to present their points of view without

criticism or comment from the group. In addition to the facilitator, a person should take notes of the discussion results.

In addition the facilitator may use a number of **participatory tools** like mapping (e.g. of location of food resources or certain problem areas), ranking (e.g. to define the importance of certain factors and prioritise certain solutions), drawing (e.g. of the food eaten that morning or day) and making diagrams (e.g. of local importance and linkages between organisations working on food issues in the community), etcetera. See Sustain (n.d.) and Bergeron for an overview of various participatory tools that can be applied in food community for a description of various

Sometimes focus group meetings incorporate a short written survey. This survey can be used in the beginning to slowly introduce the topic of interest while also collecting specific person-level information.

The community food assessment is expected to result in:

- Enhanced awareness/education in the community of important nutritional issues
- Key problems in the functioning of the local food system have been identified
- Community building; Development of linkages with the most vulnerable groups; social inclusion
- Joint assessment of main opportunities to enhance food security in the community
- Strengthened partnerships and enhanced motivation and resource mobilisation to implement the actions needed
- Joint action planning and implementation involving civic, private sector and governmental organisations focused at enhancing food availability, accessibility/affordability and distribution in the community.
- A base line for monitoring the impacts of such actions

Good guides for the implementation of community food assessments are FAO (2004b), Sustain (n.d.) and Cohen (2002).

**Community Food projects**, that result from the community assessment and planning activities, are often focusing on one or more of the following areas:

- *Initiating or strengthening local food production activities*
  - home gardening and/or community gardening projects
  - school gardens often combined with food education activities
  - gardens at hospitals and clinics often combined with nutrition education and HIV-Aids support programmes
- *Creating direct linkages between the community and nearby urban or peri-urban producers* (establishment of farmers markets, box schemes and other forms of “community supported agriculture” that provide the producers with a stable market/income and urban households -or schools and hospitals like in Farm-to-School projects- with nutritious and low priced food)
- *Establishment of community food cooperatives and shops* (buying nutritious food in bulk in order to and local sales in order to enhance access and lower prices), *food kitchens*, *food stands and restaurants* and *breakfast or lunch clubs* e.g. for school kids (to provide low priced but healthy meals including healthy fast food), *cooking clubs* (to share recipes and enhance knowledge on nutritious food, food preparation and hygiene), *food banks* (redistribution of surplus food from supermarkets as well as to create employment in such social-enterprises).

- *Policy lobbying activities*, focusing on issues like financial and technical support for the local food projects, access to public land for local food production activities, improved access to and decentralization of food distribution and nutritional programs; improved attention for specific vulnerable groups, provision of support for establishing/maintaining local food markets and food stalls in/close to the low income urban neighbourhoods

Guides for the planning of Community Food Security Projects and examples of such projects and experiences gained (with an emphasis on poverty areas in Western cities) can be found at websites like [www.sustainweb.org](http://www.sustainweb.org) and [www.foodsecurity.org](http://www.foodsecurity.org) among others.

### 3.3. Municipal Food Policy Strategy

In various cities in the world a Food Policy Council or Multi-stakeholder Platform on Urban Agriculture and Food Security have been created that brings together stakeholders from diverse food related areas to

Jointly analyse the functioning of the urban food system and to develop effective strategies to enhance urban food security for all.

In some cities, that have recognised that securing urban food security is an important policy goal, such a Council or Forum is a formal advisory body on urban food system issues, while in others it has more an advocacy role.

The Food Policy Council concept has become very popular in cities in North-America and the UK. Well known examples of City Food Policy Councils are Toronto and Vancouver (Mendes, 2004).

Organisations and programmes like RUAF-Cities Farming for the Future programme ([www.ruaf.org](http://www.ruaf.org)), CIP-Urban Harvest programme and FAO-Food for the Cities programme are assisting local government, civic society organisations and other stakeholders in various cities in developing countries in the establishment of Multi-Stakeholder Platforms on Urban Agriculture and Food Security and the preparation of a Strategic Agenda on Urban Agriculture and Food Security and/or a Municipal Policy and regulations in that field. Some examples are Villa Maria del Triunfo (Peru) and Bulawayo (Zimbabwe).

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