Food for the Cities: Urban Agriculture in Developing Countries

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Abstract

The processes of population growth and urbanisation will lead to a more or less equal world-wide distribution of population in rural and urban areas by the year 2025. At present, however, there are great differences between the continents. Due to the rapid growth of Southern African cities, the basic needs of the citizens (shelter, food, education etc.) are being undermined. Poverty levels in cities are high and recent surveys show they are tending to increase. Recent surveys suggest that the locus of poverty is shifting to urban areas, making food insecurity and malnutrition an urban as well as a rural problem. Urban agriculture is one of the livelihood strategies that vulnerable urban dwellers engage in. The main differences from rural agriculture are limitations of space, access to land, and water quality. In view of the lack of transport in many developing countries, the production of fresh, perishable vegetables in urban areas can be considered as “niche production”, complementary to the rural production of staple food. Urban horticulture is dominating urban food production in many countries. Climatic and cultural conditions clearly affect the kind of production. Production sites are gardens, open spaces (often illegally occupied), road strips and riverbanks, fishponds, rivers, lakes and the proper houses of the families. Urban agriculture is typically informal, often illegal but wide spread, and often done under extremely difficult conditions. Technical assistance to cities is needed to take advantage of the benefits of urban agriculture for city development and urban food security. Urban agriculture may help to solve some of the problems of city authorities through integrated programmes of waste water re-use and organic waste recycling, as well as through the integration of market wastes with urban fodder consumption.

URBANIZATION, POVERTY AND FOOD SECURITY

The process of population growth and the global process of urbanisation will lead to a more or less equal world-wide distribution of population in rural and urban areas by the year 2025. Over the next 25 years we shall have a dramatic increase of about 4 billion in the number of people in cities. By 2015, nearly 30 Mega cities will emerge, many of them located in Asia, some on the American Continent and two of them in Africa. The urbanisation process is not only creating Megacities but also numerous small, medium and large cities (UNCHS 2001a).

Nevertheless it is important to note, that the trend to and the dynamics of the urbanisation process are not the same everywhere – there are great differences among the continents. Up to now, Africa is the least urbanised, with only about 36% urbanisation, although it shows the highest current rates of urbanisation, while Latin America and Asia are similar to Europe, North America and other industrialised countries and are urbanised to three quarters or more. Due to the rapid growth of Southern African cities, the basic needs of the citizen (shelter, food, education etc.) tend to be undermined and local authorities find themselves in the difficult situation of having to face ungovernable conditions. It is estimated that between 1/4 and 1/3 of all urban households in the world live in absolute poverty. Regionally, urban poverty is highest in Africa and Latin America (UNCHS 2001b). Kampala, Lilongwe and Ibadan show the highest poverty levels in
Africa with 60 to 80% urban poor. Households with female heads show significantly higher poverty rates in African cities (WRI 1996).

The urban poor are vulnerable to a number of hazards and are always at risk. They live densely packed, subject to heavy rains or sudden fires that can wipe out their homes. They have precarious employment, in the formal or informal sector. They are exposed to a higher incidence of disease, arbitrary arrest and forced eviction. Neglected by formal institutions, they are often left unprotected against violence, drug dealers, corrupt officials, unscrupulous slumlords, and organized crime. Lack of resources, hence lack of political power, is a major cause of their vulnerability.

The urban poor spend a disproportionate amount of money on food making them vulnerable to changing macro-economic conditions. Poor residents of Kampala and Accra spend up to 75% of their incomes on food, and still they universally endure decreasing food supply and quality. No formal safety nets address poverty and hunger, and thus the poor have adapted numerous survival strategies (Maxwell 1998). One of the livelihood strategies of the urban dweller is “urban agriculture” and more specifically urban horticulture. While food might be available in markets, many households can hardly afford to buy sufficient food (vegetables in particular) with their limited cash resources.

**URBAN AGRICULTURE**

“Real agriculture” was thought to take place in the rural sector only. So the rural and periurban sector were foreseen to feed the urban population. In reality, this undertaking has failed in many countries due to an absence of infrastructure and the lack of purchasing power of the urban poor. Urban agriculture is not just vegetable production or gardening. In many case studies, urban and periurban agriculture is described as a system of different agricultural activities, well integrated into and part of a more or less closed circuit of energy flows and production and consumption pattern. Urban agriculture refers not only to food crops and fruit trees grown in cities but encompasses animals, poultry, bees, rabbits, snakes, guinea pigs and other indigenous animals. Urban fish production is also part of the food system in many tropical cities (Drescher and Iaquinta 1999, FAO 2000).

Urban agriculture is emerging strongly in Sub-Saharan Africa, where the fastest urban growth will occur in countries least equipped to feed their cities, but recently a strong increase was also observed in other regions with acute economic crises (e.g. Argentina).

Urban agriculture can contribute to the following:

- increased urban food supply and food security through increased availability of food, especially of fresh and perishable foods
- employment and income opportunities for the urban population (including migrants from rural areas)
- improved household food security of the urban poor
- improved urban environment.

Most directly, urban agriculture reduces food insecurity if it increases access to food (especially fresh, nutrient-rich foods) among populations suffering from food insecurity (the poor, temporarily or permanently vulnerable). Such populations can do this through their own self-provisioning that directly provides food, or by using what they grow to reduce market expenditure or increase income. As the urban poor are found to be spending most of their income on food, any of these actions can have a major impact on household well-being.

No matter whether supported or prohibited, urban agriculture does exist. This reality forces city authorities to take precautions to safeguard the well-being of their residents and the environment. Market oriented food production needs guidance, extension and control to ensure food safety for consumers and healthy conditions for the urban producers.

Urban and periurban food production is common in many developing countries but recently is an increasing phenomenon. A major barrier to the acceptance of urban
agriculture as a serious contributor to food security is the idealised picture of a city, narrowly related to what is understood as "development". The term "agriculture" is closely associated with the rural sector and, according to the opinion of many city councils and planners, does not fit into the urban setting. The most critical institutional constraint to urban agriculture, particularly crop cultivation, is access to land. Typically urban agriculture is not taken into account in the urban planning process (Drescher 2001a).

URBAN HORTICULTURE

The development of urban horticulture involves the production of vegetable and ornamental plants under irrigation, and also fruits, tubers and roots, and mushrooms. Horticultural production in urban and periurban areas is proposed as a means to partially meet the job and food requirements of the increasing urban population. In view of its potential high return rate and scope for intensification, horticulture can be an attractive opportunity in meeting the food needs of urban dwellers. Horticultural species, as opposed to other food crops, have a tremendous yield potential and can provide up to 50 kg of fresh produce per m² per year, depending on the technology applied. As compared to other agricultural activities horticulture makes efficient use of scarce land and water resources (FAO 1998). Locating production close to the consumption centres also helps to reduce the requirements for special packaging and storage facilities and reduces post-harvest losses, which commonly reach 30%.

In urban and periurban areas, three broad categories of horticultural producers can be distinguished. The division is mainly related to the access that growers have to land and water resources which largely determine the type of activities that can be developed (Drescher, 1998). The categories include:

- Urban micro-gardens and mushroom production as well as high value exotic ornamentals, condiments and aromatics (FAO, 1995);
- Highly intensive cultivation systems under localised irrigation methods and small-scale nurseries;
- Small-scale allotment schemes.

The role of home gardens for food security and the genetic diversity of vegetable crops attract increasing attention in the development debate (e.g. Enda-Zw 1996, Drescher 1998, Drescher et al. 1999). Home gardening plays an important role within the overall farming and livelihood system in terms of household food security and income generation. Home gardening is an ideal complement to crop production and an important component of the urban food production system. Home gardens are often kept by women, which enables them to save money on food, to gain some additional income, to improve household nutrition and, in some cases, also to improve social relations.

Highly specialised cultivation systems can be observed in many cities. Production concentrates on market-oriented production of leafy vegetables which are an essential part of the traditional diet (e.g. Amaranthus spp, Chinese cabbage). Leaves are very perishable and do not tolerate transport. Hence, having a short distance between producers and consumers offers open-space producers a niche market which cannot be taken over by producers outside the city (Jacobi et al. 2000).

Simplified hydroponic systems have been supported by FAO in some cities, e.g. Dakar (Senegal), while those in Lima (Peru) and in Manila (The Philippines) have been supported through local initiatives.

The idea of transferring adapted versions of allotment gardens into cities of the developing world has only recently come into the discussion (Drescher 2001b, Holmer et al. 2002). The establishment of this type of production area was a response to increasing poverty and malnutrition in European countries about 200 years ago. Why should this measure not be transferable to the South?

TECHNICAL ASSISTANCE

Of course, technical assistance for city farmers is needed more than ever before. In
many areas of the world, horticultural crop production relies on the use of irrigation to reduce the risks associated with rainfall variability and to optimise inputs. Though water is scarce in many urban centres and water systems are often not designed to handle increasing populations, water supply for agricultural uses in cities is generally omitted from planning in most cities. Therefore, alternative sources of water of reliable quantity and quality need to be sought. For cultivation in urban centres these sources might include groundwater, collected rainwater, protected springs and wells, or sometimes extension of the municipal water supply network (FAO 2001). It also appears important to improve and promote simple water-saving irrigation systems in cities. The re-use of waste water (treated and un-treated) for urban and periurban agriculture is practised in many countries and has recently been supported by development projects, e.g. in Dakar (Senegal) and in regional projects in Latin America. It is estimated that about 10% of the world’s wastewater is currently being used for irrigation purposes (RUAF 2002). The more systematic integration of organic waste recycling with urban agricultural activities can reduce the amount of urban waste by 50% or more. Large amounts of organic market wastes currently remain un-recycled, and so contribute to the increasing waste problems of most cities in the South. Examples such as that from the central market in Mexico City show how organic wastes can be used as fodder for urban and periurban livestock production.

**Literature Cited**


