

## 1.2 Economics Impact of Urban Agriculture



Retailer selling local produce.

(Picture: Henk de Zeeuw)

## Economic Impact of Urban and Periurban Agriculture

**Rachel A. Nugent, Ph.D.**

**National Institutes of Health, Bethesda, United States**

[rachel.nugent@nih.gov](mailto:rachel.nugent@nih.gov)

### Introduction

The economic impact of urban and periurban agriculture (hereafter UPA) provides information that can ensure the survival of the activity when it is threatened by economic or political opposition – but it is also one of the most elusive. UPA has long faced an audience sceptical of its contributions and sustainability, and is only recently being analysed in ways that can demonstrate its value to households and communities. A uniform method of accounting for and tracking the economic output of UPA would provide information to policy-makers, as well as prospective urban farmers, that would improve efficiency and possibly increase support for the sector.

Unfortunately, such a method has so far not been devised and attempts to produce credible and useful economic impact information have been partial and inconsistent. A survey of the existing literature related to economic impact of UPA shows that there is general agreement on which elements should be measured, and on the relative importance of those measures in assessing the impact of UPA. However, there is also agreement that UPA varies widely from city to city and cannot be easily characterised from general experiences. Therefore, the field remains dominated by partial evidence and unsubstantiated claims, and policy-makers respond with little enthusiasm to the resource needs of UPA adherents.

This chapter describes what is known and not known about the economics of UPA based on existing literature. It begins with a definition of the economic impacts of UPA and summarises the state-of-the-art in the field of measuring and analysing those impacts. It then provides a brief summary of the results of economic studies of UPA, highlighting where there are clear and credible results, and where – much more often – there are vague and qualitative statements about the impacts. Finally, the chapter identifies the major gaps in the literature on economic impacts of UPA and suggests steps for filling those gaps in the coming years. The annotated bibliography follows this short summary of the literature.

### Overview of literature on economic impacts of UPA

There are two primary strains of literature addressing economic impacts of UPA: city case studies with some quantitative information and descriptive accounts of the theoretical economic impacts of UPA. Neither strain has a long history. The earliest article that appeared discussing the economics of UPA was published by the OECD in 1972, but there was little to follow until the mid- and late-1990s when a series of international conferences spawned a serious look at the subject (Toronto, Havana, Berlin, Quito, Bangkok, Nairobi).

The state-of-the-art in identifying economic impacts of UPA can be characterised as low -- in terms of the techniques used and in the information obtained. Most economic impacts are produced by casual observation or by limited survey methods (case studies in *Growing Cities Growing Food*, 1999). A few studies exist that have used statistical methods to derive figures

(UNDP, 1996) or gathered information from primary data sources (Nugent in Furuseth, 1999). Nugent (2001, Nairobi workshop) explains the standard economic methodology for obtaining market and non-market values as cost-benefit analysis and contingent valuation, respectively. The former method was used in a limited way in Nugent, 1999 but use of the latter method – most appropriate for quantitative measurement of non-market impacts, such as the informal labour and output markets in which UPA exists, as well as health and environmental impacts – has not yet appeared in the literature. Carrying out such work would serve as excellent research projects for Agropolis to support.

### Descriptive accounts of UPA economic impacts

The early literature in this field focused on identifying the types of economic impacts arising from UPA activity. These articles included Ministry of Foreign Affairs (1994), FAO (1996), Nugent (1998), and Mougeot (1998). The articles focused on the employment creation and poverty alleviation potential of UPA, while also naming other impacts with less clear economic connections, such as food security, health and environmental effects.

These articles attempted to lay out an economic framework for thinking about urban agriculture, beginning with definitions. Mougeot (1999) reports that there have been many different published definitions of urban agriculture, but economic aspects are common elements of almost all accepted definitions. He summarises the economic elements as follows:

Types of economic activities: most definitions refer to the production phase of agriculture; recent definitions include processing and trade to stress system interactions between them. Besides being analytically sound, the integrated approach is particularly relevant to UA as, differently from rural agriculture (RA), production and marketing (and also processing) can and tend to be more integrated, thanks to greater geographic proximity and quicker cash-flow. This is achieved by small and dispersed units which make up an extensive and decentralised supply system within immediate reach of a massive consumption market. Economies of agglomeration seem to prevail over those of scale, the latter being more important in RA production. In UA, economies of scale through cooperative efforts may further enhance the benefits of unit-based vertical integration (CFP Report 31, 1999).

Clearly stated was the idea that UPA could be a potent and important economic activity under certain conditions, and that agricultural policy-makers should take it seriously. As the literature expanded, so did the different definitions of UPA (see Quon, IDRC, 1999). Some of the definitions focused on economic aspects by emphasising the use of resources in a competitive market setting (FAO, 1998, COAG), while others focused on the types of outputs of UPA (Mougeot, 1998) or the different locations in which it could be practiced (UNDP, 1996). The net result has been a healthy discussion about the diverse benefits of UPA, but an unhealthy confusion about what UPA actually is, and who benefits from it.

For instance, Nugent (1999, Furuseth) emphasises the commercial market value of community farming in a North American city in finding that the benefits of UPA outweigh the costs. UNDP (1996), IFPRI (1998) and others emphasise the potential food security benefits, job creation, and overall sustainability that might occur through UPA. In “A framework for measuring the sustainability of urban agriculture,” Nugent (1999) identifies the following types of economic costs and benefits deriving from UPA:

| BENEFITS            | COSTS |
|---------------------|-------|
| Agricultural Output | Land  |

## Economic Impact

|                                 |                                  |
|---------------------------------|----------------------------------|
| Economic Diversity              | Water                            |
| Indirect Economic Activity      | Labour Time                      |
| Recreational Activity           | Seeds and Plants                 |
| Food Security Benefits          | Tools and Equipment              |
| Dietary Diversity               | Energy Input (fuel, electricity) |
| Community Cohesion and Security | Environmental Degradation        |
| Environmental Improvements      | Health Risks                     |
| Health Benefits                 | Chemical Inputs                  |

The full range of costs and benefits may not be apparent or significant in every urban agricultural enterprise. Specifically, UPA conducted by poor urban dwellers in developing countries is likely to use less chemical fertilizer and pesticides and less purchased energy than UPA conducted by commercial market gardeners near wealthy cities. Similarly, weekend community gardeners in North America or Europe are more apt to derive recreational benefits from their UPA activity than female home gardeners in poor cities who produce subsistence food for their household.

Nonetheless, the description of multiple types of costs and benefits, and the author's insistence that each of them can be considered to have economic value, presents a systematic approach to assessing economic impacts of UPA. A more qualitative discussion of the broad array of potential costs and benefits is found in IFPRI, 1998. The focus of this report is on food security, but the paper discusses the importance of UPA for income, employment, health, and other aspects. The paper presents a literature review and recommends areas needing research.

### City Case Studies

The problems of multiple definitions, lack of uniform conditions, and differing foci have resulted in the literature on UPA consisting largely of case studies. City case studies focus on one or several aspects of UPA – generally those that are particularly important to the writer and to the particular circumstances of the city being studied. Very few studies attempt a complete review of all the negative and positive impacts that UPA creates in the urban context. The net effect of the case studies is to create confusion about the economic impact of UPA because UPA itself varies widely by city, and because the methods used in the case studies vary and are often not explicitly stated.

The most extensive collection of case studies was produced for the 1999 Havana Workshop: "Growing cities, growing food: urban agriculture on the policy agenda." A selection of nine case studies was reviewed for the thematic chapter on urban agriculture and the household economy, included as part of the full volume of papers produced for the workshop. The thematic chapter summarised the economic impacts identified in the case studies with the caveat that the cases are variable in their sampling methods, scope, and presentation of data. The summary shows that the primary impacts of urban agriculture are related to food security. UPA practitioners are motivated by the need to produce food for home consumption, to earn income, and as a way to ameliorate the effect of food crisis or high prices on their households. Each of these reasons can be seen as a way to relieve the risk of food insecurity.

The thematic paper also discusses the effect of UPA on labour markets, especially informal markets that exist in many cities of the developing world. Urban farmers are often not formally employed in these circumstances and farming provides the means to earn some income or relieve poverty. In a developed country context, one case study (Nugent, 1999) showed that the use of wage labour was relatively small and concentrated in the commercial sector, while part-time and elderly pensioners provided the bulk of the labour input in the non-commercial UPA sector. However, even among the latter groups, UPA was engaged in for recreational and health reasons rather than food security reasons.

The monetary income from UPA varies significantly from city to city, according to the case studies, and also varies seasonally and by the assets and effort of each farmer. Some case studies carried out surveys to determine income from UPA. Where average earnings were calculated, urban farming produced a range from 2 percent of an average industrial wage (Zimbabwe) to 10 percent of income (Russia). The monetary returns from UPA depended heavily on access to land and the effort and time invested in farming.

The overall economic impacts of UPA are still very much disputed. Case studies show a range from \$4 million (Mazingira, Nairobi in 1985) to \$25 million (Howarth, Dar es Salaam in 1996). The city of Havana, Cuba and other Cuban cities are widely cited as examples where UPA output provides a large proportion of city food needs (Murphy, 1999) and the results in improved food security and diversity are well documented. In Dar es Salaam, the contribution of UPA to food security and total production is also shown to be significant (Jacobi, 1998). However, with all these studies using different methods, applied in different years, and including different commodity groups, there is no feasible means of making these results comparable across cities or across time.

The disputes arise because of the lack of comparability in available statistics. The case study of Mexico City prepared for the Havana workshop (1999) concludes that UPA has little economic impact in the area, whereas some sources conclude that well over half of households across the world are involved in urban farming (UNDP, 1996). Once again, until common definitions and data collection methods are used in case studies, these differences will not be reconciled.

### **Major Gaps in the Literature and How to Address Them**

Few communities are prepared to conduct a full economic analysis of UPA. Not only do such studies demand specialised skills and require a significant amount of researcher time, but they require data and information that is difficult to acquire. Most importantly, such methods are utilised most often when there is a problem that requires policy-makers to make choices among powerful competing interests. In such situations, policy-makers demand objective, verifiable information that comes only from thorough investigation of a situation. With rare exceptions, issues surrounding UPA have not risen to the level of concern among local or national policy-makers that would warrant such an information-gathering and analysis effort.

Ultimately, credible economic analysis of UPA will clarify choices among activities and needs within a community. Preliminary work can be performed that will improve communities' capacity to undertake economic analysis of UPA for purposes of better decision-making down the road. Some of these steps and their usefulness are described in this section.

### **Use trend analysis to understand UPA impacts**

The most important impact of UPA is the agricultural produce. Lack of information about production trends in UPA presents a severe limitation to any assessment of the value UPA contributes to a community. UPA output depends on many factors (see Nugent, 1999) and can fluctuate widely with changing conditions. This can lead to serious misunderstandings of UPA and its impact.

One step toward eliminating misunderstandings about UPA is to collect available information about major quantifiable impacts of UPA and correlate it with underlying conditions. For instance, UPA production would be expected to correlate positively with unemployment rates in a community: greater unemployment encouraging UPA production from informally or unemployed workers. These kinds of relationships should be examined over a minimum of several years to assist in understanding the major influences on and contributions of UPA.

Quantifiable trends available from official or unofficial statistics often include localised employment in agriculture, wage rates, food availability and prices in markets, and sometimes local agricultural output. If these statistics are not readily available, simple surveys can be carried out to begin establishing a reliable database.

### **Carry out limited economic analysis of UPA using only market-based, quantifiable measures**

A partial cost-benefit analysis can be done when market-based aspects of UPA can be quantified. Results of such analysis can be surprising to policy-makers and others who were unaware of the economic contribution made by UPA. If reliable data are available, the product of agricultural output and prices paid in the market for the output reveal the contribution to a city's GDP of UPA. If data can be produced that show labour hours invested in UPA and wage rates paid to UPA workers (or proxy for wages), the beneficial impact on incomes and employment can be demonstrated. These figures must be offset by the value of the opportunity cost of resources invested in UPA, such as costs of land, water, and seeds.

### **Develop indicators to approximate non-measurable impacts of UPA**

UPA indicators can measure the conditions and trends affecting UPA : are certain things improving or worsening, where are problems occurring, etc. The main reasons to use indicators, rather than simply raw data or qualitative information, is that they can be selected to be simple, comparable, and "indicative" of important objectives. Thus, they can demonstrate the health of UPA itself, and the sustainability of UPA in a city.

The indicators should be selected to provide information, to show trends, to guide policy and give feedback to policy decisions. Primarily, they should show people whether the situation in question is worsening or improving. For UPA, this again suggests different motives for different groups. Some are concerned about the immediate food security impacts of UPA production, others are interested in the environmental effects of soil and water use for agriculture, and others about the social effects of women's involvement in farming, among other issues. These diverse interests complicate the task of selecting a small set of relevant indicators for UPA.

### **Conduct a case study economic analysis to demonstrate the unrecognised impacts of UPA to policy-makers**

The first step to establish a common methodology to assess the sustainability of UPA across communities is to perform a competent case study. The selected city should be one that has the full range of impacts that can occur from UPA, and the full range of issues and conflicts that face policy-makers and communities in deciding how to manage UPA.

The case study will need to draw on methods described elsewhere (Nugent paper for Nairobi workshop on methodology, 2001) and should at a minimum assess both market and non-market impacts of UPA. The study should identify important stakeholders affected by UPA and sectors affected by it both directly and indirectly. The issues and hurdles raised in conducting the case study will inform researchers about the demands and uses of economic analysis for agricultural research and planning.

In summary, the most glaring gap from the current literature on the economic impact of UPA is quantification of important economic variables: income, employment, annual output. Correction of this gap will require further progress toward an agreed definition of UPA, continued progress on methods of analysis appropriate to UPA, and researchers who can devote serious time and effort to produce rigorous case studies that can serve as models. The pay-off will be substantial if this research can be delivered to policy-makers in cities where UPA is an important economic sector and an important livelihood activity for many people.

### **References**

- Growing Cities, Growing Food: Urban Agriculture on the Policy Agenda** (2000), see multiple case studies.
- United Nations Development Program**, 1996, *Urban Agriculture: Food, Jobs, and Sustainable Cities*, New York
- U.N. Food and Agriculture**, 1996, "Urban Agriculture: An Oxymoron?", *The State of Food and Agriculture*, Rome.
- Murphy, C.**, 1999, "Cultivating Havana: Urban Agriculture and Food Security in the Years of Crisis," *Institute for Food and Development Policy*, Oakland, CA.
- Nugent, R.A.**, 1999a, "A framework for measuring the sustainability of urban agriculture," in Koc and Mougeot, (eds.), *For Hunger-Proof Cities: Sustainable Urban Food Systems*, IDRC Books, Ottawa.
- Nugent, R. A.**, 1999b, "Is urban agriculture sustainable in Hartford, CT.?" in Furuseth, O. and M. Lapping, (eds.) *Contested Countryside: The Rural-Urban Fringe in North America*, Ashgate, London.
- Ruel, M., L. Haddad and J. Garrett**, 1998, "Are urban poverty and undernutrition growing? Some newly assembled evidence," IFPRI Discussion Paper 63 (and others in the series) Washington, D.C.
- IFPRI**, 1998, "Urban challenges: A review of food security, health and caregiving in the cities," Discussion Paper 51, Washington, DC.
- Mazingira Institute**, 1985, cited in Tevera, D., 1996, "Urban agriculture in Africa: A comparative analysis of findings from Zimbabwe, Kenya and Zambia," *African Urban Quarterly*, pp. 181-187.

**Abdelwahed, Said I (ed.) (1998). Future of urban agriculture in Gaza: proceedings of regional workshop 13-15 September 1998. 168 p. Palestinian Agricultural Relief Committees (PARC)**

economic impact

Gaza Strip; workshops

The papers draws a picture of the situation of urban agriculture in the particular setting of the Gaza Strip and examines perspectives for its more widespread introduction in Gaza, Palestine and Lebanon. (WB)



**Agyemang, K; Smith, JW (1999). Counting the costs and benefits of implementing multi-country collaborative research projects: the case of the periurban Inland Valley Dairy Project in West Africa. In: Agriculture urbaine en Afrique de l'Ouest: une contribution à la sécurité alimentaire et à l'assainissement des villes = Urban agriculture in West Africa: contributing to food security and urban sanitation / Olanrewaju B. Smith (ed.). International Livestock Research Institute (ILRI), Ibadan, Nigeria**

economic impact      R&D methodology  
multi-disciplinary projects; agricultural research

Costs mainly associated with consultations, communication problems and bureaucracy are far less than the benefits including capacity building, institutional linkages information sharing and methodology development. (NB)

**Aktie Strohalm (1996). Balancing Europe for sustainability: using financial micro initiatives to build a better environment. 252 p. ISBN 90\_70\_33413.5. Aktie Strohalm, Oudegracht 42, 3512 AR Utrecht, The Netherlands**

economic impact  
economic aspects; alternative marketing; community supported agriculture; microfinance

This 'reader' analyses the potential of various financial micro initiatives as tools for sustainable development. The general concepts provide insight in why urban agriculture is important to achieve sustainability, but especially the chapters on community supported agriculture and local exchange systems are relevant for urban agriculture. (NB)

**Allen, Patricia (1999). Contemporary food and farm policy in the United States. In: For hunger-proof cities: sustainable urban food systems / Mustafa Koc, Rod MacRae, Luc JA Mougeot and Jennifer Welsh (eds), p. 177-181. ISBN 0\_88936\_882\_1. CAD 35.00. International Development Research Center (IDRC), PO Box 8500, Ottawa, Ontario, Canada K1G 3H9  
Supplier: International Development Research Centre (IDRC), Publications Department, PO Box 8500, Ottawa, Ontario, Canada K1G 3H9**

food security and nutrition      economic impact  
food policy; United States; agricultural policies; food programmes; food security

Two movements affecting the food security of Americans have emerged in recent years. One is the community food-security movement, dedicated to ensuring that everyone has the ability to obtain a nutritionally adequate diet. The other is the movement to dismantle social-welfare programs to "end welfare as we know it." While interest in domestic food security is increasing in some areas the food-security safety net is unravelling in others. These notions are distinctly at odds with expectations for commercial agriculture. This paper explores the character of the



disjuncture between governmental farm and food programs. It examines the demographic characteristics of those who benefit from food programs and of those who benefit from farm programs. The privileging of agricultural producers over poor consumers is framed in its political and ideological context. Ensuring food security for the poor will require innovative food policies capable of operating effectively in this political and ideological environment. (Abstract adapted from original)

Armar-Klemesu, Margaret; Maxwell, Daniel G. (2000). **Accra: urban agriculture as an asset strategy, supplementing income and diets. In: Growing cities, growing food: urban agriculture on the policy agenda, p. 203-208. DSE, GTZ, CTA, SIDA**  
economic impact      food security and nutrition  
farming systems; livestock; vegetable production; asset strategy; land use systems; food security; health; ecology; economic impact; gender; urban policies; livelihoods; reuse of waste; Accra; Ghana

Urban agriculture was identified as an important element for a study on livelihoods, food and nutrition in Greater Accra. Different farming types were distinguished and analysed with regard to food security, household economics, health ecology and gender. Farming is done for three main reasons dependent on the farming type: cash income, food subsistence and assets strategy for emergencies. Men and women do have different roles in urban agriculture whereby women's activities tend to contribute more to household food security than men's and women dominate the marketing of crops. Urban agriculture improves food security in terms of availability and access. Crops were analysed to assess health risks and it was found that for rural and urban crops the main source of bacterial contamination is in the transport of the crops. Main issues for urban farmers are land, theft and marketing. Urban agriculture is still missing from municipal planning. The loss of agricultural land is a major reason for concern. (NB)

Anon., (1999) **Scheme for Urban Micro Enterprises: An Impact Assessment, 1999. National Institute of Urban Affairs (NIUA) New Delhi, Research Study 76**  
Supplier: National Institute of Urban Affairs, 1 Floor, Core 4 B, India Habitat Centre, Lodhi Road, New Delhi 110 003, India  
economic impact  
poverty alleviation; urban poverty; India

This study critically analyses the different dimensions of efforts made under the Scheme for Urban Micro Enterprises (SUME), including a review of the procedures and processes underway and assessment of the overall impact of the programme on urban poverty alleviation. It makes recommendations to the Government of India for improving the effectiveness of the scheme. The study is a part of four other studies commissioned by the Ministry of Urban Development and confined to selected cities from the states of Punjab, Haryana, Himachal Pradesh and Delhi.

Atukunda G (1998). **An analysis of the impact of IDRC funded research projects on urban agriculture in Uganda. Workshop on Cities Feeding People: lessons**

### **learned from projects in African cities. IDRC. Nairobi. 21-25 June 1998**

R&D methodology      economic impact  
impact analysis; research; Uganda; workshops

This paper reports on the results and impact of an International Development Research Centre (IDRC)-supported study of urban agriculture in Kampala Uganda (88-0325) and fieldwork for a PhD thesis by David Maxwell, one of the original researchers. The study and fieldwork found that over one-third of the respondents practiced urban agriculture, mainly for subsistence, and that urban agriculture made a significant contribution to child nutrition status, especially in low and very-low income groups. Access to land and security of tenure were the major problem facing urban farmers. The research results were disseminated at a workshop held in Kampala in June 1990 attended by 50 participants, including government officials, academics, and representatives of nongovernmental organizations (NGOs); to the residents of the areas in which the survey was carried out; and at a 1-day seminar on Farming in the City, attended by about 100 researchers, policymakers, Kampala City Council authorities, NGOs and international organizations.

The impact of the project on human resource development, institutional capacity strengthening, partnerships with other institutions, gender sensitive analysis, scientific and methodological advances, and research utilization by non-researchers is discussed. It was noted that the studies were relevant and timely in that they were carried out just before the new structure plan for the city was drawn up, and that the seminars were instrumental in changing the attitudes of a number of city council officials toward urban agriculture. Urban agriculture was officially recognized as an informal activity and land use in the Kampala Structure Plan of 1994. (HC, IDRC)

**Allen, Patricia (1999). Contemporary food and farm policy in the United States. In: For hunger-proof cities: sustainable urban food systems / Mustafa Koc, Rod MacRae, Luc JA Mougeot and Jennifer Welsh (eds), p. 177-181. ISBN 0\_88936\_882\_1. CAD 35.00. International Development Research Center (IDRC), PO Box 8500, Ottawa, Ontario, Canada K1G 3H9**  
**Supplier: International Development Research Centre (IDRC), Publications Department, PO Box 8500, Ottawa, Ontario, Canada K1G 3H9**

food security and nutrition      economic impact  
food policy; United States; agricultural policies; food programmes; food security

Two movements affecting the food security of Americans have emerged in recent years. One is the community food-security movement, dedicated to ensuring that everyone has the ability to obtain a nutritionally adequate diet. The other is the movement to dismantle social-welfare programs to "end welfare as we know it." While interest in domestic food security is increasing in some areas the food-security safety net is unraveling in others. These notions are distinctly at odds with expectations for commercial agriculture. This paper explores the character of the disjuncture between governmental farm and food programs. It examines the demographic characteristics of those who benefit from food programs and of those who benefit from farm programs. The privileging of agricultural producers over poor consumers is framed in its political and ideological context. Ensuring food security for the poor will require innovative food policies capable of operating effectively in

this political and ideological environment. (Abstract adapted from original)

**Armar-Klemesu, Margaret; Maxwell, Daniel G. (2000). Accra: urban agriculture as an asset strategy, supplementing income and diets. In: Growing cities, growing food: urban agriculture on the policy agenda, p. 203-208. DSE, GTZ, CTA, SIDA**  
economic impact      food security and nutrition  
farming systems; livestock; vegetable production; asset strategy; land use systems;  
food security; health; ecology; economic impact; gender; urban policies; livelihoods;  
reuse of waste; Accra; Ghana

Urban agriculture was identified as an important element for a study on livelihoods, food and nutrition in Greater Accra. Different farming types were distinguished and analysed with regard to food security, household economics, health ecology and gender. Farming is done for three main reasons dependent on the farming type: cash income, food subsistence and assets strategy for emergencies. Men and women do have different roles in urban agriculture whereby women's activities tend to contribute more to household food security than men's and women dominate the marketing of crops. Urban agriculture improves food security in terms of availability and access. Crops were analysed to assess health risks and it was found that for rural and urban crops the main source of bacterial contamination is in the transport of the crops. Main issues for urban farmers are land, theft and marketing. Urban agriculture is still missing from municipal planning. The loss of agricultural land is a major reason for concern. (NB)

**Benge, Mike (1996). The economic and ecological value of trees in urban environments. 10 p. Agency for International Development (USAID), Washington DC, 20523-1812, USA**  
urban forestry      economic impact  
United States; urban trees; trees; urban environment; economic aspects; public health

Examines from various angles (urban environment, aesthetics, public health, economics) the role of trees in urban settings, notably in the USA. (WB)

**Berg, Leo van den, and W. van Winden (2002 Information and Communications Technology as Potential Catalyst for Sustainable Urban Development: experiences in Eindhoven, Helsinki, Manchester, Marseille and The Hague. Euricur: European Institute for Comparative urban Research, Erasmus University Rotterdam, The Netherlands**  
**Supplier: Ashgate Publishing Limited, Gower House, Croft Road, Aldershot, Hampshire, GU11 3HR, England**  
economic impact      R&D methodology  
European Union; sustainable urban development; communication; Netherlands;  
Finland; United Kingdom; France;

At the dawn of the 21st Century, ICT is at the centre of interest for businesses and governments. Increasingly, urban policy makers are also concerned with the new developments, opportunities and threats offered by digital revolution, and feel the need to respond strategically. Usually, technology policy is not associated with the

urban level but rather with the national or the European level. However, cities can pursue technology policies as well, as a means to reach economic and social objectives, as well as objectives intended to raise the quality of life and improve the internal and external accessibility of the urban region. To shed more light on the impact of ICT on urban development and the consequences for urban management, the European Institute for Comparative Urban Research has been invited by the city of The Hague to carry out an investigation into the "state of the art" concerning the use of information and communication technologies in 5 European cities. This book contains the results of an analysis of the impact of new technology and new technology policies in the cities of Eindhoven, Helsinki, Manchester, Marseilles and The Hague.

**Bibangambah, JR (1992). Macro-level constraints and the growth of the informal sector in Uganda. In: The rural-urban interface in Africa: expansion and adaptation / Baker J. & Pedersen P.O. (eds). Seminar proceedings No. 27. Uppsala: Nordiska Afrikainstitutet (The Scandinavian Institute of African Studies). pp. 303-313**

economic impact      rural-urban linkages  
Uganda; informal sector; survival strategies

The author reviews a number of works on urban agriculture in Africa, with particular reference to Kampala, Uganda. He calls "unhelpful" those who argue that urban agriculture has an important contribution to make to Africa's economic development. He counters that, like other aspects of the informal economy, it is a manifestation of the socioeconomic decay representative of Africa's development crisis: the decay of institutional capabilities, infrastructures, and social values and standards. Uganda's economic crisis (1970-1985) featured: marked decline in the capital-intensive industrial sector; drastic decline in major export crops; increasing dependence on coffee for foreign export earnings; smuggling of large quantities of primary produce and imported goods across Uganda's international borders; outflow of resources from the agricultural export sector into subsistence agriculture and informal trading; intensified problems of low income and absolute poverty; and extreme difficulty in getting imported inputs, spare parts and raw materials. It resulted in the collapse of the agrarian economy and the ruralization of the city, as even salaried employees took up subsistence farming to supplement unbearably low wages. He concludes that it is necessary to transcend justifications based on mere survival and short-term crisis management, and examine the extent to which the informal sector is productive, unproductive or counter-productive. What is needed are institutional and policy reforms to reverse the negative economic trends, eliminate regressive forces and create an environment and framework for a progressive economy. (HC, IDRC)

**Blair, Dorothy; Giesecke, Carol; Sherman, Sandra (1997). A dietary, social and economic evaluation of the Philadelphia urban gardening project. Urban Agriculture Notes on: <http://www.cityfarmer.org/nutritionstudy.html#diet>. 6 p. Nutrition Department, College of Health and Human Development, Pennsylvania State University, University Park, Pennsylvania 16802, USA**

**Supplier: City Farmer, Canada's Office of Urban Agriculture**

horticulture   food security and nutrition   economic impact  
United States; home gardening; surveys

An evaluation study among 144 gardeners in the Philadelphia Urban Gardening Project and 67 non-gardening controls. Data collected included demographic variables, food frequencies and dietary habits, measures of life satisfaction, and neighbourhood involvement. The average value of garden site produce was assessed. Interestingly, gardening was positively associated with community involvement and life satisfaction. An interesting and important study. (WB - from original abstract)

**Chiapa I.; King B. (1997) Urban agriculture in Gweru: household nutrition, economic costs and benefits; results of household monitoring interviews conducted between September 1996 and April 1997. Harare: ENDA.**

food security and nutrition   economic impact  
economic impact; cost-benefit analysis; household survey; Zimbabwe; Gweru

This report presents the results of an International Development Research Centre (IDRC)-supported study (95-0007) carried out in four densely populated suburbs of the small city of Gweru, Zimbabwe. The study involved a preliminary survey to determine the socioeconomic (economic activities, income levels, agricultural practices and tenure) and demographic characteristics of the population in general. The survey provided a basis of comparison between the agricultural and non-agricultural households. It also allowed the researchers to identify 50 farming households in each of the four suburbs for monitoring on a monthly basis during the agricultural period.

The monitoring study revealed that women were the main participants in all agricultural activity, both cropping and vegetable production. Gardening activities were carried out throughout the year, while cropping is only practiced during the rainy season. Gardening relies heavily on organic manure, while chemical fertilizers are used in cropping. There was a higher use of pesticides in the garden than on the crops, however. Low-income urban farmers tended to have more meals per day than their non-farming counterparts and greater ability to purchase protein-rich foods such as meat and fish. This was reflected in their overall health and child growth rate: children under 5 years old from farming households were generally taller and heavier than those from non-farming households. Savings from urban agriculture amounted to approximately 1 287.00 ZWD per annum. It was concluded that urban agriculture benefits a significant proportion of the households in Gweru. A number of recommendations for formalizing and improving the activity are put forward. (HC, IDRC)

**Cleveland, David A (1997). Are urban gardens an efficient use of resources? Arid Lands Newsletter no. 42 (fall/winter 1997). 4 p.**

economic impact   city ecology  
gardening; arid zones; resource management; water efficiency

Explores the functions and importance of gardens. There is an information gap with regard to productivity of gardens. This paper tries to fill some of the gaps based on monitoring the results of gardens in Tucson. Furthermore, the paper discusses ways to improve water efficiency in gardens. (NB)

Chisholm, Alyson (1996). **City farming in Albania Urban Agriculture Notes.**  
<http://www.cityfarmer.org/albania.html>. 3 p. City Farmer, Canada's Office of Urban Agriculture  
economic impact  
Albania

Tells the story of Albania's transition from a communist regime to a free market economy, from the perspective of life in the northern city of Shkodra where people manage to survive through vegetable production and small livestock keeping on rooftops and in gardens. (WB)

Cox, Stephen (1999). **Oases of food security in the urban sprawl? The case El Alto, Bolivia.** In: **Gate: Technology and Development no. 2 (April-June 1999) p. 34-37**  
food security and nutrition      economic impact  
Bolivia; El Alto; food security; ornamental plants

The South American continent has the highest degree of urbanisation in the developing world. In the light of major shortages of affordable fresh food for urban communities, the prospects of food production in El Alto are being discussed. Awareness raising on nutritional aspects of food is an issue that needs to be addressed. Furthermore, ornamental plant production by the urban poor for income generation is also included in the analysis. There are plenty of new ideas, but progress in the hard climatic conditions of El Alto has been slow. (NB)

Craig, E. , L. Falco and L. Sabatte (2002) **Municipal Strategies for the Primary Sector of the District of Moreno, Buenos Aires. Municipality of Moreno, National University of Lujan, Buenos Aires In: The Economics of Urban Agriculture - Urban Agriculture Magazine no. 7, August 2002, pp.7-9.**  
economic impact      urban horticulture  
Argentina; horticulture; ornamental plants

The horticultural and ornamental plant production sector of the district of Moreno, in Buenos Aires, is strategically located in an urban area with direct access to the major markets of the country. Horticultural producers predominantly belong to the Bolivian colony, with scarce income. Growers of ornamental plants are mostly from the Japanese (herbs) and Italian (trees and shrubs) communities, who are capable of undertaking larger capital investments.

Danso, G.P. Drechsel, P. Wiafe-Antwi and L. Gyiele (2002) **Income of Farming Systems around Kumasi.** Dept of Agricultural Economics, KNUST/IWMI,

**Kumasi In: The Economics of Urban Agriculture - *Urban Agriculture Magazine* no. 7, August 2002, pp.5-6.**

economic impact

Ghana; farming systems; income generation

Market proximity is a major incentive for the intensification of farming systems or change of systems to more profitable ones. A common example is the production of perishable products, such as vegetables in urban and periurban areas. Around Kumasi, many rainfed maize-cassava farmers started dry-season vegetable production along in the city itself, year-round open-space vegetable production is common, especially in bottomslands with water access for irrigation.

**Del Mar Lopez, T., T. Mitchell Aide and J.R. Thomlinson, (2001) Urban Expansion and the Loss of Prime Agricultural Lands in Puerto Rico. Royal Swedish Academy of Sciences. In: *Ambio*, Vol. 30, no. 1, pp. 49-54, February 2001**

economic impact

urbanisation; Puerto Rico; historic overview, Caribbean

In many countries where the economy has shifted from mainly agricultural to industrial, abandoned agricultural lands are lost to urbanization. For more than 4 centuries the Puerto Rican economy depended almost entirely on agriculture, but sociopolitical changes early in the 20th century resulted in a shift to industry. This shift in the economy, and an increase in population, has resulted in an increase in urban areas. This study describes the rate and distribution of urban growth on the island of Puerto Rico from 1977 to 1994 and the resulting influence on potential agricultural lands. Urban extent and growth were determined by interpreting aerial photographs and satellite imagery. The 1994 urban coverage was combined with a soil coverage based on agricultural potential to determine the distribution of urban areas relative to potential farmlands. Analyses showed that in 1977, 11.3% of Puerto Rico was classified as urban. After 17 years, urban areas had increased by 41.6%. This represents a loss of 6% of potential agricultural lands. If this pattern of encroachment by urban growth into potential farmlands continues, Puerto Rico's potential for food production in the future could be greatly limited.

**De Melo Neto Segundo, J.J. (2002) Urban Agriculture Project: In the Conjunto Palmeira Slum, Fortaleza-Ceara, Brazil. Banco Palmas, Brazil. In: The Economics of Urban Agriculture - *Urban Agriculture Magazine* no. 7, August 2002, pp.10-11.**

economic impact

urban agriculture; Brazil; projects; slums

Conjunto Palmeira is a slum with 30,000 inhabitants, situated in the southern area of Fortaleza-Ceara, a metropolis located in the northeast of Brazil. The first inhabitants arrived here in 1973 and started building their houses spontaneously, without access to purified water, electric power, schools or other public services. In 1981, the Association of Settlers of the Conjunto Palmeira (ASMO-CONP) was founded, starting the process of organisation of the families.



Drechsel, P.; Kunze, Dagmar (1999). **International Workshop on Urban and Periurban Agriculture, 2-6 August 1999, Accra, Ghana. Urban Agriculture Notes** <http://www.cityfarmer.org/africaworkshop.html>. 8 p. IBSRAM Regional Office for Africa, Ghana; FAO Regional Office for Africa, Ghana  
**Supplier: City Farmer, Canada's Office of Urban Agriculture**  
health and environment      waste recycling economic impact  
food security; environment; West Africa; health; urban planning; economic aspects

Concise presents the results of the International Workshop on Urban and Periurban Agriculture in Accra. The main theme of the conference was Closing the nutrient cycle for urban food security and environmental protection. Within this theme four sub-theme were distinguished with background papers and working groups: (1) Environment and public health; (2) Nutrient recycling; (3) Policy, Planning and Economics; (4) Farmers' point of view. For these themes priority actions and main constraints were identified. (NB)

Drechsel, P.; Kunze, Dagmar (eds) (2001) **Waste composting for urban and periurban agriculture: closing the rural-urban nutrient cycle in sub-Saharan Africa. ca 200 p. ISBN 0-85199-548-9. CABI, Wallingford, UK; IBSRAM Regional Office for Africa, Ghana; FAO Regional Office for Africa, Ghana**  
health and environment      waste recycling economic impact

Rapid urbanisation has created a major challenge with regard to waste management and environmental protection. However, the problem can be ameliorated by turning organic waste into compost for use as an agricultural fertiliser in (peri-)urban areas. The forthcoming CABI hardcover (May/June 2001) provides an African perspective on potential and constraints of urban waste recycling for soil amelioration (and integrated pest management) as well as on urban and periurban farming systems as beneficiaries. Most papers derived from an IBSRAM - FAO workshop held in Ghana in August 1999 with authors from several European, as well as African, countries, representing various disciplines. The book will appeal to a readership in soil science, urban and rural planning, environmental science, waste management, developing studies and farming systems.

Contents include:

- Potential use of waste stream products for soil amelioration in periurban interface agricultural production systems
- Economic, sociocultural and environmental considerations
- Turning urban waste into fertilizer: Case studies from East and West Africa
- Modelling urban and periurban biomass and nutrient flows
- Urban agriculture: International support and capacity building in Africa

(PD)

Eberlee, J. **Neglected industry of Kenyan cities**

economic impact

Kenya

From the findings of households surveys in Nairobi, Kenya it can be concluded that urban agriculture is a vital tool for alleviating poverty and achieving sustainable development in the cities of developing countries. Two out of three urban households grow their own food and 51% of families keep livestock and 17% urban livestock in Nairobi. (NB)

**European Commission (EC). Network for the Pan-European food data bank based on household budget surveys: DAFNE 2. 32 p. European Commission (EC), Directorate-General XII, Science, Research and Development, 200 rue de la Loi, B-1049 Brussels, Belgium; National Nutrition Centre, National School of Public Health, 196, Alexandras Ave., GR-11521 Athens, Greece**

food security and nutrition      economic impact  
surveys; food security; databases

Describes the Data Food Networking initiative, aiming at the creation of a pan-European food data bank based on household budget surveys. Data referred to households as the statistical unit and covered 5 European countries, namely Belgium, Germany, Greece, Hungary and Poland. (WB)

**Feenstra, Gail et al (1999). Entrepreneurial community gardens: growing food, skills, jobs and communities. ANR University of California Publication No. 21587. Also on: <http://danrcs.ucdavis.edu>. 106 p**

community development      economic impact      services  
community gardens; United States; enterprise development

Entrepreneurial community gardens are identified as a potential strategy for meeting multiple community needs, addressing both food security and economic development simultaneously. A survey of 27 such gardens nationwide was carried out. The following questions were posed: (i) what products and marketing strategies have worked under which conditions, (ii) how much income is being generated, (iii) how many jobs have been created, (iv) what kind of training is provided, (v) how much land and capital are required, (vi) what are the typical operating costs, (vii) to what degree can these enterprises be self-sufficient? Five cases explore all these questions and others. A set of 12 recommendations for success are posited. The appendices offer resources and addresses. (JS)

**Gerstl, S., G. Cisse and M. Tanner (2002) Economic Impact of Urban Agriculture on Home Gardeners in Ouagadougou Swiss Tropical Institute, Bale, Switzerland / Ecole Inter-Etats d'Ingenieurs de l'Equipement Rural, Ouagadougou, Burkina Faso. In: The Economics of Urban Agriculture - *Urban Agriculture Magazine* no. 7, August 2002, pp.12-15.**

economic impact  
economic impact; urban agriculture; home gardening; Burkina Faso

Urban agriculture can provide benefits but also risks for urban inhabitants. This study confirmed that the strengths overshadow the risks of practicing home gardening in a sub-Saharan setting, and underlined the positive economic impact and food security for home gardeners. However, these two benefits depend on seasonal variations and external factors.

**Gonzalez Novo, M. (2002) Impact of Urban Agriculture: Reduced Prices in Havana. Red Latinoamericana de Investigaciones English Agricultura Urbana, Peru. In: The Economics of Urban Agriculture - Urban Agriculture Magazine no. 7, August 2002, pp.25.**

economic impact

impact analysis; Cuba; urban agriculture

Urban agriculture emerged in Cuba, and specifically in Havana, from the critical economic crisis of 1989, as a response to food insecurity. Today, it has become one of the largest sources of employment in Havana, improving the supply of fresh produce and ensuring greater stability and availability of, especially, leafy vegetables. Until the emergence of urban agriculture, the agricultural markets (numbering 58 in April 2000) were the only option for unregulated agricultural produce, gradually becoming a reference point for prices in the domestic economy.

**Goulven, K.L. and R. Gardiner (2002) Sustaining Our Global Goods: Briefing Paper UNDP / UNED Forum. In: Towards Earth Summit 2002, Economic Briefing no.3.**

economic impact

globalisation; sustainable development; security

Global Public Goods (GPGs) cut across many aspects of our lives. Many GPGs have historically existed outside of human interference, such as the oceans and seas, the atmosphere, and ozone layer. Whilst other GPGs have emerged as different aspects of globalisation have advanced. The opening of national borders has increased the volume of cross-border influences, both positive and negative. As a result, it has become increasingly important to name and frame the growing phenomenon of GPGs. The concept of GPGs is relatively new and an agreed precise definition of GPGs has been lacking. However growing pressures have drawn international attention to the fact that public policy-making has been largely reactive in response to the challenges they pose. GPGs cover global issues that range across the whole spectrum of the sustainable development agenda, from the global environment, international financial stability and market efficiency, to health, knowledge, peace and security and humanitarian rights. This paper seeks to outline some of the latest policy ideas, framing the international debate about some of these key global issues by examining them through the 'lens' of Global Public Goods.

**Gutman, Pablo; Gutman, Gabriela; Dascal, Guillermo. (1987). El campo en la ciudad: la producción agrícola en el Gran Buenos Aires. Informes de Investigación del CEUR, no. 6. Buenos Aires: Centro de Estudios Urbanos y Regionales, 1987. 155 p.**

economic impact

land use planning

Argentina; periurban agriculture; land use; history; horticulture; vineyards

This is the report that presents the results of one of the pioneering studies in urban agriculture, conducted within the UN University's Food-Energy Nexus program. It describes the range of agricultural activities that can be found in Greater Buenos Aires. Prepared by prominent urban researchers, it emphasizes changes in land uses. One chapter is devoted to a historical overview of the city's urban expansion and its impact on agriculture. After a chapter describes the state of horticulture in the metropolitan area, one chapter presents a case study of a periurban sector known for its vineyards. The report contains many data tables and maps. (JN)

**Hargesheimer, Ken. Urban agriculture: gardening, market gardening, mini-farming, mini-ranching. Gardens / Mini-farms Network, Lubbock, TX, USA**

horticulture   economic impact   rural-urban linkages

home gardening; gardening techniques; urban livestock production; youth; United States

Focuses on the potential of various forms of urban agriculture, notably from the perspective of an opportunity for youth employment. Much of this paper is a mapping of production techniques. In addition, a condensed overview is given of important publications and suppliers' addresses, for the American market. (WB)

**Hermann, Hans-Joachim (1999). Planning for survival spaces in the city: how urban agriculture could be promoted. In: Gate: Technology and Development no. 2 (April-June 1999) p. 10-13**

economic impact   services   food security and nutrition

urban dwellers; rural-urban migration; urban poor; survival strategies

The majority of poor people live in urban areas. The received wisdom of development theory that the poor migrate to the city is being challenged in this article. Urban agriculture is an important element in survival strategies. However, the isolated promotion of urban agriculture as part of a solution of the problems of the urban poor will be of little help. (NB)

**Hietkamp, Fern (1995). Opportunities and constraints for urban agriculture in Bandung, Indonesia. AURN working paper no. 7. 36 p. Asian Urban Research Network (AURN), Centre for Human Settlements, School of Community and Regional Planning, The University of British Columbia, Vancouver, Canada**

land use planning   city ecology   economic impact

Bandung; Indonesia; urban planning; land resources; resource management

Focuses on the competition for space between urban agriculture and other activities in Bandung, Indonesia. When the author states that with the current rate of development, much of the land now used for food production within the urban area will disappear in the next 15-20 years, we must realise that this statement was made before the economic crisis hit Indonesia. The author's suggestion that city administrators should include urban farming more systematically in urban planning remains as valid as before, however. (WB)

Holmer, Robert J; Schnitzler, Wilfried H (1999). **Urban and periurban small and medium-sized enterprise development for sustainable vegetable production and marketing systems: Vietnam, Laos and Philippines. Urban Agriculture Notes** <http://www.cityfarmer.org/laos.html>. 5 p. Periurban Vegetable Production Project (PUVeP), Xavier University College of Agriculture, PO Box 78900, Cagayan de Oro, Philippines  
**Supplier: City Farmer, Canada's Office of Urban Agriculture**  
horticulture economic impact services  
vegetable production; Vietnam; small- and medium-sized enterprises; Laos; Philippines

Gives a description of the Urban and Periurban Small and Medium-Sized Enterprise Development for Sustainable Vegetable Production and Marketing Systems. The project is implemented in Vietnam (Ho Chi Minh City), Laos (Vientiane) and the Philippines (Cagayan de Oro). The project aims to facilitate small and medium sized enterprises in South-East Asia with access to the market by developing socially, economically and ecologically sustainable vegetable production systems. (NB)

Howorth, Chris; Convery, Ian; Majani, Bituro (1995). **Feasibility study of urban horticulture in Dar es Salaam. 31 p. Natural Resources Institute (NRI), Central Avenue, Chatham Maritime, Kent ME4 4TB, UK**  
**Supplier: ETC(UK)**  
horticulture economic impact  
Tanzania; economic impact; political aspects

Gives an overview of the urban agriculture situation in Dar Es Salaam. The report provides figures about cost and benefits of urban and periurban farming. A number of other issues are also discussed: local authority perception of urban farming, water and land supply, urban waste management, composting and recycling. Different projects for the promotion of urban horticulture undertaken in the Dar Es Salaam area are briefly described. (WB)

Instituto de Investigaciones Fundamentales en Agricultura Tropical (INIFAT) (1995). **Primer Encuentro Internacional sobre agricultura urbana y su impacto en la alimentación de la comunidad. 92 p. Instituto de Investigaciones Fundamentales en Agricultura Tropical (INIFAT)**  
food security and nutrition economic impact  
home gardening; economic analysis; IPM; hydroponics; permaculture; crop rotation; biofertilisers

Contains a number of papers on various technical aspects of homegardens and communal gardens on Cuba. (WB)

**Jacobi, Petra (1997). Importance of vegetable promotion in Dar es Salaam, Tanzania. 15 p. Urban Vegetable Promotion Project (UVPP), PO Box 31311, Dar es Salaam, Tanzania**

horticulture      economic impact      services

Tanzania; agricultural production systems; economic analysis; marketing

Urban agriculture in Dar es Salaam involves a large proportion of the city population, Therefore, the city has been of major interest for research undertaken in this area for many years. The Urban Vegetable Promotion Project, started in 1993, deals with the different production systems of vegetables in and around Dar es Salaam. Three major production systems are determined: periurban production, open space system and homegarden production. The report gives useful information about the number of people engaged in gardening, different cropping patterns and cultivars used, cultivation periods, and approximate yield. It is argued that the different production systems all occupy a specific niche with regard to vegetable production and consumption in Dar es Salaam. (WB)

**Jacobi, Petra (1998). Food production as a survival strategy for urban households: state of knowledge and state of research in Tanzania. 10 p. Urban Vegetable Promotion Project (UVPP), PO Box 31311, Dar es Salaam, Tanzania**

economic impact      food security and nutrition      rural-urban linkages

horticulture; Tanzania; urban livelihoods; food security

Provides an overview of urban agriculture in Dar es Salaam with its estimated 3 million inhabitants and its growth rate of 8%. In such a setting, urban food production has revealed itself to be very important as a survival strategy for the urban poor. The paper provides interesting figures and statistics out of which emerges a varied picture as to who is practising urban agriculture, with what purpose, scale of production, and more. Various production systems are presented and typified: crop based systems, periurban crop production, open space production, homegarden production, and livestock based systems. (WB)

**Jaramillo Avila, C. and R. van Veenhuizen (2002) The Economics of Urban Agriculture – Editorial. Municipality of Quito, Ecuador / ETC-RUAF. In: The Economics of Urban Agriculture - Urban Agriculture Magazine no. 7, August 2002, pp. 1-4.**

economic impact

urban agriculture; economics

Urban agriculture provides multiple functions and benefits to urban dwellers and cities. Political support is growing and further research and financial support to enhance the contribution of urban agriculture to sustainable urban development is necessary. In this issue of the UA-Magazine we focus on the analysis and understanding of the economics of urban agriculture, during periods of economic recession as well as in times of a well developing economy.

**Jacobi, Petra., Drescher, Axel W. and Amend, Jörg (2000) Urban Food Security;**

urban agriculture response to crisis. In: *Urban Agriculture Magazine*, no 1, Maiden Issue, July 2000, RUAF, Leusden The Netherlands.  
food security and nutrition      economic impact  
crisis; poverty alleviation

Why people get involved in urban agriculture is the basic question of this article, which is based on information extracted from 20 city case studies on urban agriculture world-wide and additionally draws from experiences of the Urban Vegetable Promotion Project in Dar Es Salaam (Tanzania). It is argued that local authorities have to take their responsibilities in securing urban food security and to create an impact on urban poverty alleviation.

**Knierim, Andrea (1996). Agricultural development potential around Dolisie in the Congo: a case study in the catchment area of a small town. In: Agriculture + Rural Development vol. 3 (1996) no. 2 p. 51-54**  
**Supplier: Technical Centre for Agricultural and Rural Cooperation (CTA), PO Box 380, 6700 AJ Wageningen, The Netherlands; Deutsche Stiftung fuer Internationale Entwicklung / Zentralstelle fuer Ernaehrung und Landwirtschaft (DSE/ZEL)**  
economic impact      horticulture      rural-urban linkages  
Congo; periurban agriculture; socio-economic aspects

Examines the potential of periurban agriculture around the city of Dolisie in the Congo. Technical issues are addressed, but also who are the target groups for agricultural innovations and intensification activities. In this analysis, a distinction is made into 3 agricultural circles in and around the town: (1) lots within the town and around its fringes; (2) areas within a radius of 10 to 15 kilometres; (3) villages in a radius of up to 50 kilometres. All 3 different circles are farmed by different groups of producers. (WB)

**Knowledge and Learning Center Africa Region, The World Bank (1999). CARE Periurban Lusaka Small Enterprise (CARE-PULSE) project, Zambia. Findings no. 147. 4 p. Knowledge and Learning Center Africa Region, The World Bank, 1818 H Street NW, Room J-5-055, Washington DC 20433, USA**  
economic impact  
Zambia; periurban areas; small scale industries; development projects

The paper describes project approach and results. The overall goal of this project was to increase household income, economic security and employment opportunities among the families of poor micro-entrepreneurs in periurban areas of Lusaka.

**Lamb, Gary (1994). Community supported agriculture: can it become the basis for a new associative economy? In: Biodynamics Nov-Dec 1994 p. 8-15. Bio-Dynamic Farming and Gardening Association**



## Economic Impact

community development      rural-urban linkages      economic impact  
community initiatives

Describes the intricacies of Community Supported Agriculture (CSA), a community-based organisation of producers of consumers. This concept has spread primarily in the USA since the beginning of the 1990s. CSA is an approach and common understanding rather than a blueprint. The close links between producers and consumers have the potential of adapting offer and demand much more adequately to each other and to seek for optimisation instead of maximisation of production. In practice, the production-driven focus of farmers is not easy to wipe out. As much of the support work is done by volunteers, the movement may find itself to weak to provide proper guidance and support in the long run. Still, this is a very interesting and important approach in the light of urban and rural renewal. (WB)

**Little, Peter D (1992). Petty trade and household survival strategies: a case study of food and vegetable traders in the periurban area of Maputo, Mozambique. Periurban economic growth in Africa series. 37 p., annex. Institute for Development Anthropology, Binghampton NY**

economic impact

Mozambique; marketing; employment; vegetable trade

Presents results of a study on small-scale traders in the periurban area of Maputo. The report gives an overview of the periurban labour market, methodology and parameters of the study, patterns in vegetable trading, the role of self-employed trade in household survival. Lastly, policy implications are discussed. (NB)

**Lueke, Markus (1996). Urbane Landwirtschaft in den Tropen und Subtropen. Thesis, Institute for Agrarian Economy, University of Goettingen, Germany. 120 p.**

economic impact

household economy; urban development; classification; economic theory

This thesis is on "Urban agriculture in the Tropics and Subtropics: A socioeconomic analysis of agricultural activities inside urban centers". It contains an extensive literature survey on research on the subject until the mid-1990s, including some summary tables of this research. He develops a typological classification of urban farming in these regions. The study emphasizes socioeconomic aspects, placing urban agriculture within the larger context of urban development on one hand, and the household economy on the other. Theoretical models are developed of time allocation within different types of households. (JN)

**Mawoneke, Sthembile (1998). Impact of the urban agriculture research study in Zimbabwe. ENDA Zimbabwe, Box 3492, Harare, Zimbabwe**

economic impact

food security and nutrition

health and environment

Zimbabwe; economic impact assessment; food security; off-plot cultivation; health

hazards; heavy metals

Reports on the results of a household monitoring study aiming at determining the economic impact of urban agriculture on urban households in Harare, Zimbabwe, assessing the nutritional impact of agricultural produce on urban households; and identifying crop types and off-plot cultivation. Simultaneously, environmental research was conducted focusing on assessing the impact of urban agriculture on the urban environment. (WB)

**Maxwell, Daniel G.; Armar-Klemesu, Margaret (1998). The impact of urban agriculture on livelihood, food and nutrition security in Greater Accra. 30 p. Nutrition Unit, Noguchi Memorial Institute for Medical Research, University of Ghana, PO Box 25, Legon, Ghana**

food security and nutrition      economic impact      health and environment  
food security; Ghana; Accra; nutrition; livelihoods; health; environment; land use systems; food contamination; gender; multi-disciplinary approach; institutional aspects; human resource development; farming systems

Part one of the paper summarises the major findings of the urban agriculture component of the overall study. The geographic, demographic, and socio-economic distribution of urban agriculture in Accra is presented. The impact of urban agriculture on food and livelihood security and nutritional status at household level and individual level are discussed as well as the environmental impacts and the impacts on health. An analysis is made of how city growth affects land use, property rights and livelihoods on the urban fringe. Finally, various other areas like human resource development, institutional strengthening, local partnerships gender are discussed. (NB)

**May, Julian; Rogerson, Christian M (1995). Poverty and sustainable cities in South Africa: the role of urban cultivation. In: Habitat International vol. 19 (1995) no.2 p. 165-181. Data Research Africa, Durban; University of the Witwatersrand, Johannesburg, South Africa**

R&D methodology      land use planning      economic impact  
household survey; farming systems; access to land; land rights

Urban agriculture is increasingly seen as a major means of supplementing incomes in the cities of South Africa. In light of that nation's transition to a non-racial democracy, the particular task of the paper is to review the potential and policy implications of urban agriculture in the context of national initiatives for post-apartheid reconstruction. To reach these objectives, findings of household surveys are presented on the nature, methods and problems of production of groups of urban and periurban farmers. Income surveys supplemented by participatory techniques are used to gather further information on the problems faced. These major problems include gaining access to land with secure title for cultivation, finance, machinery, transport, crop security and the need for support services. The policy implications which emerge are then discussed. (Original abstract)

**Mbaye, Alain (et al.) (1999). Some more urban agriculture case studies: Dakar, Cairo, Zambia and Cagayan de Oro. In: Gate: Technology and Development no. 2 (April-June 1999) p. 40-47**

food security and nutrition      economic impact      city ecology  
food security; ecology; economic impact; nutrition; land use planning; political aspects

Discusses case studies on urban agriculture in Dakar, Cairo, Lusaka, and Cagayan de Oro (Philippines). An overview is presented including what are the main agricultural activities, who is involved, what are the environmental and economic impacts and policy implications. Extended versions of the case studies can be found in 'Growing Cities, Growing Food: Urban Agriculture on the Policy Agenda' published by DSE-ZEL. (NB)

**MDP (2001) The Political Economy of Urban Agriculture, report of a preparatory workshop, Harare, February 2001.**

land use planning      economic impact  
Africa (Southern); Africa (Eastern); ;political economy; land use; planning; Uganda; Kenya; Zimbabwe

This report contains one general paper by B. Mbiba (The Political Economy of Urban Agriculture in Eastern and Southern Africa; Overview, Settings and Research Agenda) and five case studies commissioned by the Municipal Development Programme, for a preparatory workshop in Harare, February 2001. The aim of the workshop was to discuss new insights and jointly work on a research proposal on the subject. The five country case studies are on Uganda, Kenya, Tanzania, Zambia and Zimbabwe.

**Ministry of Foreign Affairs ( 1994). Stedelijke armoedebestrijding. Sector- en themabeleidsdocumenten van Ontwikkelingssamenwerking no. 5. 163 p. ISBN 90-5328-063-4. Ministry of Foreign Affairs, Directorate General International Co-operation (DGIS), PO Box 20061, 2500 EB The Hague, The Netherlands**

economic impact      land use planning  
poverty alleviation; urban poor; government policies; development co-operation

This publication elaborates on the general policies of the Netherlands department for development co-operation on urban poverty alleviation. The policy starts with a description of the processes of urbanisation and impoverishment in the urban environment. From there, the themes employment and income, habitat (housing, land, water, sanitation, waste, energy, transport and gender), basic social services, institutional development, policies of international donors and the thematic programme of the Dutch government are discussed. (NB)

**Ministry of Foreign Affairs (1994). Urban poverty alleviation. Sector- en**

**themabeleidsdocumenten van Ontwikkelingssamenwerking no. 5. 178 p. ISBN 90-5328-076-6. Ministry of Foreign Affairs, Directorate General International Co-operation (DGIS), PO Box 20061, 2500 EB The Hague, The Netherlands**

economic impact

poverty alleviation; urban poor; government policies; development co-operation

This publication is an elaboration of the policy of the department for development co-operation on urban poverty alleviation. The policy starts with a description of the processes of urbanisation and impoverishment in the urban environment. From there, the themes employment and income, habitat (housing, land, water, sanitation, waste, energy, transport and gender), basic social services, institutional development, policies of international donors and the thematic programme of the Dutch government are discussed. (NB)

**Ministry of Planning (1991). Investigation into the potential role of urban agriculture: towards the preparation of policy guidelines. Pretoria: Ministry of Planning, South Africa. 69 p.**

land use planning      economic impact

South Africa; policy; labour; smallholder farming; land use

This reports investigates the potential role urban farming can play in South African cities. It emphasizes the use of land by small holders, the labor issues they face, and the policies that can be put in place to foster their activities. (JN)

**Mireri, C. (2002) Private Investment in Urban Agriculture in Nairobi, Kenya. Dept of Environmental Planning and Management, Kenyatta University, Nairobi, Kenya. In: The Economics of Urban Agriculture - *Urban Agriculture Magazine* no. 7, August 2002, pp.19-21.**

economic impact      food security and nutrition

urban agriculture; Kenya; commercial agriculture; food security;

Urban agriculture is an important economic activity both for poor and commercial urban farmers. Urban agriculture constitutes an important food security strategy for poor urban farming families. Commercial urban agriculture makes a significant contribution to employment and income generation. The role of urban agriculture has become even more critical in Kenya because of the deteriorating urban poverty situation. Kenyan urban poverty is estimated at 50 percent and it is feared that the situation will deteriorate in the future (Republic of Kenya 2002).

**Moskow, Angela Lynne (1999). The contribution of urban agriculture to gardeners, their households, and surrounding communities: the case of Havana, Cuba. In: For hunger-proof cities: sustainable urban food systems / Mustafa Koc, Rod MacRae, Luc JA Mougeot and Jennifer Welsh (eds), p. 77-83. ISBN 0\_88936\_882\_1. CAD 35.00.**

**Supplier: International Development Research Centre (IDRC), Publications Department, PO Box 8500, Ottawa, Ontario, Canada K1G 3H9**

community development      economic impact      food security and nutrition

food security; community development; economic impact; food quality; Havana;

### Cuba

Urban agriculture is promoted in Havana, Cuba, as a means of addressing the acute food-scarcity problems that developed when Soviet aid and trade were drastically curtailed in 1989. Today more than 26 000 gardens in Havana provide for the gardeners' own food needs. Research was conducted in 1995 to determine the ways these gardens contributed to the gardeners' sense of control over their lives and the role of the gardens in enhancing the surrounding communities. Results indicate that the gardens significantly incremented the quantity and quality of the food available to the gardeners' households and neighbourhoods; improved financial welfare through reduced gardeners' households weekly food bills and through money earned from sales of garden products; and made aesthetic, environmental, and other contributions to the community. (Abstract adapted from original)

Mougeot, Luc JA; Egziabher, AG; Lee-Smith, Diana; Maxwell, Daniel G.; Memon, Pyar Ali (1994). **Cities feeding people: an examination of urban agriculture in East Africa** xiv, 146 p. ISBN 0\_88936\_706\_X. GBP 9.95. International Development Research Center (IDRC), PO Box 8500, Ottawa, Ontario, Canada K1G 3H9  
**Supplier: Intermediate Technology Publications (ITP), 103-105 Southampton Row, London WC1B 4HH, UK**

food security and nutrition      rural-urban linkages      economic impact  
case studies; Africa (Eastern); farming systems; food production; urban communities

Urban agriculture is gaining importance in order to reduce developing countries' dependency on food imports in order to feed rapidly growing urban populations. The underlying book studies urban agriculture in four East African countries: Tanzania, Uganda, Kenya and Ethiopia. In these countries, IDRC began examining impact and feasibility of urban agriculture a number of years ago. Urban agriculture has long been neglected by researchers as a marginal, unproductive activity undertaken by the urban poor. However, under the pressure of falling per-capita food production in Africa south of the Sahara, and subsequent migration to urban areas resulting in high unemployment, urban agriculture can no longer be ignored as an important part of the urban informal sector, providing income or income-substituting food. An important aspect of the study of urban agriculture is that the approach that looks at rural and urban economies as completely separate entities is seriously questioned. In reality, these economies have many links, although they do not necessarily appear in official statistics. Better land use agreements are needed for urban food production to flourish. More government involvement and interest in urban agriculture will be necessary to achieve this. (WB)

Mougeot, Luc JA (1998). **Farming inside and around cities. In: Urban Age (winter 1998) p. 18-21**

economic impact      food security and nutrition  
Africa; development projects; agricultural production; urban planning; urban development

General overview on urban agriculture, with, mostly, African examples. The author

expects increased opportunities for urban agriculture in the twenty-first century, e.g. as a result of lower-density urban expansion and because urban planning will more systematically include an UA component. (WB)

**Moustier, Paule (2001) Assessing The Socio-Economic Impact Of Urban And Periurban Agricultural Development. Paper for the workshop "Appropriate Methodologies for Urban Agriculture", October 2001, Nairobi, Kenya. Proceedings, available On: [www.ruaf.org](http://www.ruaf.org). A shortened version is taken up In: *Urban Agriculture Magazine*, no 5, Appropriate Methodologies for Urban Agriculture, December 2001, RUAF, Leusden The Netherlands.**

R&D Methodology      economic impact      horticulture  
West Africa; Central Africa; policy; vegetables

The paper provides practical indicators and field methods for assessing the impact of urban and periurban agriculture in social and economic terms (employment, income, added value, and food supply). In a context of growing advocacy for policy support in favour of urban agriculture, while public resources are shrinking, it is more and more necessary that researchers provide rigorous assessment of the contribution of urban agriculture to policy objectives. The paper is based on the author's fieldwork in West and Central Africa, mostly centred on vegetable production and marketing, as well as some literature review.

**Moya, Rita; Montero, Alejandro; Yurjevic, Andres (1996) Invest in the poor to allow to create wealth: the Tomé project in Chile. In: *Agriculture + Rural Development* vol. 3 (1996) no. 1 p. 53-55. Technical Centre for Agricultural and Rural Cooperation (CTA), PO Box 380, 6700 AJ Wageningen, The Netherlands; Deutsche Stiftung fuer Internationale Entwicklung / Zentralstelle fuer Ernaehrung und Landwirtschaft (DSE/ZEL)**

community development      economic impact  
Chile; community initiatives; local government; development projects

Tells the story of a town in southern Chile hard hit by the closure of its 3 textile factories back in 1982. Local government, the population and an NGO worked together towards in a successful programme covering 400 families. The plan contained an analysis of costs and benefits, investments, and expected productivity. (WB)

**Mushamba, S. (2002) Different Kinds of Investment in Urban Agriculture: Kintyre Lake County and Musikavanhu Project Experiences. Municipal Development Programme Eastern and Southern Africa. In: *The Economics of Urban Agriculture - Urban Agriculture Magazine* no. 7, August 2002, pp.26-28.**

economic impact  
urban agriculture; Zimbabwe; financing

One principal factor for the slow development of the urban and periurban agricultural sector in Zimbabwe is the inadequate, or in some cases total absence of financing

arrangements, especially from the formal sector. There are two explanations for this state of affairs, first that the rapid rise in urban agriculture is a fairly new phenomenon, and second, that it has also retained the tag of an illegal activity in most urban settlements. As such, funds that have been available to other sectors from especially non-governmental organisations and international development agencies have not been extended to urban and periurban agriculture.

**Mvena, ZSK; Lupanga, IJ; Mlozi, MRS (1991). Urban Agriculture in Tanzania: a study of six towns. Draft. Morogoro, Tanzania: Sokoine University of Agriculture, Department of Agriculture, Education & Extension, 1991.**

economic impact

Tanzania; surveys; household economy; food security

This important survey mirrors the one conducted by the Mazingira Institute for six Kenyan cities in the mid-1980s (see Lee-Smith et al. Above), also funded by Canada's IDRC. Six Tanzanian towns (Dar es Salaam, Dodoma, Kilosa, Makambako, Mbeya, and Morogoro) were surveyed in the late 1980s and early 1990s. As in Kenya, the study revealed that urban crop and livestock production is an integral part of the urban economy, constitutes a disproportionately large share of the household economy. (JN)

**Niang, Demba (1998). A statistical look at the Senegal River delta's economy: urban domination and activities linked to the agri-food sector. In: Club du Sahel: The Bulletin no. 18 (March 1998) p. 2. Organisation for Economic Co-operation and Development (OECD), 2, rue André-Pascal, 75775 Paris Cedex 16, France**

economic impact      rural-urban linkages

Senegal; Saint-Louis

Examines city-countryside linkages in the Senegal River Delta. The author concludes that, in spite of a poorly developed modern sector, the economy has essentially urban traits. Economic development of the Delta must be sought both in increasing agricultural productivity and in strengthening the capacity of the urban world to develop its agriculture-based activities. (WB)

**Nugent, Rachel A. The sustainability of urban agriculture: a case study in Hartford, Connecticut. Urban agriculture notes; on: <http://www.cityfarmer.org/rachel.html#rachel>. 20 p. City Farmer, Canada's Office of Urban Agriculture**

horticulture      economic impact

economic impact; sustainable agriculture; sustainability; United States

This study defines a framework for examining the impacts of urban agriculture and applies it to data from the city of Hartford, Connecticut, USA. It uses an extended cost-benefit approach which includes market and non-market economic, social, and environmental factors affected by urban agriculture. Non-quantifiable factors are



discussed qualitatively as they are integral to understanding the effects of urban agriculture. The author concludes that, on the basis of data gathered, it cannot be concluded that urban agriculture in and around Hartford is sustainable, be it economically, socially, or ecologically. A longer time frame would be needed to draw conclusions about this issue (WB - from original abstract)

**Nugent, Rachel A (1999). Measuring the sustainability of urban agriculture. In: For hunger-proof cities: sustainable urban food systems / Mustafa Koc, Rod MacRae, Luc JA Mougeot and Jennifer Welsh (eds), p. 95-99. ISBN 0\_88936\_882\_1. CAD 35.00**  
**Supplier: International Development Research Centre (IDRC), Publications Department, PO Box 8500, Ottawa, Ontario, Canada K1G 3H9**  
R&D methodology      economic impact  
economic impact; food systems; cost-benefit analysis

The paper defines economically relevant benefits and costs of urban agriculture to evaluate conditions needed for sustainable urban agriculture. Urban agriculture is sustainable if the benefits exceed the costs over a relevant period and the impacts are equally distributed. A cost-benefit framework is presented to measure whether the benefits of urban agriculture outweigh the costs in a particular locale. A comparison of a sustainable local food system and the traditional import-export local food system model is discussed. Sustainable urban food systems can form a closed loop if they reduce the need for cities to import resources to satisfy their production and consumption needs and reduce the amount of waste leaving the city. A theoretical model for measuring the sustainability of urban agriculture in a community is presented. (Abstract adapted from original)

**Nugent, Rachel A (1999). The significance of urban agriculture. Urban Agriculture Notes <http://www.cityfarmer.org/racheldraft.html>. 14 p. Department of Economics, Pacific Lutheran University, Tacoma, WA 98447, USA**  
**Supplier: City Farmer, Canada's Office of Urban Agriculture**  
economic impact  
economic aspects; resource reuse; urban policies; poverty; rural-urban linkages; food availability

The paper explores what is urban agriculture and what is its significance. To this end the author discusses (1) urbanisation and growing food requirements; (2) the conditions of urban agriculture among the poor practitioners; (3) the benefits and costs of urban farming; (4) the obstacles to urban farming; (5) the relation to rural agriculture; (6) the policy implications; and lastly provides an example of resource reuse for urban agriculture in urban livestock waste reuse and an example on waste water treatment and irrigation. (NB)

**Nugent, Rachel A (2000). The impact of urban agriculture on the household and**

**local economies. In: Growing cities, growing food: urban agriculture on the policy agenda, p. 76-97. DSE, GTZ, CTA, SIDA**

economic impact      food security and nutrition      health and environment  
household economy; local economy; employment; income generation; labour  
markets; gender; economic diversification; urban policies; macro-economic impacts

On basis of the case studies presented in the reader the article analyses the economic impact of urban agriculture on individual, household, city and macro-economic level. The paper explores the economic conditions and policies in urban areas that create the impetus for urban agriculture to exist and which affect its viability. The capacity of urban agriculture to provide jobs and income and value of production are analysed, which all are badly needed in fast growing cities. Conclusions are drawn on the economic relevance of urban agriculture based on both quantitative and qualitative knowledge. (NB)

**Nugent, Rachel A. (2001). Using economic analysis to measure the sustainability of urban and periurban agriculture: A comparison of cost-benefit and contingent valuation analyses. Paper for topic 1 of the workshop "Appropriate Methodologies for Urban Agriculture", October 2001, Nairobi, Kenya. Proceedings, available On: [www.ruaf.org](http://www.ruaf.org).**

R&D Methodology      economic impact  
diagnosis; economic method; sustainability

One of the claims made about urban and periurban agriculture is that it adds to the "sustainability" of an urban area. This has been used as a selling point for local, national and international policy-makers to support the development of it, with clear and fair policies, and to integrate it with other components of the food, planning, and agricultural systems under their jurisdictions. But whether urban and periurban agriculture really makes a city more "sustainable" is an open question and will remain so until methods are developed to measure what is meant by sustainability. This paper describes several economic methods, a combination of standard and recently-developed economic methods, and seeks answers to the following questions about the social, environmental, and economic impacts of urban agriculture: In what ways does UPA affect the community, and why? Are the positive and negative effects temporary or permanent and how might they change over time? Who are the important stakeholders affected by UPA, what conflicts arise among them, and how might they be resolved? Are the impacts of UPA better for the community than an alternative use of the resources, and how should choices be made about alternatives? How do factors from outside the community affect UPA and its role in the community?

**Organisation for Economic Co-operation and Development (OECD) (1998). Popular urban economy at the heart of the economy and of urban society. In: Club du Sahel: the Bulletin no. 18 (March 1998) p. 3. Organisation for Economic Co-operation and Development (OECD), 2, rue André-Pascal, 75775 Paris Cedex 16, France**

economic impact      rural-urban linkages

Sikasso; Mali; San Pedro; Ivory Coast; added value; employment; informal economy

The modern sector of an urban economy provides a significant portion of the added value. Most jobs, however, are created by the popular urban economy sector which is based on meeting basic needs. (WB - based on original abstract)

**Pearce, Barry (1995). Towards an economic evaluation of urban innovative projects: micro projects for mega change. 75 p. ISBN 92-828-1104-2. ECU 20.00. European Foundation for the Improvement of Living and Working Conditions, Loughlinstown House, Shankill, Co. Dublin, Ireland  
Supplier: Office for Official Publications of the European Communities, Luxembourg**

city ecology      economic impact      R&D methodology

sustainable cities; sustainable development; urban planning; European Union; innovations; project evaluation

Report of an overview of 110 projects on innovative urban projects in EU member states. There are interesting and relevant appendices presenting a checklist on evaluation criteria on urban sustainability and an evaluation matrix. (WB)

**Petts, J. (2002) Costs and Benefits of Urban Agriculture in East London: A Discussion Paper. SUSTAIN UK In: The Economics of Urban Agriculture - Urban Agriculture Magazine no. 7, August 2002, pp.34-36.**

economic impact

horticulture; food production, United Kingdom, Europe (Western)

Studies calculating the contribution of urban agriculture to income are unlikely to accurately estimate the quantities of food produced because informal agricultural activities are not generally included. One estimate (Blair et al. 1991) calculated that the 30,000 or so allotment holders in London produce nearly as much fruit and vegetables in weight terms as horticultural enterprises. Prices are also difficult to measure due to fluctuations and variations in different markets.

**Pinzás, Teobaldo (1994). Can city farming survive? In: ILEIA Newsletter vol. 10 no. 4 (December 1994) p. 10. Instituto de Estudios Peruanos, Horacio Urteaga 694, Lima 11, Peru**

**Supplier: Information Centre for Low-External-Input and Sustainable Agriculture (ILEIA), PO Box 64, 3830 AB Leusden, The Netherlands**

economic impact      food security and nutrition      horticulture

home gardening; horticulture; Peru; urban communities; urban development; urban environment; urban population; urban wastes; vegetables; waste recycling; women

Early 1994 ETC Foundation asked Teobaldo Pinzás to make an exploratory study on urban agriculture in Peru. This is an excerpt from his report, focusing on his findings about urban vegetable growing. In his full report, he suggests that more attention be given to recycling of waste and sewage water. (ILEIA)

**Poner, U. (ed.) (2001), Reform of the World Trade Order: Reform of the World Trade Organisation and the Interests of the Poor; The TRIPS Agreement threatens the Human Rights of the Poor. Deutsche Kommission Justitia et Pax, Bonn: German Commission for Justice and Peace. Supplier: Justitia et Pax, Kaiser-Friedrich-Str. 9, D - 53113 Bonn, Deutschland.**

economic impact

poverty; human well-being

In 2000, the German Commission for Justice and Peace - a specialist organisation of the Catholic Church with responsibility for development, peace and human rights policy - established a committee on "Political control of economic globalisation" and thus shifted the focus of attention to questions of the world trade order. After all, no other area probably exerts a greater influence on the development opportunities of a large number of poor countries and on the opportunities which the poor and marginalised populations in the Third World will have in life.

The committee produced 2 declarations which could also be described as studies on account of their specialist focus. The present publication documents these declarations. The one declaration addresses the rules and procedures of the World Trade Organisation, while the other treats the Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS). The questions posed here, are: To what extent do the rules of world trade (and the practice which has emerged on the basis of these rules) benefit or harm the poor? To what extent do they encourage or obstruct the fulfilment of the human rights of the poor and the realisation of their justified social and economic interests?

**Purnomohadi, Ning (2000). Jakarta: agriculture as an alternative strategy to face the economic crisis. In: Growing cities, growing food: urban agriculture on the policy agenda. - p. 453-465. DSE, GTZ, CTA, SIDA**

horticulture economic impact

crisis response; commercial agriculture; vegetable production; food security; land use systems; health; ecology; economic impact; gender; urban policies; reuse of waste; poverty; land tenure; Jakarta; Indonesia

The production of fresh vegetables in Jakarta is essential as the congestion of the city inhibits timely rural imports. As a result of the Asian crisis urban farming spread rapidly and the governor of Jakarta gave permission to the people to farm vacant land left by broke developers. There are two main types of farmers: land owners and workers. Most workers are male migrant workers who lost their jobs in the fallout of the crisis. Farming occurs among others on vacant land, along rivers and roadsides and in home gardens. Almost all produce is marketed. Despite the widespread nature of urban agriculture it is seen as a temporary phenomenon and is not included in the city master planning. The city government could play an important role to expand the activity in Jakarta. (NB)

**RCD Consultants (1990). Urban Agriculture in Latin America, Africa and Asia. Washington, DC: UNDP/IBRD**

city ecology economic impact

Latin America; Africa; Asia; surveys; survival strategies; history; development programmes

This document was based on the principal investigator's 15 years of part-time research and experience with urban agriculture in Asia, Africa, the Middle East and the United States, plus visits to 17 developing countries. Although urban agriculture varied more than expected from country to country, the author notes that it increases as the economy gets worse; it is strongly influenced by urban management policies and practice, especially antagonistic ones; it has no comprehensive support programs similar to those for rural farmers; and is perceived as rural, old-fashioned, temporary and low-yielding. The last indicates that the principle barriers preventing urban agriculture from achieving its potential are cultural. This report examines the various kinds of urban agriculture; the history of and trends in urban agriculture; the places where urban agriculture is carried out; the various actors involved; and the economic, social, equity and environmental impacts of urban agriculture. It also looks at technology and assistance programs for urban agriculture, and identifies a number of areas for further action. (HC, IDRC)

**Rees, William E (1999). Why Urban Agriculture? Notes for the IDRC Development Forum on Cities Feeding People: A Growth Industry, Vancouver, BC, 20 May 1997. University of British Columbia, Vancouver, Canada**

economic impact

economic aspects; social aspects

Describes context and rationale for interest in urban agriculture, and highlights differences according to the countries or regions where urban agriculture is practiced. (WB)

**Research, Development and Consultancy Division (REDEC) (1996). Urban agriculture in Gweru: proceedings of a one-day workshop organized by ENDA - Zimbabwe, Midlands Hotel, Gweru, 16 October 1996. 24 p. Research, Development and Consultancy Division (REDEC), Environment and Development Activities (ENDA) - Zimbabwe, PO Box 3492, Harare, Zimbabwe**

food security and nutrition      economic impact      horticulture

Gweru; Zimbabwe; workshops; home gardening; off-plot cultivation

At this workshop, results of a household survey conducted by ENDA in Gweru in 1996 were presented, looking both at on-plot and off-plot cultivation. A fair number of parameters was discussed and quantified. (WB)

**Rogerson, Christian M (1993). Urban agriculture in South Africa: scope, issues and potential. In: GeoJournal vol. 30 No. 1 (May 1993) p. 21-28.**

economic impact

South Africa; poverty; gender; policy

This paper examines the present state of urban agriculture in South Africa and

analyses its potential for poverty alleviation. It finds the activity underdeveloped relatively to neighboring countries. It raises policy issues regarding how farming can be expanded beyond the most marginalized and vulnerable groups. (adapted by JN)

**Sawio, Camillus J (1998). Urban agriculture in Dar es Salaam. Workshop on Cities feeding people: lessons learned from projects in African cities. IDRC. Nairobi. 21-25 June 1998.**

R&D methodology      economic impact

Tanzania; workshops; project implementation; monitoring & evaluation; project impact; impact assessment

This International Development Research Centre (IDRC)-supported project (93-0037) aimed to build up baseline data to feed into the Urban Environmental Planning and Management process taking place under the auspices of the Sustainable Dar es Salaam Project. The research team, which included urban planners, geographers and scientists, examined the extent of urban agriculture and its role in the urban economy, income-generation and food security; health issues; the impact of urban agriculture on the environment (including analyses of water, crops and soil for heavy metals and other contaminants); and actual and potential instruments for urban agriculture support. The result was a broad data collection, in-depth analysis and presentation of the results in readily understandable form using maps, diagrams, tables and figures. This paper examines the impact of the project on institutional capacity strengthening, human resource development, partnerships with other institutions, gender sensitive analysis, scientific and methodological advances, and research utilization by non-researchers. It was noted that the project strengthened the University College of Lands and Architectural Sciences (UCLAS) and the University of Dar es Salaam (UDSM), both in terms of equipment and research capacity; inspired a number of students to pursue postgraduate studies in aspects of urban agriculture; and sensitized farmers, stakeholders and local governments to the importance of urban agriculture. The project generated information that was used in the Strategic Urban Development Plan for Dar es Salaam and leveraged funds for rehabilitating the Horticultural Gardens. These gardens are becoming vehicles for disseminating knowledge, seeds, and technologies for developing urban agriculture. (HC, IDRC)

**Schilter, Christine (1991). L'agriculture urbaine à Lomé. Geneva: IUED, and Paris: Karthala Press. 334 p.**

horticulture      economic impact

Togo; food supply; farming practices; cooperatives; marketing; economics

This is one of the first book-length commercially published studies on urban agriculture. It considers the range of farming practices found in Togo's capital, Lomé. A whole chapter is devoted to the role of cooperatives. The second half of the book assesses the economic dimension of the urban food production system. (JN)

**Silk D (1985). Urban agriculture. Background study prepared for the World Commission on Environment and Development. Sao Paulo. 25 October - 4 November 1985. Geneva: WECD. Volume 6, Document 71**

economic impact

history; impact analysis

This paper gives some examples of urban agriculture in ancient and modern times, provides an overview of the current literature on the subject, and points out some of the positive aspects of urban agriculture. The obvious benefits of urban agriculture are that it improves household food security, especially between major harvests; acts as a buffer against inflation; and results in better family nutrition. As well, converting vacant land into productive green space displaces illegal dump sites, reduces noise pollution, helps moderate the climate, provides an opportunity for recycling organic waste and reduces the need for expensive - in economic, environmental and energy terms - transportation, processing, packaging and storing. One of the intangible benefits of urban agriculture is that it raises people's awareness of the importance of ecologically sustainability and the need to protect the environment. (HC, IDRC)

**Smit, Jac (1992). Profit from raising rabbits in the city. Developing Countries Farm Radio Network package no. 26, script 2. 5 p. Developing Countries Farm Radio Network, 40 Dundas Street West, Box 12, Suite 227B, Toronto, Ontario, Canada M5G 2C2**

urban livestock economic impact

rabbits

A radio script for dissemination in a large number of developing countries, explaining how to raise rabbits in the city. Contains practical information about uses, housing, feeding and breeding. (WB)

**Smit, Jac (1993). Analysis of the urban agriculture sector in the metropolitan area of Port-au-Prince, Haiti. CARE. International, Atlanta. 3 Volumes.**

economic impact horticulture

Haiti; small livestock; land use

The purpose of the study reported herein was a rapid appraisal of the opportunities, constraints and potential interventions in assisting small-scale agricultural producers, processors and marketers within the Port-au-Prince metro area to increase their incomes. Twenty-two sub-sectors were analyzed and twelve identified as worthy of support. Bidonville Agriculture was particularly commended. CARE selected Vegetable production for further study and support. (JS)

**Smit, Jac (1994). Evaluation of urban agriculture possibilities in Côte d'Ivoire. Prepared for UNICEF, New York and Abidjan, Côte d'Ivoire. Unpublished. 52 p.**

economic impact



youth; gender; poverty; nutrition; micro enterprise; Africa

This field report has special value in its broad scope of potential for urban agriculture development in West Africa based on squatter settlement women and youth. And it has a structure for project proposals. (JS)

**Smit, Jac (1999). What would the world be like in the 21st century if cities were nutritionally self-reliant: the prospect for urban agriculture. Urban Agriculture Notes. <http://www.cityfarmer.org/21century98.html>. 5 p. The Urban Agriculture Network, 1711 Lamont St. NW, Washington, DC 20010, USA**  
**Supplier: City Farmer, Canada's Office of Urban Agriculture**

economic impact      city ecology  
waste management; urban policies; environment

Summarises findings from the book "Urban agriculture: food, jobs and sustainable cities" and outlines prospects for the 21st century on the basis of questions emerging from the book: what if waste is food and sewage and garbage were prime inputs to food production? What if urban landscape were edible, what if vacant land in cities were productive, what if urban areas were increasing rather than diminishing biodiversity? The author argues that the characteristics of the 21st century city with more productive land use, with fertile soil contributing to increased biodiversity and a major shift to healthy and greener cities are already there. However we haven't noticed it and too often policies and investment have been hindering its emergence. (NB)

**Soriano, R., J.D. Leaver, G. Woodgate and H. Losada (2002) Economic Impact of Agro Biodiversity in the Chinampa Sub Urban System. Metropolitan Autonomous University, Mexico / Imperial College at Wye, University of London, Wye, UK. In: The Economics of Urban Agriculture - *Urban Agriculture Magazine* no. 7, August 2002, pp.16-18.**

economic impact  
economic impact; urban agriculture; biodiversity; Mexico

A study was carried out in order to assess the economic performance of the periurban agro-ecosystem known as "chinampa". Chinampa is a small piece of land of irregular form, of pre-Hispanic origin, where inhabitants from the valley of Mexico still produced a diversity of plants for the city. These were built in a lacustrine setting by reclaiming bordering a lake and building the plots and a network of channels.

**Stassen, Saskia (1997). Cities in the global economy = Las ciudades en la economía global. Columbia University**

economic impact  
economic globalisation; local government; privatisation

Major cities and metropolitan areas have become a third player next to the global economy and national governments, in view of infrastructure and human resources accumulated there and of specialised services that can be rendered. Also, the large

wave of privatisation and deregulation has led to a shift towards the private sector and/or local government of large cities. (WB)

**Tremante L. P.(2000) Livestock in Nineteenth Century New York City. In: *Urban Agriculture Magazine*, no 2, urban livestock, October 2000, RUAF, Leusden The Netherlands.**  
urban livestock economic impact  
United States

Commercial agriculture existed in two forms in nineteenth century New York City: livestock husbandry and horticultural productions. Both are similar in that they emerged as viable forms of production soon after the year 1800. Both also depended for their existence on location, the availability of low-cost immigrant labor and urban waste products. Yet by the end of the century, urban livestock production had slipped into decline while urban horticulture continued to thrive. The article discusses the question: "why did commercial livestock production live such a short life in New York City?".

**Whyte, A; MacKenzie, F (1999). Cities Feeding People: a review of the CFP program initiative of IDRC. Ottawa: IDRC**  
R&D methodology food security and nutrition economic impact  
development programmes; project impact; impact assessment

The reviewers examined the implementation of the objectives set in the International Development Research Centre (IDRC)'s Cities Feeding People program initiative: prospectus 1997-2000, as evidenced in the following five projects: Urban agriculture in Dar es Salaam (93-0037); Socioeconomic and ecological impacts of urban agriculture in Harare (95-0007); Urban horticultural technologies in Port-au-Prince (96-0035); International research awards in urban agriculture (97-0026); and wastewater treatment using water lettuce in Dakar (98-0214). The reviewers agree that CFP has been effective in raising awareness of urban agriculture among international organizations, donors, and national and urban governments; knowledge creation; publication and dissemination; and training. They note that it needs to better integrate gender and social relations into its conceptual framework and to make the political economy of conflict more integral and explicit in that framework.

The reviewers also looked at the question of whether adequate recognition of urban agriculture has been achieved and whether CFP should move on to more strategic issues. They conclude that it would be premature to move on, as the battle has yet to be won on three fronts: in the cities, which may have the will but not the tools to move from attitude change to policy change; within the research community, which has difficulty attracting practitioners in urban agriculture due to its inherently multidisciplinary nature; and within the international donor community, where urban agriculture is not central to any agency's mandate and therefore vulnerable in all. (HC, IDRC)

**World Commission on Environment and Development (WCED) (1985). Official minutes of the Commission's fourth meeting held in Sao Paulo, 25 October - 4 November 1985. Geneva: WCED. Volume 41**

economic impact      food security and nutrition  
policy development; economic development; sustainable development

The Brazilian meeting took place half-way through the Commission's life. Priority issues to be dealt with were the outline of the official final report, two alternative versions of which were put before the Commission for its consideration, and the preliminary outline of the popular final report. Additional discussions focused on international economic relations, environment and development; food security, agriculture, forestry, environment and development - tropical forests; human settlements, environment and development; and international cooperation - legal principles for environmental protection and sustainable development and resolving environmental disputes. Some 15 annexes include the background documents used in the discussions. Annexes include the following: list of participants, press seminar, opening address, list of submissions, agenda, progress report, preliminary and alternative outlines of the official report, revised alternative version of official final report, outline of final popular report, and background documents pertaining to the discussions. (HC, IDRC)

**Wohl, Hope (2000). The feasibility of urban agriculture: with recommendations for Philadelphia Pennsylvania Horticulture Society. Contains 8 case studies.**

economic impact  
greenhouses; herbs; poultry; mushrooms; hydroponics; ornamental horticulture;  
United States

This four-part study identifies and describes viable urban agriculture businesses on the East Coast of the United States. It discusses the issues surrounding economic viability of inner-city urban agriculture and recommends next steps that will be critical in creating a public/private/civic support structure to guide and nurture new ventures. (JS)

**Yeung DS (1997). Policy intervention in the streetfoods trade and its effects on health and livelihood: a case study of Quezon City, Philippines. (MA thesis) Vancouver: University of British Columbia**

services      economic impact  
Philippines; Manila; urban livelihoods; street vendors; street food; marketing; policy development; social participation; food supply; food distribution

A case study of the process of developing a municipal ordinance on street food activities was carried out in Metro Manila. The author examined three themes: the creation of institutional linkages between local government units and community organizations to develop and deliver support services for street food vendors; the impact on health and livelihood of the introduction of a municipal ordinance regulating street food vending activities; and the implications of street food activities

for the municipal planning process. The principal findings were that urban planning interventions of a regulatory nature are insufficient to deal with street food issues; the participation of interested community groups in the development of such policies is very important for their effective implementation; and education and awareness-raising must take place both within government agencies and within the community in order to obtain support for policy provisions. It was concluded that street vended foods are an important link in the urban food delivery system - some regulation of their nutritional content and safety is an effective intervention in managing the health of the urban population, especially the urban poor; that street food vending is an important means of income generation for many of the urban poor, especially women - recognition of the activity is therefore an effective means of addressing the employment issue; and that street food vendors have intimate knowledge of their business needs — they should be consulted by government officials in the process of developing a street foods policy. (HC, IDRC)

Yoveva, Antoaneta; Gocheva, Boriana; Voykova, Galya; Borissov, Boris; Spassov, Al (2000). **Sofia: urban agriculture in an economy in transition. In: Growing cities, growing food: urban agriculture on the policy agenda, p. 501-518. DSE, GTZ, CTA, SIDA**

economic impact      land use planning

crisis response; food security; food processing; food policy; land use systems; health; ecology; economic impact; reuse of waste; poverty; land tenure

Historically urban agriculture and processing of produce is common in Sofia in various forms. With the transition to a market oriented system its function and importance changed. There are private farms and household agriculture in different forms in Sofia. Urban agriculture provided mitigated the impacts of the collapse of the economy. People could reduce their food bill and generate some additional income. Production is for self-supply and the market. At the same time it is attractive to change the land allocation from agriculture to residential area to maximise short term profits. Environmental pollution poses serious problems to agriculture as industries during the socialist era could contaminate the area unchecked. Under pressure because of budget cuts are the remaining government institutions, which could facilitate urban agriculture, could exercise the necessary control on product quality and uphold regulations. Unclear land tenure situation is a serious constraint. Environmental awareness and proximity of markets and knowledge infrastructure present good opportunities to enhance urban farming. (NB)

Zalle, Dieudonné (1999). **Les stratégies politiques pour l'agriculture urbaine: rôle et responsabilité des autorités communales: le cas du Mali. In: Agriculture urbaine en Afrique de l'Ouest: une contribution à la sécurité alimentaire et à l'assainissement des villes = Urban agriculture in West Africa: contributing to food security and urban sanitation / Olanrewaju B. Smith (ed.), p. 1-18. 18 p. Institut Supérieur de Formation et de Recherche Appliquée du Mali**

food security and nutrition      economic impact

policy environment; economic aspects; Mali

## **Economic Impact**

The increase of fruit and vegetable consumption might be linked to the process of urban development, and the evolution of nutritional habits. Vegetables produced for sale play an important role in the economy of the urban family. Land tenure problems pose a big threat for the development of the sector, other constraints relate to human resources and lack of communication between stakeholders. (NB)