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Overview - Urban Food Self-Reliance: Significance and Prospects

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Food insecurity is drawing more and more people in Southern cities to the burgeoning practice of urban agriculture -- the production of food and non-food crops and animal husbandry in built-up areas.

For the urban majority of poor people in the South, food is turning into a very expensive commodity. In 1990, households in nearly half of the developing countries' largest cities were spending 50-80% of their average income on food. Surveys from the late 1980s in Kenya, Egypt, India, Bolivia, Bangkok, La Paz, Bamako and Dar es Salaam, show that poor urban households spent around 60% -- and in some cases as much as 89% -- of their income on food.

When it comes to food, poor people in cities have fewer coping strategies than rural inhabitants. Price surveys of five developing countries showed that city dwellers paid between 10-30% more for their food than rural dwellers. The notion of urban privilege over rural neglect appears ill-founded when as much malnutrition prevails in large primary cities as in rural areas of some countries.

The practice of producing food in cities dates back to Incaic, Aztec and Mayan cities, early Javanese and Indus settlements, and towns of the Tigris and Euphrates. In our era, more advanced urban agriculture is typically found in Asian cities, where policy-makers and planners have for some time accepted and promoted food production as a critical urban function.

Urban agriculture has been expanding since the late 1970s in many parts of the developing world. Multiple factors come into play: rapid urbanization, ineffective agricultural policies, crippled food distribution systems, withdrawal of subsidies, reduction of wages, inflation, unemployment, lax urban regulations, civil strife and droughts.

Most urban agriculture still remains largely unrecognized and unassisted if not outlawed or harassed, even in years of food shortage. But more governments are creating agencies to manage this activity and actively encourage it. Between 1975 and 1985 governments in at least ten Asian, six African and six Latin American countries supported such initiatives in a variety of ways.

Globally, about 200 million urban dwellers are now urban farmers, providing food and income to about 700 million people. In Dar es Salaam in 1980, 44% of low-income earners had farms, but by 1987 70% of heads of households engaged in some farming or husbandry. During the 1980s, 25% of all urban households engaged in food production in the US, compared to 57% in six Kenyan cities, with other city-specific figures ranging from 32.6 to 70% for Kisangani, Kampala, Lusaka, Moscow (1991) and Dar es Salaam. Cairo in the early 1980s had at least 80,000 households raising animals at home.

IMPORTANT CONTRIBUTION

We now can say that such agriculture often makes a significant contribution to many major cities' food self-reliance. In some large Latin American centres a third of vegetable demand is met by urban production. Cities such as Kathmandu, Karachi, Singapore, Hong Kong, Shanghai and others in China produce between 25 and 85% of their supply in vegetables and fruits, while Hong Kong, Kampala and Singapore raise between 70 and 100% of the poultry they consumed. Some cities even manage to export products to other countries.

Although the agricultural potential of cities is clear, development policies nurturing rural-urban dichotomies have been needlessly starving cities; by 1980 nearly half of all food consumed in developing countries was being imported from other countries and weakened urban food supply systems are now causing renewed concern. Urban agriculture now gives us good reasons for recognizing the comparative advantages of rural and urban areas in meeting large cities' growing needs for reliable, cheap supplies of sufficient and nutritious food.

Apart from nutrition and health, farming in cities contributes to producers' well-being in a number of ways, including cash-saving and income generation. Among the lower-income groups, self-produced food can cover a considerable share of a household's total food intake and can save cash income that otherwise would be spent on food. Depending on the income group, self-produced food is found to account for between 18 and 60% of household food consumption in East Jakarta, Dar es Salaam, and Kampala. Home-produced food enables families in Addis Ababa cooperatives and Dar es Salaam's poor families to save 10-20% and 37% of their income, respectively. In Bolivia, urban food projects supply women producers with a quarter of their total income.

The impact of this activity on households' nutritional status is under-researched but the data available is encouraging. According to a 1981 UNICEF survey of households with children in 13 low-income districts of Kampala, partial reliance on intra-urban food production largely explained why supplementary feeding aid could be discontinued, despite dramatic economic decline. Thus conventional urban food security strategies need to be reassessed in view of the potential of city farming to augment the real income of low-income households at levels equivalent to food subsidy programs, doing so at much lower cost and with many other benefits.

THE SCALE OF CITY FARMING

Tailored surveys reveal that the area devoted to agriculture in cities is much more than indicated by most urban land use classifications. For instance, some 60% of Greater Bangkok was officially under urban agriculture in the 1980s. Agriculture is found on land unsuited to building, undeveloped land, idle public land and bodies of water, and household spaces. Urban farming thus does not obstruct more appropriate land development; rather it puts to use small, inaccessible, unserviced, hazardous, and vacant areas.

The adaptability of this agriculture is due to a range of farming systems and crop selection that make the best of site and locational constraints and resources in the urban fabric. One UNDP survey identified over 40 farming systems, including aquaculture, horticulture, livestock, agroforestry, silkworms, and medicinal and culinary herbs.

Urban agriculture is clearly far more than a means of subsistence, an informal activity, or an illegal business. The UNDP survey identified seven urban farmer categories, ranging from low-income survival to middle-income home gardeners to agribusiness. In Bangkok, a single large firm contracts some 10,000 outgrowers of chickens.

Owing to its considerable resource needs, city farming is not the business of recent immigrants from rural areas. More than 60% of Lusaka's farmers had been in the city for more than five years before starting their plot gardens, and nearly 45% for more than ten years. In Lusaka, Nairobi, Freetown, Ibadan, and Dar es Salaam, the majority of urban farmers waited at least five years before initiating farming in the city and most were longtime residents by the time of the surveys. Most urban farmers have other part or full-time

jobs.

INFORMATION FOR URBAN AGRICULTURE DEVELOPMENT

Throughout the 1990s, research on urban agriculture will probably lead toward more multidisciplinary and policy-oriented efforts via regional and global networking. Several aspects of it require attention by researchers, coupled with changes in urban environmental management.

Comparative and Longitudinal Impact Studies

There is a marked lack of longitudinal and comparative analysis between farming and non-farming households that examines nutritional status and strategies of the urban poor to cope with food insecurity. More generally, systematic comparisons of cities that analyze the impact on nutrition, income, employment, health, waste and other environmental management issues are needed.

Technologies

Urban agriculture requires higher technological and organizational precision than rural agriculture because it needs to be more intensive, more tolerant of environmental stress, responsive to market behaviour, and carefully monitored to protect public health. Many highly valued systems must be adapted to smaller-scale operations, such as hydroponics and stall feeding. Where poorer urban households have little land, technologies must be adapted to make more efficient use of tiny household spaces.

The Urban Ecosystem and Economy

More thorough accounting is required of the costs and benefits associated with urban agriculture, both as a land use (including environmental, social and health benefits) and as an industry (job multiplier). Various methods exist to assess the value added to land and the savings to the private and public sectors. Such assessments should help argue for savings in land investment and management either through incorporating city farming in conventional land uses or assigning land in new developments and laying out utilities accordingly. A further area of investigation is quantifying the employment and income associated with this activity. Street-food vending, for instance, is a bustling yet repressed business that is a critical feeder of specific groups, often an important employer, and run largely by women.

Access to Land and Credit, and Crop Security

The amount of vacant and underutilized land suitable for agriculture was enormous in most large cities in the 1980s: 200 km² in Greater Bombay, 338 km² in Bangkok, 203 km² in Metro Manila, as much as 600 km² in Sao Paulo, and 4850 ha in Karachi. The real problem is lack of access to land. Surveys have found that improving access to land would lead current farmers to expand operations and prompt many non-farmers to begin farming. People may be prevented from farming their own land by zoning laws. Farming often takes place on land or water where crop security and usufruct rights are at issue. Thus, there is a need to support local authorities, NGOs and communities groups in improving access to land, through usufruct and leasing agreements, multi- or flexi-zoning, agro-residential planning, land leasing and land banking. Agricultural credit is almost universally unavailable to urban farmers, even when credit is granted to poorer urban businesses and when city farming holds lower risks than rural farming. The lack of credit results in high failure rates, low yields, intermittence, and non-investment in higher-yielding systems. Current credit programs to housing and small enterprise development could be re-oriented, particularly those targeting female micro and small entrepreneurs.

Waste and Health Risks

Urban agriculture could further reduce its use of high-quality water if sewage systems were designed to recycle sewage locally. Irrigation with untreated wastewater is a problem that requires the adaptation of low-cost pathogen and vector elimination processes and assessments of crop susceptibility to

contamination. Research results could guide crop selection accordingly; for instance, whether to plant food crops or non-food crops.

Solid waste is already used in a variety of ways but the practice should be further encouraged. Current centralized management systems may hinder solid waste reuse for city farming, as solids are dumped at sites with restricted access and wastes are unsorted. Pollution of the water table and soil from agrochemicals could be curbed by the use of biological insecticides, multicropping, compost and treated sewage.

Equity Aspects

More research is needed on those who stand to benefit from expanding and improving city agriculture, with particular attention to gender and ethnic inequities. Immigrant minorities often are major agents of technological transfer but are frequently neglected by ruling groups in host urban settings. Depending on a range of factors, women may make up half -- if not the majority -- of urban farmers, yet very few studies have focused on the needs of women in urban agriculture.

Leading Urban Agriculture into the 21st Century

Urban agriculture is capturing growing attention among international bodies. After the East-West Center's initial survey of the practice in the Pacific Basin, IDRC held a seminar in Singapore and commissioned a worldwide literature search from the Urban Resources Centre in 1984. In the later 1980s, UNICEF implemented various projects and IDRC funded four studies in Kenya, Uganda and Tanzania. By 1988, the UN University's Food-Energy Nexus Programme had published a series of research reports in selected regions, countries and cities. Related research was carried out by the Cities and Ecology Project of Man and Biosphere/UNESCO. Building on this, the UNDP's Urban Agriculture Network surveyed 21 countries in 1991-92 and convened interested agencies to effectively promote UA development, including wastewater farming and hydroponics. Components of the reputed CGIAR system (i.e. International Food Policy Research Institute) are assessing the potential for more comprehensive food security strategies. Development NGOs are already active, particularly in Latin America, with others reviewing their rural record and current expertise to better shoulder urban agricultural development.

In 1992, the Toronto-based Developing Countries Farm Radio Network released four radio scripts on urban farming for broadcast in developing countries. UNICEF is reviewing its own project experience for future policy directions. Major UN programs (e.g. Healthy Cities of WHO and Sustainable Cities of UNCHS/UNDP/WB) now provide operational frameworks for urban agriculture research to guide better urban management. Since early 1993, IDRC's Urban Environment Management Program focuses on water-waste-agriculture linkages in cities.

In mid-1993 various agencies and Northern and Southern country specialists met at IDRC in Ottawa to identify key information needs and collaboration mechanisms. IDRC has about CA\$1 million in active projects on urban agriculture production and urban nutrition; many past studies have tested links between waste treatment and recycling with farming, others have analyzed urban food circulation systems.

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