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Sub-urban development on prime agricultural land, Toronto, Canada

Charlie Clark

the Integration of Urban and Peri-Urban Agriculture into Planning

In regions of the world characterised by economic collapse, such as those in East and Southern Africa, the last decade has witnessed a tremendous increase in total city area under informal urban food production. Associated with this has been an unprecedented increase in worldwide attention to urban agriculture (Bakker et al. 2000; Mbiba 2001). Yet, the overall picture shows that formal recognition and integration of agriculture into urban planning and city development has hardly changed, save for a reduction in prohibitive or anti-urban agriculture interventions.

Editorial

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Problems and conflicts remain that constrain integration into planning. In many urban areas, the transformation of city responses from prohibitive models towards permissive or enabling ones has hardly materialised nor been formalised. The perceptions and responses to urban agriculture among actors in a certain city at any given time are not consistent, and conflict remains the norm.

In this context, the following questions are pertinent:

- Why does urban agriculture remain marginal in the urban planning process?
- What factors determine urban agriculture's integration into urban planning and sustainable development?
- What is being done, or what should be done, to facilitate the integration of urban agriculture into urban planning in different contexts of the world?
- In the few instances where integration is taking place, how has this resolved questions of land - access and use - conflicts? What lessons if any, can we learn from these instances?

DETERMINANTS FOR CHANGE

The change from prohibitive to facilitating approaches and integration of urban agriculture into urban planning and development requires (and is dependant upon) structural changes in perceptions, in institutional regimes that govern or manage cities and in social values upon which production and consumption in cities is anchored. The cases in this volume highlight, as other cases do, that these structural changes do not arise primarily from people's simple exchange of ideas and verbal assent. Instead, structural changes (and hence the need for integration of agriculture into city development) is partly a consequence of some sort of crisis in a given context; this could

A differentiated and flexible approach is needed

PAGE 28

Urban Agriculture Support Programme for Madhyapur Thimi Municipality in Nepal
Traditionally, municipalities in Nepal are defined on the basis of (the accumulation of) non-farm activities. Agriculture is considered to be a rural activity, which is one constraint to the promotion of urban agriculture. How this problem was overcome is narrated in this article, which describes the integration of urban agriculture into the land-use planning of Madhyapur Thimi municipality located in the centre of Kathmandu Valley in Nepal.

be drought, economic collapse (as in East and Southern Africa today), or political and economic change (like in Bulgaria), lack of confidence in current agricultural practices (the Netherlands), waste disposal problems (as in West Africa – see no. 3 of the *UA-Magazine* – and in the Philippines) or food insecurity.

If we accept this "crisis" model, the question that arises is "what would happen to (the attention on) urban agriculture, once the crisis is over?" The European scenario of allotment gardens from World War 1 to the present (see Howe and White on page 11 and Mbiba 1995) suggest that the activity will decline as the crisis disappears. However, gardens will re-emerge to serve new needs such as leisure and education (see the article on Portugal and Brazil in this volume), or integrated with other uses of the land (see the case on Delft, the Netherlands). Planning might cease to give it significant standing and planners will move on to deal with new crisis issues. Hence even in European cities where urban food production was once a key aspect of national survival strategy (see Garnett 1996) most planning departments have no 'space' for urban agriculture. As concluded by Martin and Marsden (1999: 389) for England and Wales, planning departments are hardly engaged in the broader aspects of the politics and local economy of urban food issues and there is a progressive decline in allotment provision. In the capitalist production-consumption environment prevailing today, urban agriculture as a land use will be left to compete against other potential users of the same urban spaces (as is illustrated in the case of Lusaka, Zambia). It is an environment where power prevails and planning has to be understood accordingly. There is a need for innovative approaches in the urban planning process to enhance a sustainable and equitable development of cities.

THE IMPORTANCE OF URBAN AGRICULTURE FOR CITY AUTHORITIES

According to Fainstein (1999) the reality of planning is one of conflicting interests in a very unequal society; planning provides justification to the interests of the powerful while giving token attention to the rest. The testimonies from articles in this volume endorse a picture where urban agriculture is marginal to/in city

PAGE 14

Urban Agriculture and City Planning in Bulgaria
Current urban planning and development in Bulgaria does not take into account the existence of urban and peri-urban agriculture. The SWAPUA project, operating in 10 cities in five CEE countries, has identified characteristics of the various types of farming and the main problems associated with urban and peri-urban farming, with an emphasis on soil and water management issues. Here, the case study of the Bulgarian city Trojan is presented.

Dear Readers

Again, the amount of articles submitted to the magazine was very high, for which we thank you. It was decided to accept quite a lot of these articles, since the wealth of experiences is illustrated and the broad topic could only be covered sufficiently this way. The guest editor for this issue was Beacon Mbiba from Zimbabwe, Co-ordinator of PeriNET (Peri-Urban Transformations Research Network), South Bank University, London, UK. Further input was received from Axel Drescher, from the University of Freiburg, Germany. The latter reports on the FAO-ETC E-Conference session on Planning (held in September 2000) in this issue. We offer you sixteen articles on a diversity of topics surrounding the theme; Integration of Urban Agriculture into Urban Planning. Articles cover all regions again, although West-Africa is not represented sufficiently this time.

Great news from Latin America: the first edition of the UA-Magazine in Spanish has been released by our colleagues in Quito, Ecuador. Spanish readers are suggested to contact UMP-LAC (see page 35).

You are invited to contribute to future issues of the Urban Agriculture Magazine. Same of the topics considered for 2002 are given on the back-page of this magazine. As suggested in the Editorial Board we welcome your contributions on any subject. Articles would ideally be up to 2,500 words in length, and preferably accompanied by illustrations (digital and of good quality), references and an abstract.

Looking forward to hearing from you.
The Editor

Efforts towards engaging rather than abandoning planning

planning; of no importance to city leaders, not competitive *vis à vis* other urban land uses such as housing, and remains incidental rather than a primary consideration in city programmes. The questions generally asked have to do with what city authorities and planners should do for urban agriculture to flourish. However, the way forward may be to ask the question from the other side: "what can urban agriculture do for cities, city authorities and planners?" For example, what difference can it make to the fortunes of a local councillor and to the city budget? It is furthermore important to understand the planning process, the constraints and opportunities, and how urban agriculture could assist in improvement. From the case study of St Petersburg (and others) the problem of insufficient budgets is highlighted. Agricultural activities could assist in overcoming part of this problem (see also the case study on Trojan, Bulgaria, and the proposal to re-develop suburban areas in Toronto, Canada). The evidence from the papers is that, unless urban agriculture can perform better on these questions than other, competing activities, its integration into planning will not materialise.

THE NEED FOR A FLEXIBLE APPROACH AND DIFFERENTIAL TARGETING

The papers in this volume further illustrate that regional- and local-level diversity influences the success of integration of urban agriculture into planning. But, there is more to it. Proponents of urban and peri-urban agriculture tend to present these activities as one homogenous industry and expect wholesale acceptance and integration of the activity into cities; this is not reality, nor will it ever work. What seems to work, and what will lead to integration is a more differentiated approach. Firstly, this should be considered per activity; for example, crop production versus livestock, but even further: vegetables versus cereals and large animals versus poultry, and so on. The cases and other papers in earlier issues of the *UA Magazine* clearly show that authorities and by-laws favour crops in the city, especially vegetables; cities world over will not promote livestock within their borders, but rather envisage animals (save some poultry perhaps) in the peri-urban areas: see for instance in Accra, Hubli-Dharwad, Havana and Dar es Salaam (Bakker et al. 2000).

Secondly, there is a need to differentiate by spatial focus; the consideration of urban agriculture in built-up areas (on-plot), on large city spaces (off-plot) or on the more rural interfaces (peri-urban). Again city authorities and planners have always promoted peri-urban agriculture and on-plot vegetable production. It is in the off-plot category where there is greatest disagreement. Consequently, to a very large extent the city cases show that urban agriculture (if specified) has already been dealt with in urban planning worldwide.

Thirdly, the beneficiaries have to be clear: it must be specified whether the activity is for subsistence and for the poor, or for the market and exports. Evidence from the articles in this magazine underlines that when urban agriculture produces for the latter ends, city authorities are ready to integrate the activity and increase land security to the farmers (cases in Gabarone and Bulgaria). In this form, the

In this issue

PAGE 33

Multifunctional Land Use: an Opportunity for Promoting Urban Agriculture in Europe
Politicians and planners are faced with many competing claims for the use of scarce land in and around cities in industrialised countries. Multifunctional land use – combining different functions within one area – offers a solution. On the basis of a case study in the heavily populated west of the Netherlands, the authors aim to demonstrate that urban agriculture can be promoted as one element land-use offering valuable functions to society.

activity has something positive to offer to the city balance sheet. But as confirmed by the Gaborone paper, where UA is commercial and capital investments are high, the participation levels decrease and claims of direct benefits to the poor become more doubtful.

ENGAGE WITH PLANNING, NOT ABANDON IT

Comprehensive land use planning is still dominant in the cities reported here, and evidence suggests that this will remain so in the near future. In this context, efforts should be towards engaging with, rather than trying to abandon, planning. Urban agriculture could be integrated better if efforts were to be made to increase the participation of diverse groups in the planning process to determine what goes into those plans; for example in the by-laws (Gaborone, Dar es Salaam, Quito and Santiago de los Caballeros). Also, innovation in conflict resolution comes up as a recurring theme in the articles (e.g. Marilao, Lusaka). Cities are domains of maximum differences where, according to Healey (1997: 3), planning is about "managing our co-existence in shared space". Rather than *claiming* space for urban agriculture, ways to *share* urban space with other users has to be sought.

PAGE 40

Planning in a Changing Environment: the Case of Marilao in the Philippines

Marilao, located on the fringe of Manila in the Philippines, faced a typical peri-urban dilemma a few years ago, when its mayor could not find affordable land for a new waste disposal site. There were more than 850 business firms and housing projects that competed for the use of municipal land. Not only the question of where to bring the waste was a problem, also what to do with recycled waste and changes in policy and urban management needed to be tackled.

Views from **Municipalities**

Interviews with planners and policy-makers

For this issue on integration of urban agriculture in planning, we asked our partners to interview planners and policy-makers of a number of cities and ask them about urban agriculture and planning related issues. What follows are quotations from the interviews, brought together by the editors under specific questions.

The interviews we received are from Ghana, the Philippines and Zambia with:
- **Dr. Daniel Sackey**, head of the Directorate for Food and Agriculture, Accra, Ghana (interview by Dagmar Kunze and Pay Drechsel)
- **Mayor Duran**, Marilao Philippines, (interview by Joseph Batac)
- From Lusaka, Zambia: **Mrs Judith Simuzya**, Councillor for Lubwa Ward; **Mr Fisho Mwale**, Ex-Mayor, Lusaka City Council; **Mr T. Hakuyu**, Assistant City Planner; **Mrs Phiri**, Housing and Community Services; **Mr Enock S. Mwape**, Chief Housing Officer, Peri-Urban Areas (interviews by Beacon Mbiba).

Full text interviews can be found on www.ruaf.org

Min. of Information, Accra

Dr. Sackey (left) handing an award to a farmer at the 2000 Farmer's Day Celebration

What is your personal view on urban agriculture, and how did you get involved in the subject?

The solid waste disposal in the city was a major concern to me. When the solid waste management project was able to generate compost from biodegradable waste, I consulted non-government organisations and community residents if they were interested in bringing back some of the greeneries. When I got a resounding positive respond, I knew urban agriculture would be defined and shared by this desire of my constituents. *(Mayor Duran, Marilao, Philippines)*

To me, urban agriculture is an issue of land. People grow vegetables for their own consumption, to be self-reliant. In my backyard I also grow cassava, okra, sweet potatoes and vegetables. Urban farmers are not supported because of fear of mosquitoes. *(Judith Simuzya, Lusaka, Zambia)*

Urban planning does not institutionalise agriculture in the city. To do that, there are profound changes in legislation necessary. And one has to consider the planning process, since it means re-planning the city all the time. Like any other form of agriculture, its urban form requires land, which has attained a value since 10-15 years ago. Few people will afford land for urban agriculture. *(Fisho Mwale, Lusaka, Zambia)*

Urban agriculture is firstly a small backyard garden, like mothers who go out on land not utilised. Then there are the weekend farmers, who live in town and go out to their plots on land leased from the government. The constraint is that land does not belong to the cultivators. One would be happy to have secure tenure, because agriculture contributes to food security. *(Mrs Phiri, Lusaka, Zambia)*

Urban agriculture is a means of securing incomes, and therefore has an important role in urban planning. Urban agriculture also converts idle laying land into green space, and green zones and green belts are important for the city authorities. *(Daniel Sackey, Accra, Ghana)*

How is urban agriculture perceived in the Council or Municipality?

In Accra, the biggest group practising agriculture is the group of fishermen and women. Their contribution to the economy of the city is very important. The livestock holders, we rather try to discourage within the city boundaries. They are

Generally, and more so in the case of urban agriculture, planning is continually criticised. Therefore, the editors had wished this volume to provide an exchange platform for planner practitioners and the other urban actors. Our efforts to get participation of urban planners have been limited. This is crucial for we know that criticism ignores that planners are overloaded with diverse demands, work in under-resourced offices and an environment that gives little time or encouragement to keep abreast with expanding knowledge frontiers upon which planning innovations depend. We were happy to receive the articles on Dar Es Salaam, Harare, Marilao written by, and other articles written with city authorities. Going with this editorial are excerpts from interviews with the representatives of Marilao, Philippines, Accra, Ghana and Lusaka, Zambia, illustrating other issues not touched in this editorial, nor in the papers.

Planning is an environment in which there is little incentive to be a reflective or deliberate practitioner but to remain very bureaucratic. Thus, if the breadth of new knowledge in urban agriculture is to make a difference in how cities are planned, we must address not only the politics, spirit and purpose of planning

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encouraged in the peri-urban areas. Many poultry producers are now moving into these areas, which is not so much an effect of our strict control, but more of their ability to acquire land outside their private grounds and to keep a proper hygienic and good environmentally healthy atmosphere to prevent Zoonosis. *(Daniel Sackey, Accra, Ghana)*

We see urban agriculture, including horticulture and forestry, as a more sustainable way for urban greening. Urban agriculture is the fruit of good solid waste management and a practical way of improving urban areas and addressing food supply and distribution. *(Mayor Duran, Marilao, Philippines)*

The council does not promote agriculture on open spaces, but on smallholdings 5km away from the city. Agriculture encountered on open spaces, is discouraged but we do not slash crops. Support for smallholdings is through NGOs. The major problems are water, street lighting and the lack of government grants. There is a problem of party cadres illegally allocating land, some even for financial gain. *(Judith Simuzya, Lusaka, Zambia)*

Firstly, there are smallholdings (5 to 20 acres) around, but within the boundary of, Lusaka, then there are the people in the peri-urban areas who rent land from the owners of open spaces in the city. People use it for agriculture until it is taken over by town planning. There are also kitchen gardens confined to the house. Within these areas, people are warned not to grow maize within the housing areas because of the mosquito risk. *(Enock S. Mwape, Lusaka, Zambia)*

Is there an institute or institution, which facilitates (or facilitated) the process of integration?

The Accra Metropolitan Assembly (AMA) has a planning unit, to which all the yearly projects and budget proposals have to be submitted for approval. In respect of the by-laws as well as zoning, the Directorate for Food and Agriculture is playing a leading role. Generally, we have much support within AMA, but less support from the Ministry of Food and Agriculture, especially in terms of funding. We are on the brink of getting a by-law for the green belt - green zone areas passed, which will allow these spaces to remain green and only permit farmers to use them, until the Government decides otherwise. *(Daniel Sackey, Accra, Ghana)*

Open space policy is at two levels: a Central Governance Policy and City Council policy In practice urban agriculture is excluded in the City Council policy. There is no regional plan to guide urban-peri-urban area relations. The Ministry of Agriculture has taken up the role to fill the vacuum left by the Ministry of Local Government and Housing. Planners do not control urban agriculture, and have not taken up the challenge. *(T. Hakuyu, Lusaka, Zambia)*

Which issue triggered off the interest and what were the main activities by the Municipality?

We wanted to teach the community how to grow vegetables as a source of micronutrients, as well as the benefits of the practice of segregation of household wastes. We handed out the compost substrate and the potted flowers and vegetable seedlings, with the message that these materials can be used to re-green their surroundings and to raise safe and nutritious food for the family and the community. At first, the farmers thought we were crazy, but now the urban growers are more than happy since this is additional income for them, and they are urgently requesting guidelines on the use of the compost and crop choice. *(Mayor Duran, Marilao, Philippines)*

Urban agriculture is regulated by by-laws, which regulate and support certain activities, such as vegetable production or fish handling and trading, and ban other activities, such as livestock keeping within the city boundaries. The Directorate collaborates with many of the other 31 Directorates within AMA. For example with the Directorate for Town and Country Planning, who are doing an aerial survey to determine all government land, which should be given to farming. So far, we have zoned 40 ha in Teshie and 60 in La area. Current activities are the construction of 6 markets, access roads and parking space under the Village Infrastructure Program. In conjunction with the Ghana Export Promotion, UNDP and the International Trade Centre, Geneva we are promoting a fish processing plant at Teshie, mushroom production for export to Europe and the USA, and the production and pre-packaging cut flowers, also for export. AMA further contributed financially to the supply of pipe born water to vegetable producers to avoid health hazards of the use of unsafe water in agriculture. A further step will be the aerial zoning plan of green spaces and government lands and the respective by-law that we are about to push through. *(Daniel Sackey, Accra, Ghana)*

How did the urban farmers participate?

The committee on export promotion under AMA consists of members from Town and Country Planning, City Engineers, Parks and Gardens, Architects, EPA (Environmental Protection Agency), Ghana Standard Board and our Directorate plus 2 farmers representatives who are active in this committee. The vegetable growers are represented by their General Association. The fishermen and women by their Community based Management Fisheries Organisation", which also includes the chiefs of the respective areas. The zoning of government land and the occupation of this land, is left up to the farmers to decide, since most land is already being cultivated. We only want to make sure that no additional house construction is taking place on government land. Women's role in urban agriculture in Accra is explicitly on the marketing side. In livestock and vegetable production they are a minority. Women are represented in the farmer's association. If loans are to be given, the

but also the internal environment within which planners work. Simply put, in many circumstances, our planner practitioners are not the villains but rather the victims of the systems within which they operate (see the article on South Africa). The need for more information for city planners on the subject is further shown in interviews held in the UK.

The contributions have a word on collaboration and partnership not only among local institutions or cities within one country (see the article on Marilao in the Philippines) but also among cities in different countries (the case of Santiago de los Caballeros in the Dominican Republic) and incentives by donors (see for instance the cases of Dar es Salaam and Harare). The articles underline that integration is possible from multiple entry points that are very much context-specific. In the future, 'private developers' must also be engaged, whose activities and investment decisions influence how land will be developed and whether urban and peri-urban agriculture will have space in their development schemes. With the possible exception of the Toronto case, the articles have little to say on these crucial actors.

PLANNING TOOLS

In our call for contributions, we asked for experiences on using zoning, GIS, and participatory approaches to integrating urban agriculture into planning. As can be seen from the different maps from Dar, Gaborone, Delft and Madhyapur Thimi, GIS is used extensively. Zoning for urban agriculture is also highlighted in the Dar es Salaam, Madhyapur Thimi, and Gaborone papers. Drescher summarises the discussions in the FAO/ETC e-conference, and gives a range of other tools to facilitate the integration of urban and peri-urban agriculture into planning processes.

There are 16 experiences described in this issue, of which two from Asia, two from Latin America, five cases from cities in Southern and Eastern Africa, two from CEE countries, two West European and one from Canada. As a package, these articles elaborate on the complex web of variables that impinge on the integration of urban agriculture into planning.

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new government is now leaving the decision to the agriculture subcommittee to decide and men and women equally qualify. *(Daniel Sackey, Accra, Ghana)*

We build models in several areas. We bring the potential adopters of urban agriculture to these models and ask them how they can do the same. We subscribe to the old notion that people will do it when they see, feel and believe in it. We invest in the replication process by having staff for education campaign and logistics support. Also, we had to develop the compost substrate in a way that suites each type of crops. *(Mayor Duran, Marilao, Philippines)*

What Factors Determined Success and Failure?

To integrate agriculture into urban planning, you need some kind of established office with the responsibility to lobby for the farmers. Sometimes we have visitors from other assemblies, where agriculture has no voice and I am asked how I have been able to get the Food and Agriculture Department integrated into AMA. *(Daniel Sackey, Accra, Ghana)*

There is need for managerial and political appreciation of capacity problems. With a stronger institute, more pressure can be applied. People are not aware of town planning – even internally in the city council there is little awareness. This has caused lack of reviews of the 1975 plan - until the World Bank came in to draw up the Lusaka Integrated Development Plan. *(T. Hakuyu, Lusaka, Zambia)*

Slowly, the farmers are beginning to use the technology we have developed for urban agriculture, which include drip irrigation system, grafting, netting structures and green housing. The process is about doing, rather than talking. *(Mayor Duran, Marilao, Philippines)*

To secure land ownership and use of land, we are passing a by-law. We want the available land in Accra to be placed into a zoning plan, so it can be visible for everyone who intends to construct on this land to know that such a land is reserved for urban and peri-urban agriculture as well as parks and gardens. Generally, there is less risk for farmers to be pushed from the land, if they grow high value crops and contribute more to the urban economy. This is why we promote export crop production such as mushrooms and flowers. *(Daniel Sackey, Accra, Ghana)*

Mayor L.S. Duran

With secure land ownership, people invest: build houses and small shops and use these as income sources other than agriculture. Most of the land in Lusaka is title land, which is for a 99 year lease. There is competition for land in the city. The question is: "who are the stakeholders?" Is it the guy growing vegetables around his house, or is it the farmer in a designated small area around the city? I think the second case is more appropriate for Lusaka in terms of policy focus. *(Fisho Mwale, Lusaka, Zambia)*

No spaces are designated for agriculture except on the fringe of the city, as created by the Ministry of Agriculture and Lands. The City has no relationships with these smallholdings. The implications of the recent (1995) policy changes on land, is that everyone has to pay rates, meaning income for the city council, but also that now there is a open land market. Squatters move into areas that have not been developed. Evictions become an issue since the invasions are politically motivated at the local level e.g. by ward political leaders who want to wield power through land allocations. *(T. Hakuyu, Lusaka, Zambia)*

Ghana introduced the "Farmer's Day" as a national holiday 16 years ago, on which we honour our farmers and fishermen throughout the country and where awards are given to best urban and peri-urban farmers too. There are awards to individuals in the groups of local and exotic vegetable production, fishing, fish processing, poultry, the best IPM farmer, and also to the best Agricultural Extension Agent. In 2000 we introduced awards for the best farmers in secondary schools, since we want to promote agriculture for schools and we also introduced a category of rabbit and bee keeping and mushroom growing. Apart from the quality and quantity of the produce, we also judge the application of techniques, the use of safe water in vegetables, the hygiene in animal keeping, the type of shelter construction, fodder and water supply, and the degree of self-organisation. *(Daniel Sackey, Accra, Ghana)*

Some summarising issues from the interviews are:

- Interest from planners and policymakers is often triggered by personal interest or a crisis situation;
- This interested party is a major facilitator in the process of integration of urban agriculture in urban planning until a (usually one) lead institution can take this facilitating role;
- Land is the most relevant issue for planning in relation to urban agriculture;
- Urban agricultural activities seem more interesting for planners when related to crisis management or when the activity is an important economic activity (high output);
- In that sense one could say that urban arable farming is often allowed, livestock is generally pushed to the periphery, and greening/forestry, fishery or high value crops are stimulated and regulated;

Urban and Peri-urban Agriculture

Report of the E-Conference

on the Policy Agenda

A virtual conference on "Urban and peri-urban agriculture on the policy agenda" was jointly organised by FAO and ETC-RUAF, from August 21 - September 30, 2000. The conference was divided into three main themes: Household Food Security & Nutrition; Urban and Peri-urban Agriculture (UPA), Health & Environment; and UPA and Urban Planning. The conference attracted 720 participants from around the world (45 countries). This short article will revisit some issues regarding the nature of planning, the diverse opportunities for intervention and potential UPA enhancement tools.

Min. of Information, Accra

Director of Food and Agriculture, Accra, handing over an award to a fisherman, at the Farmer's Day Celebration

FAO/ETC joint Electronic Conference August 21 - September 30, 2000

Reflections on the Discussion Group on Urban and Peri-Urban Agriculture and Urban Planning

Although it is difficult to capture the rich information generated in the discussions, any interpretation should capture/recognise both political as well as technical/procedural elements of urban planning. Many contributions stressed that differences between local contexts and cultures should underpin the understanding of the nature of planning and of the opportunities for integrating UPA into planning. This requires not only a grasp of agricultural production issues but also of a range of interrelated matters, like urbanisation, social change, culture, planning, governance and gender.

It was noted that, to a large extent, planning represents and reflects a given society's social contours of power, resource mobilisation and distribution. In both political and technical terms, urban planning endeavours to reduce or manage conflicts associated with different users or competing uses of limited space. Integration of UPA into urban planning will require adaptive conflict resolution skills and approaches within which the poor can organise for enhanced political power.

THE LAND QUESTION AND ITS MANAGEMENT

Consensus was observed in the central importance of land resources, specifically of open spaces, the soil, water, forests; and in the conclusion, that the integration of urban agriculture into policies should be approached from the context of conflicts relating to the use of these resources. The participants emphasised that land access, ownership and tenure make a big difference in the profitability of UPA.

PARTICIPATION

The need for the participation of all involved in planning and subsequent activities was also

Recommendations for action by the participants:

- ❖ Strengthen the organisation of UPA practitioners (farmers' groups, farmers' associations, clubs, etc.).
- ❖ Connect UPA to ongoing urban programmes (Sustainable City Programme, Urban Management Programme, Local Agenda 21).
- ❖ Strengthen institutional capacity at the local level.
- ❖ Develop guidelines for land-use regulations that protect urban agriculture uses, encourage investment in UPA and make credit use viable.
- ❖ Assess land and water tenure / access conditions - develop policy reform proposals and tools.
- ❖ Develop training materials related to planning for UPA (including use of GIS and remote sensing for urban planning).
- ❖ Organise regional workshops on the integration of UPA into urban planning with the broad approach of considering food security, health, environment issues, and sustainable city development.

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emphasised. However, in practice, an exclusionary status quo reality prevails. The reality of inequities between North versus South, men versus women, elites (including researchers, donors, technocrats) versus the poor were among those pointed out. An example is the need for planning tools that are anchored in local contexts.

Focus on process rather than product

Indeed local contexts, history and culture may dictate that "urban agriculture is not necessarily a desired activity by the poor". In the context of the collaborative city planning model (e.g. the cases of the Philippines and Tanzania in this issue), efforts have been made to enhance participation of the poor. But in Dar es Salaam, Tanzania, results show that these efforts seem not to have made much difference.

THE INSTITUTIONAL CONTEXT

It was seen that UPA needs to be a more "official" or "formal" activity in and around cities, in order to be integrated into urban planning processes. However, little was said on the role of institutions with respect to UPA, a topic, which could be an important entry point into the discussion. As historical experience from Europe proves, institutionalisation of UPA has been one precondition to achieving greater land security, higher participation of farmers in policy decision-making and the stimulation of the democratisation process. Approaches are needed that focus on process rather than product so that participation by the poor is enhanced. Participants noted that for that participation to be meaningful, some political organisation would be required.

The creation of urban farmers' associations might be an important step into a more participatory process of urban planning. One lesson learned from this conference is the need to claim these rights, and that urban agriculture has to be negotiated just as any other city development issue. To "sell" the idea of UPA to policy-makers and planners, appropriate arguments must be used, such as its contribution to the welfare of people in small cities (thereby reducing migration); urban habitat improvement and biocultural diversity; the creation of markets for local produce or the recycling of "green wastes" into compost.

INTEGRATION OPPORTUNITIES

Within the matrix of linkages that UPA has with other citywide processes, diverse opportunities exist for integration. A single blueprint cannot be prescribed for this, as future activities would have to select a spatial and sectoral focus relevant to the local context.

The role of education and information is underestimated. School gardens, garden exhibitions, educational materials (books, videos, press releases, etc.) are important means to creating awareness of UPA in the public and among policy-makers. Changes in the extension approaches are essential to assure safe food production in urban and peri-urban environments. Another window of opportunity was seen in sustainability and waste management. In order to contribute to sustainable city development, UPA needs to be more than just agriculture that happens to be in or next to built-up areas. Embedding UPA into the greater context of sustainable urban development forces urban administrators to review their anti-UPA planning principles. Thus in the Philippines, solid waste had been served as one entry point to UPA and over time created the chance "to modify efficiently the traditional hierarchical system of city management." Linking UPA to Sustainable City Development Programmes is a major issue for integration of agriculture into educational, recreational and environmental issues.

PLANNING APPROACHES AND PLANNING TOOLS

In procedural and technical terms, Geographical Information Systems (GIS) and remote sensing were identified as tools potentially useful for integrating UPA into planning. The use of GIS could also act as an obstacle, because of high purchasing costs and difficult maintenance. However, it is necessary to say that costs of simple GIS applications are reasonable today. The advantages of such systems are the avoidance of double work, allowing integrated planning, and the establishment of an urban database that would otherwise have to be placed on other computers.

The process of integration also requires other tools for problem analysis and diagnosis. Examples like Participatory Technology Development (PTD) or Sustainable Livelihoods Analysis (SLA) were given. Furthermore, tools for conflict management, communication information exchange, impact assessments (such as Environmental Impact Assessments (EIA)) were suggested.

The introductory and final papers, and the discussion of the e-conference can be found on the FAO website:
www.FAO.org/urbanag
or on the RUAF website
www.ruaf.org/news_and_agenda_fr.htm

Magaret Armar-Klemese

Discussing the future of the neighbourhood

Newbuilt low-cost housing area with minimal space for gardens near the houses. Missionvale, PE, South Africa

Lena Jarlov

The western concept for urban planning used today is developed to fit a society of labour-based employment. In many growing cities in the Third World, however, the vast majority of the inhabitants is unemployed and has to survive in other ways. There is a need for a more flexible planning concept that enables other means for livelihood security such as from urban agriculture. Both politicians and planners keep up the idea of a western consumer lifestyle as the blueprint for development, even though it is unrealistic for the majority of urban inhabitants in the developing world.

This article is a synthesis of insights from a short period of participation in a comprehensive urban planning project (Sida funded) in Kimberley and Port Elizabeth (South Africa) in 1998 and 1999. All statistics used in this article originate from the First Comprehensive Urban Plan (draft), City of Port Elizabeth (May 1999).

Why We Need
Insights from South Africa
New Urban Planning Concepts

According to basic knowledge, the aim of physical planning should be to organise the system of maintenance of a human society in space. The agricultural society has its own characteristics, which are different from those of the industrial society. The meaning and function of work, recreation, housing, working place, consumer and producer differ between the two. However, the cities of South Africa represent neither of these two types of society. They are not agricultural societies as the majority of the inhabitants do not own or have access to any means of agricultural production like land or animals; neither are they industrial, as the majority is not employed, has little or no income, and limited consumption. They represent an exception and therefore need to be handled in a different way by the planners.

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PLANS WITHOUT POWER

Planners, however, seem to be unaware of this fact. Their main goal continues to be to try to develop these cities as industrial cities with a functional separation between housing areas, working areas and shopping areas and a focus on the transport system. This planning concept leads to extremely dense housing areas, with very little space left over for agriculture and other productive activities near the dwellings, space that could be used by unemployed people without means of transport, and women with children to look after.

Unfortunately, the planners have no power to attract the necessary industries to the planned areas! They simply devise schemes and hope and pray, and in some ways facilitate for the investors to come. Many big investors need to be attracted to employ all the unemployed as well as all the newly arriving poor people migrating in from the countryside every day.

Lena Jarlov

Inhabitants of a peri-urban squatter camp are planning to develop a settlement with agriculture. Joe Slovo Settlement, Port Elizabeth

DECREASING EMPLOYMENT IN SPITE OF A HIGH ECONOMIC GROWTH RATE

In 1998, the growth rate of the population of Port Elizabeth was estimated to be increasing from approximately one million to 2.3 - 2.9 million by the year 2020. At the same time, the formal sector employment was estimated to rise to between 95,000 and 285,000 persons (depending on the economic growth rate: 3 % or 6 %). The draft Comprehensive Plan (1999) states:

"Both scenarios assume a higher growth in the total economy than over the last 25 years. The gap between employed in the formal sector and the rest of the population will tend to increase in both scenarios. However, in the High Growth scenario the public sector will have the economic capacity to increase transfers and maintain services for the entire population. The assumption is that it will be difficult in the Low Growth scenario."

The above thinking reflects a very fragile foundation for the physical planning of the future society. A society where the majority of people will depend on production by a minority is not sustainable, especially not if the precondition is a permanent extreme growth rate of 6 %. The discussion about jobs in the informal sector and the areas for small industries and handicrafts, is still within the concept of the industrial society. Urban agriculture is mentioned, but in practice it is not given requisite attention in the plan. Urban gardening can be applied in allotment areas in some places where the space is not needed for anything else. The private plots for housing are planned to be extremely small in order to obtain high density.

NEW PLANNING CONCEPTS

Maintenance systems that are more suitable to the cities of South Africa as well as other parts of the developing world, must be systems that enable not only entrepreneurs and employed people, but also unemployed people without the resources to earn a decent living. Instead of the industrial city concept, it ought to be a mixture of agricultural, industrial and handicrafts systems, where the limits between producers and consumers, work and recreation, housing areas and working places are weakened or nullified. Allocation of land for food production must be an important part of the infrastructure and as important for the design of the city as the transport system.

CONSUMPTION-BASED MODEL AND GLOBALISED CULTURES

To change the prevalent planning concept will certainly not be easy. It will also not be enough because the development of societies is not conducted by theories. The driving forces are complicated mixtures of cultural and economic factors. Many strong forces drive the industrial planning concept. The attitudes among ordinary people today are highly affected by global influences through the television. The western lifestyle stands as an ideal for many people in the developing world. It is the ideal of consumption, supported by strong commercial forces. But clearly, this lifestyle will never be achieved by the majority. This is most obvious in developing countries, where conditions will continue to be very rudimentary or deteriorate if the physical planning of their cities remains based on principles that have been developed for a completely different maintenance system. Politicians often take on the role of optimists, encouraging their people. The main criticism of the comprehensive plans for Port Elizabeth and Kimberley is this unfounded optimism, or rather the illusions it supplies, including the illusion that the people will become well-adapted members of a consumption society.

Strong forces drive the industrial planning concept

Another part of this topic is the influx to the cities. In the townships of Kimberley and Port Elizabeth, one would doubt the prevailing view of the positive connection between urban growth and living standard. As long as this connection is taken for granted and is spread by authorities who do not provide strategies for developing the countryside, rural people without assets will go on setting their hope on a new and better life in the city. If access to land for small-scale farming and basic services in the countryside and small towns were to be increased, a great part of the rural population would stay there rather than moving into a dense township in a big city.

Furthermore, in order to ensure a global sustainable future, people in the richer world must also adapt their consumer lifestyle for one that takes greater care of nature, the resources and our fellow people in the less well-off parts of the world. All of these variables impact (directly and indirectly) upon the prevailing planning model and the options for alternative ones.

Unemployed men, preparing for vegetable gardens on a temporarily vacant site. Walmer township, PW.

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Women in a township have invited a councillor to ask for gardening land. New Brighton, PE.

Lena Jarlov

Awareness and Action in the UK

Recently, richer industrial nations began to consider the possibilities of urban agriculture and its potential benefits to relevant policy-makers (Garnett 1996, Howe and Wheeler 1999). This literature highlights the value of urban food growing projects as a powerful vehicle for tackling intimately linked social, economic, educational and environmental concerns, arguing that the rationale for urban agriculture has never been stronger. In the UK, there is increasing awareness of the interlinked benefits of urban food growing. Planning, as an inclusive, future oriented vocation, which seeks to enhance the liveability of localities is ideally placed to strengthen community food systems. Nevertheless, the role played by UK local planning authorities in regulating urban agriculture has received only scant attention to date (Howe 2001, Martin and Marsden 1989).

Allotment garden

Sustain

This paper redresses this deficit by presenting findings from a UK Government Economic and Social Research Council (ESRC) funded survey examining the role played by planning in regulating urban agriculture on allotments, community gardens and city farms. The survey of all metropolitan planning authorities produced 32 usable replies, representing a response rate of 46%. The survey was concerned with:

- exploring planners' attitudes to and knowledge of urban food production; and
- examining the regulation and coordination of urban food production.

Planning conditions with regards to health issues acquires considerable importance

Respondents varied in seniority, ranging from Principal Planning Officer to non-planners involved in urban food schemes.

PLANNERS' ATTITUDES TO AND KNOWLEDGE OF URBAN FOOD PRODUCTION

The survey revealed that there was an encouraging awareness, and perceived significance, of urban food issues amongst planners (more details are given on the RUAF website in tables of the survey results):

- Of the respondents, 47 % claimed to have low levels of awareness regarding food issues, with 22 % claiming to have a high level of awareness.
- Sustainability targets and health were seen as being the most significant potential benefits of urban food schemes (22 %).
- Fifty percent regarded urban food growing as having a significant role in environmental factors, 41 % in social factors, 47 % in education and 22 % in urban regeneration.
- Of minor importance is the economic role of urban food production, according to 21 percent.

The data suggests that a link may exist between the claimed level of awareness of urban food issues and the perception of the relative importance and benefits of urban food growing.

It also appears that a distinction may be drawn between planners' knowledge of the issues surrounding urban food production and their knowledge of land-use issues, notably on allotments. A number of the comments made by respondents point to a higher level of land-use knowledge than specifically for urban food. This suggests a tendency for planners to view issues purely from a land-use perspective.

THE REGULATION AND COORDINATION OF URBAN FOOD PRODUCTION

In examining the regulation of urban food production, the survey initially explored the planned local coverage of urban food (see box).

The plan coverage provides a strong indication of the way in which urban food production might be viewed by the land-use planning system and, to a significant extent, sets the context within which it is to be regulated. While clearly a small sample, the potential difference in treatment by the planning system of allotments, community gardens and urban farm sites resulting from this division in policy coverage may also be significant. The different plan coverage raised the question of whether planning protection strategies and mechanisms would differ between various

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urban food sites or whether the dichotomy between the planning regulation of allotments and urban farms and community gardens would persist.

Essentially, none of the responding planning departments appears to treat urban food production as a discrete issue specifically within the statutory planning arena. This is reinforced by the comments of a number of authorities, and in several instances, the siting of urban food production as a "Local Plan" or "planning" issue was questioned. Two respondents suggested that the Local Agenda 21 process was a more likely arena for this issue, and one questionnaire was passed from the planning department to a community allotments' officer for completion. Nonetheless, it remains clear that a number of planning departments are involved in schemes which do relate specifically to urban food and extend beyond purely land-use considerations. Significantly for the input of the statutory land-use planning system it appears from the data concerning revised development plans that certain steps are now being taken towards identifying urban food production as a planning theme in its own right. This suggests a potentially significant impact upon the input of the planning system into the regulation and coordination of urban food, with more focused statutory treatment accompanying the broader framework for contribution.

In considering the response of the planning system to urban food, the survey revealed that:

- The greater number (44%) of respondents thought that their policy framework neither encouraged nor discouraged the development and protection of urban food production, though a significant proportion (31%) said their policy framework actively encouraged this. No respondent thought their framework actively discouraged urban food schemes.
- 47% considered that their local policy framework gave urban food about the right level of significance, than gave too little (28%).
- At the national level, this situation was reversed: 38% of respondents thought the national policy framework gave too little significance to urban food production against 25% who considered its significance about right.

In relation to development control, the survey revealed that:

- Only one authority suggested that a planning application had been received specifically for development on an urban food site.
- Planning conditions were imposed on urban food sites in three authorities. These related mainly to health issues, e.g. the condition of the soil at the site.
- If the demand for urban food sites was no longer sufficient, the majority of respondents stated that retaining some form of open space or recreational area would be desirable. One authority stated that sites might be used mainly for residential development, since they were primarily located in areas denoted in the development plan as "primarily residential use."
- Conflict regarding urban food sites had arisen in 12 districts. Of these, nine related to pressure to develop on allotment sites, particularly where these were considered under- used.

These issues of demand for, and potential changes of, use at urban food producing sites are related to the issue of conflict between food production and other forms of land use, either during plan preparation or in development control. Since this relates directly to land use, this issue appears particularly salient to the planning system. In addition, the possibility of planning conditions with regard to health issues acquires considerable importance in the context of the use of brownfield sites and seems to be an area in which the land-use planning system can exert a direct effect through its statutory powers.

CONCLUSION

The rising interest in food growing as a recreational activity combined with consumers' desires and indeed the need for healthy food are combining to make urban agriculture an emerging and dynamic activity. However, the development of urban agriculture is dependent upon the supply of land. Urban land is a highly prized, and priced, commodity and urban food production faces fierce competition for land and financial resources from land uses with higher profiles or offering greater returns, such as housing and industry. This puts pressure on urban food producing sites, and it is for planning to legitimate their position within the urban environment.

In general, planning's direct role in relation to food growing is relatively small in the UK. Indeed, urban agriculture sits uncomfortably within the UK planning framework. Nevertheless, planning's apparent low level of involvement is perhaps perplexing given the significance of food to the metropolitan system. Cities are complex, dynamic entities within which food production and consumption are important components. The challenge for the statutory framework is to recognise and integrate every aspect of the urban system, including food production, into sustainable development strategies.

- Of the 32 authorities responding to the questionnaire, 26 had policies in their development plans relating to allotments. Only four had policies relating to urban farms; three to community gardens, and eight to various "others", notable among which were open/green space policies, and policies dealing with rural agriculture in boroughs containing rural land.
- Of the 20 respondents providing details of the development plan chapter headings under which specific allotment policies fell, 14 cited headings broadly relating to leisure and recreation; four related to the environment, and two to open/green space.
- Only three respondents regarded their development plans as specifically designating sites for urban food production.
- Of the four authorities whose current plans contained no policies aimed at any form of urban food sites, two said future plan revisions were likely to contain such policies and two thought they were not.
- Of the 28 respondents whose development plans contained policies relating to at least one form of urban food site, 12 said that no policies specifically related to urban food production were to be introduced. The other cases, however, suggested that policy in this area is to be developed further.

Oleg Moldakov

Opening-ceremony of community garden

In Russia, agricultural activities of the urban inhabitants are taking place at significant distances from their urban homes (see Moldakov 2000). 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.

Support for Urban Agriculture
In St Petersburg

The importance of agricultural activities, especially the production of food for subsistence consumption for urbanites increased after the disintegration of the Soviet Union. The demand for land by those without dachas became so high after 1991-92 that urban authorities started to organise small plots on open space (non-building development sites) within the urban territories. This was then followed by other urban inhabitants who started to occupy land adjacent to motorways and railroads, without permission from the authorities.

Federal law defines how local administrations use city budgets for the necessary infrastructure in these areas (like health and safety services). The organisation of the plots outside city boundaries results from negotiations and agreements between the municipal and regional (rural) administrations. The St Petersburg city and regional administrators were sensible and clever enough to organise, regulate, and formalise the access-to-land process.

These two administrative units have different motivations. City authorities have an interest in (peri-)urban agriculture mainly to solve social problems, but their interest is focused on practices outside official city boundaries. They assist in organising plots close to the city, but not within the city. The regional (rural) administration however, does not really welcome new plots and new summer inhabitants because of the need for waste recovery and health services, extra pressure on the rural roads, and the increase in public transportation, water discharge, etc. They would like to win support from the city administration, something they do not currently receive.

In 1995, "The Gardening Office" (Department for the Development of Horticulture and Gardening in St Petersburg and the Leningrad Region) was created. The Gardening Office coordinates, together with other departments, the development of urban agri-culture, activities of state agencies, local government, private enterprises, and other organisations in St Petersburg.

Urban farmers themselves have created public organisations like the "Union of Gardeners". Gardeners discuss their problems within their units (Community Garden or Dacha Cooperatives), whose chairpersons report to the Union of Gardeners' meeting with "The Gardening Office", which will further act on the problems in need of support from urban authorities and coordinate with sectoral departments.

URBAN PLANNING AND AGRICULTURE

This positive story about support of urban agriculture is, however, not fully reflected in a firm integration of agriculture in urban planning and land zoning. The emphasis of the St Petersburg/ Russian urban planners still lies with industry, tourism, services, science and education.

Urban farming currently consists of 154 community gardens within urban boundaries, and the authorities consider these to be part of the urban landscape, as one official separate zone. This is a serious step towards the integration of urban agriculture into urban planning. However there have been, and still are, no functional zones taken up in city planning, for the development of urban agriculture. City authorities believe that, with the improvement of the economic situation in Russia, the use of temporary plots of land will lose status and will decline on its own, to be replaced by further development of private and community gardens without the need of support by authorities.

City authorities do not mention, nor care about (though at least they do not ban), informal agricultural plots along the less important roads, under electricity lines, on land bordering upon railway tracks, or on other open spaces that are not needed in the short term. These places however have no agricultural future.

The open spaces (land with poor soil) on the urban outskirts are temporarily authorised for agricultural purposes to selected groups (veterans and pensioners). Other poor land around the cities is informally used, unsanctioned by the authorities.

The St Petersburg' experience shows the important role of the The Gardening Office within the municipal administration. However, there is an important and necessary role for NGOs, like the Union of Gardeners to provide further support to the gardeners. Training programmes and extension on agricultural technologies need to be financed partly from urban administration and partly from payments based on fees collected by regional and urban branches of the Union of Gardeners from their members.

The integration of urban agriculture into urban planning and development will only be feasible when the majority of the people living in the city, consider agricultural activities not only as a means of additional income and self-maintenance, but also as a necessary element of the sustainable development of the city.

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Current urban planning and development in Bulgaria does not take into account the existence of urban and peri-urban agriculture. The urban planning guidelines included in the Law for Territorial Development (2001) refer to zoning, densities for buildings, heights, distances and other technical parameters related to construction, roads and green open space, property issues and control. Issues related to farming and livestock breeding in the city are not treated as they are not expected to occur in urban areas. However, reality is different. In most cities in Bulgaria, urban agriculture is a common and permanent phenomenon There is a need for innovative urban planning approaches.

Antoaneta Yoveva

Gardening in Sofia

Using Urban Agriculture for *The Case Of Trojan* **Sustainable City Planning** in Bulgaria

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In the last decade, Bulgaria has gone through a process of political and economic transition. The share of agriculture within the GDP increased significantly (up to 26 % in 1999). As a response to the economic decline and the introduction of open market principles in this transition period, the importance of urban agriculture for the subsistence of many urban households has also increased substantially. Agriculture increasingly functions as a social safety net for the poorer sectors of the urban population and forms an important complement for middle income groups. Agricultural production in urban and peri-urban areas also has an important potential for urban landscape management, nature conservation, recreation and ecological education, as will be shown later on.

Here, the case study of the Bulgarian city Trojan is presented, and some guidelines for the integration of urban agriculture into urban policies and development planning are presented.

FARMING IN AND AROUND TROJAN

About 80 % of the houses in Trojan have their own yards, which, in general, are used for agricultural production. However, agricultural activities are not the basic occupation of the urban gardeners, who usually have another job (small tradesmen, technicians, office clerks) or are retired. Most urban gardeners and farmers are between 50-75 years of age. About 15 % of the population of Trojan is older than 60 years, while the unemployment rate is about 17 %.

In general, the urban gardeners and farmers are less educated and have below average income.

The majority of urban agriculturists garden for self-consumption, which on average satisfies over 50 % of the household food needs (and in this way allows for important savings). Only 15 % of the interviewed households have income generation as their main motive, selling their produce directly from the garden or farm to consumers.

The production of vegetables is very intensive. Chemical fertilisers and pesticides are hardly used, but organic fertilisers are applied (about 1 ton or more/ha). Vegetables are grown by 88 % of the interviewed households, with on average a total area of less than 100 m^2. Fruits are cultivated by 75 % of the interviewed households and grapes by 13 %. Many families also raise animals, mainly poultry (63 %, with on average 18 fowl) and cattle (50 % of the farming households breed an average of 3-5 animals), but also sheep or goats (25 %), and/or pigs (38 % keep an average of two animals). Most animal feed is produced on-farm. Cultivation practices are rather basic: crop rotation is hardly practised, and animal husbandry practices are primitive and not monitored by contemporary veterinary services.

TENDENCIES IN URBAN FARMING

Most of the farmers and gardeners interviewed do not have clear ideas regarding future develop-

The SWAPUA project (Soil and Water management in Peri-urban and Urban Agriculture in CEE countries) is operating in 10 cities in five CEE countries. Its aim is to explore the presence and impacts of urban and peri-urban agriculture and to facilitate the development of local policies that accommodate, and plan for, urban agriculture as an integral part of sustainable city development.

ment. Most want to continue in the present way. Only 8% of the farmers are looking for ways to improve and/or enlarge the scale of their agricultural activities. About 5 % want to specialise more. The very low percentage of farmers willing to take out a loan indicates that the group which would invest in urban agriculture (including willingness to take entrepreneurial risks) is very small. This might be explained by the main motivation (growing food for self-consumption), or by the low profitability of market oriented farming under the present conditions.

PARTICIPATORY PLANNING

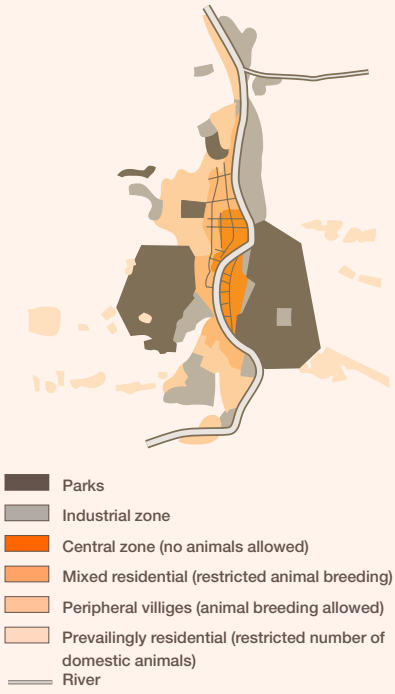
Based on the results of the city survey, a participatory process of policy and action planning was initiated, starting with an inventory of the stakeholders involved, in one way or another, in the use and management of this territory. Subsequently, a meeting with representatives of these stakeholders was organised, where the results of the survey were presented and their participation in a policy and action planning process was requested. The meeting resulted in an agreement to cooperate in the planning process initiated by the SWAPUA-project and to meet periodically. It was decided to focus the participatory process on the southern periphery of the city, which is the contact zone adjacent to the "Central Balkan" National Park. A planning team was formed consisting of the Bulgarian SWAPUA-team member, a local consultant (a professor in economics), a planning expert from the municipality and the deputy director of the Research Institute for Mountainous Animal Breeding located in Trojan.

Agricultural production has an important potential for urban landscape management

Meetings with local farmers and gardeners were organised in the area, to discuss the needs and problems and to generate ideas on required actions and policy measures. In general, the findings of the survey were confirmed. A problem of special interest to the farmers was the shortage of land for grazing the animals or to grow fodder. The interest of the peri-urban farmers in the provision of credit and assistance in marketing was higher than found in the survey. The planning team also consulted experts and representatives of a variety of local organisations.

On the basis of the results of these meetings and a review of the changes in land use and other tendencies in the southern periphery of Trojan, the planning team revised the outdated urban development plan for the southern zone of the city and drafted new municipal regulations for urban agriculture. The new development plan focuses on organic agriculture in combination with development of agro-tourism and landscape conservation. This draft action plan was first discussed and revised with the local farmers during follow-up meetings. The action plan was presented and discussed at the Trojan Municipal and Citizens' Forum, in which all major local groups were represented to advise on priority issues for the city. During the first meeting, the plan and regulations were presented and later published in the local newspaper. In the second meeting, the plan was discussed and it was accepted for the development of peri-urban agriculture in this zone.

Specific urban rules and standards for urban agriculture in Trojan



THE ACTION PLAN

The action plan includes a number of activities, indicating the organisation(s) responsible for implementation, the source of financing, the period of implementation and the expected results. The most important ones are summarised below:

The **Municipality** will play a coordinating role, to stimulate and regulate urban and peri-urban agriculture through:

- integrating urban agriculture in the general municipal development plan;
- adopting a set of specific norms and regulations regarding urban agriculture for different zones of the city;
- improving access to land for urban agriculture by selling and renting municipal land to family farms and providing land, directly or through gardening associations, for temporary agricultural use (medium-term leases), to those households registered as "being in need";
- encouraging organic production and regulation of the application of fertilisers and pesticides;
- periodically monitoring of the degree of pollution of soils and water in the urban agriculture plots, applying the municipal regulations regarding use of fertilisers and pesticides, and preventing ecological damage and public health problems;

Trojan is a typical Bulgarian town - about 50 % of Bulgarian cities have very similar characteristics. The population of Trojan counts 25,260 persons. Agriculture is one of the leading economic sectors, both in the region and in the city. Around the city centre there are two belts of residential zones varying in density and characteristics. In the peri-urban zones, some villages have more traditional farming functions (see map). Trojan is implementing the project "Civil development and local self-government". Because of its geographic location, size, economic activities and scale, Trojan was selected for the implementation of the exploratory survey. Respondents came from the various farming types and from both urban and peri-urban areas.

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Main problems encountered by the urban gardeners and farmers in Trojan

- lack of feed and inputs (25 %);
- lack of capital (50 % - nearly 100 % replied no to taking out a loan if possible);
- lack of labour (38 %);
- lack of marketing (38 %);
- lack of transport (25 %); and
- lack of access to land or fear of eviction (50 %)

- assisting in the identification and solution of marketing problems, amongst others by creating the infrastructure for a local farmers market and by further facilitating arrangements between local farmers and schools, hospitals, and restaurants in Trojan and the neighbouring city of Lovetch;
- improving the roads;
- facilitating the provision of credit;
- stimulating the processing of local produce (canned, frozen, pickles and other forms);
- stimulating the (regulated) use of semi-public open spaces for urban agriculture for educational purposes and consumption in schools, hospitals, kindergartens; and
- including provisions for landscape development, recreation and gardening in building plans.

The **Research Institute on Mountainous Livestock Breeding and the National and Local Extension Services** will be active in providing technical advice and training to urban agriculturists on organ-

The rules are still experimental

ic farming techniques, fodder production, animal reproduction, prevention of ecological damage, performing soil and water analyses, farm planning and information on available credit lines. The *Central Balkan National Park,* in cooperation with the *State Forestry Division,* will provide permits to the peri-urban farmers for grazing of animals, harvesting of herbs, forest fruits, and mushrooms, etc. in the territory of the National Park.

The **Swiss Foundation for Support of Sustainable Development of Farming in Bulgaria** and the *Bulgarian Swiss Foundation FAEL* will promote organic farming methods through distribution of publications, farm demonstrations, technical advice and training, and will provide credit support and supervision, and will assist in the regional marketing of farming products.

The **Tourism Association Central Balkan** and the *Trojan Tourism Bureau* will support the development of agro- and eco-tourism in the region, both by assisting farmers in providing recreational services as well as by attracting tourists and organising educational tours of students and schools.

ZONIFICATION AND MUNICIPAL REGULATIONS REGARDING URBAN AGRICULTURE

Agricultural activities and their influence on the settlements are covered by Regulation N7 of the Ministry of Health Care, which defines the mandatory requirements and standards for the protection of health and sanitation. For example, it delineates seven zones of sanitation levels, depending on the number and type of animals allowed in different types of residential areas. The Law for Territorial Management includes a specific supplement on sanitation-hygiene requirements for agriculture for various types of urban territories.
On the basis of these legal requirements and the information generated in the SWAPUA city survey on the presence and character of urban agriculture in the various districts of the town, the planning team developed *zonification* for urban agriculture in Trojan. This aims to facilitate backyard gardening and other forms of urban and peri-urban farming whilst preventing associated ecological and health problems. The zonification also includes a set of norms regarding agricultural land-use and guidelines for urban planning. The rules are still experimental and await endorsement by the municipal council.

CONCLUSION

The Trojan case illustrates a number of important issues:

- Urban agriculture is widely practised in Trojan, a city that is representative of a large group of cities in Bulgaria.
- Urban agriculture plays an important role in the food security of a substantial number of households and has provided a safety net during the transition period; for a smaller group, urban agriculture is an important source of income.
- A relatively limited group of urban farmers and gardeners in Trojan is interested in further growth and development into commercial farms.
- Rather than excluding urban farmers and gardeners from city development plans (as is current practice), they must be integrated into urban planning to prevent negative impacts from unregulated urban agriculture. Optimal use can also be made of the role urban farmers and gardeners can play in the protection of nature, landscape management, provision of recreational services to urban citizens and ecological education of the youth and citizens.
- When a participatory and multi-actor approach is applied, with relatively little financial means, a good quality plan can be made and implemented, combining expertise and resources of various local actors, including the urban farmers.

Antoaneta Yoveva

Open space in Sofia

The growth and geographical spread of urban agriculture in Zimbabwe is largely attributed to the harsh effects of economic structural adjustment programmes (ESAP). The negative impact of ESAP has been manifest by the erosion of basic wages, escalating prices of basic commodities and the widening of the gap between rich and poor households. Studies by ENDA-Zimbabwe (1994) indicated that the total land under cultivation in the City of Harare increased dramatically, by 92.6% between the years 1991-1994. This period coincides with the early phases of ESAP launched in 1991. The land under cultivation has also increased under the economic hardships of the last years. The responsiveness and actions of urban local authorities in addressing the pressing needs of the urban community has become of utmost significance.

Beacon Mbiba

Women selling maize in Harare

The Urban Planning Dilemma in Harare, Zimbabwe

In Zimbabwe, the nature and practice of agricultural activities within the urban environment are posing chronic headaches to the largely conservative urban planners, who are keen to observe and perpetuate the status quo. Traditionally, urban environments have been identified by the absence of agricultural activities as these are more aligned to the rural forms of settlement (Mbiba 1995).

Urban farming activities in Zimbabwe broadly fall into two categories: intra-urban farming activities and peri-urban farming activities carried out on the outskirts of the urban environment. Whilst all farming activities are of great concern to local urban planning authorities, the off-plot mode of intra-urban agricultural production is the most contentious and problematic in urban planning practice, and officially illegal.

The uncontrolled encroachment of 'traditional' cultivation practices upon environmentally sensitive land, and the ill-advised use of chemicals in vegetable and crop production are often put forward as reasons why urban agriculture should never be considered as a serious urban land-use option. Urban planners are thereby caught up in a jigsaw puzzle in which, on one hand, they are expected to address the current needs of the urban citizenry, whilst on the other hand, protecting and preserving the urban ecological and physical environments in tandem with prescribed notions of urban management. In most instances, matters pertaining to the livelihood systems of the urban populace, mostly the poor, have often taken second fiddle to inflexible environmental planning considerations.

Food produced within the urban environment is primarily consumed by producing households, whereas the surplus is sold to the urban market. Next to production-related problems, planners have to grapple with marketing aspects of agricultural produce. In the cities of Harare and Gweru, local authorities have been engaged in incessant conflicts with fruit, vegetable and crop vendors who sell their products in undesignated areas often in conflict with other urban land uses. Urban land and water resources are critical in the development and practice of urban agriculture. Accessibility of such resources to the urban poor farmers is curtailed by intense competition from other urban land uses such as housing and industrial developments. Planners in most Zimbabwean urban centres view urban open space cultivation as standing in the way of urban development.

Furthermore, the promotion of free market operations in the distribution of urban land entails the poor and powerless being completely pushed out of the urban economic operations.

One would expect the role of the planner to be an advocacy role, by deliberately setting aside land for agricultural production by the poor, but the institutional environment in which the urban planner operates is a major obstacle to responsive and innovative planning.

INSTITUTIONAL PROCESSES AND URBAN LAND-USE PLANNING

Historically, urban planning in Zimbabwe has been guided by rigid Master and Local Plans, which tended to stifle relevant adaptations to emerging and unforeseen urban socio-economic needs, while the urban planner is also faced with political pressures that tend to be concerned with short-term political gains.

Local authorities have been engaged in incessant conflicts

A review of local authority response to urban planning would show that political forces have been at the forefront in determining the course of urban agriculture.

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For instance, the City of Harare promoted urban farming 'cooperatives' as far back as 1985 following a directive from the Minister of Local Government and Town Planning. These farming 'cooperatives' never functioned as cooperatives in the true sense of the word, but more as groupings for the purposes of acquiring land. The farming 'cooperatives' were more of a manifestation of the ruling party's experimentation with socialist ideologies, than a deliberate and carefully thought out planning intervention to address the needs of the citizens. Similarly, toleration of urban agriculture in other urban centres such as Gweru, could be seen as being more politically motivated than as a conscious planning intervention. In election years for local government, councillors and Members of Parliament, even the worst environmentally damaging practices of urban agriculture have been permitted to continue.

The urban planner operates in an institutional environment that is at the centre of diverse political interests. The fact that urban planning officials are accountable to politically elected councillors, most of whom have no relevant urban planning and management expertise restricts development of innovative ways for integrating agricultural activities into the urban land-use system. Consequently, most practising planners are content with observing the status quo by implementing development control according to laid down procedures and standards and provisions of enabling legislation such as the Urban Councils Act. A further critical shortage of skilled planners also hampers innovative and responsive planning.

The successful and sustainable integration of urban agriculture into urban land-use systems in Zimbabwe is a complex task requiring a multi-stakeholder approach with the urban professional planners taking a leading role and providing a conducive operational environment. This requires intensive public and political awareness-raising and strict observance of ethics of good urban governance.

The Women and Land Lobby Group in Zimbabwe

Urban agriculture is an important social and economic activity providing nutritious food, employment and income to a large number of people in urban areas, especially women. This importance has increased as a result of Economic Structural Adjustment Programmes (ESAP) initiated in Zimbabwe since the 1990s, because of the sharp rise in the cost of living due to the removal of subsidies on basic commodities. This period also saw an increase in urban agriculture and the commercialisation of the activity. Research has shown that, in Zimbabwe, the majority (90 %) of urban cultivators is women who are engaging in urban agriculture as a strategy for poverty alleviation. Households save money by consuming their own produce rather than by purchasing it. As in many other developing countries, urban agriculture is a necessity as it is practised to supplement household food supplies, unlike in developed countries where it is practised as a leisure activity.

Urban agriculture has only recently been identified as an activity area for the Women and Land Lobby Group, in which the focus is more on the poor sector of the community because these are the people who practise the activity out of need. Also, these people live in the high-density suburbs, and as a result, most of their activities are carried out on municipal, state or privately owned land that is vacant. This land is not designated for agriculture, and agricultural activities are therefore considered to be illegal.

Vegetable production in Mbare high density area

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URBAN AGRICULTURE STRATEGY

Several problems are associated with urban agriculture in Zimbabwe, related to policy and land-ownership issues, production techniques, marketing and the negative environmental impacts. The Women and Land Lobby Group has a two-stage strategy to bring attention to the need for a relevant policy. The first stage relates to lobbying for the legalisation of urban agriculture through stakeholder workshops, to highlight its importance and to map out strategies to have it legalised. The key targets in this regard are the parliamentarians, the municipal government, city council officials, urban council associations, relevant NGOs and the urban cultivators themselves. Once a policy framework governing urban agriculture is put in place and when legalisation is expected, the Women and Land Lobby Group will carry on to the second stage of its strategy. In partnership with other organisations such as the Farmers' Development Trust, the Extension Service and Compassionate Ministries, they will assist cultivators to undertake urban agriculture in a sustainable and viable manner.

Female farmers will be assisted through the provision of agricultural training in farming techniques and management practices, and by offering low-interest loans (from the Farmer Development Trust Input Loan Scheme).

The ultimate goal is to have urban agriculture included in urban land-use planning in Zimbabwe's urban areas and to have the activity realise its full potential in terms of food security for the urban population.

The mandate of the Women and Land Lobby Group is to advocate and lobby for gender-sensitive land policies and promote women's economic empowerment through the equitable access to and control of land. The organisation is concerned with ensuring that policies affecting women's access to land are effectively translated into practice and implementation.

Fruit market in Harare

Beacon Mbiba

The Marginalisation of Urban Agriculture in Lusaka

In 1987, Sanyal suggested that Lusaka, Zambia, was the capital city of urban agriculture (UA) in Africa. This was at the peak of Zambia's economic crisis when residents took up UA as a form of employment and to improve their nutritional status. Travelling in the region today, one will easily agree that Harare, Zimbabwe, has taken over as the capital of urban agriculture and that the activity may not be as widespread in Lusaka as observed by Sanyal in the 1980s.

There is no longer abundant maize growing outside the boundary fence of the elegantly designed Hotel International. In addition, there is little integration into planning. In fact, urban and peri-urban agriculture has been marginalised out of planning; it is not considered a priority by the city authorities and is being gradually squeezed out by residents seeking lodgings to rent, as well as developers. Under these circumstances, a recurring question is 'what factors determine the integration (or otherwise) of urban agriculture into city planning'?

The integration of UA into planning is determined not only by the character of planning and planning institutions in a given place but also by socio-political dynamics relating to access and control of land resources. In Lusaka, it can be observed that the local planning institutions are weak; the planning department lacks the capacity to plan and most of the current strategic planning is carried out by donor agencies and their externally appointed consultancy firms (especially from South Africa)[1].

The combined effect of these determinants in Lusaka is to marginalise agriculture in the planning processes (institutional marginalisation) while also pushing it towards the periphery of the city: peri-urban agriculture (spatial marginalisation).

SOCIO-ECONOMIC SETTINGS AND LUSAKA'S STRATEGIC PLANNING

Lusaka's current population is about two million people, over half of whom reside in peripheral 'compounds', largely unplanned previously informal or squatter settlements. Reports suggest that 70% of the city's population resides on 20% of the land, thus pointing to a dual city comprising of extremely high density areas co-existing with spacious low population density zones (Muwowo 2000, Lusaka City Council 2000). Planning for Lusaka since the 1970s has largely revolved around programmes to upgrade the 'compounds' in terms of provision of improved housing, roads, social services, water and sanitation infrastructure. This is a domain in which large multinational donors and local NGOs play a significant role (see for example, Agyemang *et al.*1997, Lusaka City Council 1999, Nippon Koei Co. Ltd. 1999).

The spatial growth of the city to date was supposed to be guided by the 1975 'Greater Lusaka Development Plan' whose full implementation was however constrained by limited capacity and financial resources, due to a shrinking economy since the late 1970s. Recently, signs of economic stability and recovery have emerged, buttressed by donor funding. A new strategic plan for the city has been identified as necessary to guide these new developments. Whereas, the legal requirement is that the master plan be reviewed every five years, this has never been undertaken for the 1975 Development Plan. Thus over the years, land use has developed in unforeseen directions hence the need for a new

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The result is that UA is pushed out of the more central areas

strategic plan. However, despite all these obvious reasons, local actors in Lusaka allege that the impetus for this plan came from the World Bank which provided the financial resources and appointed a team of South African consultants to prepare it[2]. A draft strategic plan was then submitted in June 2000 and was still awaiting ministerial approval as of March 2001.

THE NEGLECT OF URBAN AGRICULTURE IN THE STRATEGIC PLAN

Generally, little direct mention is made in the plan, on urban and peri-urban agriculture. It appears that there was no attempt to conduct a detailed primary survey of the activity, though the report by Agyemang *et al.* (1997) which included

Beacon Mbiba

Roasted Maize cobs sold along the major roads in Harare

a small section on UA was used. Even in terms of secondary data, the plan did not draw on the large literature base that exists on the topic for the city of Lusaka.

Urban agriculture was discussed in the context of open space management and the need for sustainable environmental development. In section 1.8.4.3, the plan recognises the presence of open spaces and agricultural land amounting to 400,000 hectares in the form of agricultural smallholdings at the periphery and kitchen gardens, where a variety of crops such as potatoes, cassava, maize and vegetables are grown. Aspects of livestock production and commercial horticulture were also identified. The latter is largely found in areas outside the Lusaka District boundary, where close to 90% of the actors are possibly foreign business people[3]. The plan supports a vigorous environmental approach to management of these activities.

However, other than the environmental view of these activities, the study to the plan did not capture the political and economic dimensions of UA and its poverty alleviation potential. It seems to have been influenced by a modernisation philosophy leading to a strategic perspective that fails to draw out employment potentials in the sector as initially identified in another section of the plan. This issue could be gleaned in section 3 where it is stated that:

Agriculture is a major employer in the Lusaka economy. However, as Lusaka is a built up urban area and more and more agriculturally productive land is taken up for urban purposes, it is ***not believed that there is any scope for long term growth*** in this sector.

The plan thus fails to interrogate the issue further. Yet maps produced show that a lot of open spaces exist which could be comprehensively used for agriculture, to boost growth and employment. Secondly, no synthesis and strategy to protect agriculturally productive land from being replaced by building development sites is given. Lusaka still has untapped potential for upward growth, an approach that would draw away pressure from existing open spaces.

THE "COMPACT CITY" PERSPECTIVE AND IMPLICATIONS FOR URBAN AGRICULTURE

Urban agriculture in Lusaka will also be affected by the "compact city perspective" adopted in the strategic plan (also seen in Nairobi and Harare) and described as part of the '*new urbanism*' (Mbiba 2001). Section 2 of the Lusaka Integrated Development Plan captures this as follows: "Before Lusaka expands outside the current district boundary, it is imperative that infilling of residential and commercial areas takes place." This implies that all vacant land within residential areas should be used for building development sites before further expansion outwards. The rationale is that such open spaces are better serviced (with water, roads and sewer lines) relative to more peripheral sites and therefore cheaper to develop.

The result is that agriculture is pushed out of the more central areas towards the periphery of the city; these sites demand longer travel times not available to poor urban residents. This peripheral future of urban agriculture was endorsed in an interview with Councillor Judith Simusya of *Lubwa* Ward 29 who indicated that:

"As council, we have not tackled UA. We do not have a strategy as such.... For us, we provide UA on smallholdings 5 km away from the city... that we promote. On open spaces within the city, we discourage it but do not slash crops". (Interview 08/03/2001)

However, even in the smallholdings, the council does not provide any material support. Instead, this support comes

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Urban Vegetable Promotion Project

Crop production along the road in Dar Es Salaam

The rental income option appears more attractive than the benefits derived from UA

from NGOs who work with cultivators and community groups.

SOCIO-POLITICAL CONTEXTS AND LAND DIMENSIONS

The view by councillor Simusya that "urban agriculture is an issue of land' is shared by many in Southern and Eastern Africa (see Mbiba 2001). The urban land on which agriculture does or can take place could be used for many other purposes. Ownership, access and perceptions of good use of land are all socially contested matters that do not favour it. Prevailing processes in Lusaka seem to confirm this view.

As from 1975, land ownership and access in Zambia was governed by the Land (Conversion of Titles) Act (Chapter 289) which abolished land sales, transfers, alienation of land for value and restricted agricultural landholdings. This act was repealed in 1995 restoring value to undeveloped land. As a result of these statutory changes, public perceptions changed on how to use land, as well as on the importance of ownership, control and access to land sites for building development. A real estate market emerged and is now growing steadily with an emphasis on building site development and not on urban agriculture. Key processes observed are:
(a) Open spaces are used for prestigious commercial and residential developments with involvement of international capital such as at Manda Hill Out of Town Shopping Centre, the upcoming OAU Complex in Long-acres, housing developments in the Ibex area, the Chinese Trade/Cultural Centre near Kalingalinga residential area, and so on.
(b) Investments and investors take land from the poor or get preferential treatment *vis à vis* the poor and UA.
(c) Land is being sold illegally by officials and politicians.
(d) Conflicts between different groups and competing claims on the same piece of land occur.
(e) Illegal development of houses for rent is taking place.
(f) There are rising levels of land disputes.

The *Times of Zambia* has reported on many of these processes while the City Council in 2000 set up a Committee to investigate the 'rampant' illegal land dealings by its officials and councillors (Lusaka City Council, 2000-2001). The *Times of Zambia* reported on July 6th 2000: "Police in Lusaka Yesterday evicted over 500 squatters who invaded 40 acres of University of Zambia land and demarcated it into residential plots on the border with Kalingalinga Township." At the time, the land being reserved for future expansion of the university was being used for agricultural production by some residents.

But this article clearly shows that the 'residential movement' and demand for houses by the poor seem to be stronger than that for agriculture. Other press articles and the Lusaka (2000/2001) report suggest that powerful local politicians and patrons use the poor to invade urban open spaces not only for political patronage but also as a way to access sites on which to built structures from which to generate rental incomes. The rental income option appears more attractive than the benefits derived from agricultural activities.

CONCLUSION

Grey literature and anecdotal interview evidence from Lusaka highlight that among other things, the conduct and content of current strategic planning efforts coupled with formal and informal land market dynamics reinforce the exclusion of agriculture rather than its integration into urban planning and development. Current efforts at strategic planning in Lusaka are largely managed by external agencies driven by a western modernist view of the city. These have tended to ignore the urban agriculture reality. Although these efforts have strong concerns for 'environmental biodiversity', they have missed opportunities to explore and develop urban agriculture as a sector within which to tackle issues of urban economy and poverty alleviation. The plans and planning exclude rather than integrate urban agriculture.

Urban agriculture is further excluded by ongoing social and political processes around issues of control and access to land in the city. The priority seems to be to focus on the conversion of undeveloped sites (both formally and informally) for building site development and away from UA. Given these processes and the context, it seems that Lusaka's agriculture will become more active at the periphery (peri-urban agriculture) than in other city open spaces. Consequently, there is a need for a formal process to explore and put in place a peri-urban agriculture review programme as an extension or complement to the just completed Lusaka Integrated Development Plan.

NOTES

(1) A view expressed by officers in the City Council and confirmed by a cursory review of planning and programme documents for the city.
(2) A view expressed by Mr F Mwale, former mayor of Lusaka City (Interview discussion, March 2001).
(3) The team of consultants comprised of V3 Consulting Engineers, LASCO Engineers, Urban Dynamics and Urban Econ.

Integration of Agriculture in City Development in Dar Es Salaam

A number of forces have driven the mushrooming of urban farming and livestock keeping. In Dar Es Salaam. They include poverty; decreasing formal employment; proximity to markets; availability of services; government policy; culture (like livestock keeping as part of the culture) and non-enforcement of laws, regulations and by-laws.

Urban Vegetable Promotion Project

Cropproduction in a valley in Dar Es Salaam

In the Tanzanian context urban agriculture is commonly referred to as "farming activities in the built-up areas where open spaces are available as well as livestock keeping in the built-up and peri-urban areas". Farming and livestock keeping in the city of Dar Es Salaam is undertaken either in the back-yard, near homes, in vacant lots around the city, and in the peri-urban areas. Substantial farming takes place in the many valleys and swampy areas. Size of the plots increase as one moves away from the centre to the periphery, while intensification moves in the opposite direction. Crops include vegetables (spinach, cabbages, tomatoes etc.); fruits (papaya, oranges, quaver); paddy; maize; cassava; sweet potatoes; and bananas. Table 1 below shows the growth in animals kept in the city.

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Despite substantial growth, urban agriculture received very limited recognition from the authorities in the past ten years. Of late, professionals and politicians have realised that if urban agriculture is taken seriously and properly organised, it can be effective land management. The city of Dar Es Salaam further recognises the need to develop strategies that can enhance urban agriculture in order to ensure sustainable human development, in support of the Local Agenda 21 and the Habitat Agenda.

INTEGRATION OF URBAN AGRICULTURE INTO URBAN PLANNING

In 1992 the city of Dar Es Salaam adopted the Environmental Planning and Management (EPM) Approach in the City Consultation. This new approach has been the engine of change in many aspects amongst others related to urban agriculture. Environmental Planning and Management advocates dialogue and participatory city planning. Under this new approach the city held a mini-consultation in 1993 to deliberate on agriculture. In the consultation, stakeholders agreed that agriculture in the city contributed substantially (almost 30%) in household food supplies and that is had become integral part of urban livelihood strategies. A Working Group was formed to work out strategies for putting urban agriculture on the city agenda.

The National Human Settlements Policy states that; The Government Shall:

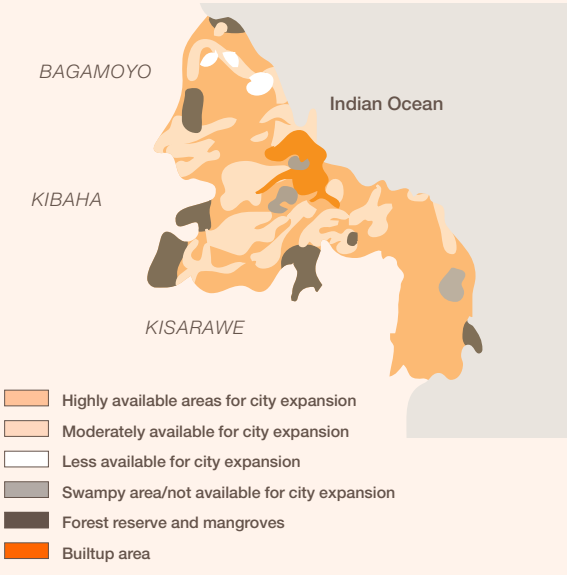
- ❖ Designate Special areas within planning areas whereby people will be granted legal rights to engage themselves in agricultural activities;
- ❖ Continue to regulate and research on the urban agriculture and will ensure that it does not disrupt planned urban development;
- ❖ Review existing laws to facilitate planned agriculture e in the city;
- ❖ Facilitate the construction of appropriate infrastructure to mitigate/prevent land degradation, water pollution and health and safety hazards in areas whereby agriculture is permitted.

The Working Group included representatives from various segments of urban dwellers (the urban poor, men, youth and women groups); Village governments (especially in the peri-urban areas); various government ministries; institutions of higher learning; the Dar Es Salaam City Council Popular sector groups; NGOs and CBOs (both, within the city and active in urban villages). The size of the group depended on the issue being addressed. The Dar Es Salaam City Council was the co-ordinating institution and guided the operations in the urban context. Other members provided information and ideas from their respective localities. Conflicts of interest were minimum. The members knew failure to address interests of a section of city residents would be detrimental. Differences in opinion were managed in a participatory way.

The results of the whole process, from action plan preparation, implementation of demonstration projects and further integration of agriculture in the cities urban zonification was good. One of the successful demonstrations is the Mbutu Agricultural project. Findings of the working group included results of these projects and were a basis of deciding where and to what extent agriculture can be practised in the city as reflected in the *Strategic Urban Development Plan (SUDP).* In this plan, special land zones have been designated for agriculture (See ***Map***) Ideas necessary for revising municipal by-laws and regulations were also worked out and a platform for co-ordination established and enhanced.

In Dar es Salaam UA has received attention on various policy levels and is accepted as a land use in the city. The SUDP also has deliberately set apart several areas to be used for large and medium scale urban agriculture in the future and gives corresponding development conditions. This is contrary to the earlier "zonification" where an area could only be considered for Agricultural activities while it awaited to be assigned other uses like residential or industrial areas. The major difference is that a Master Plan considered UA as a transitional land use whereas the SUDP considers it to be an important activity and has a very important contribution to its citizens.

Strategic Urban Development Plan Framework for Dar Es Salaam



Recognition of urban agriculture has contributed significantly to the quality and quantity of foodstuffs in the city, which in turn lowered prices, thus enhancing the purchasing power of the urban majority. A negative impact though, of agriculture in the city, is the uncontrolled growth, hindering efforts to develop land in a way that could benefit many citizens. With the decreasing number of jobs both in public and private sector, intra-urban and peri-urban agriculture calls for strengthened efforts to organise the activity.

Mrs Mlambo presents findings of the Sustainable Dar Es Salaam Project

Urban Vegetable Promotion Project

Special land zones have been designated for agriculture

Recognition is reflected in several laws and regulations, among them are the Agricultural and Livestock Policy (1997) and the National Human Settlements Development Policy (Jan 2000).

The Working Group applied the following steps (as part of the EPM Approach):

- Clarifying the issues to be addressed;
- Involving those whose cooperation is required;
- Setting priorities;
- Agreeing on priority issues
- Initiating and implementing demonstration projects in collaboration with respective institutions.
- Monitoring and evaluating progress and making periodic adjustments to WG proposals; and
- Providing input to the Strategic Urban Development Plan

ACCESS TO LAND

Getting land in the city of Dar Es Salaam has always been difficult. The urban poor have consistently sold their land to the rich on the pretext that they do not have sufficient funds to develop it themselves. Through the Environmental Planning and Management Process, communities

TABLE 1: Animals reared in Dar es Salaam City

Year	Dairy cattle	Layers	Broilers	Local fowls	Ducks	Pigs	Goats
1985	3,318	221,920	146,205	88,720	4,900	6,795	1,361
1986	4,200	292,000	180,500	93,389	6,800	8,601	2,617
1987	5,278	390,000	194,500	98,304	8,100	10,454	3,820
1988	7,105	445,000	237,000	103,341	10,449	13,383	5,764
1989	8,597	551,800	282,083	108,508	13,479	15,658	8,531
1990	10,402	664,232	335,624	113,933	17,388	18,946	12,626
1991	12,586	824,448	399,393	119,630	22,431	22,925	18,686
1992	15,229	1,027,275	475,276	125,611	28,936	27,739	27,655
1993	18,286	1,225,392	565,579	131,891	37,327	33,564	40,930

are now aware that if they are empowered to better plan and manage their environment in a more coordinated manner, they can contain many of the problems they face.

To improve access to land the city authority is encouraging vertical expansion of buildings, to free some space in the built up areas and in potential areas for city expansion.

CONCLUSION AND RECOMMENDATIONS

There is no one single way of organising urban agriculture, and success very much depends on adaptation to local conditions. In Dar Es Salaam, it is shown, that agriculture can be effectively integrated in Urban Land Use Plans. The city has integrated urban agriculture in urban planning through a bottom-up approach, under the Environment Planning and Management Process. Agriculture in the city is recognised as one of the land uses and an important informal opportunity for the unemployed population.

It is recommended that a thorough study to ascertain the potentials and limitations of urban agriculture be carried out. The results of this survey will be a basis for continued - informed - decision making, and to prevent detrimental effects to the residents and the environment. The shortage of affordable and reliable transport also needs due attention. Efforts to facilitate urban agriculture should incorporate elements to enhance low cost mobility, like bicycles, which will ease the work involved in distribution of the produce.

The approach piloted in the city of Dar Es Salaam has been widely accepted by the Ministry responsible for Land Development. The ongoing process to prepare other Strategic Urban Development Plans in the nine Municipalities with replication of the Environment Planning and Management Process provide evidence of its integration at national policy level. The Strategic Urban Development Plans will give due attention to urban agriculture.

A homegarden

Urban Vegetable Promotion Project

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WORKSHOP ON URBAN AGRICULTURE

Dar es Salaam, 11-13 june 2001.

This workshop, organised by the Urban Vegetable Promotion Project (UVPP) under the Ministry of Agriculture and Food Security and the University of Dar es Salaam, together with the Municipal Development Programme (MDP) based in Zimbabwe, under the RUAF Programme, looked at issues of planning and policy for urban agriculture, existing activities and initiatives as well as the communication, information and training needs of stakeholders. One important aim of the workshop was to close the gap between the policy makers and the practitioners at farm level. Representatives of the most important stakeholders were invited to the workshop, amongst others from the Ministry of Agriculture, the Ministry of Lands, the International Labour Organisation (ILO), UVPP, The University of Dar es Salaam and Sokoine University of Agriculture (SUA) in Morogoro and the University College of Lands & Architectural Studies (UCLAS). Next to presentations and working groups on special subjects mainly pertaining to the question of mainstreaming urban agriculture and the identification of a possible urban agriculture coordinating office, a small market was organised where some farmers displayed their products. One important conclusion was that urban agriculture should be seen as an urban management tool, another was that participatory techniques were necessary for the promotion of sustainable urban agriculture. Further information and the workshop proceedings may be obtained from uvpp@africaonline.co.tz or from ruaf@etcnl.nl .

Incorporating Urban Agriculture

A Case Study Of Glen Valley In Gaborone City Planning

Branko Cavric

Training of urban planners

Today, the scale of urban and peri-urban agriculture (UPA) in Botswana's urban settlements is still very limited when compared to the intensive agricultural practices found in other southern African cities like Nairobi, Dar es Salaam, Lusaka, Harare or Johannesburg. However, in the capital of Gaborone, one of the fastest growing cities in Africa, several agricultural projects have started that are integrated into its urban development. The aim of this article is to provide more details on these new initiatives, using a case study of Glen Valley.

The growth of Botswana's capital, Gaborone, has necessitated encroachment on surrounding farmlands (with land being converted into housing and industrial estates) and the sprawl that has been developing since independence (1966) has resulted in dispersed suburban growth and segregated areas for retail, residential and commercial/ industrial activities. The city is still spreading out, but has now reached its limits in almost every direction. The recent Gaborone City Development Plan (1997) has gone so far as to suggest acquiring even more farmland south and north of the city to accommodate urban development (see the Figure). Of the total area of 19,096 ha of land within the city, agricultural and forested land occupied 2,468.12 ha in 1997, amounting to 17.09 % of the total landmass (DTRP/MLHE 1997: 90).

Gaborone, like many other towns in Botswana has always been reliant for most of its food (even perishable) supplies, on deliveries from outside the city boundaries (Mosha & Cavric 1999). Today, limited agricultural production is taking place within the city boundaries. Most urban commercial farmers are situated in Gaborone North and are either private venturers, or from academic or scientific institutions. Some restricted agricultural activities are going on within the city limits on freehold farms. However, planning authorities have consented to change the two major large-scale freehold farms in Gaborone North, from agricultural use to residential and other land uses (Dithebe 1998), which has caused some land speculation and disputes.

In the southern part of the city, there are a number of small-scale poultry farms. Sanitas plant nursery, also located in this area, is both a commercial nursery and a nucleus of a botanical garden exhibiting exotic plants. In addition, Gaborone City Parks and Gardens Service has a plant nursery in Gaborone West (Ibid 1997).

ENVIRONMENTAL CONSIDERATIONS

A major problem facing the development of urban agriculture is the availability of water as rainfall is erratic and unreliable. The need to make the City of Gaborone self-sufficient in horticultural products was recognised many years ago, but the lack of sufficient water has made this task very difficult.

In August 1997, a new sewage treatment plant was commissioned, with a design capacity of 40,000 cubic metres of effluent

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water per day (Gibb 1993). The proposal for effluent reuse as a source of water for irrigation came as no surprise. This potential water supply brought back the interest to develop small-scale market gardening in and around Gaborone.

Today, about 20,000 cubic metres of effluent is being generated by the City Sewage Works per day, which is at the moment still being discarded as sewage water. It is now under consideration to treat this water to the point that it could be re-utilised as a source for irrigation. Such huge volumes of water in Gaborone

The lack of a clearly defined policy is a limiting factor

with its unreliable water supply, stimulates the idea that Gaborone could become self-sufficient in horticultural production.

It was with this in mind that an irrigated agriculture project, using effluent water from the Gaborone Sewerage Treatment Plant in the Glen Valley Area, was planned.

INSTITUTIONAL AND POLICY CONSIDERATIONS

The lack of a clearly defined policy is another limiting factor in the development of agriculture in Gaborone City. There is currently no leading institution working on its integration into urban planning. It has also been said that UA thrives where there is no real effective planning taking place. Indeed, urban planning and land-use controls are very tight, and this may be a further indication as to why UA is so limited (Byerley 1996, Rogerson 1994).

The participation of farmers is strictly up to the individual. Some neighbourhood committees, like in White City and Bontleng, have voiced their displeasure with the development of agriculture on open spaces, alleging that the growing of vegetables and other greens attracts snakes and mosquitoes, reduces playing areas for their children, and utilises pipe water at public stands. Their concerns have been made public in the Ward Development Committee meetings.

Gender is an important issue not only in Gaborone, but in the whole country. Food production is traditionally the responsibility of women, and logically so in female-headed households, which currently make up 36% of households in Gaborone city. Production decisions, providing labour, and financial control over inputs and outputs, are activities predominantly undertaken by women. However, the role women play is insufficiently recognised by society, resulting in the lack of any organised support for female-headed households.

There is no platform for the coordination of urban agriculture activities among Government institutions, who may take uncoordinated initiatives. For example, the Department of Town and Regional Planning (DTRP) of the Ministry of Lands, Housing and the Environment (MLHE) recently launched a campaign to protect agricultural and open spaces from the encroachment of residential developments. Consequently, proper zoning and preparation of physical plans have been very rare in current planning practice. The case study of the Glen Valley area is one of the first systematic and interdisciplinary attempts to integrate agriculture into the existing urban matrix. The 1998 plan tackles adequate access and land-use zoning problems, by involving experts from various professional fields (agriculturists, engineers, planners, environmentalists) and by conducting detailed analyses of the economic components and conditions for attracting investors' attention.

A CASE STUDY OF GLEN VALLEY

Area

Glen Valley is a peri-urban area situated in north-eastern Gaborone. The surrounding areas are primarily residential, recreational or open space. The area is relatively flat and prone to flooding due to the proximity of river channels. Despite its location, which is relatively far from the city centre, the site, consisting of 234 hectares, had been viewed as ideal for agriculture. The soils are suitable and treated wastewater from the nearby treatment plant can be utilised.

Planning and environmental concerns

The intent of the Glen Valley Horticultural Plan was to create a well-designed irrigation project which would cater to small-scale commercial agricultural plots for horticultural purposes with some other activities like flower gardening and perhaps poultry and small stock breeding. The idea was to allocate portions of land to agricultural investors who were conversant with irrigation systems and who would utilise the land to its fullest potential, in order to produce and provide fresh agricultural products to the City of Gaborone and its surrounding areas. Unfortunately, this type of rather intensive production is aimed at those with the necessary resources, and, as seen in other cities like Harare (Mbiba 1995), the poor become excluded.

The plan was approved in September 1998 on condition that an environmental impact assessment be clearly stipulated in the lease contract. The use of the treated water was restricted to specific crops not used for human consumption, such as seedlings, grass, etc. The planning authority stated that close environmental monitoring of the project at the implementation stage was a prerequisite.

Design principles

The size of the Glen valley plots varies from 1.5 to 4 hectares. All plots are back-to-back, and so are easily serviced (see

Glen Valley Area

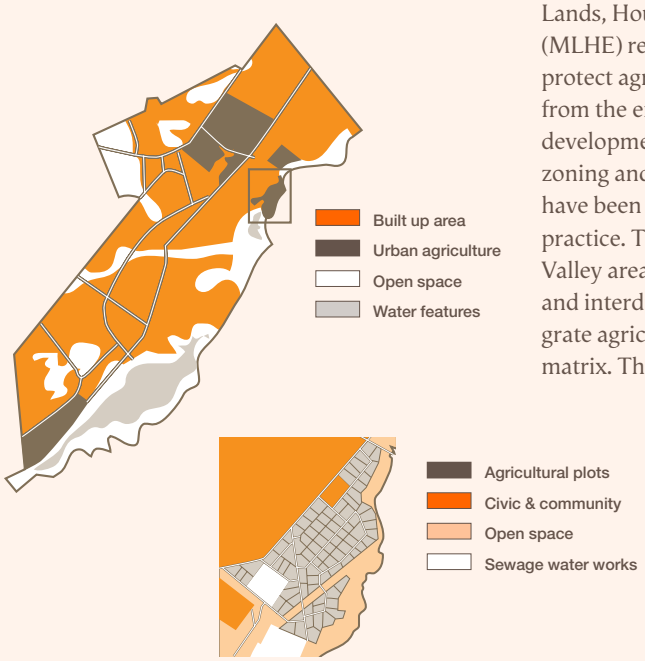

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Figure 1). The requirement from the Ministry of Agriculture is to reduce the buffer zone from the Notwane River and its tributaries, in order to utilise the most fertile soils along the riverbanks. As the site is a floodplain, the investors were warned of the dangers of possible loss of investments and properties. Those areas unsuitable for horticultural purposes (e.g. with soil types susceptible to salinisation) have been planned for other agricultural activities, such as the rearing of small stock, poultry, etc. As a result, 63 plots have been designed on good soil for horticultural purposes and 27 plots for other agricultural uses. No permanent residences are allowed in the project area apart from farm sheds and small quarters to house farm workers.

FUTURE OPPORTUNITIES

Opportunities for the future integration of agriculture into urban planning in Gaborone and the whole of Botswana are still under review. As this article has only scratched the surface of this subject, there are many more questions which need research before the municipal and planning authorities, planning agencies and institutions can capture the full potential of this integration (Mosha & Cavric 1999, Mougeout 2000, Jarlöv 2000). The areas that need attention are listed in the box.

CONCLUSION

Unlike many countries in the subregion, the presence of UA in Gaborone and Botswana at large is still rather low and is not integrated into urban development planning. Due to the fact that more than 40 % of the cityís residents live below the poverty line, UA is rather a spontaneous activity. As in other cities in Africa, as the economy gets worse, incomes are eroded and hence people look for alternative ways to supplement their income just to be able to survive (Mosha 1996, 1999). For quite a number of people, urban agriculture activities help to enhance food security and present an element of self-reliance (Hesselberg 1993, Pile 1999).

In the meantime, planning authorities and agencies are cautiously starting to open their doors and to accept this activity as part of the urban reality. The first steps are now being taken to formalise these activities through the preparation of physical plans. In the current Gaborone City Development Plan (1997), analyses of land-use patterns point out the general changes that can be expected in the next twenty years. Meanwhile, the detailed zoning of certain locations such as the Glen Valley Area indicate that UA can be controlled through proper planning.

A long period of adjustment of interests of various institutions and individuals still lies ahead. Unfortunately, some individuals have neither the time nor the means to wait for the formalising of physical and economic relations as their livelihood depends on the production of vegetables or minor stock breeding. As a result, planning regulations are contravened, particularly by people building all over their plots, in conflict with those who want to cultivate the available land. In view of this, the paper suggests that a minimum set of activities are essential for establishing a balance between the interests of the government, various NGOs and individuals within the framework of the existing urban planning machinery.

CHALLENGES AND PROSPECTS OF URBAN AND PERI-URBAN AGRICULTURE IN BOTSWANA

National Veterinary Laboratory, Sebele, Gaborone,Botswana, May 28-29, 2001

Various stakeholders including central government, local government, parastatal organisations, NGOs, researchers and international organisations like FAO, attended the meeting organised under the RUAF Programme by MDP and MOP. The workshop brought together key stakeholders, facilitated interaction among participants and provided impetus for future collaboration. It was a signal to all stakeholders that UPA is an important, relevant issue in Botswana and action needs to be taken. The government has pledged to come up with a policy on UPA and will strive to mainstream it in the next national plan due in 2003. Contact: MOSHAAC@mopipi.ub.bw

AREAS NEEDING MORE ATTENTION

- The laws and regulations relating to the planning and use of agricultural land in cities must be brought into concurrence (e.g. Town and Country Planning Act, State and Tribal Land Act, Land Control Act, Agriculture Resources Conservation Act).
- Government inter-departmental committees and agencies need to be established.
- Support needs to be provided to all NGOs, associations and individuals involved in UA.
- UA should be introduced as an aspect of the National Settlement Policy.
- UA needs to be included in the revised version of the Physical Planning Handbook and the New Physical Planning Manual and Agricultural Manual.
- A Land-Use and Land-Cover Classification system needs to be developed, and the existing planning DTRP Land Use Code in the section referring to agricultural zoning, improved.
- A Land-Use Information System to monitor the changes in the use of agricultural land in Botswana urban settlements must be developed.
- Regular soil-engineering and soil suitability mapping need to occur.
- Aspects of UA should be integrated into the Terms of References for the preparation of all future settlement development and master plans.
- An instrument of Agricultural Planning Permits must be introduced, bearing in mind the fragility of the environment in Botswana.
- UA and Planning should be introduced as a subject in the School of Planning at the University of Botswana, as well as opportunities for continued research in this field.
- Public information, participation and awareness must continue.

Urban Agriculture **Support Programme**

for Madhyapur Thimi Municipality, Nepal

Traditionally, municipalities in Nepal 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 in Madhyapur Thimi municipality located in the centre of Kathmandu Valley. How this problem was overcome together with issues of land development strategy is narrated below.

Land for urban agriculture is now a significant component of the recently completed 'Development Plans and Building Regulations 2001' of the municipality. The Zoning Plan sets aside just about half of the 11.47 square km area as 'Reserve Zones'. After a two-year planning process, the board of the municipality was convinced of the advantages of an agriculture-based Reserve Zone and accepted the plan, though with great hesitation.

Transporting vegetables to the market

Kai Weise

DEVELOPMENT GUIDELINES AND BUILDING REGULATIONS 2001

The Madhyapur Thimi municipality, with an area of 11.47 km² was established in 1997 by consolidating five existing VDCs (Village Development Committees). In recent years, the municipality's population has increased steadily to nearly 40,000, and the adjoining larger municipalities of Kathmandu, Lalitpur and Bhaktapur have exerted mounting pressure as they have also grown at tremendous rates. As a result, a lot of new construction has taken place in Madhyapur Thimi, in a manner inconsistent with traditional settlement structure, and urban sprawl has encroached upon what is actually still primarily agricultural land.

implementation of regulations often appears to be **difficult**

A principal tenet of the Madhyapur Thimi municipality's "Development Guidelines & Building Regulations 2001" is the creation of an Agricultural Reserve Zone. Most non-urban, fertile agricultural land has been placed in this reserve, while existing urban areas will be designated as Development Zones. The regulations mandate the municipality to prevent the development of any kind of urban infrastructure or utilities within the reserve zones. Only the construction of temporary structures will be condoned. The intent behind this regulation is to curb the loss of prime farmland to unplanned urban development.

The implementation of these kinds of regulations often appears to be difficult, especially since in Nepal the courts give greater weight to individual property owners' rights than to the enforcement of municipal regulations. Unfortunately, landowners often interpret this as permission to develop their land in whatever manner they desire, despite the potential degenerative effects this has on the community as a whole. Although a growing percentage of the younger generation has abandoned agriculture, currently 70% of the population still farms. The success of the Reserve Zone policy depends heavily upon the support of the farming community. In recognition of this, the overall municipal planning concept takes the needs of the farmers into serious consideration. The municipality will initiate several support programmes, to increase the profitability of agriculture and to take advantage of presently under-utilised local resources such as nutrient-rich organic waste. These programmes will further focus on integrating agriculture into the overall urban development master plan. Rather than allowing the typical urban/rural dichotomy to create rifts within the community, cooperation and mutual support will be promoted .

THE NEWAR FARMERS

Agriculture has been the primary occupation of the Newars for hundreds of years, deeply influencing both their society and spirituality. Traditionally, Newar communities have lived in compact settlements on elevated ground, surrounded by their agricultural land. The Newars developed an intricate system of land classification, based on soil quality, extent of irrigation, crop type and ownership.

In recent years, farming families have found it increasingly difficult to sustain their previous standard of living through agriculture alone, thus many farmers have taken on secondary occupations, resulting in the slow deterioration of agricultural knowledge and practice in the Kathmandu Valley. Decreasing access to irrigation water has further compromised the economic viability of farming. Whereas 20 to 30 years ago rivers maintained at least a minimal flow year round, now due primarily to an array of detrimental human impacts on the environment of the Kathmandu Valley, rivers are practically dry during the winter season. These are just a few of the many factors which have contributed to an overall decline of agriculture in the Kathmandu Valley.

ZONING

The basis for the new Madhyapur Thimi municipality zoning plan was conceived in a workshop arranged by PAHAR Nepal in

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Potential strategies for integration as identified in the Programme:

- ❖ Create general community support for agriculture.
- ❖ Co-ordinate administrative and management efforts.
- ❖ Facilitate agronomic production.
- ❖ Develop marketing strategies for specialised goods.
- ❖ Promote localised processing and production of agricultural by-products.

June 1999 with financial support from the Swiss Agency for Development and Cooperation and with the participation of the Swiss Federal Institute of Technology.

The members of the workshop sought to determine the factors behind the current explosive expansion trends of the Kathmandu Valley. Traditionally, Newars have constructed their settlements on elevated ground, leaving the fertile lowlands and floodplains almost exclusively for agriculture. However, this pattern has been remarkably altered over the past 30 years. Building has continued as before on elevated areas, but in addition, new construction has also sprung up and burgeoned along roads in the previously undeveloped lowland areas. This indicates that roads act as the primary catalysts for new construction. In acknowledgement of this observation and in an effort to realistically assess potential reserve land, the workshop participants identified the lowland areas with minimal road access as target areas for agricultural zoning.

A group of municipality officials followed up on the workshop over the course of the next few months. The municipality's planning advisor prepared the "Development Guidelines & Building Regulations 2001" in close cooperation with several ward chairmen, the legal advisor and other technical staff. The Reserve Zone was initially conceived of as a conservation area, in which no urban expansion in the future would be possible. Elected municipality officials felt that this was unrealistic for economic and political reasons. Eventually a compromise was reached. The term "Reserve Zone" was adopted, and the municipality was given the authority to incrementally identify and plan out expansion areas within the Reserve Zone and release them for development in the future. As the preservation of agricultural land is one of the driving forces behind the entire concept, a legal mechanism must be set in place to ensure that decision-making remains transparent and responsible. Such a release of protected land would be contingent upon a genuine, documented need and subject to extensive community discussion. On the other hand, this system would also be attuned to economic concerns. Should the disparity between the economic potential of the land in the Development Zones (the existing urban areas) and that in the Reserve Zones grow too large, sufficient political will could set an incremental release of Reserve Zone land into motion. The main attributes of the Reserve Zone remain unchanged. The area may only be developed for agricultural use, with non-permanent, single storey structures. In order to dissuade development, the municipality will not construct roads or provide utilities such as electricity, drinking water, sewage and telephone connections.

THE RESPONSE

The strongest opposition to the Reserve Zone came from those landowners, mostly middle-class government employees, who had moved to the Kathmandu Valley and had intended to build their residences on small plots of land. The municipality is now in the process of allowing the release of one such area for a housing project.

Both the municipal authorities and the farmers are supportive of the concept for urban agriculture. Preliminary studies show that the promotion of localised processing and production of agricultural by-products and developing marketing strategies will be the most essential components of an "Urban Agriculture Support Programme". The advantages for further municipal development of the agriculture-based Reserve Zone are:

- ❖ better allocation of limited financial resources;
- ❖ focus on "new" growth within the existing urban areas, which will promote denser urbanisation and efficient use of space in the Development Zones;
- ❖ proper sewage disposal and management of biodegradable solid waste through compost and manure production methods, enhancing agricultural development. This will turn a potential urban problem into a valuable agricultural resource and promote a community-strengthening interdependency between the agricultural and urban populations; and
- ❖ ensuring that any release of Reserve Zone land be planned and controlled.

Opposition came from **landowners**, who had intended to build their **residences**

Kai Weise

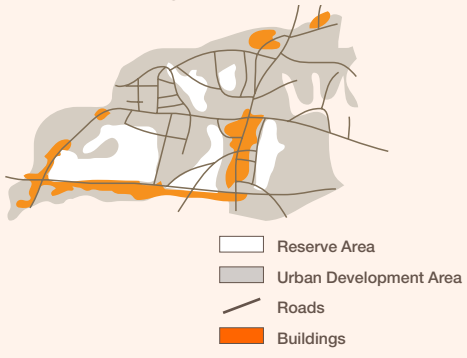
Drying wheat on city square

Madhyapur Thimi has become an example for urban planning in the Kathmandu Valley. Urban planners and government officials of other municipalities and the central government have shown great interest in the experimentation of integrating agriculture into the zoning plan of a municipality.

PROMOTING A SUSTAINABLE MODEL OF DEVELOPMENT

The preservation of agricultural land is vital for the sustainability of urban development in the Kathmandu Valley. The Madhyapur Thimi master plan will serve as a positive example of how urban agriculture can be integrated into the development scheme of a municipality. The reservation of open spaces within urban development areas, combined with the active promotion of agriculture as an economically viable source of income for the farming community and the urban population as a whole, will assist in controlling urban growth. Such a policy will result in higher land values and assure well-rounded family nutrition. Ultimately, the long-term prosperity and liveability of the Madhyapur Thimi municipality will be ensured for many generations to come.

Location of Agricultural reserve Areas



Urban **Farming** and **Land-Use Planning** in the Dominican Republic

The municipality of Santiago de los Caballeros, in the Dominican Republic, aims to promote a more coherent and effective inclusion of urban agriculture citywide through municipal management and planning policies, mechanisms and instruments, with the objective to support local environmental management, and strategies for poverty reduction.

Jacquelyne Acevedo

The mayor of Santiago de los Caballeros, Dr Hector Grullón Moronta, alongside urban agriculture technicians and workers, carries out the first harvest of the horticultural garden developed on the grounds of the Municipal Palace.

In 1991, during a participatory analysis and planning exercise with urban actors (municipal staff, civic organisations and neighbourhood groups), the municipality of Santiago de los Caballeros identified the following principal problems, which are similar to those of many other municipalities in Latin America:

- a significant percentage of urban population live in conditions of poverty and food insecurity (57%);
- a large volume of solid organic waste negatively affects the urban environment, and a lack of resources to collect and dispose of them adequately;
- a large amount of urban and peri-urban plots (both of municipal and private property);
- lack of environmental awareness;
- lack of inter-institutional cooperation and integration to solve the above-mentioned problems; and
- a weak application of existing laws and regulations, and the lack of a land-use plan and operational regulation for poverty alleviation and environmental management.

The **challenge** now lies in the **institutionalisation**

One of the strategies to counteract these problems was the development of a (municipal) urban agriculture programme, which was set up in that same year. This programme would focus on more efficient use of local resources (like organic wastes) based on the existing agricultural culture, and an adequate institutional setting was developed.

The municipality has a specific role to play in this programme: "The municipality will develop urban agriculture as the coordinator, planner and facilitator of actions. It will also implement direct projects in its different zones, with support of the various departments (Public Works, Urban planning, Community Affairs, Cooperation and Development, Environmental Management, Public Relations and Legal Advice), neighbourhoods, the community and in cooperation with other entities (universities, private enterprises, NGOs). It will also guarantee the legal framework that is required for UA development." (Municipal presentation in Havana, Cuba, May 2001).

ACTUAL LAND USE

The city of Santiago de los Caballeros, with its 500,000 inhabitants, is the second city in the Dominican Republic. Land use is rapidly changing from agriculture towards urban construction.

To visualise the extent and type of urban agriculture activities in Santiago, the city was divided into: the *inner city urban* area (34.6 km^2), the *peri-urban* area (29.5 km^2) and the *suburban* area (130 km^2). In the *urban area*, 33% of the vacant or partially constructed areas contain UA activities[1] and another 22% of this land has been classified as suitable for agricultural land use. The total agricultural land-use area counts up to 315 hectares or 9 % of the total inner urban area, including patios, backyard gardens, river- and roadsides and other open spaces.

Due to pressure on the land for housing and the high population

Jacquelyne Acevedo Abinader, *General Coordinator, Municipal Urban agriculture Programme, Santiago de los Caballeros*

density, the presence of agriculture in the poorer neighbourhoods is generally lower than in middle or high-class neighbourhoods. The presence of agricultural land use is relatively high in industrial and institutional areas (especially by schools), and in middle-class neighbourhoods that are generally expanding and include open spaces that are temporarily used for agriculture.

The further away from the functional centre of the city, the higher the presence of urban agriculture. Agriculture is shifting from the centre to other areas, and is characterised by a cycle of location-substitution-relocation. Only in patios and along roads and riversides is agricultural land use of a more permanent character. The main presence of agriculture is on vacant plots and is of a temporary nature.

Most of the *peri-urban* area is subject to a process of urbanisation. Agricultural land use occupies 29 % of the area (ca. 840 hectares) of which 10 % is dedicated to crop cultivation and differs from the inner urban area in that an important part is dedicated to pasture, cattle and pig raising (14 %) and tobacco growing (4 %).

Agriculture thus occupies about 16 % of the total urban (inner and peri-urban) area of Santiago and is the third most important soil use after residential and vacant land use. In this perspective, Santiago is a real agricultural city or modern "agropolis", in which agriculture lives in "conflictual co-existence" with urban construction. Agricultural land use is " on the move" (relocates), but does not disappear with urban growth (del Rosario et al. 1999).

The municipality recognises that agriculture has an important and permanent urban function - food production and income generation - and is embarking on a more systematic inclusion of urban agriculture into urban and land use planning. This function directly responds to the fundamental problem of urban food security.

LAND USE PLANNING: A PROCESS

With the support of a Cuban expert in September 2000, the municipality started to update the classification and identification of non- or partially constructed plots or areas within the urban area, with use of maps, aerial photographs and satellite images. Areas are classified according to their location, land tenure (municipal, institutional or private), characteristics (agronomic, physical and environmental) and potential agricultural land use (agriculture, animal husbandry; temporary versus permanent; monoculture versus mixed land use).

On the basis of this classification, and starting at the end of 2000, agricultural use of land is being stimulated through the dissemination of the objectives of the Municipal Urban Agriculture Programme, by radio, television, journal articles, and through a number of workshops, seminars and meetings. Various demonstration projects (demonstrative gardens, waste recycling and composting, seed and plant nurseries) are also being implemented with the support of different actors.

THE CHALLENGE

The challenge for the municipality now lies in the "institutionalisation" of agricultural land use by either including permanent agricultural land use into zoning plans (see the Box on Havana) and/or stimulating multifunctional and temporary productive use of non-built-up and vacant lands by means of financial or legal incentives (for example tax exemption). This implementation is high on the agenda in 2001. The creation of a municipal department for food security, under which urban agriculture is one component and field of work, also supports a more permanent programme, whose survival does not depend on the interest of only one favourable political administration.

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Agricultural Zoning in Havana, Cuba

One way to include urban agriculture into land-use planning is to include it in zoning policies. For the first time, in the "General urban and land-use plan for the city of Havana" (December 2000), urban agriculture is explicitly mentioned and zoned as an "agricultural corridor" around the urbanised area of Havana:

- Goal
  - Create the urban and land-use conditions that contribute to reach the goals set for agricultural production and commercialisation.
- Objectives
  - Develop 101 hectares of agricultural land responding to the demand of international tourism.
  - Optimise use of land for animal production in the corridor around the city.
- Actions
  - Elaborate a partial land-use plan for the southern part of the city where agricultural soils are located.
  - Localise 63 hectares for intensive crop cultivation that will be added to the 38 hectares already in use.
  - Define the perspective of the agro-industrial complex in the city, related to the type of production and the use of industrial installations.
  - Identify the area where the buffalo will be introduced without affecting the aesthetic and environmental values of the south-eastern part of the province.
  - Solve the water supply to animal production systems through alternative solutions that avoid using groundwater of the city.

Source: General urban and land-use plan for the city of Havana
Council for provincial administration, Department of Physical Planning, City of Havana, December 2000

NOTE

(1) Ornamental gardens and non-soil-bound production (hydroponics) were excluded from the survey.

The El Panecillo Pilot Project in Quito, Ecuador

The Municipality of Quito is challenged by demands to eradicate urban poverty, to improve the urban environment and to promote a participatory style of governance. Urban agriculture is a potential source of food, income and employment, and is part of a multifunctional use of land, and therefore has an important and strategic role to play in this development.

By way of a participatory city consultation on urban agriculture, the municipality embarked upon a process of institutionalising urban agriculture. This consultation was followed by the formulation of an action plan, later implemented into a specific action programme which presently forms a pilot project. It is envisaged that this will be implemented throughout the entire Metropolitan District of Quito.

Two systems of urban agriculture (UA) are found in Quito: *intra-urban* agriculture and *peri-urban* agriculture. Intra-urban agriculture is basically a (part-time) family activity, almost entirely aimed at the production of vegetables. The farming technologies are adapted to the distinctive urban conditions (irrigation with drinking water, hydroponics, and intensive production techniques). In the peri-urban system, the entire household is involved in production, with a trend towards exchanging produce, sometimes for cash.

M. Dubbeling

Maize on steep slopes in Quito

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It became apparent during the city consultation that there are no specific regulations concerning urban agriculture in the legal framework of the municipality, in spite of there being laws and regulations concerning issues influencing UA, like land use and water availability. The general action plan includes the following recommendations:

- Urban agriculture is an urban activity and should be recognised, incorporated and regulated under specific municipal policies.
- Credit and incentive programmes for urban agriculture should be developed.
- Technical support systems and programmes for the production, processing and marketing of produce should be developed.
- An urban environmental management system needs to be established.

The decision was made to start implementing the action plan through a pilot programme in the neighbourhood of El Panecillo. El Panecillo is located in the historical centre of Quito, and was selected due to its specific characteristics. It has a large area of protected land unsuitable for construction and already includes a family garden project. This project was initiated in 1994 under a rehabilitation plan with aims to stimulate use of municipal land for UA, avoid illegal occupation of land and improve livelihood conditions for the people.

The community of El Panecillo selected four concrete areas for intervention:

- setting up of composting and vermiculture plants (providing direct employment to 15 youths);
- installation of a community nursery for native ornamental and food production species;
- supporting the existing family gardens for production of vegetables, medicinal plants and small fruits (involving 30 families, and mainly women); and
- construction of two agro-industries for vegetables and medicinal plants (providing direct employment to 23 families).

Through these initiatives, access to capital and knowledge is provided, but central to success and sustainability is the provision of secured access to land. Actors involved in the pilot programme formulated the following land-use regulations:

- use of symbolic rents for municipal lands used for agriculture;
- preferential property taxes for private land areas under agriculture (10% discount); and
- long-term (5-10 years) user-right agreements for municipal lands used for agricultural activities coordinated by producer associations and the agro-industries.

A series of reports have been published with additional information and criteria for the proposed land-use regulations. For instance, the implementation of symbolic rents and preferential property taxes should be principally aimed at the urban poor (presently representing 50 % in El Panecillo). The agricultural production should also be oriented towards organic farming and should incorporate erosion-control techniques to avoid landslides (a general phenomenon in Quito).

To date (May 2001), the programme has facilitated the official recognition of urban agriculture and its integration into the new general Land Use Plan for Quito (2000-2010). The proposals relating to the (regulation of) secure access to lands, transformation and commercialisation are at this point at the Municipal Council and will be legalised shortly. The municipality is also working on the institutionalisation of a municipal urban agriculture programme, that will be hosted under the Department for Social and Economic Development, and will receive a percentage of the municipal budget.

The pilot project started in September 2000. It is financially and technically supported by IPES, the Urban Management Programme for Latin America and the Caribbean (UMP-LAC/UNCH-HABITAT/UNDP) and the International Development Research Centre (IDRC), and is implemented by different governmental and non-governmental actors.

Jacques Schievink

Farming in the Upper Bieslandse Polder

While urban agriculture is considered appropriate for cities in developing countries, the potential for local food production in and around cities in industrialised countries is rarely highlighted. Policy to support its development is even rarer. Post-war European agricultural policy has concentrated on the production of large quantities of cheap food to avoid hunger and to ensure social stability. Economic arguments dictated that such a policy could be best realised through agriculture practised by as few people as necessary on as large a scale as possible in order to reduce costs per unit and maximise output. These policies have led to monocultures in agriculture and ecology in order to maximise scale and efficiency, with land-use planning subsequently separating functions.

Multifunctional Land Use

An Opportunity for Promoting Urban Agriculture in Europe

Food production in and around the city did not fit into this mould. Policy-makers considered it small-scale, and therefore inefficient, not economically beneficial and thus undesirable for society. Social and environmental benefits were ignored.

In Europe, the time now appears ripe for change. At European Union and national state levels, the negative consequences of post-war agricultural policies have been acknowledged, and the prohibitive costs of maintaining such policies in an enlarged European Union are recognised. Many farmers are faced with obligatory diversification of their farms to survive and are seeking a means of combining agriculture with other means of income. At the same time, cities compete with each other to attract investment, and local politicians seek to create high quality, healthy and attractive living environments for their own citizens. There is a growing need to meet a large number of societal needs on scarce urban land.

MULTIFUNCTIONAL LAND USE AS A SOLUTION

Many possible win-win situations exist to meet these challenges as urban planners seek to create attractive land-use combinations and satisfy the many demands placed on scarce land in and around cities. Many of these combinations can be based on urban agriculture, for example:

- agriculture combined with childcare and educational facilities;
- reed production combined with recreation and wastewater treatment;
- aquaculture combined with water storage and recreation;
- production of added-value agricultural products such as cheese, jams and cosmetics, combined with recreation and tourism; or
- urban forestry, which offers health and microclimate benefits, combined with energy crops and recreation.

A good example of combining land use functions in a heavily populated area is the case of the Upper Bieslandse polder in the city of Delft, the Netherlands.

PLANNING IN DELFT

Delft is a city of around 95,000 people in the densely populated province of South Holland. The region is home to approximately 3.4 million inhabitants and population density is 1,179 inhabitants per square kilometre (CBS 2000). As a result, every square metre of land has its designation under the country's planning system that operates at three levels: national, regional and local, which all have roles to play in spatial planning.

In theory, the lower level government should operate within the framework of the objectives set out in the policy of the higher levels. In turn, the policy of the higher levels of government should provide general guidelines within which plans proposed at lower levels can be realised. Of course it is not always possible to accommodate the wishes of all. The plan for mixed use of the Upper Bieslandse polder provides an interesting example of integration of land-use functions and policy objectives.

The plan combined the following land use functions:

- (organic) dairy agriculture;
- recreation;
- nature (re)development;
- (limited) natural water treatment; and
- an important awareness-raising and educational function.

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THE UPPER BIESLANDSE POLDER

The Upper Bieslandse polder lies on the eastern urban fringe of Delft (see Figure 1) and comprises a total of some 35 hectares. Before the realisation of the plan described here, six tenant farmers operated in the area on one-year leases from the municipality of Delft. Longer leases were not granted because the municipality wanted to be able to have access to the land on short notice in case it should decide to develop the area[1]. For the farmers this gave rise to uncertainty and, with six farmers on 35 hectares, use of the land was inefficient in agricultural terms, even though each farmer also worked land elsewhere in the area.

THE PLAN

In 1996 Jan Duijndam, one of the six farmers, who had for some time been considering converting his business into an organic farm, decided to act. Together with a planner from the Delft Initiatives for Nature group (IND), Jacques Schievink, discussions were initiated with the other farmers in the area. Schievink stood at the base of the plan in 1995, when he suggested ecological development and management of the ditches that regulate water levels for farmland in the polder (and got the Delft municipality's environmental prize). Agreement on a plan was eventually reached between the six farmers, including Duijndam's take-over of their tenancy rights.

The Upper Bieslandse polder plan was finalised in March 1997 and, importantly, was adopted in the manifestos of a number of local political parties for the municipal elections of May 1998. Election of a new 'green' administration meant that the plan could go ahead. Work on the ground to implement the plan began in the winter of 1999-2000. Total costs of implementation, excluding maintenance, were around 250,000 Dutch guilders (US$ 100,000).

THE ECONOMICS

Duijndam now has a twelve-year lease of the land from the municipality. He added 30 of the 35 hectares of the Upper Bieslandse polder to the 50 hectares he already farmed organically in the area, to improve economic viability. As for many organic products in Europe, organic milk commands a (slight) premium price in the Netherlands.

The remaining five hectares Duijndam devoted to nature development, setting land aside for traditional Dutch polder landscape features with an ecological function: a water meadow with fluctuating groundwater level, reed bed and marshy woodland. Each gives a habitat to wildlife that is under more and more pressure from rising urbanisation. The nature areas are laid out along the edges of the site to make them visible for visitors making use of the footpaths, cycling and bridle paths constructed as part of the plan. This also means that farming can be carried out more or less unrestricted in the centre of the area (see photo).

Whilst this land does not bring agricultural income, it does generate subsidies from the provincial government for land management that benefits nature development and recreation. In addition, Duijndam receives subsidies from the local water board ('waterschap') for his contribution to their integrated water management strategy. In effect, the farmer carries out the work of the others and gets paid by them for that work. Such subsidies deliver approximately 10% of the farmer's income.

Similar initiatives exist elsewhere in the Netherlands where local authorities have an obligation to provide a certain amount of water storage for water-management reasons. By paying farmers to devote a part of their land to water storage, the municipality 'buys off' its obligation relatively cheaply and, in effect, the farmer gets paid for cultivating water.

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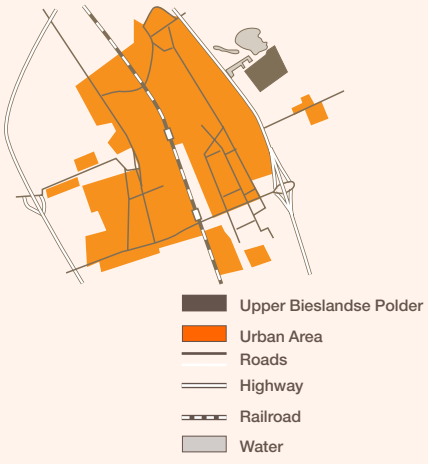
CONCLUSIONS

The case of the Upper Bieslandse polder shows that urban agriculture can offer cities in industrialised countries more than "only" food production. Through a combination of land uses and integration of policies between different organisations at different levels, Delft has obtained a viable organic farm, an attractive recreation area and has restored the opportunities for wildlife in the urban fringe. Combining land use functions can deliver extra income for farmers from unexpected sources. This in turn provides a valuable resource for environmental education in a densely populated urban region. Essential benefits in environmental, health, education, recreation and nature terms are provided to the city and its residents. Combining land use functions can also deliver extra income for farmers from unexpected sources.

Since food production is not an argument for local politicians and planners to allocate scarce urban land to agriculture, these additional benefits of urban agriculture, as 'host' of other land use functions must be made clear. In this sense, interpretation of the term urban agricul-

The Upper Bieslandse Polder



In Europe, almost 80% of the population now lives in urban areas (European Commission 1996). Cities have become largely disconnected from their surrounding countryside. Post World War II agricultural policy in Europe has turned agriculture into a 'food generator' with which city dwellers have little affinity. The one-dimensional role of agriculture is now being challenged by a number of factors: the enormous cost of the European Common Agricultural Policy (CAP), concern amongst consumers about food quality, worries about and the effects of pesticides and other chemicals used in food production on health and the wider environment, genetically modified crops and animal welfare issues (Pederson and Robertson 2001).

There are limits to the powers of planners. For years now, two nesting site poles have stood in the open space, now farmed by Jan Duijndam in the Upper Bieslandse polder. The aim was to attract storks back to the area, a rare bird in The Netherlands nowadays. Finally, this year the stork has returned to nest in Delft, not on one of the poles, but on a high-rise apartment building on the edge of the city 500 metres away!

ture should be broadened to include cultivation of useful products and performance of valuable tasks for society.

The Dutch planning system offers little long-term security (twelve years is not a long lease), but perhaps this is inherent in a situation where so many competing land-use demands exist. Inclusion in local land-use plans would provide urban agriculture with a firmer legal basis.

Urban planners must translate politicians' (still too often) one-dimensional policies into three-dimensional spatial realities on the ground. Realisation of multifunctional land use demands integration of planning between different levels of government. In the highly institutionalised planning systems common to most industrialised countries where national, regional and local plans are drawn up, such an approach even if sometimes difficult, should be possible. This integration should be accompanied by the application of innovative economic instruments, which favour multifunctional land use, such as subsidies or tax breaks where possible. Farmers should be made aware of the possibilities of such support.

Integration of policy *between* different types of organisation is also vital. In the Netherlands, for example, independent water boards have a key role to play in water management. Any decision to combine a productive function of urban agriculture or aquaculture with water storage, recreation or a natural park would require agreement between, amongst others, the water board, the province and the municipality.

The success of the Upper Bieslandse polder can be at least partly attributed to the fact that representatives of three different groups of society – farmer, environmentalist and municipality – realised the benefits of combining multiple land use in the area.

NOTE

(1) For some years rumours had circulated of plans for construction of a high value housing development on the site, even though the regional plan did not permit this.

Spanish edition

The *UA Magazine* has been published in Spanish: *La Revista Agricultura Urbana*, No. 1. Soon No. 2 on livestock and No. 3 on health will also be released in Spanish. From now on the *UA Magazine* will be released in English, Spanish, and French. Furthermore a more regional focus will be developed, with a focus on Latin America in the Spanish edition and a focus on West and Central Africa in the French edition.

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Planning for Urban Agriculture in Suburban Development in Canada

An examination of suburban development plans and official plan documents revealed that planning for urban agriculture in suburban development planning is non-existent in North American cities. While proponents of urban agriculture seek land for food production on remnants and left-over spaces in the core, built up areas of cities, they ignore the potential to include spaces for urban food production in the settlements of the future, from the outset.

Vincenzo Pietropaolo

Sara Kerr, co-founder, Garden of Friends

The Greater Toronto Area (GTA), is the fastest growing city in Canada, adding 100,000 new people a year. Between 1976 and 1996, the GTA lost 62,000 hectares of farmland to development, with another 40,000 hectares designated for development. It is projected that by the year 2026, 40 % of all agricultural land in the GTA will have been lost to development (Toronto Food Policy Council 2000).

TORONTO'S ETHNICALLY DIVERSE SUBURBS

Toronto is often described as one of the most ethnically diverse cities in North America. In 1996, 48 percent of the population of the city of Toronto were immigrants, and one in five residents arrived in Canada after 1991. Growing numbers of these recent immigrants have settled directly in suburban municipalities outside the core areas of the city. They seem to concentrate in particular suburban areas. For instance in Vaughan (north of Toronto) 42 percent of all immigrants are from Italy, while in Markham, one third of the residents claim Chinese as their ethnic origin.

Next to large single family houses with wide green lawns (the stereotype of suburban North America), new suburban housing developments include a wider range of housing types, like single family houses on smaller lots, townhouses, c ondominiums, and multi-unit housing. These new types of housing provide limited or no private outdoor space for gardening and a scarcity of public open space.

This raises questions about suburban development plans taking into account both the ethnic diversity of residents and their traditions of food production against the reduction of both private and public open space. However, little thought has been given to this aspect of land use either by municipal planners or by private land developers.

It is only recently that natural features such as woods or ponds have begun to be viewed by developers as elements of the landscape to be preserved rather than bulldozed. On the outskirts of Toronto, billboards advertise future housing developments with images of nature and names of new housing developments include "forest", "wood", and "lake". These elements of the natural environment contribute to the desirability and marketability of building lots which developers sell at a premium (Marsden 2000). However, site plans for suburban housing developments in the GTA do not include space for community gardens or urban agriculture. Space for growing food is not seen as an environmental amenity that would appeal to new homebuyers, despite the fact that genetically modified foods and food security is the subject of daily media reports, and gardening is the fastest growing recreational activity amongst urban residents.

In a recent study by the author, 30 immigrant gardeners living in the GTA were asked about their gardening histories and practices[1]. While planners and housing developers continue to assume that suburban gardens are primarily ornamental or for recreational use, it was found that immigrant gardeners often put their gardens to productive use for growing ethno-specific vegetables and herbs.

In some Toronto suburbs, social housing units in high-rise apartment buildings, accommodate new immigrants who have no access to private land for growing food. In a neighbourhood near York University, two of my undergraduate students developed a community garden in the vacant lot of a local church. In the Garden of Friends, now in its third year, twenty low-income high-rise residents from diverse parts of the world grow vegetables, which include herbs from Thailand, chillies from Mexico and bitter melon from China. A few blocks away, the African Food Basket,

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an organisation, which provides Afro-Caribbean food to subscribers, is housed in what looks from the street like a typical suburban single family house. The backyard is intensively farmed by a community of gardeners who live in nearby apartment buildings. They experiment with growing foods that are Afro-Caribbean in their origins, including callaloo, okra, and yams. This intensification of low-density suburban open space, which is a recent phenomenon in Toronto, is hampered by suburban developments like smaller housing lots, more multi-units, and more limited private and public open space.

Vincenzo Pietropaolo

Chinese gardener harvesting long squash

An Italian gardener from Calabria who moved to Canada in the 1960s, lives in a single family house with a large backyard. He can grow beans, tomatoes, and other vegetables for his extended family. In contrast, a Chinese gardener (see photo) who immigrated in the 1980s lives in a townhouse with a backyard about one third the size of that of the Italian gardener. She grows Chinese herbs and long squash, which she overwinters in the basement. A recent Punjabi resident has an even smaller backyard, which only allows her to grow Indian herbs and spices in raised beds.

STEPS TO ENCOURAGE URBAN AGRICULTURE IN SUBURBAN DEVELOPMENT

As a first step, urban agriculture and community gardens need to be incorporated into suburban development plans[2] (2), addressing the preservation of prime agricultural land for future generations as community farms or small market farms and demonstration projects. Brian Donahue's recent book, *Reclaiming the Commons* (Donahue 1999), describes a community farm, in a suburb in Massachusetts, which provides training for youth as well as local produce. Some outer London authorities own farms which are run as commercial enterprises next to accommodating school visits (Garnett 2000).

Second, the popularity of condominium developments in North American cities as a form of housing tenure that includes communally owned and managed common spaces, may also provide opportunities to incorporate community farms or gardens. These could become sub-urban-based models for urban agriculture, especially if concerns about food security and access to organic produce intensify.

Third, planners could accommodate the adaptive reuse of existing and mature suburbs. Large backyards could become community gardens, providing space to grow food. Empty lots beside libraries or churches can become community gardens and public parks can provide allotments for growing food. Such changes would require a rethinking of the traditional suburban landscape with private open space that is primarily recreational or ornamental rather than productive.

Finally, incorporating urban agriculture into suburban development requires outreach by advocacy groups to suburban planners, politicians, and especially to housing developers, to educate them about the desirability and long-term feasibility of preserving productive land for growing food within suburban housing developments. Urban-based advocacy groups for urban agriculture and food security must extend their interests into undeveloped and newly developed areas on the urban periphery. This means taking a regional perspective and becoming involved in the development of regional plans, which outline long-term growth patterns and land-use planning objectives. Advocacy groups for urban agriculture must get involved in closely scrutinising development proposals for new suburban developments. Citizens, working in conjunction with municipal planners, can point out the desirability of setting aside land for community gardens as a way to meet public open space requirements and to preserve natural heritage.

(This means that planners must expand their definition of both open space and the preservation of nature: not only playing fields but gardens, and not only woodlots but agricultural land for locally grown vegetables.)

CONCLUSION

In North American cities, including Toronto, food security, urban agriculture, and community gardening advocacy groups have focused primarily on finding land for food production in the central core areas and in established neighbourhoods of the city. Almost no attention has been paid to the new settlements that are being planned on the rural-urban fringe. Yet these are settlements that will absorb population growth and increasingly are the immigrant reception areas for new immigrants.

Paying attention to the potential for urban agriculture in new suburban developments involves taking a long-term view - twenty years into the future - and learning how to use the planning system. It involves working with planners, politicians, developers and local communities to incorporate principles and objectives into official plans, making input to development plans, and creating guidelines, models, and educational tools directed at suburban populations living on the urban fringe. Suburban developments continue to be built at a rapid rate on the edges of our cities. Unless we incorporate urban agriculture and space for community gardens, these residents and their children will not have the opportunities to grow their own food or to achieve any form of food security in the future.

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NOTES

1) This research is presented as an exhibit, *Growing Cultures*, at the Royal Ontario Museum, Toronto, May 2000 to January 2002 and is co-produced with photographer Vincenzo Pietropaolo.

2) The city of Seattle approved a resolution in 1992 that community gardens be part of the comprehensive plan of the city, particularly in medium and high density areas. In Austin (Texas), Minneapolis (Minnesota) and Boston (Massacusetts), there are zoning provisions for community gardens (Raja, 2000).

For several years, the Tropical Institute has been surveying intra-urban agriculture, particularly focusing on two categories. Firstly, the home gardens, and secondly the shifting but irresistibly attractive subsistence, mixed and market-oriented gardens

Isabel Madaleno

Cultivator in Prudente

Urban Agriculture **Supportive Policies**

Lisbon (Portugal) and Presidente Prudente (Brazil) from Two Distant Cities

The *home gardens*, which are usually unsponsored, statistically non-existent, but affectionately cared for by families, especially the female members. They are small biodiverse areas surrounding houses or inner and backyards within residential complexes, in which ornamental and fruit trees are combined with vegetable crops, spices, medicinal shrubs and grasses, and sometimes livestock. The *subsistence, mixed and market-oriented gardens*, mainly occupy idle plots in towns. Very often, they are illegally tended by the un- or underemployed using annual crops, as individual efforts of job creation, food provision or simply a way to enhance contact with nature, keep busy, and maintain physical and mental stability. Both types of urban agriculture have not only a social and economic function within city's boundaries, but also remarkable ecological benefits.

Even though urban agriculture has survived, either inside the city or at the outskirts, it is very often forgotten, or worse denied by formal planning, underestimated by urban management policies, and invisible to many researchers. Nevertheless, there are some quite remarkable public programmes, intended not only to teach but also to promote food production, processing and marketing inside towns, cities and metropolitan areas throughout the world.

This is the case with two quite different cities, united only by a common language. Lisbon, the capital of Portugal, and Presidente Prudente, an urban centre in the interior of south-eastern Brazil. While the municipality of Lisbon accounts for 700,000 people, Presidente Prudente has about 170,000. Lisbon has a mild temperate Mediterranean climate, whereas Prudente has a sub-humid tropical one. Per capita income in Brazil is less than half that of Portugal. So it is not surprising that the municipal programmes to promote agriculture within their city boundaries in these two cities have no common goals.

PEDAGOGICAL GARDENS IN THE PORTUGUESE CAPITAL

In the municipality of Lisbon, intra-urban agriculture is a micro-scaled phenomenon but widely practised in inner yards where fruits like oranges (even bananas and avocados) together with subsistence horticulture can be found. In the more peripheral neighbourhoods, scarce vacant plots and small farms (quintas) are used to grow vegetables and raise small livestock (usually consumed by the households). Some of these plots are rented from the municipality for a symbolic value, since Lisbon has one of the most expensive urban soils in Europe.

The problem is that these idle spaces are becoming scarce. Farmers are compelled to sell their farms for urban development. Modern and expensive tertiary buildings are replacing aging property, and consequently, green spaces are shrinking. As Lisbon residents were also aging at an abnormal rate, the municipality began to develop subsidised apartment blocks, much cheaper and accessible to the youngsters, at the expense of the "institutionalised" peripheral agriculture and ecological zones. On the other hand, industrial zones where cleaned and beautified (as happened with the Expo 98 area, which contributed to revitalising the eastern part of the city). However, as the birth rate has been decreasing all over the

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country for years, the schools in most of the older neighbourhoods of Lisbon are starting to become empty.

Strategies for getting children back into these neighbourhoods, such as allowing parents to choose a school near work, creating alternative tasks for teachers as well as attractive activities for pupils, were devised by the municipality together with the Ministry of Education. In the 1990s, "pedagogical farming" was promoted citywide. All newly built preparatory and primary schools were planned to have their own food garden. All the old ones, providing they had some sort of adequate space, were also given the necessary equipment.

Environmental education is not only well accepted by adults, but also a way to engage them further in the business of urban agriculture. Parents contribute inputs for compost and are invited to buy organically grown produce whenever there is surplus available.

Success stories of pedagogic gardens are such that the municipality (the Green Cabinet) developed a City Farm in 1996, where ducks, rabbits, pigs and sheep are raised and can be visited. The families are invited to participate in the preparation of the farm bread, cheese, and cakes. More than 100,000 people explore Lisbon City Farm (Olivais) every year. Additionally, 2001 marked the beginning of a contest sponsored by a public bank in collaboration with the municipality, in which a prize will be extended for the best food garden from the capital city. Eleven schools have applied as have twenty-nine private growers.

These initiatives, both by the municipality and the private sector, are an initial effort to reintegrate anonymous but numerous and increasing gardeners, into urban planning and to revise the municipal regulations to facilitate multiple uses of land in Lisbon.

THE FEED PRUDENTE PROGRAMME

Presidente Prudente is located in the highly industrialised Sao Paulo State, Southeast Brazil. Under the municipal programme, "Feed Prudente", the use of non-built-up plots for vegetable growing by low-income families is stimulated. Local authorities lack the funds to maintain these public areas. As seen in 1999, it is the retired and unemployed, particularly men, who extensively produce sweet potato, cassava and several types of legumes all year round, using organic fertilisers. Extension services provide ploughing machines, water pumps, and supply free seeds for the first crop, and make efforts to prevent cattle raising inside the city (Madaleno 2000).

The initial objectives of the programme were to support community gardening, to ameliorate the quality of nutrition in average households, to provide elders with a sort of occupational therapy, and to create jobs for the needy, thus fighting hunger and unemployment at the same time.

The programme started in 1997, aiming to reach 200 families. Two years later, it had benefited officially only 50, but, as was learnt, many other beneficiaries started with the programme (using the land, technical and financial impetus given by the municipality) after which they continued on their own. In fact, city gardeners tend to only come back for help whenever they want to increase their cultivated area, which varies between 500 to 2,000 m^2. The Secretary of Agriculture further provides free legal advice over contracts with private plot owners.

The cultivator on the photo on page 38 has two plots, both situated close to his house in a peripheral neighbourhood called Garden Itapura, where he grows cassava, sweet potatoes, chicory and other horticultural crops.

Another shift from the initial plan was to give up on community work and cooperative promotion, because the urban agriculture practitioners tend to act on a family unit basis.

The plan was to have about 30,000 m^2 of public land occupied by cassava, followed by several species of beans and corn (each with 10,000 m^2), while sweet potatoes and pumpkins should cover around 5,000 m^2 each. By the end of 1999, 42 officially supported market gardens mixed these planned crops and eight plots were exclusively horticultural. Results from the programme were, apart from irrefutable food and profit provision, a raising of interest in organic agriculture and produce in poorer neighbourhoods, and a decline in the number of complaints about insect and rat proliferation within the city boundaries.

CONCLUSION

Local governmental programmes have been addressing a broad range of problems and difficulties posed by city gardening. In Western Europe, higher per capita income permits less involvement of municipalities in food provision and job creation actions as the poor are usually able to get help from national-level social programmes. Urban agriculture in Lisbon is synonymous with leisure, environmental education, healthy food production and processing, green space and genetic reserve preservation. On the other hand, the main public goals of urban agriculture programmes in Brazil are to increase income, create employment, and improve nutrition and health in the less wealthy sectors. Consequently, the integration of agriculture into urban planning is in both cases as diverse as the cities and citizens themselves.

Composting tank in Lisbon

Isabel Madaleno

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Joseph Batac

MAFESO (NGO) network meeting on urban Agriculture

Planning in a Changing Environment

The Case of Marilao in the Philippines

Marilao is a municipality with approximately 15,000 households located on the fringe of Manila in the Philippines. A few years ago, Marilao's authorities faced a typical peri-urban dilemma. With only 2,625 hectares of land area, just five kilometres from Metro Manila, Marilao's mayor could not find affordable land for a new waste disposal site. There were more than 850 business firms and housing projects that competed for the use of municipal land.

The answers to the challenge "Where do we bring our waste?" posed in 1995 by the mayor, involved complex concepts high in capital investment requirements, but no affordable nor practicable ideas. The precarious situation was emphasised during a series of community planning workshops in 1997, in search of reducing waste by getting all major stakeholders involved. With the gigantic waste problems of Metro Manila in mind, Marilao's authorities decided to go a different way.

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The problem, however, was that the anticipated involvement of the community had to be tested in a country where the style of municipal governance is predominantly administrative-oriented rather than participatory. Planning has purely been a technical matter guided by a corresponding manual. However, the preparation of the development plan as wanted, required interactive consultations with different sectors of the community. Most of the planning officers found it difficult to organise such multi-sectoral consultations. The tools and methodologies required for participatory processes had to be adopted from the NGO community. It was even more challenging to apply them in an environment, which is traditionally managed in a regulatory style. Moreover, experience has shown that a regulatory framework alone is hardly effective, even in the Philippines, which has one of the most stringent environmental laws in Southeast Asia.

Thus, a new style of local governance was required. The basis for this new style was given in 1992, when municipal local government units (MLGUs) were mandated by law to be autonomous with specific powers, functions and revenue. The mandate was anchored in certain principles, among which is the pursuit of ecological balance and participatory processes of managing development. Each of these 1,525 units in the Philippines can have their own interpretation of these two principles, given their actual conditions and management capacity to change them. Within this favourable atmosphere for nearly autonomous local governance, the municipal authority of Marilao together with NGOs, started in 1996 to brainstorm on appropriate solutions, more stakeholder participation and on investment programmes to overcome the waste crisis. It was estimated that the current landfill would be full in about 3-5 years. Another study revealed that almost 50% of the current content was biodegradable waste; 30% could be recycled and only 20% consisted of non-usable materials.

Both the leaders of the municipal local government units and of the NGOs decided to look for ways to recover the major portion of the waste. Four months later, a proposal was finalised for the municipality to establish a composting facility, while the NGO commu-

nity would address the necessary change in behaviour of the main waste generator: each and every household.

To ensure the stable supply of organic household waste, source separation was initiated at the household level in late 1997, followed by different campaigns in the next two years. The activities in these campaigns involved workshops, cross visits, seminars, training, video films (on community cable TV), the playing of jingles during collection, providing the collection crew with a uniform, heralding the message of segregation, printing of calendars and community newsletters, and periodic letters from the mayor. The costs of these activities were shared between the NGOs and the municipality.

In general, principles of marketing were employed for all activities, starting with an analysis of the clientele as to their existing knowledge, attitude and practices (KAP). The ideal profile of potential clients was formulated and its 'appeal' determined. The distribution channels as well as the promotional activities were then set up. NGOs drove the process of product development for community change. The process utilised participatory planning techniques that were designed by the NGO. The planning interfaces again involved both the NGO leaders and the municipal staff, and were placed within the Municipal Development Planning Council (MDPC). Each year, a work plan was agreed upon and translated into investment by the municipality. The agreement only takes effect after a series of consultations with community stakeholders and the mapping of internal strengths and weaknesses as well as of external threats and opportunities. Then, the identification of strategies, followed by a consensus on the preferred strategy, the translation of this consensus into activities, and the municipal investments as well as NGO counterpart to implement the strategy. These investments included developing models on urban agriculture and improvements on the collection system for solid waste management. From 1995 to 2000, a total of USD 10,000 was allocated for developing models on urban agriculture. The investment for the collection system reached USD 15,000.

Breaking with traditional training habbits

THE NURTURE PLAN

The regular supply of biodegradable waste allowed the municipality to produce compost at a rate of approximately one ton per day using a compost fungus activator to reduce the composting time from three months to one month. The set-up of the technology needs both waste from urban households and agriculture. Initially, the compost was given to urban farmers together with seeds and tools. When the municipalities realised that the compost supply could not cope with the demand, and farmers also asked for application guidelines and related information, the NURTURE plan (*Networking for Urban Renewal Through Urban Ecology)* was established.

The NURTURE plan identified the farmers who practised solid waste segregation and have open spaces within their yards and/or in the contiguous areas. Three strategies were identified on priority crops: (i) food security, (ii) recreation and aesthetics, and (iii) livelihood. The farmers targeted for "food security" are the urban poor who cultivate high nutritive crops that supplement for micronutrient deficiency, especially among children. The target group for "recreation and aesthetics" is middle class households who grow ornamentals and plants with fragrant flowers; and the "livelihood strategy" addresses farmers with growing potted crops/flowers and produce during the off-season.

All three groups encountered the problem of access to land. The NURTURE plan addressed this by developing compact gardens with standard soil composition. At first, the plan targeted appropriate application guidelines, but it had to struggle with large inner-urban variations in soil quality, and some urban areas even had no soil at all but only concrete. Yet they faced a demand from farmers using pots and other containers to grow vegetables or flowers. To address this situation, the municipality carried out a series of practical experiments in 1999, which resulted in a standard substrate with the compost as the predominant material for pot cultures and raised beds with rain shelters.

The farmers were organised under the umbrella of the Marilao Federation of Service Organisation (MAFESO). The MAFESO is a network of 75 community-based housing associations, church/religious groups, sectoral groups like women and transport workers, and civic clubs. In each of these organisations, there are numerous members who have been actively involved in the activities of solid waste and urban agriculture. These members periodically plan and discuss the activities within a working committee under the MAFESO and the Municipal Development Planning Council (MDPC). The members were critical in technology applications and testing, land access arrangements and implementing the investment plan as approved in the MDPC.

THE MESSAGE IS SPREADING

Metro Manila launched a segregation campaign that ended in failure just a few weeks later. After a meeting with Mayor Duran of Marilao, the chairman of the Government of Metro Manila instructed his senior staff to study the Marilao model via one-day cross visits. Several more local governments went to Marilao for a cross visit to learn about the project. In addition, national government as well as

REACHING HOUSEHOLDS AND URBAN FARMERS

Initially, the adoption of the practice of waste segregation was slow but accelerated over time. The municipality offered as incentive a predictable and reliable collection of the *segregated* waste, and a reliable waste collection means a lot in Marilao. Within three weeks, the 500 households in the area adopted the practice, seeing that the waste collection really was predictable and more frequent. After three months, a next area with 400 households decided to adopt the practice. Another 2,000 households from the contiguous area followed six months later, and the municipality had to buy more collection vehicles to keep the promised collection frequency. Today, almost all the 15,000 households of Marilao benefit from the system by providing source separation.

donor agencies published articles on the project, and in April 2000, the wife of Philippine President Estrada visited Marilao to learn about urban agriculture. Officials from the largest NGO in Metro Manila working on solid waste management and recycling accompanied her.

All of these interested groups and institutions had one common question – How did the programme start? The Marilao experience showed that the way to success is a stony one, which challenges old structures and planning habits. The required shift in mindset and style of gov-

Joseph Batac

The compost 'bed'. The bed layers are alternatenaly household waste and agricultural waste

Composting has been promoted by the national government under a specific programme since 1990, but it was more wishful thinking than implementation. Marilao was probably the first municipality actively implementing this policy.

ernance to manage development with community change can only happen when there is a strong political will. This is necessary to motivate the NGO community as well as the households. Once this political will is in place, the technical aspects can be modified with a greater degree of tolerance for correction in the context of improvement. The Marilao experience also showed that Municipal Planning can serve as a focus of development, as long as the commitment of the local government is ascertained, and is characterised by a more managerial style. This commitment then easily translates into investment for community mobilisation and logistics for both short and long term.

PLANNING FOR URBAN AGRICULTURE : A REVIEW OF TOOLS AND STRATEGIES FOR URBAN PLANNERS

Quon Soonya. 1999. CFP Report Series. Report 28, International Development Research Centre (IDRC) Ottawa.

Based on published and "grey" literature and a survey of 26 urban planning professionals from 18 cities around the world, key planning-related constraints facing urban farmers were identified as well as possible responses to these constraints. Land-use issues are of particular concern to urban farmers. These issues are compounded by the urban planning policy context through, amongst others, a lack of formal recognition. Important recommendations cited in literature and from planners are changes to the land-use planning policy level, participation in new multi-disciplinary institutions responsible for all facets of urban agriculture in a community, and establishing records of urban agriculture. It was found that urban planners have opportunities to permit and support urban agriculture, given their position as regards decision-making at the various levels. Planners could use their influence for change, forge alliances and facilitate opportunities for urban farmers.

URBAN LAND TENURE AND PROPERTY RIGHTS IN DEVELOPING COUNTRIES: A REVIEW

Payne G. 1997. London: Intermediate Technology Publications (ITP). ISBN 1_85339_400_9 : GBP 12.95 (pbk).

Payne has provided an annotated and very thorough literature review on a very important aspect of urban agriculture. Indeed, urban land tenure and property rights play an even more vital role than in rural areas. Often, there are frictions between different systems, particularly in urban areas where land is scarce and expensive. Access to credit very much depends on the definition of property rights. Changes in ownership may have very drastic effects on prices of land and, therefore, its use by the urban poor. In this publication, the main tenure types are catalogued and explained: customary tenure, private tenure, public ownership, religious concepts and indigenous vs. imported concepts. The author concludes that careful analysis of the existing systems should be carried out before embarking on major reforms. This is all the more so since tenure measures as a policy tool are rather inflexible in comparison with fiscal and monetary policies. Interestingly, full tenure turns out to be not essential to increasing levels of tenure security. In Botswana and Indonesia, the establishment of a statutory system (i.e., by the state) was firmly grounded on traditional principles. At the end, we find an elaborate, annotated bibliography and a very welcome glossary of terms. There is also a typology of the main categories of land tenure.

AESTHETICS, FUNCTIONALITY AND DESIRABILITY OF THE SUSTAINABLE CITY

Culot Maurice 1997. European Foundation for the Improvement of Living and Working Conditions. Wyattville Road, Loughlinstown, Co. Dublin Ireland. ISBN 9282749231

This publication addresses the renewed focus on the desirability of the city, a phenomenon as essential as ecological perfection and economic health for a city to survive in the long run. The author looks at urban forms placing modern and functional architecture, which breaks with tradition and advocates zoning and separation of functions, against European city-building tradition, with its consistent mix of human activities. The report concludes with recommendations for representatives and officials making a plea for this renewed pluralism. This renewed interest stems from a too-long reign of functionalism that left no space for the human need for buildings that are evidence of an alternative to the destruction and loss of the European city. Briefly put: we should strive again for the 'city of desire'.

Spanish edition

The *UA Magazine* has been published in Spanish: *La Revista Agricultura Urbana*, No. 1. Soon No. 2 on livestock and No. 3 on health will also be released in Spanish. From now on the *UA Magazine* will be released in English, Spanish, and French. Furthermore a more regional focus will be developed, with a focus on Latin America in the Spanish edition and a focus on West and Central Africa in the French edition.

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FURTHER READING ON URBAN AGRICULTURE AND URBAN PLANNING

THE EARTHSCAN READER IN SUSTAINABLE CITIES

Satterthwaite David (ed.). 1999. Earthscan Publications, London, *Stylus Publishing, LLC.*

Satterthwaite provides an introduction to the field of sustainable cities in 20 articles. Part I brings together a wide range of published articles covering the key issues. Furthermore, concepts linking sustainable development and cities (Part II) as well as sectoral programmes contributing to sustainable development in cities (Part III) are discussed. The section on sectoral programmes includes chapters on urban agriculture and planning green cities, waste recycling and building and designing with nature. Part IV provides case studies on innovative action plans (Local Agenda 21) at the city level, from South and North America as well as information systems and urban sustainability indicators. The last part (V) places sustainable city development in a wider regional and global context. (NB)

URBAN AGRICULTURE: CAN PLANNERS MAKE A DIFFERENCE?

Greenhow, Timothy. 1994. CFP Report Series Report 12, International Development Research Centre (IDRC) Ottawa:

Greenhow examines the way city planners look at urban agriculture in three countries: Lesotho, Botswana and Sweden. The basic question is to what extent planning plays a role in influencing the spread of agriculture in urban areas. Gaborone, Greenhow concludes, has neither the subsistence need nor the planning attitude conducive to widespread urban agriculture. In Maseru, inhabitants farm out of necessity and suitable preconditions exist that favour urban agriculture. In Stockholm, policy environment is such that urban agriculture is seen as a valuable component within a new approach to planning, with the environment and the sustainable city in mind. The paper ends with a number of recommendations for urban planners.

SUSTAINING CITIES – ENVIRONMENTAL PLANNING AND MANAGEMENT IN URBAN DESIGN

Leitmann, Josef 1999. McGraw-Hill

A historical transition will take place at the dawn of the new millennium: for the first time in human history, more than half the world's population will be living in cities. These cities currently generate two-thirds of economic wealth and will account for 80% of GDP growth during this decade. Population and economic growth in cities create externalities - more people making more things demand more resources and generate more waste. The resulting set of environmental problems is known as the "Brown Agenda": distressed industrial area; eroding infrastructure; pollution; resource losses; environmental hazards and global environmental issues (taken from J. Leitmannn and editorial comments).

PLACING THE FOOD SYSTEM ON THE URBAN AGENDA : THE ROLE OF MUNICIPAL INSTITUTIONS IN FOOD SYSTEMS PLANNING

Pothukuchi Kameshwari and Kaufman Jerome L. 1999. Agriculture and Human Values 16(2): 213-224. University of Wisconsin.

This article takes a perceptive look at the relationship between city planning and the urban food system in America at the turn of the century. The urban food system is less visible than other such urban systems. The reasons for its low visibility include the historic process by which issues and policies came to be defined as urban; the spread of processing, refrigeration and transportation technology, together with cheap, abundant energy; that rendered invisible the loss of farmland around older cities; as well as the continuing institutional separation between urban and rural policy. Despite its low visibility, the urban food system contributes significantly to community health and welfare and metropolitan economies; connects to other urban systems such as housing, transportation, land use, economic development and impacts upon the urban environment. Existing and potential city institutions that could offer a more comprehensive management of the urban food system are examined. These include the city department of food, the policy council, and the municipal planning department.

ILLEGAL CITIES : LAW AND URBAN CHANGE IN DEVELOPING COUNTRIES.

Fernandes Edésio and Varley Ann (eds). 1998. Estover, Plymouth: Plymbridge Distributors. ISBN 1_85469_550_7 (pbk) : GBP 14.95. 256 pp.

This book provides an important overview of the role played by legislative and legal institutions in the way open spaces are occupied in cities. Much of the content is about how the urban poor gain access to urban land and housing within the margins of the law. Issues addressed are of a wide range: How is illegality perceived? How are property rights and public control of land use defined? How do informal settlements occur and how are they regularised? How does customary law operate? How secure are land-tenure rights in reality? Such questions have often met with uncritical treatment in traditional legal studies. Therefore, this is an important book that brings law and urban change to the attention of a wider audience. After an introductory section setting the framework for urban legal research and the research record thus far, the remainder of the book is devoted to twelve case studies from major cities in Asia, Africa and Latin America.

OPPORTUNITIES AND CONSTRAINTS FOR URBAN AGRICULTURE IN BANDUNG, INDONESIA.

Hietkamp Fern. 1995. AURN working paper no. 7. Asian Urban Research Network (AURN), Centre for Human Settlements, School of Community and Regional Planning, The University of British Colombia, Vancouver, Canada. 36 pp.

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

FORTHCOMING EVENTS

SUSTAINABLE FOOD SECURITY FOR ALL BY 2020: FROM DIALOGUE TO ACTION

International Congress Centre of the Federal Parliament, Bonn, Germany September 4-6, 2001

The International Food Policy Research Institute (IFPRI) in close collaboration with the German Federal Ministry for Economic Cooperation and Development (BMZ) will organise this event. The conference takes stock of the current situation, reviews progress in achieving sustainable food security since the first 2020 Vision conference in 1995, and offers state-of-the-art projections for scenarios in 2020. The meeting will focus on the emerging issues that are most likely to affect the global goal of achieving sustainable food security for all by the year 2020, and to prioritise actions. For more information and registration, you can visit www.ifpri.org/2020conference.

DEVELOPMENT STUDIES ASSOCIATION ANNUAL CONFERENCE 2001 : DIFFERENT POVERTY DIFFERENT POLICIES

Manchester University, Manchester, UK, September 10-12, 2001

The sessions of this conference will include issues of poverty and poverty reduction, agrarian and land reform, urban poverty, livelihood frameworks and poverty analysis, international policy and poverty, e-development and development management. Some of these concepts would be valuable for debates on urban and peri-urban agriculture. For further details, contact the Conference Secretary, Debra Whitehead by e-mail: dsa2001@man.ac.uk or visit http://www.bham.ac.uk/DSA/events.htm.

LOCAL ECONOMIC DEVELOPMENT (LED) POLICY WORKSHOP FOR EASTERN AND SOUTHERN AFRICA

Harare, Zimbabwe, September 10-14, 2001

This workshop, organised by the Municipal Development Programme, is part of its joint programme with the Institute of Social Studies (ISS), the Netherlands, in partnership with the University of Zimbabwe. The workshop is meant to bring all strategic players together to enable them to share experiences and options for sustainable economic development at the local level. The role of urban and peri-urban agriculture in the LED will be part of the workshop module. For details, please contact the Director, George Matovu by e-mail: gmatovu@mdpesa.co.zw.

RAINWATER INTERNATIONAL 2001 AT MANNHEIM, GERMANY 10TH INTERNATIONAL RAINWATER CATCHMENT SYSTEMS CONFERENCE AND INTERNATIONAL RAINWATER FAIR

10-14. September 2001

Rainwater harvesting within an integrated water resources management concept is one important step forwards to a sustainable water future. The conference will reflect on the growing realisation that rainwater harvesting offers great potential in solving domestic and agricultural water problems in humid and semi-arid areas and also many critical urban-related water issues. It will provide a global platform and an exchange forum for technologies and concepts across countries and continents.

More information: http://www.rainwaterconference.org/english/programme.htm

SUSTAINING FOOD SECURITY AND MANAGING NATURAL RESOURCES IN SOUTHEAST ASIA: CHALLENGES FOR THE 21ST CENTURY.

Thailand, January 8-11, 2002

This international symposium will discuss possible approaches and innovations that should contribute to achieving food security, reducing poverty and raising food production under sustainable natural resource management in Southeast Asian countries.

For more information visit: http: //www. uni-hohenheim.de/symposium2002.

THE INTERNATIONAL CONFERENCE "ONE WORLD: RESEARCH FOR A BETTER QUALITY OF LIFE"

Bonn, Germany, October 9-11, 2001

The *Deutsche Tropentag* (DTT) 2001 will be held as a two-day conference on tropical and subtropical agriculture and forestry, organised jointly by the Universities of Bonn, Berlin, Göttingen, Hohenheim and Kassel-Witzenhausen, as well as by the Council for Tropical and Subtropical Agricultural Research (ATSAF e.V.), in cooperation with BEAF/GTZ. One symposium of this conference is planned to deal specifically with urban and peri-urban production systems. More information is available at: http://www.uni-bonn.de/akci/dtt_1.htm

URBAN AREAS - RURAL AREAS AND RECYCLING: THE ORGANIC WAY FORWARD

Royal Veterinary and Agricultural University, Copenhagen, Denmark, August 19 - 21, 2001

This seminar is organised by the working group on Organic Farming of the Danish University Consortium on Sustainable Land Use and Natural Resource Management. After a one-day excursion to an organic farm and an ecological village, a two-day seminar will discuss ecological development of post-industrial societies, focusing on themes such as the consequences of local integration of food production (including urban agriculture); recycling; eco-villages and local self-sufficiency; local collaboration between consumers, processors, distributors and producers; and research needs. More information can be obtained by e-mail: jma@kvl.dk or telephone: +45 3528 3491

IFOAM 2002 ORGANIC WORLD CONGRESS: CULTIVATING COMMUNITIES

Victoria, British Columbia, Canada, August 21-28, 2002

The IFOAM 2002 Organic World Congress "Cultivating Communities" will bring together representatives of the organic movement from around the world, and is open to everyone interested in organic agriculture and sustainable development. The event combines the 14th Organic World Congress, the 4th IFOAM Organic World Exhibition, the 7th International Congress on Viticulture and Wine, and the IFOAM General Assembly.

For more information about Canadian Organic Growers, visit: www.cog.ca.

For more information about IFOAM, visit: www.ifoam.org.

REGIONAL TRAINING COURSE ON URBAN AGRICULTURE

Quito, Ecuador, November 2001

The "Cities Feeding People Programme" of the International Development and Research Centre (IDRC), Canada, is collabo-

rating with UMP-LAC/UNCHS-Habitat and its anchoring institute IPES in the development and implementation of the first regional training course on urban agriculture. Specific support to the project will also be provided by ETC-RUAF, NRI-UK and the FAO. The course will allow twenty (20) municipal staff members, researchers, NGO professionals, and representatives of producer or marketing organisations to discuss and evaluate proposals for action-research and concrete intervention in urban agriculture, in order to influence planning and management of their cities. For more information, contact Marielle Dubbeling, Urban Management Programme for Latin America and the Caribbean (UMP-LAC/IPES) by e-mail: marid@pgu.ecuanex.net.ec

MANAGING BIODIVERSITY IN AGRICULTURAL ECOSYSTEMS

Montreal, Canada, November 8-10, 2001

This meeting is organised by the United Nations University in collaboration with the International Plant Genetic Resources Institute, and the Secretariat of the Convention on Biological Diversity. More information at http://www.biodiv.org/areas/agro/default.asp

REPORTS ON PAST EVENTS

URBAN AGRICULTURE AS PART OF A NEW LANDSCAPE STRATEGY FOR SUSTAINABLE CITIES

University of North London, UK, June 29, 2001

As part of the Architecture Week, organised by the Arts Council, the Low Energy Architecture Research Unit at the University of North London, UK, hosted this conference on Urban Agriculture, which consisted of a series of presentations and short workshop sessions. Contributors explored urban, architectural, environmental, economic and social benefits of Urban Agriculture. The main issues were: "likely strategies for establishing urban agriculture within urban regeneration proposals"; "joining existing research to promote or test the viability of urban agriculture"; financial viability of urban agriculture as a means of local food production.

More information can be obtained from Andre Viljoen, Deputy Director of the Low Energy Architecture Research Unit by e-mail: a.viljoen@unl.ac.uk or at: www.studioBandV.co.uk.

ZIMBABWEAN INITIATIVE, UA STAKEHOLDER FORUM

MDP Offices, Harare June 18, 2001

This meeting made an inventarisation on what has been happening in UA in Zimbabwe. MDP has been asked to further facilitate the process of discussing the subject, which should lead to a policy document on urban agriculture.

NATIONAL NEEDS ANALYSIS ON TRAINING AND COMMUNICATION NEEDS IN SE AFRICA

As part of the RUAF Programme, MDP facilitated National Consultative Workshops in June 2001 on the status of Urban Agriculture in Zimbabwe (as well as Zambia, Botswana, Malawi, Tanzania) and the needs of Information, Training and Communication. Reports on the workshops in Tanzania and Botswana can be found on page 24 and 27. Reports on the other countries will be published in the next issue of the *UA-Magazine*, and on the ruaf website www.ruaf.org

SUBREGIONAL EXPERT CONSULTATION 'URBAN AND PERI-URBAN HORTICULTURE IN SOUTHERN AFRICAN COUNTRIES'

Stellenbosch University, Cape Town, South Africa, January 16-17, 2001

The University of Stellenbosch, South Africa under the auspices of the Food and Agricultural Organisation (FAO) of the United Nations hosted this meeting which focused on the use of low-cost and simple technologies for crop diversification by small- scale farmers in urban and peri-urban areas of Southern Africa. A full report is available on the RUAF www.ruaf.org and FAO www.fao.org websites, or contact Lizl Hobson at LHOB@akad.sun.ac.za.

NON-GOVERNMENTAL ORGANISATIONS COMMITTEE (NGOC) OF THE CGIAR

Durban, South Africa, June, 2001

This workshop was about how NGO and small-farmer organisations could exert more influence on agricultural research for development - not only by the CGIAR centres but also by other research organisations. Urban agriculture was mentioned as one area in which NGOs are involved in research and development. The mid-term meeting of the CGIAR focused on the restructuring of the CGIAR system. If you are interested in further information about regional priority-setting for research in southern Africa - for CGIAR centres and national, subregional and regional research organisations - you might like to get in touch with PELUM (Mutizwa Mukute) - the current NGO contact point for the joint efforts of the CGIAR and the Global Forum on Agricultural Research (GFAR) in this direction. Email: pelum@ecoweb.co.uw.

INTERNATIONAL WORKSHOP: COPING WITH INFORMALITY AND ILLEGALITY IN HUMAN SETTLEMENTS IN DEVELOPING CITIES

Leuven and Brussels, Belgium, May 23-26, 2001

This was the annual event of N-AERUS: Network-Association of European Researchers on Urbanisation in the South. Papers presented had relevance to issues of urban governance and urban agriculture. Further details and papers can be obtained at: http://www.naerus.org.

HABITAT ISTANBUL + 5

New York, USA, June 6, 2001

On June 6 and 8 the Istanbul +5, special session of the General Assembly, took place to evaluate progress five years after the Habitat II. This time it was held in New York and convened by the UN Centre for Human Settlements. More information can be found at http://www.un.org/ga/istanbul+5. Several discussions were organised simultaneously. One of them was the "Food for the Cities: Food Insecurity and Urban Management" organised by UNCHS, IDRC and FAO. This parallel event had the aim of sensitising participants on the issue of urban growth and its impact on urban food security. Presentations were given on food distribution, the role of urban agriculture and cases from Latin America by UMP/LAC. Dialogue was facilitated by a video presentation. More information can be obtained from the respective organisations, or at: http://www.unchs.org/istanbul+5/pel2.htm

THE AGRICULTURE-URBANISATION INTERFACE IN COASTAL LEBANON AND IN THE MIDDLE EAST / NORTH AFRICA

The French Cultural Centre of Beirut, Beirut, Lebanon, June 13-16, 2001

The regional information and training needs assessment under RUAF was jointly organised with a workshop on the results of a four-year running research programme in Lebanon *(see UA Magazine no. 3).*

The programme was meant as a foundation for broader regional exchanges, which would cover neighbouring countries in the southern and eastern Mediterranean basin. The coastal Lebanon programme and the regional needs assessment are coordinated by Joe Nasr, vice-president of The Urban Agriculture Network (TUAN) and researcher at the CERMOC. CERMOC is also the main host. The Lebanon programme is included within the activities of the *CERMOC's Observatoire de recherches sur Beyrouth et la reconstruction.*

For further information, contact: Joe Nasr by e-mail: joenasr@compuserve.com

PARTNERS

URBAN FOOD INSECURITY AND VULNERABILITY MEETING

The FAO Regional Office for East and Southern Africa based in Harare, Zimbabwe is holding periodic meetings on this topic and brings together members from key international development institutions as well as local stakeholders. For further details on these initiatives, contact Farayi Zimudzi or Karori Izumi from the FAO Subregional Office for SE-Africa.

Email: Kaori.Izumi@fao.org

FORMULATION OF URBAN AGRICULTURE POLICY ADVISORY TOOLS FOR LOCAL GOVERNMENTS IN LATIN AMERICA AND THE CARIBBEAN

As part of its "closing the loop" activities, the "Cities Feeding People" programme initiative will collaborate with the Urban Management Programme, Regional Office for Latin America and the Caribbean (UMP-LAC/UNCHS- HABITAT/UNDP) and its anchoring institute IPES to produce a set of seven Policy Briefs known in Spanish as *Directrises o lineamientos de Politica*, intended for local governments in the LAC Region. The general content will include: arguments for better municipal policies on UA, examples of good municipal practice, practical planning and management guidelines, and resources. The purpose of the Briefs is to raise awareness, mobilise support for and strengthen capacities and provide ways for municipal governments to implement urban agriculture programmes and policies. The Briefs will discuss and define strategic approaches for disseminating new knowledge and an agenda for change. Draft Briefs will be validated by the target group, convening the LAC City Working Group on Urban Agriculture and Food Security, and the Latin American Chapter of the International Union of Local Authorities (IULA-LAC), the Federation of Municipalities of Central America (FEMICA) and the Caribbean Local Governments Association (CALGA). The Briefs will be disseminated by sending 20,000 copies (in both Spanish and English) to municipal urban governments throughout the region.

For more information, contact Marielle Dubbeling, Urban Agriculture Adviser, Urban Managment Programme for Latin America and the Caribbean (UMP-LAC/-IPES) by e-mail: marid@pgu.ecuanex.net.ec

NEW EXECUTIVE SECRETARY FOR THE LATIN AMERICAN RESEARCH NETWORK ON URBAN AGRICULTURE: *RED AGUILA*

AGUILA, the network of Latin American and Caribbean institutes and organisations working on urban agriculture (see earlier issues of the *UA Magazine*) is again complete. Since January 2001, the Secretariat of AGUILA has been managed by the Institute for Promotion of Social Economy- IPES, located in Lima, Peru. The new Executive Secretary who recently started in Lima, is Mario González Novo. Together with Gunther Merzthal and Maritza León they form the Aguila Secretariat.

For further information, contact Aguila by e-mail: aguila@ipes.org.pe

AGROPOLIS

Agropolis is the research and training awards programme, coordinated and led by the IDRC on behalf of the Support Group on Urban Agriculture (SGUA). Agropolis supports innovative Masters' and Doctoral research in urban agriculture around the world. Each award covers field research expenses of up to CA$ 20,000 for the research period (between 3 and 12 months).

The deadline for applying for 2002 awards is December 31, 2001.

Agropolis now has its own homepage in three languages. Please link to:
http://www.idrc.ca/cfp/agrhome.html for English
http://www.idrc.ca/cfp/fagrhome.html for French
http://www.idrc.ca/cfp/sagrhome.html for Spanish

Agropolis Award themes

AGROPOLIS International Graduate Research Awards in Urban Agriculture AGROPOLIS . The AGROPOLIS award recipients for 2001 are:

- CHUO, Adamu Nsangu (Mr.) from Cameroon, on "Urban Agriculture and Physical Planning: A Case Study of Zaria Urban Area, Nigeria";
- DANSO, George Kwasi (Mr.) from Ghana on "Perception and willingness to pay for composted municipal waste and night soil by farmers of different urban and peri-urban farming systems in three Ghanaian cities (Kumasi/Tamale/Accra)";
- HOVORKA, Alice (Ms.)from Canada on "Exploring the Effects of Gender on Commercial Urban Agriculture Systems in Gaborone, Botswana";
- ABULO, Grace (Ms.) from Uganda, on "The Assessment of Heavy Metal Pollution To Crops Grown Around Kampala City Kampala, Uganda";
- NGUYEN, Quang Linh (Mr.), from Vietnam, on "The Use of Local Feed Resources to Strengthen Animal Smallholdings and Poverty Alleviation in Urban Hue, Central Vietnam"
- SCHAMI, Danielle J. (Ms.), from Canada, on "Planning for Sustainable Urban Food Systems: From Toronto to Guadalajara"

This site, on Water and Environmental Health, is managed by the London School of Hygiene & Tropical Medicine and the Water, Engineering and Development Centre, Loughborough University, and further supported by a network of collaborating institutions. WELL is a resource centre promoting environmental health and well-being in developing and transitional countries.