

### 3.6 Rural-Urban Linkages



**City life style in rural setting.  
(Picture: René van Veenhuizen)**

# The Rural Urban Interface

**René van Veenhuizen**

**ETC-RUAF, Leusden, the Netherlands**

[r.van.veenhuizen@etcnl.nl](mailto:r.van.veenhuizen@etcnl.nl)

## Urbanisation

More than half the world's population lives in and around urban areas. In developing countries this proportion is higher and increasing. The impact that this growth has on food security and urban livelihoods has been dealt with in other sections. In this part of the bibliography those references are brought together that look at the fringe of the expanding cities.

The border between urban and rural areas used to be considered as a clear-cut line in the landscape; clear-cut both in the physical and organisational sense. However, increasingly it is recognised that rural and urban features tend to coexist within cities and beyond their limits. The interface between urban and rural domains, or the periurban area, as it is more often called, is under continuous change, driven by the expanding urban areas and the (still) strong linkages with the rural hinterland. Urban population growth has now overtaken migration in terms of influx of persons in the periurban area. Still, one can speak of a meeting of two worlds, the rural and the urban, since migration is still quite substantial. The urban agriculture practitioners are therefore accordingly diverse in background and farming system.

Major challenges exist in this highly versatile area from an environmental, social and economic perspective; but also on issues such as planning of construction sites and green areas, development of markets, waste disposal, availability of clean water, labour etc. The relationship between the challenges and the ability of rural, urban or new institutional arrangements to cope with them seem to be key points for the design of proper planning and management in these areas, so as to guarantee a living environment for the inhabitants, especially the poor, while enhancing sustainable development.

The periurban areas are heterogeneous in social composition, which is characteristic for fast changing environments, but the lower income communities seem to prevail (Allen, 2001). This group is particularly vulnerable to the negative impact of rural and urban surrounding systems, and moreover easily dominated by wealthier players and ignored by the authorities in the absence of clear rules and regulations. Risks have to be faced, under uncertain livelihood strategies (Tacoli, 2001). These risks include health and physical hazards related to the occupation of unsuitable sites, lack of access to basic water and sanitation and poor housing conditions.

The sustainability of both urban and rural areas is affected by the dynamic and changing flows of commodities, capital, natural resources, people and pollution in the periurban interface (Allen 2001). Despite this fact, development policy and systems of governance continue to treat rural and urban development as independent, largely unconnected sectors (Rabinovitch, 2001).

## Concepts

Development and urbanisation have been traditionally structured around dichotomies such as urban-rural, traditional-modern, formal-informal, etc. There is no, or at the most an uneasy, attention to periurban areas. Problems in these periurban areas, are most often characterised by a lack of 'urban' values, such as the lack of adequate infrastructure, services and regulations etc., or the vanishing of 'rural' values, like the high prices for the land, loss of fertile soil, social cohesion, etc. This distinction between urban and rural territories is insufficient to characterise the communities and the landscape of periurban areas as 'border' territories. There is still a call for a clearer definition of the periurban area, periurban interface, or rural-urban fringe, but the fact that rural and urban features should be seen as co-existing within and along cities seems to be gaining support.

There are different methods of defining the periurban areas. MDP (2001b) identify four main classes based on:

- Physical criteria including street patterns and housing density.
- Functional criteria encompassing communication systems, employment levels and transportation networks.
- Social and socio-psychological criteria involving the determination of the urban life quality and the general social life of the people.
- Administrative criteria covering the local authority boundaries

As can be seen from this collection of references the number of publications on periurban areas is rather limited, several belong to one or two conferences related to the subject. Adell (1999) summarises several conceptual approaches to periurban areas (he refers to the periurban interface or PUI) but it remains unclear how many authors adhere to each of the categories given. Going from the least to the most integrated concepts, a first, and most common, approach is the *periphery of the city*, much applied in management interventions. A second approach is that applied by those who see the fringe as a socio-economic system, as a social category with a *dual urban-rural orientation* in social and economic terms, regardless of its spatial location. Yet another approach views the periurban areas as the interaction of *rural-urban flows*, by looking at the dynamics of rural-urban links and flows at the regional level. Finally, a particular group of authors see the periurban areas as a particular *ecological and socio-economic system*.

Under all conceptual approaches, though, the particular features of the periurban areas are based on the mix and coexistence of urban and rural features. Iaquinta and Drescher, give five periurban typologies, and new abbreviations, but state that rural, periurban, and urban form a linked system, a "multidimensional continuum" (Iaquinta and Drescher, 2001)

### **Farming Systems**

Farming systems are a response to both ecological and socio-economic conditions. Farming systems in the periurban areas are a "result" of migration from rural areas, absorption of former rural enterprises (Bentinck, 2000), urban farmers seeking expansion possibilities in the fringes, or banned by the urban authorities (most often livestock, see Nunan, 2000). Both urban and periurban farming systems are highly diverse, and generalisations are difficult to make.

Many papers in the proceedings edited by Grossman et al. (1999), argue that in Africa farming in urban areas, notably relying on rain-fed crops and animals, is more a survival strategies, an expression of poverty and food insecurity, and therefore that urban agriculture will remain a marginal activity. Others show the development and importance of highly technological, high input and commercial aquaculture (see for instance for Calcutta in India, Edwards, 2001, and Ivory Coast, Lazard, 1998) and horticulture systems (Moustier, 1999, de Bon et al., 1998) and Gockowski, 1999) in and around the cities, that rely on national and even international markets.

Although the notion of urban agriculture carries an intrinsic "small scale" connotation, experiences all over the world (Cuba, Argentina, Lebanon, Vietnam) show that agriculture in the fringe of the city is practiced on larger plots and larger enterprises than in the city centres. Even if they are not on a large scale or fully commercial, the systems often combine other urban occupations (generating 'off-farm' income). In the Congo, periurban operations can be seen as a complement to rural areas but should be considered in any rural development scheme, since more than 80% of the people live in towns (Belantsi and Torreilles, 19..).

Farming systems change in response to urbanisation. Livelihoods in the periurban areas are affected by changes in, for example, land-use, employment, markets, etc. Some groups benefit from new opportunities and develop accumulation strategies, while emerging constraints can force vulnerable groups with limited assets to rely on survival strategies (Tacoli 2001).

Several examples of this are provided in the literature. The Niayes Zone in Senegal, could be seen as one large periurban zone, with horticulture and livestock systems, poultry dominating (Touré Fall, 2000). On Lebanon's heavily urbanised coastal zone, intensive agriculture occupies large areas, and competes for

space with human settlements (Zurayk et al. 2000). Urban farming here is favoured by a mild climate, the availability of water and closeness to the markets. In Harare, Zimbabwe, ideas are currently being developed to change land belonging to commercial farmers (considered rural) to small plots for the urban poor.

## **Issues**

Although the attraction of cities to those migrating to seek a living within its borders has not decreased, urbanisation today does not add up to the ideal of the city as it used to be, especially not in developing countries. This is reflected in the inner-urban areas, but is most apparent on the fringes of the cities. Here, the size of the problem is determined by the speed and nature of development and urbanisation. Major problem areas are the lack of governance, or rather a lack in clarity in responsibilities between urban and rural authorities; lack of adequate services, like the availability of electricity and water, and when water is available, a lack of adequate sewage systems or waste-water treatment facilities.

## **Land disputes**

A major issue resulting from an uneven process of urbanisation under missing or overlapping regulations, are disputes over access to land and land tenure. Some authors identify the access to land as a key issue (MDP, 2001a). Lack of regulation and social cohesion, as well as the coincidence of poverty and environmental stress may lead to conflicts, and are often used as reason by the urban authorities to deny adequate public services to the, often illegal, inhabitants of periurban areas. As stated before, this weakens the livelihood strategies of the periurban inhabitants further.

In the study by MDP (2001b), the difference between land tenure planning on one hand and land tenure regularisation on the other, was emphasised. These terms are mistakenly used interchangeably in some instances, while in others they are believed to be totally isolated concepts. In actual fact, these two are related concepts, but with different meanings. *Land tenure planning* refers to the anticipation of future trends in land tenure changes and the implementation of policies and plans aimed at harnessing the negative impacts of uncoordinated and haphazard developments. *Land tenure regularisation* on the other hand is about the official recognition, realisation, and/or legalisation of already existing land tenure systems. This could be achieved by ensuring security of tenure to vulnerable groups (such as the poor, women and children) in society

## **Waste and Wastewater**

One could conclude that most of the literature on the periurban areas that is reviewed here, places attention on waste, that is, the dumping of refuse, reuse of (treated and untreated) wastewater, sanitation and environmental management in general (a large amount of publications on the latter, are related to the research programmes in Ghana, Kumasi city and India, Hubli Dharwad city).

Much of the wastewater produced in urban and periurban areas is already used, directly or indirectly, for irrigation almost always without treatment. It appears that suitable technologies for decentralised treatment are available but that other barriers to the wider adoption of the decentralised approaches exist. These barriers include lack of finance and suitable land, deficiencies in knowledge and skills and a lack of flexibility in official design standards (Parkinson, J. and K. Tayler 2001). Advantages are sought in decentralised management, including compatibility with decentralised approaches to: urban management and reuse needs, particularly those of the periurban poor; cost reduction and increasing agricultural productivity. The challenge for activists and planners is to create informed demand for improved systems, focusing on health and on the improvements that may be achieved for the household economy through participation in improved wastewater management (for instance in Dakar, Senegal; own observation).

## **Urban and Rural Planning**

A distinctive characteristic of periurban areas is the lack of institutions capable of addressing the links between urban and rural activities. Moreover, sectoral policies are generally defined under the assumption that the physical distinction between urban and rural areas is self-explanatory and uncontroversial Tacoli (2001).

Allen (2001) therefore argues that environmental planning and management in periurban areas cannot simply be an extrapolation of planning approaches and tools applied in rural or urban areas, but that they need to be based on the specific situation. Jarlov (2001) argues that there is a gap between the real problems among the poor in and around the cities and the conventional planning view where people mainly get their food from buying by means of salaries and wages (based on field work in Port Elizabeth in South Africa).

### **Future Research**

According to Allen (2001) the most important aspect of a strategic planning for the periurban area is, obviously, related to the possibility of participation of the poor themselves in the definition of priorities and in political decision-making. Integration of urban and rural policies, and multistakeholder participation in planning is a central element in the relationship between sustainability and poverty alleviation.

The periurban concept itself should be considered as a definition that can be useful in certain cases but not in others. Without wasting too much time in seeking the right definition, social and environmental management of the periurban areas of growing cities should try to tackle the problems mentioned in close collaboration with the people involved.

Areas for further research and development are, firstly, land tenure, legislation and urban land use planning (including agricultural activities). The need for land tenure planning and regularisation, as well as institution building in order to reverse the effects of tenure insecurity in periurban zones is evident (MDP, 2001a). In many cities where men have traditionally been the holders of land titles, laws for women's tenure are urgently needed. Another field is that of applicable methodologies in working with stakeholders in sustainable (peri)urban development, including agriculture. Working with planners to include agriculture in environmental planning, as a part of greenbelts, city parks and open spaces can create mutually beneficial results, as farmers can gain access to land that is protected from future urban sprawl, and planners can justify the space as being productive. Institutional assessment and development of new institutions or new institutional arrangements is a related area. Development of urban and periurban markets and support to commercial and subsistence horticulture, aquaculture and livestock systems is yet another field of interest.

The rural-urban interface is moving, but not vanishing. It is characterised by a series of flows, like migration and growth (people), goods, capital, natural resources and waste (water and nutrients), and information. Each of these flows has multiple components and impacts, feature different spatial and temporal linkages, and thus need adequate policies. Advice to policy makers should identify and assess the impact of rural-urban linkages by integrating the following factors into their policy frameworks: emerging global-local realities of rural-urban integration; concern for poverty alleviation, income improvement, well-being and sustainable development of the regions. It has to be investigated whether this needs improved use of existing policies or new policies all together.

Rabinovitch (2001) identifies six major policy areas:

1. Strengthening capacities of local and regional government;
2. Encouraging participatory modes of development, fostering gender sensitive approaches and enabling collaboration among all stakeholders;
3. Localising production linkages to diversify local economies;
4. Assisting in the formation of group co-operatives and enterprises;
5. Providing public infrastructure and urban and rural services;
6. Ensuring safety and security of the movement of people, goods and capital;

### **References**

- Adell, Germán.** (1999 ). Draft for discussion. Theories and Models of the Periurban Interface: A Changing Conceptual Landscape.
- Allen, A.** (2001). Environmental Planning and Management of the Periurban Interface. Key note Paper for the Conference Rural-Urban Encounters: Managing the Environment of the Periurban interface, London 9-10 November 2001.
- Bentinck J.** (2000). Delhi's Urban Growth and the Stray-Cattle Controversy. In: Urban Agriculture Magazine, no 2, Urban Livestock, October 2000, RUAFA, Leusden The Netherlands.

- Grossman et al.** (1999). Urban and Periurban Agriculture in Africa.
- Iaquinta and Drescher**, (2001). More than the Spatial Fringe: an Application of the Periurban Typology to Planning and Management of Natural Resources. Paper for the Conference Rural-Urban Encounters: Managing the Environment of the Periurban interface, London 9-10 November 2001.
- Jarlöv, L.**, (2001). Urban Agriculture in South Africa. In: H. Hoffmann, K. Mathey (eds.). Urban Agriculture and Horticulture, the linkage with Urban Planning. 2000. International Symposium. Berlin July 2000. (on cd-rom).
- Municipal Development Programme Regional Office for Eastern and Southern Africa (MDP)**. (2001a). Proceedings of the workshop on "the Political Economy of Urban Agriculture"
- Municipal Development Programme Regional Office for Eastern and Southern Africa (MDP)**. (2001b). Periurban Land Tenure Planning and Regularisation in Eastern and Southern Africa: case studies from Kenya, Malawi, Tanzania & Uganda; a Research report. Studies Commissioned by: The Food and Agriculture Organisation Regional Office for Southern Africa (FAO-SAFR)
- Nunan F.** (2000). Livestock and livelihoods in Hubli-Dharwad, India. In: Urban Agriculture Magazine, no 2, Urban Livestock, October 2000, RUAFA, Leusden The Netherlands.
- Parkinson, J. and K. Tayler.** (2001). Paper for the Conference Rural-Urban Encounters: Managing the Environment of the Periurban interface, London 9-10 November 2001.
- Rabinovitch, J.** (2001). Challenges and Opportunities for Rural-Urban Interface Approaches; an Overview from the United Nations. Paper for the Conference Rural-Urban Encounters: Managing the Environment of the Periurban interface, London 9-10 November 2001.
- Tacoli, C.** (2001). Livelihoods Impacts and Strategies of the Periurban Poor. Key note Paper for the Conference Rural-Urban Encounters: Managing the Environment of the Periurban interface, London 9-10 November 2001.
- Touré Fall S. A. Salam Fall , Ibrahima Cisse** (2000) Urban livestock systems in the Niayes zones in Senegal . In: Urban Agriculture Magazine, no 2, Urban Livestock, October 2000, RUAFA, Leusden The Netherlands.
- Zurayk, R., S. Talhouk, J. Chatila and L. Abdul-Samad.** (2000). Environmental costs of periurban agriculture in coastal Lebanon. In: H. Hoffmann, K. Mathey (eds.). Urban Agriculture and Horticulture, the linkage with Urban Planning. 2000. International Symposium. Berlin, July 2000. (on cd-rom).

**Abaleron, C.A. (2001) The Pros and Cons of Peri-Urban Management in a Tourist City. Paper prepared for the DPU International Conference: Rural-Urban Encounters: Managing the Environment of the Peri-Urban Interface, London 9-10 November 2001 CONICET / Quality of Life Program, Fundacion Bariloche, Argentina**

rural-urban linkages

Argentina; urban management; urbanisation; periurban area, America (Southern)

The paper describes the physical expansion of San Carlos de Bariloche, an international winter resort of North Patagonia, Argentina; explains how the management of the urbanisation process works; shows which difficulties are acting in public participation related to environmental matters; and suggest new ways to better represent the views and the people of smaller geographical subdivisions such as neighbourhoods in the management of the peri-urban interface. The constrains of growing inequality and destruction of the natural resources of a tourist city, plus the structural context in which Argentina are subjected, are giving room to a decentralisation process accompanied by a political crisis that is asking for genuine ways of local decision representation, including those of the peri-urban interface.

**Adam, M. (2001) Definition and Boundaries of the Peri-urban Interface: Patterns in the Patchwork. In: Waste composting for urban and peri-urban agriculture: closing the rural-urban nutrient cycle in sub-Saharan Africa, by P. Drechsel and D. Kunze, pp. 193-208, 2001. Natural Resources Institute (NRI), Chatham Maritime, Kent. Uk**

rural-urban linkages

Ghana; urban agriculture; socio-economic aspects; farming systems; periurban area, Africa (Western)

It is useful to have an idea about the nature, size and demarcation of the 'periurban area', not only for the modelling of nutrient flows, but also to pave the way for adequate policy support. Three approaches to the demarcation of the periurban interface (PUI) as used by the research team for the Kumasi Natural Resources Management Research Project are presented in this

chapter, together with some reflections on the nature of the problems faced by the inhabitants of these areas. A comparison with the findings of other research in the PUI is drawn and a definition is proposed.

**Adell, G. (1999 ) Theories and Models of the Periurban Interface: A Changing Conceptual Landscape. Draft for discussion.**

rural-urban linkages

India; concepts; periurban interface

This document is written under the Periurban Interface Production System Programme of the Development Planning Unit of University College London, UK, aiming to reduce poverty and mitigate environmental problems in these areas. This literature review consists basically in a thorough desk-based research of available material linked to the subject. The aim of this literature review is to examine the complexity of the theoretical discussion on concepts and models of regional development, where the PUI finds a theoretical place within the broader literature on rural-urban interactions and linkages. The validity of a rather old concept (first discussions date from the 1950s) will be assessed, and its evolution when confronted with new theoretical contexts such as globalisation will be examined.

**L'agriculture périurbaine entre ville et campagne: les enseignements d'exemples ivoiriens In: Agriculture périurbaine en Afrique subsaharienne p. 93-100**

rural-urban linkages

sub-Saharan Africa; periurban agriculture; case studies; Ivory Coast;

This paper looks at the particularities of periurban agriculture in Abidjan, Bouaké and Touba. Periurban agriculture is an unstable, changing place. In the case of Abidjan the edge is characterised by its extension, related to the size of the city and to the ago-industrial blocks pushing periurban farming further outwards. The example of Azaguié area demonstrates the complexity of the situation and processes. (NB)

**Allen, A.. (2001) Environmental Planning and Management of the Periurban Interface. Key note Paper for the Conference Rural-Urban Encounters: Managing the Environment of the Periurban interface, London 9-10 November 2001.**

rural-urban linkages

environmental planning; periurban interface

There is increasing recognition among development professionals and institutions of the fact that rural and urban features tend to increasingly coexist within cities and beyond their limits. This paper argues that environmental planning and management of the periurban interface cannot simply be based on extrapolation of planning approaches and tools applied in rural or urban areas, but need to be based on the specific situation.

Allison, M (et al.) (1998). **A review of the urban waste in periurban interface production systems. 2 p. Department for International Development (DFID), Natural Resources Systems Programme, 94 Victoria Street, London, SW1E 5JL, UK**

waste recycling      wastewater reuse      rural-urban linkages      R&D methodology  
urban wastes; organic wastes

Provides a dense overview of uses of urban waste and wastewater and examines factors affecting the use of wastes in agriculture. Attention is drawn to the fact that there are important gaps in our knowledge about the quantitative need for organic wastes in urban and periurban agricultural systems and about the potential to satisfy these needs. (WB)

Arbelot, B.; Dayon, J.-F.; Merouan, N. **Développement et organisation des filières avicoles autour de Dakar. Agriculture périurbaine en Afrique subsaharienne p. 161-166**

rural-urban linkages  
poultry farming; Senegal

Periurban poultry farming in Senegal has developed considerably in response to an increased demand for proteins. The Projet de Développement des Élevages à Cycle Court (project for the development of short life cycle livestock, PRODEC) set up a diagnostic laboratory at ISRA-LNERV as well as a training structure. After three and a half years of operation the project succeeded in setting up a fee-paying poultry pathology lab, introducing surveys to ensure greater control of on-farm pathologies and training technicians, farmers and veterinarians. The strength of PRODEC is to tackle the poultry farming problems at different levels despite a number of problems encountered. (NB - Abstract adapted from original)

Atkinson, A. (2001) **The Juggernaut and Peri-Urbanisation, Workshop A. New Synergies in Development. Paper prepared for the conference 'Rural-urban encounters: Managing the Environment of the Peri-Urban Interface', Development Planning Unit, University College London, 9-10 November 2001**

rural-urban linkages  
conferences; periurbanisation

This paper takes a strategic look at the problems emerging in the peri-urban interface around the cities of the South. It asserts that these are the result of the ideology of development and the ways in which this emerged and has evolved out of the 18th century European Enlightenment. The last 200 years has seen a struggle spread across the globe between two visions concerning the ultimate ends of 'development'. Neo-liberalism today represents the triumph of the pessimistic view that sees poverty and human degradation as acceptable in spite of spectacular life transformations for some. Paradoxically, in this context the development ideology is 'succeeding', where in more optimistic times it failed. The mass of southern peasants are being both pressured and lured to participate in the global commercial economy even with little or no hope of moving beyond the impoverished margins. Meanwhile the unconsidered activity of both rich and poor in spatial redistribution, including the peri-urban interface, and evolving lifestyles represent the ultimate in profligate misuse of resources presaging an environmental disaster of unimaginable

proportions in the years ahead. The essay ends with a brief look at the current potential social, ideological and political forces for positive change and provides a sketch of directions that could head off the denouement and create a sustainable world where all can live well.

**Ba Diao, M. (2001) Urban-Rural Linkages for Animal Products Supply in Dakar. Paper prepared for the DPU International Conference: Rural-Urban Encounters: Managing the Environment of the Peri-Urban Interface, London 9-10 November 2001 Senegalese Agricultural Research Institute**

rural-urban linkages

urban agriculture; food supply; urban waste management; rural-urban linkages, Senegal, Africa (Western)

In response to growing urbanisation, the promotion urban agriculture (UA) becomes more and more a priority for policy makers in developing countries because it meets the demand for food, employment and urban waste management. Around Dakar, the government promoted intensive dairy, poultry and fattening sheep productions. However, demands for the land and water by city dwellers for non-agricultural uses are increased and farmers have many problems for growing fodder through lack of resources. Consequently, a scrutiny of the efficiency and sustainability of UA relative to rural agriculture (RA) becomes rather pressing and legitimate. Recent studies on UA carried out by a multidisciplinary team showed strong linkages between RA and UA, in terms of production and flows. From rural areas to urban zones, live animals, dairy products, fodder, crops by-products and labour are provided. Conversely, services, manufactured products, industrial by-products and other inputs are available.

In order to make urban food supply quantitatively and qualitatively more stable, it is important that urban-rural linkages are fully understood; neither urban nor rural development should be treated in isolation.

**Baker, J; Pedersen, PO (1992). The rural-urban interface in Africa: expansion and adaptation; seminar proceedings No. 27. Uppsala: Nordiska Afrikainstitutet (The Scandinavian Institute of African Studies)**

rural-urban linkages R&D methodology

Africa; Botswana; Zimbabwe; Ghana; urban poor; survival strategies; urban development

In September 1990, a conference entitled "Small towns and rural development in Africa under conditions of stress — adaptive strategies and survival mechanisms" was organized jointly by the Scandinavian Institute of African Studies and the Centre for Development Research, Copenhagen. This book is based on the papers that were presented at the conference. Chapters two and three outline the conceptual and theoretical contexts of the role of small towns in development. The next four chapters examine linkages between small towns and both rural areas and larger towns in Sudan, Somalia, Zimbabwe and Ethiopia, respectively. The following three chapters examine the role of entrepreneurship in small town development in Botswana, Zimbabwe and Ghana, respectively. The section entitled "Living conditions and labour markets" examines urban textile workers as farmers in the 1980s in Nigeria, the relationship between rural and urban life in Mtwara, Tanzania, and survival strategies of migrants to Makambako, Tanzania. The last, plus the four chapters in the final section, deal with urban agriculture and have been

abstracted individually. (HC, IDRC)

**Belantsi, R; Torreilles, JC. Appui au développement agricole périurbain au Congo. Agriculture périurbaine en Afrique subsaharienne p. 53-62**

rural-urban linkages

periurban agriculture; Congo; development projects

In Congo, 75-80% of the people live in towns, hence it is crucial to take account of the urban factor in any sustainable development operations. Periurban operations are not merely a complement to rural supply zones, but can also be seen as reference sector for launching rural development. At the same time periurban activities have always been precarious, as they are subject to numerous constraints, which eventually jeopardise their development (e.g. land use pressure, anarchic urban development, theft). The periurban agricultural development structure as developed by Agricongo helps to stabilise and sustain the profession. In the paper, emphasis is put on how the project helps the marker gardeners, how professional groups are developed and how information systems are set in collaboration with CIRAD to monitor the sector and spread information to the stakeholders. (NB - Abstract adapted from original)

**Bendavid-Val, Avrom (1989). rural-urban linkages : farming and farm households in regional and town economies. Review of Urban and Regional Development Studies, Vol. 1, No. 2 (July 1989) p. 89-97.**

rural-urban linkages

Africa (Eastern); Somalia; Kenya; urban economy; household economy

Agricultural expansion is recognized as critical to growth in nonfarm sectors of rural and urban regions. However, the extent and mechanisms of economic interdependency between agriculture and other sectors remain an inadequately understood aspect of the rural-urban economic growth dynamic. Least well understood are the linkages between household farm income and the development of town and city economies. The paper presents findings from research on rural-urban exchange - including periurban agriculture - in Kenya and Somalia. It provides insights into the relationships between agriculture and the urban economy, and offers conclusions for regional development economies. Data is presented of the percentage of town dwellers that farm and rural households that are engaged in urban economic activities. (adapted from original by JS)

**Bentinck J. (2000) Delhi's Urban Growth and the Stray-Cattle Controversy. In: *Urban Agriculture Magazine*, no 2, urban livestock, October 2000, RUAF, Leusden The Netherlands.**

urban livestock rural-urban linkages

India; urbanisation;

The streets of urban India are characterised by the presence of animals: cattle, bullocks with carts, monkeys, dogs, elephants, and occasionally some scavenging pigs. Cows are certainly the most visible fauna. The presence of dairy farming in the city is explained here by the way that

villages and its people become urbanised. It may look that this is an undisputed part of city life, but the case of Delhi shows that it is surrounded by controversy, which calls for creative policy action.

**Berg, Leo van den (2001) Farming downstream from Hanoi. Paper for the Conference Rural-Urban Encounters: Managing the Environment of the Periurban interface, London 9-10 November 2001.**

rural-urban linkages

Vietnam; irrigation; urbanisation; horticulture; aquaculture

The paper outlines the nature of the land conversion processes that take place in the southern outskirts of Hanoi, in Thanh Tri District. The responses of farmers to these challenges include turning to more intensive horticultural production and fish farming on the one hand and demanding higher compensations for lost land on the other.

**Bergeron, Bernard (1998). Agriculture péri-urbaine au Gabon. 4 p. Ministère des Affaires Étrangères, Coopération et Francophonie, Bureau Production Agricole, Industrielle et Echanges**

rural-urban linkages services

Gabon; periurban agriculture

The 'Institut Gabonais d'Appui au Développement (IGAD) is closely involved in shaping periurban agriculture around Libreville, mostly commercial. The underlying paper describes the development methodology of the IGAD. Focus is on horticulture, food processing and training. (WB)

**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)

**Birley, MH; Lock, Karen (1997). A review of the health impacts of periurban natural resource development. On: <http://www.liv.ac/~mhb/publicat/periurban/start.html>. 14 p. Department for International Development (DFID), Natural Resources Systems Programme, 94 Victoria Street, London, SW1E 5JL, UK.**

health and environment          rural-urban linkages  
health hazards; natural resource management

Describes findings of a study to identify kinds of health hazards that natural resource managers, researchers and users should be aware of. The article gives numerous cases and health survey figures. (WB)

**Birley, MH; Lock, Karen (1999). The health impacts of periurban natural resource development. 185 p. ISBN 0-9533566-1-2. Liverpool School of Tropical Medicine, Pembroke Place, Liverpool, L3 5QA, UK**

health and environment          rural-urban linkages  
periurban areas; health hazards; natural resource management; diseases; health impact assessment

This important monograph is based on a report commissioned by the UK Department for International Development (DFID), which is conducting research into natural resources in periurban areas through its Natural Resource Systems Programme. In this study, the various health hazards in connection with the periurban interface are identified and systematically examined. Health issues are organised into categories of communicable diseases, non-communicable diseases, injury, malnutrition and psychosocial disorder. In a way, periurban communities may have to face the worst of two worlds, being subject to both traditional and modern health hazards. All major natural-resource-management themes in the periurban setting are closely examined, such as energy, agriculture, fisheries and waste management. The authors, however, do not stop at this examination but also provide techniques for safeguarding health. Also, a procedure for health impact assessment is described which can be used in project design and operation. The final chapters provide a synthesis of important linkages and give a state-of-the-art overview of researchable themes that require collective, natural resource-, social- and health-specialist inputs. Highly recommended reading for an audience of non-health specialists, such as managers of NRM projects, researchers and recipients of development aid. It contains a well-stocked bibliography on urban-health research. (WB - from executive summary)

**Bom Konde, P. Les migrants et les institutions dans l'évolution des activités agroalimentaires périurbaines. Agriculture périurbaine en Afrique subsaharienne p. 81-87**

rural-urban linkages

periurban agriculture; sustainability

Migrants from different regions offer a potential for product diversification, which can help to encourage the growth of periurban agrifood systems. In Cameroon, agrifood zones have been seen to develop on the edge of large urban agglomerations and medium sized towns. Their emergence is facilitated by the proximity to available land and all the different technical operations involved. Periurban activities are very unstable due to urban sprawl. Preliminary results of the study indicate that activities in the maize and cassava sector is based on processing from products of urban origin. This confirms the idea that immigrants in periurban areas are able to adopt new products, insofar as such products are not found in their region or origin. There is however little sign that maize and cassava processing is diversifying. Thus one can assume that the potential for diversification is still spreading. To support this the local component of the expertise diffusion methods as implemented by the AVAL project could prove to be useful in periurban areas. (NB - Abstract adapted from original)

**Bon, Hubert de; Ducelier, D.; Hernandez, S.; Temple, L. Appui aux productions maraîchères et fruitières périurbaines de Yaoundé. Agriculture périurbaine en Afrique subsaharienne, p. 89-92**

rural-urban linkages horticulture

periurban agriculture; marketing; vegetables; sub-Saharan Africa

Vegetable crops are intended to be marketed and are often produced by young farmers, new to the business. The major species grown are: African spinach, jute, *Solanum aethiopicum* and lettuce. Green peppers, parsley, basil and dokra are also grown. CIRAD-FLHOR works on improving the production techniques practised and the sanitary quality of the marketed produce. The agronomic support for fruits aims to diversify the range of products with species adapted to the prevailing conditions. A number of varieties already has been selected and distributed. Vegetable and fruit crops from the periurban zone play an essential role in market supplies. A study under way includes quantifying fruit and vegetable movements and monitoring and analysing prices and urban market supplies. Major surveys of markets, notable in Yaoundé will determine the role of fruits and vegetables from urban and periurban areas compared to produce from further a field. (NB - Abstract adapted from original)

**Bos, Liesbeth van den; Helmsing, Bert (1998). Restructuring and rural-urban relations: a survey of the literature. 123 p. Institute of Social Studies Advisory Service (ISSAS), PO Box 29776, 2502 LT The Hague, The Netherlands**

rural-urban linkages

economic aspects; structural adjustment programmes; urban development; rural-urban migration

A scientifically oriented literature study on the economics of rural-urban linkages. The study examines how these linkages are affected by economic restructuring since the 1980s. Links between small towns and surrounding rural areas are analysed. A number of aspects are highlighted in this very dense publication:

- The influence of structural adjustment programmes on economic opportunities for small and intermediate cities;
- The effects of agricultural deregulation and the growth of small and intermediate towns;
- The possible influence of decentralisation to local governments on the service rendering role of small cities with regard to
- the rural hinterland, notably effects on markets and rural area services;
- The effect of restructuring of industry on the economy of small and intermediate cities;
- The extent to which all these changes have had an influence on migration patterns.

For a scientific audience of economists. (WB)

**Cofie, O.O., Drechsel, P., Amoah, P., Danso, G.P., Gyiele, L. (2001) Improving Rural-Urban Nutrient Flows Through Urban And Peri-Urban Agriculture University College London, UK Development Planning Unit**

rural-urban linkages wastewater reuse reuse  
water, periurban agriculture, nutrient transport; Africa (Western)

Rapid urban growth in several parts of Africa poses challenges to urban food security and municipal waste management. Urban centers can be considered as vast food and nutrient sinks, because unlike in rural areas, urban household waste and market refuse is not returned into food production but rather contributes to urban pollution and health risks. On the other hand, there is an increased nutrient need, for example, in urban and peri-urban production areas specialized on urban food supply.

Increased understanding of rural-urban nutrient flows could reveal the potential for nutrient recycling to agriculture. Concomitantly, recycling can reduce nutrient mining as well as health and environmental problems caused by accumulated organic waste. The paper discusses strategies to study nutrient flows within the rural-urban interface based on an ongoing project conducted in three different agro-ecological zones in Ghana. Flow data show the contribution of rural, peri-urban and urban farming to urban food security. Waste analysis suggests that the organic waste products generated and de facto available could be recommended for crop production. The study also reveals that there is enough waste (solid and liquid) currently dumped as refuse, which could be recycled for agricultural use. A pilot station for co-composting is currently under construction in Kumasi.

**Corten, Irma (1998). Het proces: stad-land: succesfactoren en belemmeringen in stad-land projecten. Werkdocument IKC Natuurbeheer no. 163. 113 p. National Reference Centre for Nature Management (IKC-N), PO Box 30, 6700 AA Wageningen, The Netherlands**

rural-urban linkages  
urban planning; planning approaches; methodologies; political aspects

Aims to provide lessons from practical experiences with planning approaches. These cases have been analysed on factors determining successes and constraints. Sheets are presented in which specific recommendations are presented under: process; plan; policy and legislation; knowledge and skills. (NB)

**Craddock Williams, Vivian (1997). Neither urban, nor rural. TRContinental development, PO Box 7558, Kampala, Uganda**

rural-urban linkages

Uganda; settlements in transition; urban planning

The author argues that the easy urban-rural dichotomy is upset by the realities of agro-industrial linkages and by residential allegiance in Africa. The focus should thus be on growth centres that are able to convert low-cost inputs into relatively high-rate growth. (NB)

**Dahiya, Bharat (2001) Hard Struggle and Soft Gains: Environment, Voluntarism and Governance in Pammal, South India. Paper prepared for the DPU International Conference: Rural-Urban Encounters: Managing the Environment of the Peri-Urban Interface, London 9-10 November 2001 Cambridge University**

rural-urban linkages

periurban area; environmental management; services; India; community initiatives, Asia (South-Central)

In the developing country peri-urban context, environmental management suffers from poor provision of urban services. The urban local governments are unable to provide these services adequately owing to their poor financial situation and administrative capacities. In some areas, this has resulted in the formation of civil society organisations that provide self-help urban services. Although it has contributed to environmental management in peri-urban settlements, the civil society organisations have faced challenges from two sides: the urban residents who are reluctant to pay for the self-help services and the urban local governments that stop providing secondary-level urban services. Thus, the civil society organisations are left in conflicting situations from both sides. The approaches taken for the resolution of such conflicts by civil society organisations have been two-fold: commitment in the provision of self-help urban services in face of degrading living conditions, and building networks with those in power and having influence on the peri-urban local governments. The paper presents a case study of conflicts in environmental management and their resolution through strategic networking by a civil society organisation in Pammal, a small town in South India.

**Dávila, Julio (2001) Guidelines for Strategic Environmental Planning and Management of the Periurban Interface. 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 rural-urban linkages

urban planning; environmental planning; periurban interface; guidelines

The traditional separation between urban and rural authorities makes intervention's, aimed at supporting periurban farming, difficult. The aim of this paper is to present the principles and components of a strategic environmental planning and management of the periurban interface – and, by extension, of urban and periurban agriculture as salient activities in it – in a developing country context. The work presented here is the result of a research project aiming to produce a set of guidelines to be used as the basis for action at the local and periurban levels.

**Dayaratne, Ranjith and Raja Samarawickrama (2001) Empowering Communities in Managing Rural Urban Encounters: The Concepts and Practices of the Housing and Community Development Program in the Peri-Urban areas of Colombo. Paper prepared for the DPU International Conference: Rural-Urban Encounters: Managing the Environment of the Peri-Urban Interface, London 9-10 November 2001, University of Bahrain / Colombo Municipality Council**

rural-urban linkages

periurban area; community development; urbanisation; Sri Lanka, Asia (South-Central)

Peri-urban areas of Colombo have been battling the trauma of their communities whose cultural identities are neither urban nor rural. Their life styles are dislodged from the traditional situations while unhealthy policies and the transition forces have posed serious issues to the development agencies and practices.

Open economic policies of Sri Lanka since 70s resulting in the promotion of the private sector have boosted the development and acquisition of land, shooting up the land values. Land-use has begun to change from agriculture to industry and residential use. The pressure of the industry commerce and investment and the attractions of the city as a cultural and educational center have brought about unprecedented changes. Recently, these have received a positive attention and practices have emerged that recognize the distinct nature of the periurban areas and more importantly their potentials as a sustainable and essential transition space between the urban and rural areas.

In this context, the Colombo Municipality Council together with other development agencies have launched a program aimed at dealing with essentially social and spatial issues of the peri-urban areas. Based upon the concepts of community empowerment and capacity building, this program has enabled the communities to deal with the traumatic impacts of the urbanization practice. This paper examines the Housing and Community Development Program (HCDP) of the Colombo Municipality Council of Sri Lanka.

**Debnath, Debashis \*(2001) Mandora - Blossoming in Horizon and Beyond "It was Five Past Midnight in Bhopal" Paper prepared for the DPU International Conference: Rural-Urban Encounters: Managing the Environment of the Peri-Urban Interface, London 9-10 November 2001 Indian Institute of Forest Management**

rural-urban linkages

India; rural-urban linkages; rural-urban migration, Asia (South-Central)

Bhopal is the capital city of Madhya Pradesh, is well known as "City of Lakes" and has placed its

name as worst ever-industrial disaster on the globe. There are few lakes that keep environmental balance of the city. Mandora, the studied village is situated 7-8 kilometers from the heart of the city towards periphery.

The villagers were migrated laborers from Sajapur, the adjacent district. They started their habitation on the bank of the lake Kerwa. During dam construction on that natural lake they were displaced and promised to give compensation. Instead of getting it they struggled to survive on the relocated place, which is the present habitation. Though all the households are divided into traditional social hierarchy, they maintain the cohesiveness, which resulted in self-initiated environmental management.

In their natural resources management it has been observed the dependency on land, forest and water bodies support them to eke out their existence. Their occupational patterns vary from agricultural labours, wage workers in the shops, unskilled labours to business men. Facing prolonged crises of fuel wood, fodder, house construction materials their self-initiated process as well as their responses to the induced institution have led them to meet up the daily necessity of biomass. Their many set-up rules have also developed their awareness in the management of health and hygiene.

**Dengu, Ebbie; Mugova, Alex (1996). Urbanization and land policy in Zimbabwe. In: Appropriate Technology vol. 23 (1996) no. 1 p. 5-8. Intermediate Technology Zimbabwe, PO Box 1744, Harare, Zimbabwe**

**Supplier: Intermediate Technology Publications**

land use planning      rural-urban linkages  
housing; urban infrastructure; land tenure; tenure rights

In the light of the recent events in Zimbabwe with regard to land tenure rights, this article gives important background information. The land division dating back to the land Apportionment Act of 1930, has led to deterioration of agricultural productivity of the Tribal Trust lands and, hence, to urban migration. The article describes how Harare's infrastructure, especially, has been unable to cope with this influx of people. (WB)

**Development Planning Unit, University College of London (2001)**

**Rural-Urban Encounters: Managing the Environment of the Periurban interface, London 9-10 November 2001. Conference Papers and Proceedings.**

rural-urban linkages  
urbanisation; wastewater; waste recycling; concepts; policy

In this one-and-a-half-day conference participated academics, practitioners, and donor agency representatives, with experience in the integration of local environmental management, traditionally separated into "urban" and "rural". The event aimed to take stock of progress in what is a new field of investigation and action and to set directions for the future, attaching priorities to common issues, to give structure to what is currently ad hoc environmental management of the periurban interface, and to mark out the current limits in understanding the environmental problems and opportunities created when activities of the city and countryside meet. The conference papers were handed out at the conference and will be available in the course of 2002

at <http://www.ucl.ac.uk/dpu/pui/conf.htm>.

**Drakakis-Smith, David (1992). Strategies for meeting basic food needs in Harare. In: The rural-urban interface in Africa: expansion and adaptation / Baker J. & Pedersen P.O. (eds). Sseminar proceedings no. 27. Uppsala: Nordiska Afrikainstitutet (The Scandinavian Institute of African Studies). pp. 258-283**

food security and nutrition      rural-urban linkages  
Zimbabwe; food security; surveys

A survey was carried out in three areas of varying socioeconomic status in Harare to establish patterns of food production and purchasing. In descending order, these were Mabelreign, a formerly white but now ethnically mixed area; Glen View, a sites and services area reasonably well provided with garden space; and Epworth, a squatter settlement in the process of being formalized. Certain basic items (bread, sugar, tea/coffee, beef and mealie) were purchased by nearly everyone. But, the people of Mabelreign spent the most on food in absolute terms but the least in relative terms. In Mabelreign and Glen View, some four-fifths of those interviewed grew food crops in their gardens. In Epworth, the two-thirds that had gardens used them to grow food. Virtually all of the crops grown in urban gardens were consumed. Only in Epworth was a small proportion (about 5%) sold. A fairly high proportion of families kept chickens. Only 10% admitted to cultivating another plot of land — probably an underestimate as much of such cultivation is illegal — and most of these were in Epworth, where there was more open space and the influence of the authorities less marked. Other sources of food were purchase, cultivated land outside Harare and gifts from rural relatives. It was suggested that governments recognize the importance of urban agriculture by providing garden space in low-cost housing schemes, by regulating land use on the urban periphery and by designating organized areas for cultivation. (HC, IDRC)

**Drechsel, P.; Quansah, Charles; Penning De Vries, F (1999). Urban and periurban agriculture in West Africa: characteristics, challenges and need for action. 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. 19-40. International Board for Soil Research and management (IBSRAM)**

rural-urban linkages      R&D methodology  
urbanisation; ecology; nutrient cycling; waste contamination

Urbanisation poses challenges for food security, sanitation and poverty alleviation. Periurban and urban vegetable production will play a multiple role in achieving development goals. At the moment mainly high-value perishable products are produced. Nutrient recycling is pre-requisite to maintain these functions. Care must be take of waste contamination by agro-chemicals and pathogens. For future planning it is important to fully understand urban-rural linkages. (NB)

Drechsel, P., Cofie, O.O., Vázquez, R. and Danso, G.P.. (2001) **Technology development for municipal organic waste recycling for urban and periurban agriculture - A holistic approach.. Paper for the workshop "Appropriate Methodologies for Urban Agriculture", October 2001, Nairobi, Kenya. Proceedings, available On: [www.ruaf.org](http://www.ruaf.org).**

R&D Methodology waste recycling rural-urban linkages  
poultry; Ghana; nutrient recycling; sanitation; FAO; IBSRAM; West Africa

One of the challenges of rapid urbanisation is how to make sufficient food available on a sustainable basis for the increasing urban population. The increase in urban food demand is giving way to intensive food production systems in and around cities often specialised on perishable crops or poultry, and also to export-oriented agriculture using the advantage of urban infrastructure. These types of agriculture require large amount of inputs, including plant nutrients. Once the food is consumed or processed in the city, related market and household refuse as well as human excreta contribute to urban pollution due to the common lack of adequate sanitation services or end in landfills. In both cases large amounts of nutrients are simply 'wasted'. This situation calls for an analysis of options for municipal organic waste recycling for the benefit of agricultural and environmental sustainability in the rural-urban continuum. An international workshop on (peri)-urban agriculture and nutrient recycling was organised for Africa in 1999 by FAO and IBSRAM, where knowledge gaps in waste recycling were analysed and recommendations developed. Many scientists, farmers and decision makers emphasised the need for more information on viable and acceptable options for the recycling of municipal and agro-industrial waste, especially for farmers in urban and periurban areas. Subsequently, the Canadian donor IDRC agreed to co-sponsor a corresponding project in three agro-ecological zones of West Africa addressing variations in organic waste generation, quality and availability. The project is an attempt to develop recycling strategies that should result in closing the rural-urban nutrient cycle as well as preserving the quality of the urban environment by reducing the (pollution effects of) waste accumulation. The analysis and its different components are described in this paper.

Drescher, Axel W.; Iaquina, David (1999). **Urban and periurban food production: a new challenge for the Food and Agriculture Organization (FAO) of the United Nations. 53 p. Food and Agriculture Organization (FAO), Via delle Terme di Caracalla, 00100 Rome, Italy**

food security and nutrition rural-urban linkages  
policy development; CGIARs; development strategies

Addresses both urban and periurban agriculture (together coined PUA), sets the scope, provides definitions of concepts of PUA, describes the institutional framework and gives a large number of examples. This paper serves to make a contribution to strategy development in the framework of the 15th session of the Co-ordinating Committee for Agriculture (COAG). (WB)

Driss, Ben Ali, Di Giulio, Antonio, Lasram, Mustapha & Lavernege, Marc (1996). **Urbanisation et agriculture en Méditerranée: Conflits et Complémentarités. Editions L'Hamattan, Paris (Histoire et perspectives Méditerranéennes.**

land use planning      rural-urban linkages food security and nutrition  
land use; policy; urbanisation; planning; Mediterranean ; environment rural-urban linkages  
environment

This publication is a collection of articles on urbanization and agriculture in the Mediterranean. Most of the articles are in French, some in English. Maps, pictures, and tables enrich the book a lot. In the first part the book deals with problems of urban planning mainly from experience of Magreb countries. The multifunctional character of urban agriculture is pointed out by one article. This paper propose a systematic mode of representing agriculture through a set of indicators, meant as a tool for choosing appropriate planning strategies. In the second part the book deals with specific problems caused by the conflict between urbanization and agriculture, like e.g. water problems and other environmental problems. In the last part the book mainly deals with rural urban linkages [AD].

**Ellis, Frank; Sumberg, James (1998). Food production, urban areas and policy responses. In: World Development vol. 26 (1998) no. 2 p. 213-225**

rural-urban linkages      food security and nutrition      city ecology  
Africa; rural-urban linkages; food policy

A literature review focusing especially on food production in and around sub-Saharan cities and towns. The authors emphasise the importance of rural-urban interactions in resource management and output markets. At the same time, they warn against too high expectations about the role of urban agriculture for food security of urban dwellers. (WB)

**Fleury, André. Définitions et contours de l'agriculture urbaine à partir d'expériences en Europe. In: Agriculture périurbaine en Afrique subsaharienne p. 17-27**

rural-urban linkages  
periurban agriculture; municipal policies

The reason for periurban agriculture moving back towards the towns is possibility of urban citizens expressing their ideas more forcefully. Farmers have been quick to see new opportunities and transform their production practices, whilst elected representatives and urbanists have come up with new town plans. Municipalities and governments have been developing new types of urban development by implementing agri-urban policies. It is essential to analyse the relations between periurban agriculture and towns, and how they have been transformed. A distinction can be made between spatial relations (where agriculture is practised) and socio-economic relations. Lastly how the idea of town planning and the means at the disposal of the authorities have changed is discussed. (NB - Adapted form original abstract)

**Foeken, Dick; Mwangi, Alice Mboganie (1998). Does access to land have a positive impact on the food situation of the urban poor? A case study in Nairobi. In: East African Social Science Research Review vol. 14 no. 1 (1998) p. 1-15. 15 p.**

land use planning      food security and nutrition      rural-urban linkages

Kenya; urban poor; food security; land rights; access to land

Examines the vital issue of whether and how access to farm land influences the household's food and income situation. There is a general introduction into coping strategies of the urban poor as well as an interesting review of existing access rights to urban land in Nairobi. Interestingly, for this aspect hardly receives any attention at all, the authors also investigate the phenomenon of urban households realising part of their livelihood from rural sources, through access to rural land, in particular. Previous surveys had revealed that this was the case for Kenyan middle income groups, in particular. The land is not necessarily farmed by the urban dweller himself / herself: often, it is a member of the family. The authors conclude that having access to a rural plot seems to have a positive effect on income and that, in addition, they seemed to be better off than those with access to an urban plot. Mechanisms involved are not entirely clear, however. A paper with a refreshing view. (WB)

**Gefu, JO (1992). Part-time farming as an urban survival strategies: a Nigerian case study. 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. 295-302**

food security and nutrition      rural-urban linkages

Nigeria; survival strategies; surveys; urban poor

Several survival strategies are being adopted in the wake of structural adjustment in Nigeria. One of these is part-time farming. This chapter presents the results of a survey questionnaire on part-time farming that was distributed to 550 academic and non-academic staff members of Ahmadu Bello University, Main Campus, Zaria. A total of 110 questionnaires were returned. All of the respondents indicated that they were involved in a variety of part-time farming activities, ranging from home gardening to commercial production. The involvement of all but 16% predated structural adjustment. Maize and cowpeas were the most commonly cropped grain, maize for sale and cowpeas for home consumption. A variety of vegetables were grown for home consumption around the house or on small patches of land near residences or office buildings. About 81% of the respondents kept some livestock: goats, poultry and sheep, in that order. Most kept fewer than five units of any one species (except poultry), indicating that livestock raising was geared to home consumption. The profit margin was very narrow. It was concluded that urban agriculture is likely to remain a prominent feature of the informal sector in urban Nigeria. It is recommended that urban farmers form their own producer associations the better to take advantage of government-subsidized production inputs and obtain credit.

**Gockowski, J. Intensification of horticultural production in the urban periphery of Yaoundé. Agriculture périurbaine en Afrique subsaharienne p. 63-79**

rural-urban linkages      horticulture

Yaoundé; Cameroon; periurban agriculture; surveys; farming systems

Population growth of more than 6%, proximity to the largest urban centre and high rural population densities all contributed to intensification and diversification in Beti farming systems

around Yaoundé. A random survey of 208 households in 16 villages 12 to 90 km from Yaoundé was conducted. Sixty-five % of the households interviewed adopted an intensive monocrop horticultural system with on average 3 monocrop fields per adopting household. They maintained roughly the same number of traditional field-systems as non-adopters, indicating an increased mobilisation of labour and increased tomatoes, okra, sweet green and hot peppers. Pests and diseases were cited most frequently as the major agronomic constraint. Variation in market access resulted in significant price differentials as a function of distance to market. The valuable genetic diversity in local land races of tomatoes and the indigenous West African okra is in danger of being lost. Many indigenous leafy vegetables are very important particularly to the urban poor. These crops have largely been neglected by research with the same risk of genetic erosion as farmers turn to cabbages and tomatoes. Rootknot nematodes were the most cited problem among commercial producers. Efforts to develop improved fallows at IITA and elsewhere need to focus on the impact of fallow species on cyst populations. Given the lack of resources at the disposal of public research institutes results should be shared through regional organisational frameworks. (NB - Abstract adapted from original)

**Grossman, David; Berg, Leo van den; Ajaegbu, Hyacinth I (1999). Urban and periurban agriculture in Africa. xviii, 335 p. ISBN 1\_84014\_910\_8. GBP 45.00**

**Supplier: Ashgate Publishing Direct Sales, Bookpoint Limited, 39 Milton Park, Abingdon, Oxon OX14 4TD, UK**

[rural-urban linkages](#)

[periurban agriculture; conferences; farming systems; Africa; food security](#)

Very elaborate proceedings of a conference examining the state-of-the-art in urban and periurban agriculture in Africa. The text highlights the differences between these, in terms of availability of land and water, policies with regard to open public spaces, accessibility of markets, pollution hazards, and use of inputs. There are four parts: the first two contain regional studies, respectively field studies from eastern & southern Africa, and periurban studies from the Jos Plateau in Nigeria. Part three deals with economic or methodological aspects of access to resources and inputs. Part four is about theoretical and policy issues, notably with regard to development. Many papers insist on the fact that in Africa, farming in urban areas by growing rain-fed crops and raising animals in the urban space is more a survival strategies than market gardening: it is primarily an expression of poverty and inadequacy of existing food supply. The book argues that, in the African setting, the role of urban agriculture lies primarily in securing income and providing food security for the producers: most of the produce comes from outside the city. The role of urban agriculture, it is argued, in feeding the cities will remain a marginal one. There is a clear split between urban subsistence, thought to have little perspective, and emergent commercial farmers, mainly in periurban areas, believed to be much more promising. Many authors insist on the importance of promoting self-help and participatory development rather than relying on top-down projects. A number of recommendations have stemmed from this conference, rather difficult to extract from the text: (1) The formation of growers' associations to address issues in connection with access to land issues and to interface with consumers; (2) Transfer of Technology for water management; and (3) Maintaining a clear focus on ecological aspects of urban and periurban gardening. Much of the attention is on the reuse of urban waste

products. This used to be a tradition in many African cities in the Sahel, but has become a debatable phenomenon as the waste is often polluted with batteries, plastics, and industrial effluents. Low-cost laboratory facilities are needed to check inputs like irrigation water and manure and also produce sold to the market. The book is self-confessed research oriented, but policy makers may also find much relevant information here. (WB)

**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)

**Holm, M (1992). Survival strategies of migrants to Makambako - an intermediate town in Tanzania. 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. 284-294**

food security and nutrition      rural-urban linkages

Tanzania; rural-urban migration; survival strategies; surveys

This chapter examines the phenomenon of rural-urban migration in Tanzania, in general, and Makambako, in particular. Makambako is a local transit and trade centre with limited infrastructure and opportunities for employment. Nevertheless, it draws large numbers of migrants, mainly from among the "better off" rural inhabitants. Researchers interviewed 283 migrant households using questionnaires and talked with key informants in Makambako and the surrounding villages, in order to shed light on their survival strategies. They noted that after taking up residence as urban dwellers, migrants tended to continue a rural lifestyle. The 280 economically active heads of households had a total of 342 occupations. More than half were farmers, one-third were in business and one-quarter worked as wage laborers. The 249 economically active wives of heads of households held a total of 295 occupations. More than four-fifths were farmers, 14.8% engaged in business and 12.3% were wage laborers. A large proportion of both male and female migrants practiced a combination farming and business, often selling their surplus production. Migrants tended to retain close ties with their area of origin and one-fifth received food from their home village. The implications of migration for rural-urban equity are discussed. It was concluded that Makambako needed a better infrastructure, facilities to process local resources and a powerful local government with local participation if it were to function effectively as an intermediate centre for the rural hinterland. (HC, IDRC)

**Jacobi, Petra (1998). Food production as a survival strategies 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 strategies 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)

**Kamal, Ashrat and Ayman El-Hefnawi (2001) Infrastructure Led Development and It's Impact on Peri-Urban Areas: The Case of Giza City, Egypt . Paper prepared for the DPU International Conference: Rural-Urban Encounters: Managing the Environment of the Peri-Urban Interface, London 9-10 November 2001 UTI (Urban Training and Studies Institute)**

rural-urban linkages

Egypt; periurban area; settlement areas, Africa (Northern)

This paper outlines the Egyptian perspective of peri-urban (PU) areas. It analyses the experience in constructing huge infrastructure projects that passes in the PU areas without enough study of the peculiarities of these areas with special reference to its fragile socio-economic structure. It also reviews an existing case study that was developed in the urban training institute a year ago, where the main objective was to study these areas thoroughly, especially in case where there are huge national infrastructure projects. The study's outcome was used as a means to increase the awareness of the decision makers in the ministry of housing about the possible negative impacts that might occur if such project has been implemented without enough socio-economic considerations. And also the study was used as training materials for the trainees of the urban management and the environmental management programs implemented in the urban training and studies institute.

The paper is documenting a study that took place in Giza city, where this city is well known of its drastic containment of informal settlements build over agricultural land, which forms a huge number of periurban areas, contained within the urban fabric. Moreover, the city is known, among practitioners and researchers in Egypt, because 75% of the urbanisation in the city is informal and most of these informal settlements were built over the most fertile agricultural land in Egypt.

The paper testifies, through using the environmental profile approach, the severity of the environmental problems in the PU areas of Giza and shows the impact of the ring road on these problems. Moreover, it analyses changing livelihood strategies of its occupants from being rural-based into urban-based identified through demographic and employment pattern changes that happened before and after the construction of the ring road.

The paper will demonstrate the absence of PU areas linkages in government' decision-making within the Egyptian context. These areas are not managed by traditional environmental institutions; rather by ad-hoc number of initiatives as part of the ministry's of housing and

agriculture efforts to control urbanisation over agricultural land in those zones. In essence the paper will testify the lack of an Egyptian acknowledgement to the mutual relationship between its rural and urban agglomeration of cities.

The paper will end with some basic conclusions which all call for a special kind of institutional settlements and policy instruments to manage these areas. The institutions must work using participatory approach in identifying their problems and setting agendas for interventions. Infrastructure led development could be one approach for controlling development and hence preserving the rural-urban linkages. It, therefore should not be applied in these areas without enough socio-economic studies.

**Katzir, Raanan. Agroecological aspects of the periurban process. Urban agriculture notes:**  
<http://www.cityfarm.org/israel.html> - israel

city ecology    rural-urban linkages  
periurban agriculture; agroecology

Looks at the consequences of urbanisation from an agroecological point of view, covering aspects like water, soil, city waste, and industrial residues. In addition, the paper looks at implications of periurban farming, such as production of special crops, exporting, agrotourism and handicraft work. (WB)

**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)

**Kuiler, Esther (1998). Toekomstperspectieven voor biologische stadslandbouw in Nederland: stadslandbouw als onderdeel van de urbane bosbouw. AV no. 98-07. 72 p. Departement Omgevingswetenschappen, Sectie Bosbouw, Agricultural University Wageningen, The Netherlands**

horticulture    urban forestry    rural-urban linkages  
landscape design; urban livelihoods; biological agriculture; home gardening; Netherlands

Looks at urban agriculture from the livelihood point of view and examines its contribution to

creating an attractive urban landscape in the setting of The Netherlands. In Dutch. (WB)

**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**

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)

**Laquinta, D. and Drescher, Axel W.. (2001) Defining Periurban. Paper for the Conference Rural-Urban Encounters: Managing the Environment of the Periurban interface, London 9-10 November 2001.**

rural-urban linkages      land use planning  
periurban; natural resources

This paper uses definitions and concepts of the periurban area, and explores the implications for planning and management of natural resources in the rural-urban interface. In exploring this, the authors attempt to define the *social footprint*, with the aim to foster effective interdisciplinary discussion.

**Lazard, J. La pisciculture périurbaine en Afrique. Agriculture périurbaine en Afrique subsaharienne, p. 111-121**

rural-urban linkages  
aquaculture; periurban agriculture; Ivory Coast; Niger

Technical and economical requirements, in terms of agricultural by-products and existence of an urban market, resulted in a concentration of pisciculture in periurban areas. The article presents a case of fish farming in Ivory Coast and one case in Niger. Both cases are set in a different environment in which fish farming is carried out and in production system. In Ivory Coast fish farming is profitable. In Niger, the need to practise pisciculture cages and (not fixed to land tenure) and as part of a commercial chain in which it is essential to organise production, means that the farmers need fairly advanced technical and management skills. As a result only a limited number of people will qualify, at least for the time being. (NB - Abstract adapted form original)

**Lewcock, Chris P (1996). Periurban interface research: workshop proceedings. ODA London & British Council Kumasi Ghana; 80 p.**

R&D methodology rural-urban linkages

Ghana; Geographic Information Systems; waste management; horticulture; environment; post harvest operations; sustainable agriculture; wastewater; rural-urban linkages; information systems; erosion

This workshop aimed first to introduce the periurban interface research being carried out by NRI to Ghanaian leadership. And it explores several relevant aspects as listed above in the keywords. (JS)

**Little, Peter D. The dairy commodity system of the Kismayo region, Somalia: rural and urban dimensions. 13 p. Institute for Development Anthropology, 99 Collier street, POB 2207, Binghamton, NY 13092, USA**

Urban livestock rural-urban linkages

Somalia; livestock; marketing; dairy production

The paper discusses the dairy commodity system in the Kismayo region in Somalia with an emphasis on marketing aspects rather than on the production dimensions of the system. (NB)

**Mbiba, Beacon M (1994). The cattle of Chitungwiza: conflicts on the rural-urban fringe. In: ILEIA Newsletter vol. 10 no. 4 (December 1994) p. 22-23. Mexico City: DDF. Department of Rural and Urban Planning, University of Zimbabwe, PO Box MP 167, Harare, Zimbabwe Supplier: Information Centre for Low-External-Input and Sustainable Agriculture (ILEIA), PO Box 64, 3830 AB Leusden, The Netherlands**

urban livestock rural-urban linkages

animal production; home gardening; livestock farmers; rural development; urban environment; Zimbabwe

Expanding cities are engulfing farmland without providing alternative land for the displaced rural people, often peasants without land title. Herders continue to use the unbuilt spaces, the "city commons", but many residents do not appreciate the presence of cattle. Beacon Mbiba looks at this potentially conflictual situation in urban Zimbabwe. (ILEIA)

**Mbiba, Beacon M. (2001) Periurban transformations and livelihoods in East and Southern Africa: the Peri-NET experience. Paper for the Conference Rural-Urban Encounters: Managing the Environment of the Periurban interface, London 9-10 November 2001.**

rural-urban linkages R&D Methodology

networking; research; Southern Africa; Eastern Africa

This paper describes the origins and operations of Peri-NET a research network in South-Eastern Africa on Urban and Periurban Africa.

**Mbiba, Beacon M (2001) The Political Economy of Urban and Peri-Urban Agriculture in Southern and East-Africa: Overview, Settings and Research Agenda. Draft paper prepared for the MDP/IDRC workshop on 'The Political Economy of Urban and Peri-Urban Agriculture in East and Southern Africa' in Harare, Zimbabwe, 28 February to 2 March 2001, Urban and Peri-Urban Research Network (PeriNET)**

rural-urban linkages

urban agriculture; periurban agriculture; workshops; research; Africa (Eastern), Africa (Southern)

This paper attempts to set parameters for a debate and research program on the political economy of urban and peri-urban agriculture in East and Southern Africa. It argues that the political economy issues at stake revolve not only around control and access to the land resource but also have to do with competing ideas about the city and the planning process. Control and ownership of this process as well as the outcome is a political process whose content affects the nature of urban and peri-urban agriculture in the region. The range of theoretical reflections on these issues are outlined together with current development concepts that could guide future research. Reflections are made on options to the institutional location and organisation of possible regional research.

**Mlozi, MRS; Lupanga, IJ; Mvena, ZSK (1992). Urban agriculture as a survival strategies in Tanzania. In: Baker J. & Pedersen P.O. (eds). The rural-urban interface in Africa: expansion and adaptation; seminar proceedings no. 27. Uppsala: Nordiska Afrikainstitutet (The Scandinavian Institute of African Studies). pp. 284-294**

food security and nutrition rural-urban linkages

Tanzania; survival strategies; urban poor

The urban agriculture research project was carried out by Sokoine University of Agriculture, with support from the International Development Research Centre (IDRC). Researchers interviewed 1 800 respondents in six towns: Dar es Salaam (700); Dodoma, Morogoro and Mbeya (300 each); and Makambako and Kilosa (100 each). The sample covered both high density and low density settlement patterns: it included political and non-political leaders, farmers and non-farmers, and men and women. It was noted that urban agriculture was practiced not only by the urban poor, but also by members of the middle class. About 90% of home gardens and out-of-town fields were used to grow field and vegetable crops for home consumption, as a cash-saving strategy. The middle class in medium-density areas and the well-off in low-density areas were the main livestock producers: they sold milk and eggs as a means of maintaining their standard of living in an inflationary context. Constraints to farming included access to inputs such as land, finances, labour, water, etc., especially by the poor; theft of crops; pests and diseases; destruction of crops by people, stray animals, vehicles, municipal employees, etc.; and contamination of crops by refuse. This chapter describes the factors that have contributed to the growth of urban agriculture in Tanzania; discusses the implications of coexistence between agricultural activities and normal urban life and activities; and draws conclusions and makes recommendations as to how the government can handle the growth of urban agriculture as an income earner. (HC, IDRC)

**Moldakov, O. (2000) Urban Agriculture in St Petersburg, Russia. In: *Urban Agriculture Magazine*, no 1, Maiden Issue, July 2000, RUAFA, Leusden The Netherlands.**  
rural-urban linkages community development  
Russia

The St. Petersburg Downtown Gardening Club is one of the six Eastern European organizations active in SWAPUA, SWAPUA stands for "Soil and Water Management in Agricultural Production in Urban Areas in CEE/NIS Countries". In this contribution the author who is involved in the St. Petersburg Downtown Gardening Club shows that the urban gardening movement in St. Petersburg has a long-standing history, both as a strategy to overcome shortcomings in food availability and for income improvement.

**Moldakov, O. (2001) The Problem of UPA Planning. In: *Urban Agriculture Magazine*, no 4, Urban Planning, July 2001, RUAFA, Leusden The Netherlands.**  
land use planning rural-urban linkages  
Russia; policy; NGOs

In Russia, agricultural activities of the urban inhabitants are taking place at significant distances from their urban homes. The term "urban agriculture" refers more to agricultural activities of city dwellers than to agricultural activities within the city boundaries only. The agricultural sites, usually with a house, are called dachas and are located between 6 and 60 km from the city. This article calls for the necessary inputs by NGOs and farmer organizations to improve technical know-how and improved use of the facilitating infrastructure to urban agriculture in St. Petersburg.

**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)

**Moustier, Paule (1999) Définitions et contours de l'agriculture périurbaine en Afrique subsaharienne. In : Agriculture périurbaine en Afrique subsaharienne, p.29 - 42**  
rural-urban linkages food security and nutrition  
periurban agriculture; sub-Saharan Africa; land use

In this paper an attempt is made to outline the boundaries of periurban agriculture in Africa. The term "Periurban agriculture" refers to the influence the town has in terms of demand but also in terms of resources for which alternatives between agricultural and non-agricultural uses generate competition and complementarities. Its importance is parallel to the dynamics of urbanisation in sub-Saharan Africa. The involvement of urbanites inside and around cities is related to their employment and food situation. This involvement is neither marginal nor transitory but rather in constant change. The interface of the urban area and agricultural activities creates changes in resource uses, choice of marketed products and marketing strategies. The economic and agronomic sustainability of the industries is in question. There have been different foci in the available research: spaces influenced by cities; natural resource management; strategies of urban residents; production systems; commodity and food systems. The analysis of vegetable commodity systems in different towns suggests ways to improve the comparative advantages of periurban agricultural commodities versus rural sources and imports, by supporting marketers in securing their supply in quantitative and qualitative terms. To ensure the sustainability of periurban industries it is necessary to cross-cut approaches on management of space and commodity system approaches which aims at favouring actors' consultation on the same commodity characteristics. (NB - Adapted form original abstract)

**Moustier, Paule (1999). Complémentarité entre agriculture urbaine et agriculture rurale. 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. 41-55. Centre International en Recherche Agronomique pour le Développement (CIRAD), Département des Productions Fruitières et Horticoles (FLHOR)**  
rural-urban linkages  
production; marketing; economic aspects; food security; employment; waste management

Urban agriculture meets the demand for food, employment and urban waste management. Given the increasing demand for land, a scrutiny of efficiency and sustainability of urban agriculture becomes urgent. Products of rural and urban origin show strong complementarity in terms of products and seasonal variation. Support programmes for producers and traders should target urban, periurban and rural areas in different but complimentary ways. (NB)

**Municipal Development Programme Regional Office for Eastern and Southern Africa (MDP) (2001)**

**Periurban Land Tenure Planning and Regularisation in Eastern and Southern Africa: case studies from Kenya, Malawi, Tanzania & Uganda; a Research report. Studies Commissioned by: The Food and Agriculture Organisation Regional Office for Southern Africa (FAO-SAFR)**

rural-urban linkages

Kenya; Malawi; Tanzania; Uganda; FAO; land tenure; Southern Africa

This research report will serve as a foundation document for subsequent activities by FAO-SAFR to develop guidelines for planning as well as regularizing land tenure and security. Also, the report will form the basis for the design of programme interventions in the focus countries. The governments of Malawi and Uganda have requested FAO-SAFR to design programmes for implementation in the field of land tenure planning and regularization. Country case studies were commissioned and conducted in Kenya, Malawi, Tanzania and Uganda.

**Muwowo, Paul (2001) Political Economy of Urban Agriculture in Eastern and Southern Africa: The Case of Zambia. Paper prepared for the MDP/IDRC workshop on 'The Political Economy of Urban and Peri-Urban Agriculture in East and Southern Africa' in Harare, Zimbabwe, 28 February to 2 March 2001**

rural-urban linkages

urban agriculture; periurban agriculture; workshops; Africa (Southern), Africa (Eastern), Zambia

Urban agriculture is as old as the cities themselves. In Zambia, many cities are experiencing a decline in the formal economy for a number of reasons. The low-income groups haven't taken up Urban Agriculture in the cities as a survival strategy. Some quarters of the society view Urban Agriculture as a manifestation of rural habits and that this activity in the cities is a problem rather than a solution. Urban Agriculture has received little or no support from local authorities.

Production of the staple food prevails in the rain season while vegetable production in the dry season. Some households keep chickens in their backyards, garages and kitchens. Studies have shown that Urban Agriculture contributes to household food security in town directly by providing food and indirectly by providing income. Urban Agriculture can also provide a lot of other opportunities such as creation of employment, use of solid waste as compost, recycling carbon dioxide and recreation. Despite all these facts, the local authorities consider urban agriculture an illegal activity.

Inadequate water supply, lack of micro-lending facilities, land tenure and inadequate extension service have a negative impact on Urban Agriculture. There is need to analyse the negative impacts in detail and come up with possible solutions. This will benefit the vulnerable groups in society, especially those in the squatter settlements, who partly or wholly depend on Urban Agriculture.

**Natural Resources Institute (NRI) (1995). Periurban interface research: workshop proceedings, 23-25 August 1995, Kumasi, Ghana. 80 p. ISBN 0\_85954\_436\_2. Natural Resources Institute (NRI), Central Avenue, Chatham Maritime, Kent ME4 4TB, UK**

rural-urban linkages

periurban agriculture; food production; health; waste recycling

Contains descriptions of a number of projects of the Department for International Development related to periurban food production. Trying to cope with an overwhelming urbanisation, many Third World cities are spreading their boundaries, reducing agricultural areas around these cities. This negatively affects people whose survival is based on the production of food which is sold in the cities. Some of the contributions deal with problems the people in periurban areas are facing, while others are looking at the very concept of periurban agriculture, and how is it different from rural and urban food production. Themes dealt with are: improving utilisation of urban waste by farmers in periurban areas, and health impact of periurban natural resource development. (WB)

**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)

**Nitsch, Egbert; Aue, Christina; Schmitt, Brigitte (1998). Zur staedtischen Land- und Gartenwirtschaft in einer Welt: Beitrage der gruenen Veranstaltung vom 22 Juni 1998 in Bonn. 139 p. Arbeitskreis II (Umwelt, Raumordnung und Staedtebau, Verkehr, Landwirtschaft) der Bundestagfraktion von Buendis 90 / der Gruenen, Bundeeshaus, 53113 Bonn, Germany**  
R&D methodology      rural-urban linkages      horticulture  
Agenda 21; Germany

Contains a number of papers presented in the framework of a seminar organised by the German Green Party. In quite a number of German cities, processes are taking place that are local implementations of Agenda 21. The underlying discussion aims at giving a more practical focus to the Agenda 21 discussion. (WB)

**Nunan, Fiona (1997). Improved utilisation of urban waste by near-urban farmers in the Hubli-Dharwad City-region. In: Urban Agriculture Notes. 3 p. School of Public Policy, University of Birmingham Edgbaston, Birmingham, B15 2TT, UK; Department for International Development (DFID), Natural Resources Systems Programme, 94 Victoria Street, London, SW1E 5JL, UK**  
**Supplier: City Farmer, Canada's Office of Urban Agriculture**  
waste recycling      rural-urban linkages  
waste management; India

Description of research on the problems in connection with access to urban waste by small and marginal farmers, including transportation costs and the poor quality of the mixed municipal waste from the dumpsites in Hubli and Dharwad. This summary gives details about the design of the research and a number of preliminary findings. (WB)

**Nunan, Fiona. Bird, K., Bishop, J. with Edmundson, A. and Nidagundi, S.R. (2000) Valuing Periurban Natural Resources: A guide for Natural Resource Managers. School of Public Policy, University of Birmingham.**

rural-urban linkages   R&D Methodology   land use planning

urbanisation; wastewater; waste recycling; concepts; policy; decision support; India; Ghana; natural resources; cost benefits

This booklet describes a decision framework to facilitate natural resource decision-making and management, particularly in areas where there are competing demands from urban development and "rural" uses of resources. It has been written for Southern Countries and is aimed principally at a range of public sector decision-makers. In part 1 the decision framework is described while part 2 gives experiences with applications in two cities; Hubli-Dharwad in India and Kumasi in Ghana.

**Nunan, Fiona; Shepherd, A (1998). Where city meets country. Is the periurban interface a concept that counts? 2 p. Department for International Development (DFID), Natural Resources Systems Programme, 94 Victoria Street, London, SW1E 5JL, UK**

rural-urban linkages   R&D methodology

natural resources

Examines management of natural resources in the periurban interface. This research was done in the framework of the Periurban Interface Production Systems Research programme, one of seven portfolios which together constitute DFID's Natural Resources Systems Programme. The research emphasises a move away from a simple geographic definition of the interface to an understanding based on intensive linkages and flows of, for example, commodities, wastes and labour. (WB)

**Nunan, Fiona (2000) Livestock and livelihoods in Hubli-Dharwad, India. In: *Urban Agriculture Magazine*, no 2, urban livestock, October 2000, RUAFA, Leusden The Netherlands.**

urban livestock rural-urban linkages

India; dairy; buffalo; policy

Small urban dairies and roaming pigs are a common sight in Hubli-Dharwad, India and make an important contribution to household livelihoods and urban food supplies. Policy measures, however, are threatening the legality of keeping livestock in urban areas and, therefore, livestock owners' livelihoods. This article gives more insight in this discussion.

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)

Ouedraogo, S; Zoundi, SJ (1999). **Approvisionnement de la ville de Ougadougou en poulets de chair.** 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. 67-82.** Natural Resources Management and Production System Department

services      food security and nutrition      rural-urban linkages

poultry production; meat supply; economic aspects; employment

The contribution of modern producers to the urban meat supply system is low. Traditional producers are the main suppliers to the city. Most production comes from a range of 10 to 200 km from Ougadougou. (NB)

Parkinson, J. and Tayler, K. (2001) **Sanitation and wastewater Management in Periurban Areas: Opportunities and Constraints in Developing Countries.**

rural-urban linkages      waste recycling      wastewater reuse

waste recycling; Ghana; irrigation; decentralisation

The paper is concerned with the options for improved sanitation and wastewater management in periurban areas in developing countries, bearing in mind the fact that much of the wastewater produced in urban and periurban areas is already used, directly or indirectly, for irrigation, almost always without treatment. Options for reducing the strength of wastewater by either separating excreta from sullage water or treating wastewater to reduce its strength are explored. The focus is on the potential advantages of decentralised management, including compatibility with decentralised approaches to urban management and reuse needs, particularly those of the periurban poor, reduced costs and increased agricultural productivity. It appears that suitable technologies for decentralised treatment are available but that other barriers to the wider adoption of decentralised approaches exist. These include lack of finance, and suitable land, deficiencies in knowledge and skills and the inflexibility of official design standards. A key constraint is the limited demand for improved wastewater management. The challenge for activists and planners is to create informed demand for improved systems, focusing not only on health but also on the improvements in the local environment and household finances that may

be achieved through improved wastewater management.

**Plastow, John and Pantuliano, Sara. (2001) Experimenting with PIM: the ACORD Sudan Urban-Rural Linkages Programme Experience of Adapting Participatory Impact Monitoring. Paper for the workshop "Appropriate Methodologies for Urban Agriculture", October 2001, Nairobi, Kenya. Proceedings, available On: [www.ruaf.org](http://www.ruaf.org).**

R&D Methodology rural-urban linkages  
participatory monitoring; Sudan; migration;

This paper explores the way in which ACORD programmes in the Horn of Africa have adapted the GTZ inspired Participatory Impact Monitoring (PIM) to their working environments. It begins with an introduction to the methodology and the ways in which it was introduced to non-literate communities. Thereafter the paper explores the results and lessons learnt from a twenty-month action research in the use of PIM with the Urban-Rural Linkages Programme and three of its partner CBOs from amongst the Beja people of Eastern Sudan.

**Pretty, Jules; Altieri Miguel (1999). Best practices in land resources management to achieve sustainable food cycles. CGIAR CSD 8 Dialogue Paper No. 3.**

land use planning rural-urban linkages food security and nutrition  
sustainable agriculture; environment; policy

This paper, prepared for the UN Commission on Sustainable Development, presents an approach to accelerating the trend to sustainable agriculture. It notes that although there has been increasing informal activity in the field only three countries have given explicit national support (Austria, Cuba and Switzerland). Sustainable agriculture is presented a multi-functional within urban and rural landscapes and economies (food and other goods, clean water, carbon sequestering, flood protection, environment for living, biodiversity). Four options for change are presented to the CSD: (i) better use of renewable resources, (ii) intensification of production, (iii) diversification of the agroecosystem, (iv) better use of non-renewable inputs. Institutions are urged to concentrate on process over product and to aim for win, win, win outcomes. (JS)

**Rabinovitch, Jonas (1998). Final summary report international workshop on rural-urban linkages, Curitiba, Brazil, 10-13 March 1998. 5 p. MDGD/BDP United Nations Development Programme**

rural-urban linkages R&D methodology  
development policies; periurban agriculture

Reports on a UNDP-sponsored workshop. Main conclusions were: (1) rural-urban linkages add a crucial spatial dimension to understanding key development issues and formulating effective policies and programmes to address them; (2) ensuring reciprocal benefits from rural-urban linkages requires a localisation of planning and management capacities to assess rural-urban linkages issues and devise appropriate initiatives; (3) the conventional view of rural as equivalent to agriculture is no longer reflective of the reality of either rural regions or the rural component of

rural-urban linkages. One of the recommendations of the workshop was for UNDP to set up a clearinghouse for the development of a network of members with a common interest in rural-urban linkage issues and policies. (WB)

**Rabinovitch, Jonas. (2001) Key note Paper for the Conference Rural-Urban Encounters: Managing the Environment of the Periurban interface, London 9-10 November 2001.**

rural-urban linkages  
concepts; policy

This paper is a summary of the report "Rural-Urban Relations: an Emerging Policy Priority" issued by UNDP in December 2000. It further represents the joint efforts of all participants who presented their papers at the Workshop on Rural-Urban Linkages held in Curitiba, Brazil in 1998.

**Richter, Juergen; Schnitzler, Wilfried H; Gura, Susanne (eds) (1995). Vegetable production in periurban areas in the tropics and subtropics: food, income and quality of life. DOK no. 1721 A/a. 160 p. Zentralstelle fuer Ernaehrung und Landwirtschaft (ZEL), German Foundation for International Development (DSE), Wielinger Strasse 52, D-82336 Feldafing, Germany**

horticulture rural-urban linkages  
Africa; Asia; Latin America; marketing; plant production; vegetable crops; case studies; Chile; food supply; urban planning; workshops

Urban agriculture is receiving more and more attention as a way to improve livelihood in third-world country cities. Ensuring food supply through boosting food production in rural areas and establishing storage facilities has insufficiently reached the newly established urban masses. A figure to illustrate the upcoming of this new activity: about 200 million urban dwellers in developing countries are now urban farmers, thereby providing food to about 700 million people. Also to be considered is the aspect of food quality: vegetables, a very important produce of urban agriculture, complete the food basket of the urban population. These proceedings primarily address an audience of researchers and policy makers and have for objective to analyse the contribution to food, income and quality of life by urban agriculture. From the conclusions it appears that most European-sponsored urban agriculture projects deal with genetics and breeding of a few species -legumes, potato, tomato- with little attention given to traditional vegetable crops. Most projects are in Africa, probably reflecting priorities of development policies of European countries. As a result of this workshop, a number of preconditions for successful interventions were identified with regard to social participation, resource use, infrastructure, marketing and credit facilities. (WB)

**Rivera, J., H. Losada, N. Millar and G. Woodgate (2001) The Spatial Distribution of Agricultural Activities in the Mountains Southeast of Mexico City. Paper prepared for the DPU International Conference: Rural-Urban Encounters: Managing the Environment of the Peri-Urban Interface, London 9-10 November 2001 Imperial College at Wye, England / Universidad Autonoma Metropolitana**

rural-urban linkages

Mexico; farming systems; agricultural activity; urban agriculture; periurban agriculture; diversification; income generation, America (Central)

Mexico City has a long agriculture history of and in spite of constant industrial growth and urbanisation spaces of agricultural activities continues to be maintained within its boundaries. Complex agricultural systems have their roots in the pre-Hispanic epoch. Since then they have been modified and adapted with the introduction of metal tools, domestic animals and crops during the Spanish colonial period. The Milpa Alta terrace areas form part of the mountain ranges to the South of the Valley of Mexico. This area is characterised by poor soils and uneven topography. As a consequence of these factors different agricultural production system tends to work independently with distinct practices defined by services and land area utilised.

Surveys and questionnaires were carried out to characterise the agricultural activities. Four agricultural sectors were identified; urban, peri-urban, interface and forest. The criteria for defining this spatial distribution were: a) infrastructure availability, b) market access, c) land tenure systems and, d) farming systems composition.

The high price of the land, its limited availability and the high profitability of agricultural production of the traditional crop nopal-vegetable (*Opuntia ficus-indica*) have limited the growth of the City, which also stopped the migration of local people. The forest system integrates distinct sub-systems of livestock and crop practices. The interaction of forest, maize and livestock in a relatively small space is the result of the high efficiency of resource management by local people. Each activity is seasonal, but together they provide year round employment and food for local people. Local knowledge and regional cultural values are the key factors that make both the systems work. The lack of detailed knowledge and integration of all the components and concerns over resource exploitation may represent future risks to the continuity of these traditional activities.

**Rodrigues, MS; Lopez-Real, JM (1999). Urban organic wastes, urban health and sustainable urban and periurban agriculture: linking urban and rural by composting. In: Urban agriculture notes, <http://www.cityfarmer.org/urbanwastes.html>**

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

waste recycling      health and environment rural-urban linkages

organic wastes; waste management; public health; periurban agriculture; horticulture

Looks at waste management systems, and at public health as a result of poor refuse disposal. The paper also examines the absorption capacity of both urban and periurban agriculture of this organic waste. (WB)

**Satish Kumar, M. (2001) Devouring Agglomerations and their Outgrowths in India: Beyond the Rural-Urban Divide. Paper prepared for the DPU International Conference: Rural-Urban Encounters: Managing the Environment of the Peri-Urban Interface, London 9-10 November 2001. School of Geography, Queen's University Belfast**

rural-urban linkages

## India; environment; urbanisation, Asia (South-Central)

The spatial impact of globalisation processes has resulted in new urban forms. These relate to flexibly specialised, industrial centres, which are deregulated, decentralised and relocated either in the metropolis or the regions adjacent to them. The Extended Metropolitan Region (EMR) is based on the notion that "region-based" as opposed to "city-based" urbanisation processes have resulted in deeper penetration by the metropolis into the surrounding rural hinterland. Such a relation of capital with space has resulted in new forms of capital accumulation, leading the rural inhabitants deeper into the urban way of life. The nature of environmental problems has also changed in cities of different size classes. This is even more true when cities move through a life cycle of growth, change, transformation and eventually stagnation and decline.

This paper attempts to provide a comparative context in which to identify and explain the nature of environmental issues faced by the metropolitan region along with their hinterland or peri-urban region in India within a given agro-climate niche. The question is how do we meet human needs in settlements of all size classes, without depleting essential environmental capital? How do we minimise the transfer of environmental costs to the inhabitants and ecosystems surrounding the metropolitan cities? Do we know enough about these peri-urban regions to introduce policy interventions at a macro scale? These are some of the questions raised based on the empirical realities of third world urban processes.

## Seré, Carlos; Neidhardt, Rainer (1994). **Stadt-Land-Integration im Rahmen periurbaner Tierproduktion. In: Entwicklung + Ländlicher Raum vol. 28 no. 2 p. 10-14**

rural-urban linkages    urban livestock services  
periurban livestock production; food processing; marketing

Addresses rural-urban linkages as a result of periurban animal husbandry. Contrarily to animal production in developed countries, animal husbandry near cities is very dependent on city waste as a source of animal feed. The nearness of the city allows for a low level of processing of the produce (packaging, quality control, transport, distribution) keeping sales prices low. This paper highlights the close links that exist between the city and its rural hinterland. A number of interesting case studies are presented from West Africa; Lahore, Pakistan; Montevideo, Uruguay; and Lima, Peru. (WB)

## Steinberger, M., T. Amado and B. Ferreira Nunes (2001) **The Ecological-Economic Zoning as an Urban-Rural Instrument for Environmental Management: The Case of The Brazilian Amazon. Paper prepared for the DPU International Conference: Rural-Urban Encounters: Managing the Environment of the Peri-Urban Interface, London 9-10 November 2001. Nucleus of Urban and Regional Studies (NEUR), University of Brasilia**

rural-urban linkages  
environmental management; periurban area, Brazil, America (Southern)

The aim of this paper is to investigate the possibility of introducing in the EEZ (Ecological Economic Zoning) the idea of urban space as a mediator of the interface with the rural world. The argumentation will be done in three parts. First, we present the historical context for EEZ in Brazil

and Amazon, highlighting the innovations and difficulties for its elaboration. We suggest that the urban space can contribute to make feasible the innovations and lessen the difficulties. The second point is related to the conceptual-theoretical mark which supports the urban/rural interface, showing that such approach is related to the actors that use the urban space as a meeting point, since it is there that most decision-making is carried out. Finally, as a third point, we stress some preliminary thoughts on actors and actions, drawing upon EEZs documents which are ready - for the states of Amapa, Acre and Rondonia. We got to such thoughts through an analysis of how the urban is presented in these EEZs and how their elaboration process was carried out.

**Sumberg, James; Kleih, U (1994). Fostering the development of periurban agriculture: the case of Port-au-Prince, Haiti. 14 p. School of Development Studies, University of East Anglia, Norwich NR4 7TJ, UK**

horticulture rural-urban linkages

Haiti; marketing; plant production; ; vegetable crops

Argues that an analysis of periurban production and marketing systems should go beyond a singular concern with the producer and consider a wide set of issues. The case of vegetable production and marketing around Port-au-Prince, Haiti, is used to briefly explore some of these issues. Vegetable production and marketing in Port-au-Prince is well established, significant in quantity and value and generating income. Public sector research and extension contribute little to the development of the sector while market opportunities, input Suppliers, farmer organisations and innovative farmers provide the stimulus for technical change. The main areas of concern are presented, among others: reduced turnover, low purchasing power of consumers, transport (costs and infrastructure), poor sanitary conditions and fluctuation in market prices. (NB)

**Sumberg, James (1996). Livestock production in periurban areas of Africa: an analysis of Dar es Salaam, Mwanza and Shinyanga, Tanzania. 79 p. Overseas Development Group, School of Development Studies, University of East Anglia, Norwich NR4 7TJ, UK**

urban livestock R&D methodology rural-urban linkages

animal husbandry; periurban livestock production; political aspects; food security

Describes and characterises livestock production in and around urban areas in Tanzania, focusing specifically on dairy, broiler and egg production. Contains a bibliography with nearly 450 references. The enclosed paper critically examines the large number of publications extolling virtues of urban agriculture for urban food security and poverty reduction. The authors stress the importance of rural-urban linkages in resource and output markets. At the same time, they issue a warning against attaching an exaggerated weight to the contribution of urban farming to food security of the majority of urban dwellers. Very detailed, very sound and very complete. (WB)

**Swanepoel, Frans (1996). Improved quality of life. 2 p. Foundation for Research Development (FRD), PO Box 2600, Pretoria 0001, South Africa**

R&D methodology    rural-urban linkages  
South Africa; development programmes

One third of South Africans have an income less than the accepted minimum subsistence level. More than 70% of these are based in rural areas. The Foundation for Research Development proposes a number of programmes to improve this situation, notably a food production and food security programme, both in rural, periurban and urban settings, and a rural and urban development programme, focusing on infrastructure and creating job opportunities. Principles and mechanisms underlying these programmes are elaborated upon. (WB)

**Tacoli, C. (2001) Livelihoods Impacts and Strategies of the Periurban Poor. Key note Paper for the Conference Rural-Urban Encounters: Managing the Environment of the Periurban interface, London 9-10 November 2001.**

rural-urban linkages  
livelihoods; periurban

Livelihoods in the periurban interface are affected by transformations in land-use and by changing employment patterns. Some groups benefit from new opportunities and develop accumulation strategies, while emerging constraints can force vulnerable groups with limited assets to rely on survival strategies. This paper describes main elements of changing farming systems in response to urbanisation from a livelihoods perspective.

**Tegegne A., Tadesse, M., Mekasha, Y. and Yami, A. (2000) Market-oriented Urban and Periurban Dairy Production Systems in Ethiopia. In: *Urban Agriculture Magazine*, no 2, urban livestock, October 2000, RUAF, Leusden The Netherlands.**

urban livestock rural-urban linkages    R&D methodology  
Ethiopia; farming systems; dairy; markets

The case study was designed to characterise the market-oriented urban and periurban dairy production systems in the Addis Ababa milk shed in Ethiopia. Seven sub-systems identified include traditional crop/livestock farms in rural areas, intensified dairy/crop livestock farms in rural areas, crop/livestock farms with intensive cropping in the Addis Ababa milk shed, specialized dairy farms, periurban producers in secondary towns, intra-urban dairy farms in Addis Ababa and urban dairy producers in secondary towns. It appears that cash income from sales of milk and milk products and/or young stock and breeding animals and utilisation of available resources such as capital, land, labor, etc are the most important reasons for keeping dairy animals. However, as the level of intensification increases, factors such as management skills, labour force, feeding resources and systems, genetic improvement, control of diseases and parasites, udder health and mastitis, calf mortality, reproductive problems, waste management, quality control, processing and marketing and other socio-economic considerations are becoming important in influencing these urban and periurban dairy production systems.

**Torres Lima, Pablo A (1991). El campesinado en la estructura urbana: el caso de Milpa Alta. 131 p. ISBN 970\_620\_023\_1. Universidad Autónoma Metropolitana, Xochimilco, Mexico**  
community development      rural-urban linkages      R&D methodology  
Mexico

Describes the case of farmers in a community that has provided a megacity with food while maintaining much of its traditional, rural, social tissue. The analysis examines various factors: natural resources in the region, type of population, structure of the labour force, land use, and socio-economic relations. (WB)

**Touré Fall S., Salam Fall, A., Cisse, Ibrahima (2000) Urban livestock systems in the Niayes zones in Senegal . In: *Urban Agriculture Magazine*, no 2, urban livestock, October 2000, RUAF, Leusden The Netherlands.**  
urban livestock rural-urban linkages  
urban livestock; production systems; Niayes; Senegal

In association with horticulture, livestock is one of the major activities well implemented in the urban agriculture system of the Niayes zone in Senegal. The area involves the main agricultural cities which generate more than two third of vegetable and fruit productions in Senegal. A low number of different species of domesticated animals live in the Niayes zone. A great diversity is observed in speculations but also huge potentialities that can be exploited in the Niayes. In association with livestock, urban agriculture is well implemented in towns even if multiple constraints make its sustainability questionable. Different types of waste recycling through animal feeding systems and, in feedback, organic matter utilization for improvement of soil status and animal traction are main ways of Livestock and horticulture integration in the system. Institutional constraints are observed that call for actions to improve economical environment.

**Wandeler, K. de (2001), The Unbounded Periphery: The Never-Ending Story of a Bangkok Soi. Paper prepared for the DPU International Conference: Rural-Urban Encounters: Managing the Environment of the Peri-Urban Interface, London 9-10 November 2001 CHORA Research and Consultancy**  
rural-urban linkages  
periurban area; urban fringe; urban construction, Asia (South-Eastern), Thailand,

In this paper, I (the writer) view the urban edge as a site where urban and rural life-worlds mesh. The process of developing urban frontier land draws on that constant shifting of actual and inverted realities and generates dynamics that exceed the confines of rural-urban interaction. To support this argument, I draw on a study of soi, a dominant type of side-street neighbourhood that characterises urban expansion in Bangkok. I first describe what kind of a life-world these dwelling environments offer and then reconstruct how that life-world came about.

The predominant pattern of urban expansion in Bangkok follows the city's major transportation arteries and penetrates their hinterland through soi, side-streets that stretch over several

kilometers or ramify into an outgrowth of sub-soi. Soi are important carriers for the expansion of the city but to most city dwellers, they remain blind spots in the overall image of the city. And yet, in-depth research conducted in a soi neighbourhood in the northern expansion area of Bangkok suggests that contemporary soi are a concatenation of 'practised places' where a variety of city dwellers establish linkages between their everyday practices and the city.

The officially recorded history of this area began when title deeds were first allocated in 1902. By reconstructing how the fragmentation of property holdings meshed with changes in land use and shifts in the trajectories of inhabitants, a social history of the soi emerges. It reveals that soi neighbourhoods were not only context-driven, but also context-generative environments. Their inhabitants helped to create contexts that exceeded the material and conceptual boundaries of their neighbourhood and thereby significantly contributed to the reproduction of urbanness.

This case study suggests that the peri-urban interface draws its extraordinary dynamism not only from uniqueness of its geographical setting, but maybe even more from the imageries that this locality sets off in the minds of those involved in its conversion.

Weise K., Boyd, I. (2001) **Madhyapur Thimi Municipality, Nepal Urban Agriculture Support Programme Integration of urban agriculture in planning. In: *Urban Agriculture Magazine*, no 4, Urban Planning, July 2001, RUAFA, Leusden The Netherlands.**

land use planning      rural-urban linkages  
zoning; Nepal

This article deals with land and other aspects of integration of urban agriculture into the land-use planning of Madhyapur Thimi municipality located in the centre of Kathmandu Valley in Nepal. Traditionally, municipalities in the country are defined on the basis of (the accumulation of) non-farm activities with agriculture considered a rural activity. This is one constraint confronted by efforts to promote urban agriculture. How this problem was overcome together with issues of land development strategy is narrated in the article.

You, Nicolas (1981). **Alternative strategies in urban development: some Chinese experiments in a quest for agropolitan space. In: *Third World Planning Review* vol. 3 no. 1 (Feb 1981) p. 77-93**

land use planning      community development      rural-urban linkages  
China; community initiatives; land use planning; rural-urban linkages

Gives a detailed account of land use planning in China since the era of the Han Dynasty up to our days. Rural-urban linkages have always been strong in China, urban dwellers maintaining close links with their ancestral home village. Since the 1950s, the relationship between city and countryside has known different levels of appreciation, but bringing the two closer together was always an overriding aim: 'urbanise the countryside, and ruralise the city'. This article provides interesting background reading and is very revealing about policy considerations of Chinese officials. (WB)