The Importance of Urban Agriculture to Food and Nutrition

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This paper was published in the Annotated Bibliography on Urban Agriculture, that was produced by ETC-RUAF and published by CTA, Wageningen, the Netherlands in 2001.

1. Introduction

Few trends seem more certain at the dawn of the 21st century than the rapid urbanisation of the global population, especially in developing countries. Sixty-six percent of the world's urban population lives in developing countries—a proportion that will increase to 80 percent by the year 2030. By 2030, almost 85 percent of Latin Americans will live in cities, as will over 50 percent of the African and Asian populations (United Nations 1998). 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 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). Urban agriculture is therefore a critical topic to examine: to understand urban food insecurity and malnutrition; to understand ways in which urban residents have mobilised resources to meet some of their own food needs, and to develop appropriate strategies to ensure food security in urban areas.

Much of the resurgent interest in urban agriculture in the 1980s was sparked by studies in developing countries—mainly Africa (Sanyal 1985; Rakodi 1988; Lee-Smith et al., 1987; Freeman, 1991; Mvena et al., 1991; Sawio, 1993; Drakakis-Smith, 1991; Egziabher et al., 1994; Maxwell, 1995; Maxwell and Zziwa, 1992; Rogerson, 1993; Mbiba, 1995), or populations struggling with the transition from centrally-planned to free-market economies (Rose and Tikhominov, 1993; Bellows, 1999). This literature examined the extent to which urban populations were meeting some of their food requirements through home production.

This literature largely reflects the original conclusions of Sanyal (1985) on the primary reasons for urban agriculture in Lusaka, Zambia: it is predominantly a strategy adopted by households whose monetary incomes are not enough to purchase sufficient food. In Latin America and Asia, commercial urban farming is more highly developed, especially with regard to vegetable and perishable-food production, but some of this production is also for home consumption (Yeung, 1985; Prudencio-Bohrt, 1993).
Throughout the 1990s, the interest in urban agriculture was merged with consumer concerns in the industrialised countries that were concerned not only with hunger issues, but which placed higher value on community decisions about the availability of a diversity of locally produced fresh or organic foods, and food safety (Koc et al., 1999; UNDP, 1996). This literature combines the concern over food with the broader themes of land use in urban and suburban areas, the recycling of urban wastes and maintenance of sustainable urban food systems. Contemporary research on urban agriculture thus serves as a common thread among a number of diverse interest groups. One major unifying theme is the impact that urban agriculture has on some element of food security or nutrition. Several specific topics stand out: these are briefly reviewed below.

2. Food Supply and Availability

The first theme is the impact of urban agriculture on the overall availability and supply of food for urban markets. Empirical findings vary widely, and comparisons are impeded greatly by differing definitions of urban areas or urban agriculture. UNDP, for example, defines urban agriculture in terms of “foodsheds” (UNDP, 1996). Others define the practice in terms strictly limited to municipal boundaries. Thus comparisons of the contribution of urban agriculture to

the overall food supply are fraught with methodological difficulties. Nevertheless, some attempts have been made to quantify such contributions. One of the pioneering studies in East Africa (Memon and Lee-Smith, 1993) estimated that 44 million dollars worth of food was produced in Kenyan cities in 1985. Maxwell and Zziwa (1992) estimated 20 percent of staple food needs in Kampala, Uganda were met from urban production. Perhaps more important is the contribution of fresh or high-value foods to the urban market. The proportion of total urban consumption of vegetables or poultry coming from urban agriculture can be quite high. In Asian cities, home production accounts for up to 90% of vegetable production and as much as 70 percent of poultry products—both meat and eggs (UNDP, 1996). Generally, however, reliable data about the proportion of the total urban food supply coming from urban production are scarce: studies are scattered, location-specific, and use varying definitions of urban agriculture. Urban production is rarely a category found in national data sets.

3. Access to Food at the Household Level

Definitional problems also exist with urban households, but there has been much more empirical research regarding the impact of urban agriculture on access to food at the level of the urban household. Many of these studies examine the impact of urban agriculture on household income, including fungible income in-kind, as the means of measuring impact (Freeman, 1991). Other studies compare the food security of urban farming and non-farming households (Maxwell, 1995; Mwangi, 1995). Conclusions vary. A study by the Noguchi Memorial Institute for Medical Research in Ghana (Armar-Klemesu, et al., 1998) found little measurable impact on consumption or overall food security from involvement in urban farming. The other studies noted above have found a strong correlation, through both a subsistence consumption pathway and a cash income pathway, particularly among lowincome households (though not the very poorest). Even if the proportion of total household access to food from home production is small, part of the importance of semi-subsistence strategies is that the household can access this food at critical times, such as when income is insufficient for food purchases, or can access foods that add to dietary diversity. Some studies also consider the impact on food consumption of urban production of fuel wood—particularly in contexts where access to fuel for cooking is a critical constraint. The general conclusion of these studies is that urban production of fuel wood is as least as critical as the production of food (Lee Smith et al., 1987).

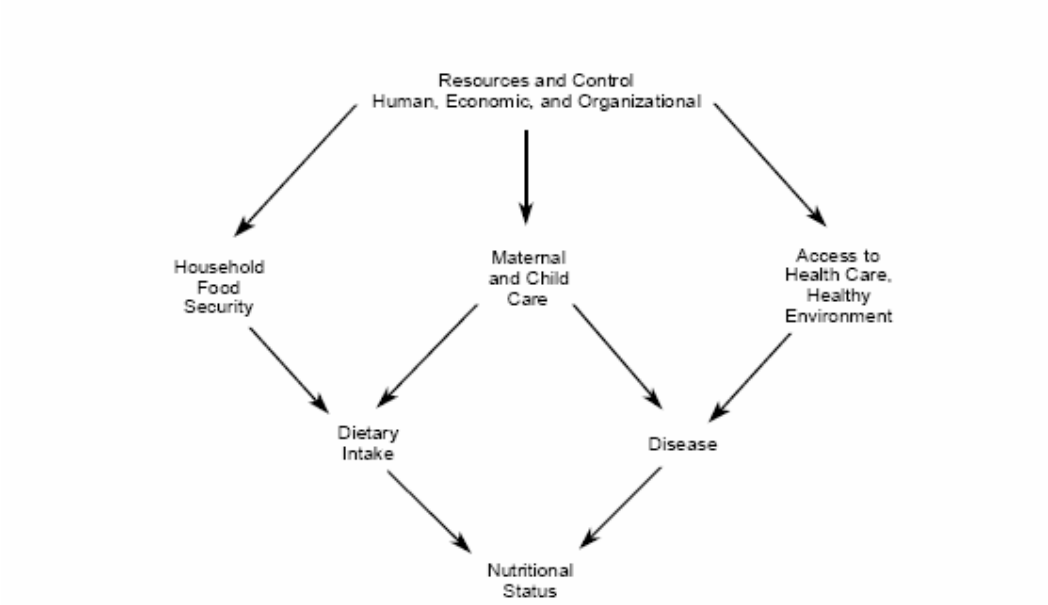
4. Impact on Nutrition

The UNICEF framework for understanding malnutrition has now been widely applied in urban areas. Briefly reproduced in Figure 1, the framework notes the importance not only of access to adequate food in achieving adequate nutritional status, but also the importance of health and care practices. Few studies have quantitatively measured the impact of urban agriculture on child nutritional status. One of the few that does (Maxwell, Levin and Csete, 1998), notes that not only is urban agriculture significantly correlated with higher child nutritional status in a multi-variate analysis, it is the single most important determinant. Mwangi (1995) shows similar results in bi-variate analysis.

Other important impacts of urban agriculture on nutrition include making available at lower cost, fresh, locally grown vegetables and other perishable crops; lowering their cost and increasing their availability; and improving micronutrient content of diets. The environmental and health impacts of urban agriculture can be both positive and negative. Some research notes the potential of urban agriculture to recycle wastewater and organic materials, and thus contribute to solving waste disposal problems in rapidly growing cities (Smit and Nasr, 1992). But this suggestion increases the concern over food safety, particularly contamination from the use of untreated wastewater for irrigation. One of the few empirical analyses of this question (Akpedonu et al., 1998) compared the source of production (urban vs. rural), and the source of water (sewage vs. tap or rainwater). The study found both (source of production and source of irrigation water) to be insignificant as determinants of levels of bacterial contamination: the sanitation level in the marketing chain was the determining factor. The unregulated usage of agricultural chemicals in a densely populated environment also poses potential dangers to health. These factors make it difficult to generalise about the impact of urban agriculture on the environment and on health. Further research and improved regulatory capacity are necessary to ensure that urban farming practices actually safeguard

human health (Birley and Lock, 1998; UNDP, 1996).

Figure 1. The UNICEF Framework: Food Security, Dietary Intake, and Nutritional Status



Source: Adapted from UNICEF (1990).

5. Concerns in Industrialised Countries

Urban agriculture has increasingly been of interest to a wealthier, more food-secure constituency in industrialised countries as well, but for different reasons. These include greater community control over local food sources and food safety, protecting where necessary small family producers that might otherwise be forced out of business, ensuring accessibility of fresh produce from local organic producers, and in general maintaining adequate dietary diversity and food freshness. This has been combined with the concern over the dismantling of state-operated safety nets and welfare systems, and increasing local or municipal responsibility for replacing such safety nets with more localised mechanisms (Bakker, et al., 2000; Allen, 1999; Power, 1999). Much of this has been accomplished through the development of formal local food policy councils, constituted from among a variety of stakeholders in local food systems including producers, wholesalers, retailers, consumers and local authorities, although a significant amount has also been achieved through purely voluntary citizen action (Dahlberg, 1999; MacRae, 1999; Lang, 1999). Many of these concerns were brought together in a recent book by Koc et al. (1999).

6. Gaps in Knowledge: Questions for Future Research

Despite the rapid expansion in knowledge about urban agriculture, several areas remain poorly understood, and several new trends require investigation. First, significant anecdotal evidence suggests that urban agriculture has become less a strategy of poor households as more middle and upper-class families have become involved: urban agriculture may be moving away from being a food access strategy of the poor towards a more commercialised strategy of the middle class. In a few cases, urban agriculture may have been the means of the poor reaching the middle class, and in some cases, changes may reflect broader growth and improvement in the overall urban economy. But more often this trend appears to reflect a change in access to resources—with more powerful urban interests realizing the value of under utilized urban land and the profit of urban production. Further research is required to test this hypothesis, and if true, to identify its consequences.
Second, where urban agriculture remains (or has become) a viable strategy of the urban poor to achieve food and nutrition security, more must be understood about the constraints faced by low-income urban farmers. Often these include legal and regulatory issues, as well as the

question of access—often informal access—to urban land. The fact that so many urban farmers are women increases these concerns since women often have less access to recourse. There is widespread but poorly understood evidence that the manner in which urban authorities deal with a variety of urban problems—crowding, health, and the widespread failure of urban services and infrastructure to keep up with population growth—end up undermining the livelihoods of the urban poor. Knowledge and examples of best practices in this area have grown, but much remains to be done.

Third, advocates of urban agriculture need to take one step back from time to time and consider more broadly the overall role of urban agriculture vis à vis rural production. Urban agriculture advocates tend to see endless possibilities and demand; agricultural planners and economists, on the other hand, tend to be less sanguine about an overall strategy for urban agriculture. The goal, after all, is not to promote urban agriculture per se, but rather to promote food and nutrition security for the urban poor as well as middle class consumers, and to promote sustainable urban environmental systems. Urban agriculture will undoubtedly continue to have a role to play, but strategies must be developed locally, and must take into account a broader picture than is sometimes presented. This not only ensures that urban agriculture contributes to sustainable strategies for achieving food security and nutrition, but also to the policies that will sustain the practices required for achieving those goals.

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