Urban and Peri-urban Agriculture, Household Food Security and Nutrition


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I. Key contributions of UPA to household food security and nutrition

The definition of food security has evolved to emphasise access to food, rather than mere availability of food. It also explicitly incorporates the need for a healthy diet, complete with necessary vitamins and proteins, rather than simply sufficient calories. Therefore, adequate national and community-level food supplies must be available year-round; households must have both physical and economic access to a sufficient quantity, quality and variety of foods; and primary household providers and care-givers must have the time, knowledge and motivation to ensure that the nutritional needs of all household members are met.

It is essential to understand the contribution that intra-urban and peri-urban agriculture (UPA) can make to both these aspects of food security. This thematic paper identifies the links between UPA and food security, provides some initial evidence of the strength and nature of these links, and raises research and policy questions that should be addressed by the conferees.

Access to food is a sine qua non of food security. With rare exceptions in today’s world (for drought, war or famine conditions brought on by either), food is available at adequate levels to meet minimum needs of most populations – even rural – and is often plentiful in urban areas. However, there are no guarantees that all segments of the population will have sufficient or timely access to these food supplies. Those most likely to be denied access are the poor, vulnerable, and more isolated members of society.

Through a myriad of marketing channels and informal mechanisms, the lion’s share of food produced in the urban area is consumed in the urban area, often by the producers or households in close proximity to them. UPA supplements supplies of food from rural areas, increasing abundance and lowering prices, especially during seasonal peaks. During times of emergency or when transportation and distribution channels break down, UPA production becomes more than supplemental – it serves as the main food source to urban consumers.

A healthy diet requires an appropriate combination of micro- and macronutrients to fulfil the needs of each individual in a household, taking into account age, gender, and health status. Two factors are largely responsible for preventing urban dwellers from achieving a healthy diet: poverty and lack of fresh foods. Poor households cannot regularly afford to buy perishable foods that contain essential micronutrients, which are especially important for children. But even the non-poor urban dwellers can face difficulties in finding adequate amounts of perishable fruits and vegetables. If the supply channels from countryside to city are inadequate, these products will periodically be in short supply, and costly.

Urban conditions are more conducive to intensive production of perishable fruits and vegetables and small livestock than extensive production of staple crops. These high-nutrient foods are needed to relieve undernourishment in poor households and can thus contribute
importantly to household food security. Production of such food near the populations that need them helps to ensure that they may reach consumers. However, in order for household food security to improve, it is important that information about the nutritional needs of the consumers is available to producers. It is also important that the food is produced in a safe and healthy manner.

The employment and income provided by UPA also offers the potential to relieve food insecurity. The primary effect is through non-wage employment of urban farmers themselves and family members and neighbours in the busy season. It appears that relatively few paid jobs exist in UPA beyond the intensive, commercial sector that is located around many cities – producing livestock and dairy products as well as horticultural and floricultural products. The evidence suggests that most urban food producers supplement their income from other sources, or supplement the household food intake, through agriculture. UPA also provides a buffer for the non-poor in times of emergency to enable them to maintain food security levels (Seeth et al. 1998, cited by Nugent 2000). The many urban farmers who are women are especially likely to use income earned from farming on food provision for the family.

II. Evidence of the impact of UPA on household food security and nutrition

The factors that largely determine whether UPA can have a significant impact on household food security and nutrition in an urban area are simple: what is being produced, by whom, and who consumes it. It is also important to determine how the food is being produced (in a safe manner?) and the seasonality of UPA production.

Most directly, UPA reduces food insecurity if it increases access to food – especially fresh nutrient-rich food -- among populations suffering from food insecurity – the poor, temporarily or permanently vulnerable, and children – either through their own self-provisioning, which reduces market expenditures or increases income. As the urban poor are found to be spending 60-80 percent of their income on food, either of these actions can have a major impact on household well-being (Tabatabai 1993; Maxwell et al. 1999, cited by Armar-Klemesu 2000). The available evidence suggests that UPA enhances quantities of food for the urban farmer and other low-income families, supplements income for the urban farmer, but offers unclear nutritional benefits.

The literature indicates that UPA increases access to food for low-income groups (Ruel, Haddad, and Garrett 1999). According to Armar-Klemesu, who conducted a thorough review of the literature for “Growing Cities, Growing Food,” a Reader on Urban Agriculture, studies support the contention that intra-urban agriculture improves food security of vulnerable urban households. Among other impacts, she cites studies showing that:

- farm households are less dependent on gifts and transfers of food;
- major shares of household food consumption are self-provided in some cities, especially among low-income families;
- cities where the demand for fresh and perishable goods is better met by urban production than rural; and
- urban farmers consume greater quantities of vegetables than non-urban farmers and wealthier consumers

Particular nutritional impacts on vulnerable populations are the focus of studies that reveal:

- mixed impacts of urban farming activity on the nutritional status of household members, depending on the specific conditions of female participation and availability of staples;
- a greater benefit to household welfare when the farmer is female; and
• a significant improvement in nutrition among poorer households (Maxwell et al. 1998).

The evidence is stronger that UPA can significantly affect household food security through income and employment. Case studies show that (Bakker et al. 2000):

• income earned from agriculture can be a significant share of the total for urban households, especially for vegetable growers, and in African cities;
• a household may engage in agriculture as a means of savings, buffer against emergencies, or current consumption (or any combination of the three); and
• a large share of the UPA activity (either production or marketing of food) is done informally and is thus not included in official statistics. If counted, it would constitute an important economic contribution in some cities.

III. The supply potential of UPA for household food insecurity

Urban and periurban agriculture have been used as a household strategy to respond to both chronic and emergency food insecurity. The supply response to those two conditions is driven by different factors – that chronic food insecurity develops from structural problems, declining food affordability and growing urban poverty, whereas emergency urban food production arises quickly in response to breakdowns in normal mechanisms for food distribution. Numerous examples in recent years have shown the potential for UPA to ameliorate emergency food shortage situations: cities in Indonesia, Kosovo, Russia and other war-torn and economic-crisis zones have turned to UPA.

More questionable is the potential for UPA to ameliorate chronic food insecurity and undernourishment of vulnerable populations. Studies cited above have shown a substantial impact on food and income generated at the household level among those who are farming. Whether that activity can have an effect beyond the micro-level to reduce urban food insecurity is still unexplored. The major trends affecting urban conditions in developing countries are not auspicious: continued rural-urban migration, increased unemployment, higher poverty and disease levels, crime and social disruption. The potential of UPA to provide some relief from these strong forces is a daunting challenge to international and local food security agencies, and of course, to the farmers themselves.

The conditions needed for successful intervention of UPA against chronic food insecurity are two-fold: steady production opportunities and involvement of the food-insecure. The former is necessary to provide a consistent and reliable source of food – which is a prerequisite of food security – and the latter ensures access by the poor which is often not a component of formal urban food distribution systems.

Steady production opportunities means having access to resources (especially land and water), a basic knowledge of farming within the agro-climatic conditions present in the urban area, and some available time. It also implies the presence of a permissive policy environment, in which UPA is not perceived as a danger or a nuisance with consequent efforts to wipe it out on the part of city officials.

UPA’s comparative advantage does not lie in the fact that it is inherently more efficient to produce food in an urban environment. On the contrary, for many agricultural activities, competition for resources and conflicts with other urban activities constrain urban agriculture in serious and sometimes costly ways. Nonetheless, it is not essential that UPA be able to compete in the marketplace with agricultural production from elsewhere since much UPA...
output does not enter formal market channels. This is especially true for the UPA output that will be available to the poor, food-insecure urban residents. Ruel et al. state that even a small proportion of overall food consumption coming from urban agriculture can greatly affect household food security if it comes at periods of acute need. It is sufficient that food can be produced and made available to the food-insecure at a lower opportunity cost of their resources, than alternative means of obtaining food.

Experience shows that output varies even from season to season as farmers find other income-producing opportunities, or additional barriers are raised against intra-urban and periurban farming. Nonetheless, there does appear to be significant potential for intra-urban and periurban agriculture to contribute to urban household food security. UPA was providing between 10-90 percent of urban vegetable needs and 48-100 percent of dairy or livestock needs in the cities where these calculations had been made. The conditions across cities are enormously variable, and no research exists to measure the maximum supply potential of UPA. The available case study information refers to the amounts being produced under existing city conditions – however favourable or unfavourable to UPA production.

IV. Connecting supply of UPA to needs of food insecure households

The previous sections briefly described what is known about UPA’s existing impacts on household food security and its contributions to urban food availability under current conditions. In order for UPA to improve the food security of urban households, it must reach the food-insecure (a measure closely matched to poverty level measures but not identical (Maxwell, 1999) and must provide not just calories but also other nutrients where they are needed.

One can infer from the available evidence that both conditions are met since non-commercial UPA is largely performed by the poor (quantities varying enormously from city to city and not well documented) for self-consumption, and large shares of cities’ fresh fruit and vegetable needs are produced within the UPA zone. However, available evidence could imply an alternative scenario that gives rise to concern that the connections between UPA and household food security are less strong. This is one of many research questions that must be pursued in order to fully understand the current and potential impact of UPA.

UPA consists of two disparate and possibly segregated sub-sectors: the commercial horticultural and livestock industries largely located in periurban areas, and the subsistence production of poor households scattered through the urban and periurban zone, wherever land and poverty create the opportunity and need. In many cities, it is relatively well documented that periurban agriculture produces large quantities of healthy food for urban areas. Much less is known about the types of output and destination of food produced by intra-urban agriculture.

If, for reasons of technology or constraints, the poor are not producing micronutrient-rich food for their own consumption, but rather staple foods and occasional vegetables, then household food security might be relatively unaffected by UPA. Several of the studies cited by Armar-Klemesu point to this conclusion. Further, if a negative policy environment prevents low-income households from investing in their urban farming activities, the returns from that activity will eventually be eclipsed by better economic opportunities, drawing people

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2 See case studies in Information Market.
3 Largely based on research conducted in African cities.
4 See city case studies in Information Market.
5 Op cit.
away from farming and perhaps losing the direct beneficial effects on household food security.

Poor urban households can find UPA a useful livelihood strategy under certain conditions. In order to achieve the maximum from their investment in UPA, they require access to essential resources, certain technical support, and most importantly, a permissive or supportive policy environment. Elements of such a policy environment are:

- land-use regulations that protect urban agriculture uses;
- provision and reasonable pricing of land and water resources
- identifying and easing distribution and marketing channels to which the poor have access as both suppliers and consumers; and
- land tenure mechanisms that encourage investment in UPA and would make credit use viable.

V. Discussion questions about UPA and household food security and nutrition

The purpose of this thematic paper is to raise issues about the role of UPA in addressing urban household food insecurity. It is not to provide answers, nor to offer final conclusions on that issue. Indeed, final conclusions at this stage could not be credible. Too many uncertainties exist, too much untapped potential must be explored before it can be known whether UPA can go far in ameliorating the growing urban food insecurity in developing countries against a phalanx of worsening trends.

Session One of the E-conference (August 21 – September 1) can address, *inter alia*, these questions about the basic facts of UPA:

- Who is engaging in UPA, why and when (seasonal, emergency, full-time or part-time)?
- Who consumes the output of UPA and how does it affect their nutritional status?
- What agricultural products offer the best potential for efficient urban production?
- Do street food vendors use ingredients from UPA?

Session Two of the E-conference (September 2 – 16) can address the following questions regarding policy choices for UPA and food security and production potential:

- What are the constraints on producers and how best to mitigate them (regarding land, water, credit, time, etc.)?
- What policies are needed to increase employment and income from UPA production and processing?
- Can policies be adjusted to improve the access of urban residents to UPA?
- What are examples of water-recycling systems that provide safe water to UPA producers?

Session Three of the E-conference (September 17 – 30) can address questions regarding how to implement changes in UPA and food security policy:

- How can UPA strategies address household food security among the most vulnerable urban populations?
- What assistance is needed by UPA farmers to increase their production potential under different agro-climatic conditions?

We hope that the multiplicity of experts and interested parties in this electronic conference will produce practical, experience-based answers to the above questions. We invite you to
expand the list of questions above and to share and learn from each others’ experiences. Please note that the discussion in Theme Two: UPA and Health and Environment deals with many nutritional and food safety concerns of interest also to this group. We invite you to cross-post your messages.

References