OPTIMISING AGRICULTURAL LAND USE IN THE CITY AREA

Access to land and water, adequate norms and regulations, integration in land use planning

PROCEEDINGS of the E-CONFERENCE

3 to 22 November 2003

Organised by

Urban Management Programme, Regional Coordination for Latin America and the Caribbean (UNDP/UNHABITAT)

and

RUAF Resource Centre on Urban Agriculture and Forestry (ETC Foundation)

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1. INTRODUCTION

Urban agriculture[1]

Increasingly, local governments recognise the potential of urban and peri-urban agriculture as an effective strategy to reduce urban poverty and to enhance the food security, health and nutrition of disadvantaged groups.

Studies reveal that urban households involved in farming have a better nutritional status (as shown by caloric and protein intake, stunting and wasting measures) as compared to non-farming households. Moreover, creation of better conditions for poor urban families to grow and market vegetables, livestock, fish, etc. positively affects the access of other non-farming urban poor groups to fresh and nutritious food at affordable prices, which is a pressing need.

Since food is the largest component of household expenditure (low income households usually spend over 50-60% of their income on basic food and drink), any saving on food expenditure translates into a significant portion of the family income becoming available for other non-food expenditures.

Where urban agriculture results in saleable surpluses, the resulting addition to the income can be sizeable. Urban farming provides a source of employment not only for the producers involved (men and especially women), but also for hired labourers and people operating in related micro-enterprises. There is a whole range of input and output services related to urban agriculture such as production of compost, herding, collection and selling of grass or manure, processing of agricultural produce and street vending of food.

In many cities, the large majority of the urban farmers are women (65% on average). Urban farming is a viable alternative to wage labour for women who lack access to formal employment due to limited education and training. Urban farming has the added advantage of allowing women to work closer to their homes, thus enabling them to combine multiple tasks during the day. Cases of women in urban households earning more from food production than their husbands from a formal job are not unusual. The ownership of animals and/or independent cash income may strengthen women's social position within the household and the community.

Several international organisations too have recognised the potentials of urban agriculture. The FAO has integrated urban agriculture into its regular programme and created an interdisciplinary working group "Food for the Cities" in order to stimulate the integration of urban agriculture in national and local poverty reduction and food security programmes. The WHO published the "Action plan on urban food production and consumption" as part of its strategy to stimulate the local production and consumption of fresh nutritious food and to improve the nutrition and health of disadvantaged urban groups. The Urban Management Programme (UNDP/UN-HABITAT) is studying and facilitating urban agriculture as part of its efforts to enhance community participation in sustainable urban land management.

Strategies to enhance and secure access of the urban poor to land and water for agricultural activities

In the last couple of years, various municipalities and local development organisations have been exploring a diversity of strategies to enhance and secure access of the urban poor to land for agricultural activities. Some have focussed on poor urban households in general, others especially on female-headed households, unemployed youth, migrants without sources of income, families with AIDS/HIV problems or disabled persons.

[1] See www.ruaf.org for discussions on the concept and significance of urban agriculture, an extensive and partly annotated bibliography, links with interesting websites, reports on recent international and regional conferences and workshops, a/o

These activities are being undertaken to:

- Enhance the nutrition and food security of urban poor and disadvantaged groups
- Facilitate the integration of the urban poor in the urban socio-economic system and to enhance self-reliance, income generation and micro-enterprise development
- Encourage civic/community participation in urban land and environmental management

Two main situations / target groups have to be distinguished:

a. *Poor urban families that already have taken up urban agriculture as part of their survival strategy (often alongside other economic activities)*.
   A part of these households farm in their back yards or on field plots that are owned or formally rented. But most of these families use (often marginal) vacant public or private land such as roadsides, riverbanks, railroad reservations, buffer zones, etc. In such areas, user rights are minimal and the use of land is transitional. Where municipalities view such land use through negative eyes, the urban farmers often encounter harassment by officials and policemen. Fear of eviction makes most of these farmers grow only quick-yielding seasonal crops and prevents them from investing in soil quality, tree and shrub components, erosion prevention, water harvesting measures, etc.

   In this target group, attention is focussed on seeking ways that enable urban agriculture to be accepted as a legitimate form of urban land use and the inclusion of urban agriculture in urban zonification and strategic urban development plans. Measures that contribute to securing user rights for urban farmers, e.g. by providing temporary permits to current users of vacant public land for food production (under certain conditions of farm management) are also pursued. For the very poor, even short-term tenure improvements can be a great advantage. If farming is taking place in a location, which is not desirable, such farmers may be provided access to an alternative location, with better conditions.

b. *Categories of the urban population that are in need of alternative sources of subsistence and income but have not taken up farming due to lack of access to land*.
   Many of the urban poor would take up urban agriculture for a living if they knew how to get access to land (see e.g. Maxwell, 1995).
   Cities in developing countries have plenty of land in public ownership, which is inefficiently used. One often encounters many unused open spaces within the city boundaries: land earmarked for industry, infrastructure or housing but not yet developed; unused private land due to speculation; public or semi-public land (e.g. ground of hospitals, schools, military centres, etc.); open spaces that should have been parks or gardens but left barren (and often used as illegal waste deposits); former municipal dump areas or vacant industrial areas. These inefficiencies mean that land is often available for temporary or permanent use in urban agriculture without reducing its availability for new infrastructure or housing.

   In this target group, attention is given to creating access for the urban poor to make use of the available open spaces. Municipalities are experimenting with strategies such as detecting available open spaces by G.I.S; leasing municipal land to (groups of) urban poor for periods of 2 - 20 years; creating community gardens on former garbage dumps; forcing speculating private owners to lease vacant land to urban farmers; stimulating enterprises, schools and hospitals to do the same; creating land banks for selling/leasing land for agriculture, etc.

2. OBJECTIVES AND METHODOLOGY OF THE E-CONFERENCE

In order to facilitate the development of adequate policies and programmes of municipalities, local and international support organisations involved in the agricultural use of urban land, the Urban Management Programme (UNDP / UN-Habitat), and ETC-RUAF jointly organised an electronic conference on *"The optimisation of access of the urban poor to land for agricultural activities"*.

Objectives of the conference

The objective if the E-conference was:
To share and discuss local experiences on:

a. *Strategies used to enhance access to land for the urban poor to undertake food production* (horticulture, livestock keeping, aquaculture, etc.)
b. *Examples of the development and application of municipal by-laws, norms and regulations regarding* (access to land for) urban agriculture

Participants

The conference created a platform to facilitate the exchange and discussion of local experiences between *local authorities and senior technical officers in municipal departments, sectoral governmental organisations, research organisations and urban NGOs and CBOs* that are involved in urban poverty alleviation and/or urban food security policies and programmes in cities of developing countries as well as staff of international organisations and programmes (e.g. UN Habitat, the Urban Management Programme, the Sustainable Cities Programme) that advise national and local governments on issues of sustainable urban land management and urban poverty alleviation.

Nearly 400 participants from 82 countries registered and many more followed the discussions by visiting the RUAF website on the Internet, of which 36% were women and 64% were men. About 33% of the participants had a background in research institutes and universities, 13% in municipalities and governmental organisations, 26% in NGOs or CBOs, 10.5% were students and 17.5 % had other backgrounds. The participation of policy makers and practitioners was higher in this conference than in the earlier E-conferences organised by RUAF.

More than 450 relevant contributions were received for the discussions and some 30 papers were added to the "Background papers" section of the conference website. These are encouraging figures, indicating a strong interest to share experiences on this topic of relevance for local policy development, urban planning and future projects on urban agriculture.

Methodology of the E-conference

The E-conference was held between *3 and 26 November, 2003*. E-mail was used as the means of discussion, thus access to Internet was not a prerequisite to participate in the conference.

Upon registration, each participant received the *three central case studies* (see chap. 5), which were prepared in advance by experienced city planners and researchers[2] on request of the organisers:

- *Rosario, Argentina*: Optimisation of Use of Vacant Land for Urban Agriculture in the Municipality of Rosario, Argentina
- *Copperbelt, Zambia*: Facilitating Land Access for the Copperbelt's Peri-Urban Farmers: an Interest-Based Approach
- *Cagayan de Oro, Philippines*: Allotment Gardens for Cagayan de Oro City: Improved Access of the Urban Poor to Land for Agriculture

These case studies provided a starting point to discuss:

a. *Strategies used to enhance access to land for the urban poor to grow food* (strategies used, results obtained, advantages and disadvantages of each strategy);

[2] Full references are given in annex 1

b. *Examples of the development of adequate local by-laws, norms and regulations regarding urban agriculture* (process of development, resulting products, implementation experiences).

The participants were invited to share their own experiences on these topics and to comment on the three central case studies and the contributions of other participants, by sending an e-mail to the *conference listserv*.

During the conference and a few months afterwards a *special website* for the conference was maintained in English, Spanish and French (www.ruaf.org/E-conference). A list of all participants and all the email contributions in chronological order were published here. The case studies as well as other background papers sent in by the participants [3] were made available on the conference website.

The main language of the conference was *English*. However, the invitation and the three cases studies were distributed in three languages (English, Spanish and French) and some participants made contributions to the email discussion in Spanish and French, which were translated in summary into English by the organisers. Participants could also make use of the link provided to an on-line translation machine.

[3] The case studies are still available on the RUAF website in full text as part of the on-line searchable bibliographic database

3. THEMATIC SYNTHESIS OF THE RESULTS

Introduction

The experiences shared in this conference were very rich. The three central case study papers described experiences in Cagayan de Oro, Philippines, the Copperbelt in Zambia, and Rosario in Argentina. In addition, interesting experiences on Accra, Bamako, Beijing, Cienfuegos, Cotonou, Dar es Salaam, Harare, Hubli-Dharwad, Kampala, Kano, Madhyapur, Nairobi, Cape Town, Sétif, and many other cities were shared during the conference.

In this chapter we provide a short synthesis of the main learning points derived from the E-conference. In the next chapter we present a city-wise overview of the experiences shared during the E-conference and the discussions related to these.

How do the urban poor seek to enhance their access to land?

The experiences presented in the E-conference illustrated the many ways through which the urban poor seek to secure access to land (and water): investments in social relations such as marriage and participation in local organisations and churches; development of strategic partnerships between households or by linking up with people with access to land; individual lobbying with caretakers of land or joint lobbying for access to land with private institutional land owners or the local government; occupation of 'vacant' land and the tapping of wastewater disposal lines.
The experiences shared indicate the importance of developing a thorough understanding in the ways people create and secure access to land and how customary and statutory land rights relate to each other, before developing any land use regulations and planning.

Constraints encountered by urban farmers seeking access to land

In the various contributions we saw a number of factors that limit access to urban land for agriculture. *Actual farmers* in peri-urban areas have no legal position and their right to agricultural land use is not protected. The quest for land of urban estate developers, recent migrants and the urban poor, for agriculture and housing, leads to diminished social cohesion. Formal ownership rights are beginning to overlap the customary and become the dominant form; customary mechanisms to distribute and manage communal lands are dwindling, leading to fragmentation and sales of communal lands to resource-rich "citizens". Often, private land is sold to "citizens" for other purposes such as construction, and the extraction of sands, stones or clay for bricks.
Furthermore, there is land grabbing by politicians who make use of the urban poor to occupy "vacant" land and claim occupancy rights. There are corrupt chiefs and non-cooperative "absent" landowners, who may be in the categories of private, institutional or public.
Moreover, rules for access and procedures for land registration are often highly complex and bureaucratic making it difficult for the urban poor to file land applications.
Farmers also encounter difficulties caused by their short duration of stay in the village, low socio-economic status, young age, and their gender (female) or ethnicity (low caste, minority group). In addition, land rents keep increasing with further contamination of irrigation water and soils, which leads to diminishing quality of the agricultural land available and the devaluation of the land.

Poor rural and urban *newcomers to urban areas seeking access to land* lack the type of social relations through which access to land and water can be gained and secured. The high prices of land and lack of resources to lease or buy land are important constraints. The low quality of available "vacant" land (low fertility, debris, regular flooding, contamination, prone to erosion), tenure insecurity, risk of theft, and high transport costs related to locations distant from roads and markets are other problems faced. Uncooperative owners of idle land and eviction by local authorities (to maintain the law or for personal gain) are forces to reckon with.

Strategies to enhance Access to Land

The E-conference showed that various municipalities, NGOs and other local stakeholders have already developed a number of promising strategies to enhance access of the urban poor to land and water for agriculture.

a. Provision of access to public or semi-public land for temporary agricultural use

One of the approaches regularly applied is the provision of vacant public and semi-public land to the urban poor for temporary agricultural use. Several lessons were learned from the ongoing experiences. A city is a living mechanism that continuously creates new spatial structures while others fall into decay. Consequently, there is often a lot of (temporarily) vacant open space that could be used for urban agriculture in most cities.

Often, a good starting point is to make an *inventory of available vacant open land in the city* (through participatory methods and GIS) and *analyse its suitability for use in agriculture* (case Rosario, Argentina).

Furthermore, the creation of a Municipal Agricultural Land Bank can bring landowners in need of temporary or permanent users in contact with those in need of agricultural land (case Rosario, Argentina). In addition, the *formulation of a City Ordinance* that regulates the (temporary) use of vacant land in the city is important (case Cagayan de Oro, the Philippines).

The *development of safer and more productive urban agricultural systems* is often constrained by the present informal or illegal status of urban agriculture, resulting in highly insecure land use rights in many cities (case Ife-Ife and Kano, Nigeria).

The *provision of temporary occupancy licenses* to land users farming on land with acceptable suitability is essential in providing some legality and security to the temporary users, which in turn leads to less harassment and better access to credit (case Rosario, Argentina).

Another lesson drawn is *the important role institutional landowners and parastatals can play in leasing out temporarily idle land* to the urban poor and disadvantaged (case the Copperbelt, Zambia; Harare, Zimbabwe; Cape Town, South Africa; Kano, Nigeria). *An independent organisation (e.g. NGO) playing a mediating role* to create acceptable win-win situations for both parties (case the Copperbelt, Zambia) is of no less importance.

Farmer training on adequate management practices, acceptable for the institutional owner, is also crucial (case Copperbelt, Zambia; Rosario, Argentina).

However, provision of land alone is not enough: *access to water of acceptable quality* is as essential. Since poor urban farmers in dry regions often rely on urban wastewater, adequate norms and guidelines regarding the safe use of wastewater have to be developed (see an example of such norms and guidelines in the Urban Agriculture Magazine No. 8 and in the case of Accra, Ghana), and rainwater harvesting and local treatment have to be promoted. The cases presented show the important role of local experiments and the development of 'models' as in the examples of the model farms with disabled people (case Kampala, Uganda), Urban Green Gardens with women from the slums (case Nairobi, Kenya), and the organised landless that reclaim wasted land due to sand poaching for construction (case Harare, Zimbabwe).

b. Allotment gardening on privately owned land

A second strategy discussed during the conference, was the creation of (allotment) gardens on privately owned land leased by associations of the urban poor (case Cagayan de Oro, Philippines). The experiences presented in the E-conference point out some important lessons.

To start with it is important that there is a *good understanding of the local social relations* before participants are selected and groups are formed. Active involvement of the municipality as well as the availability of an *entity (Municipal department or NGO or project) that plays a facilitating and coordinating role* is important.

It is also necessary to define *clear land management conditions* (e.g. type of crops that can be grown, no building of structures on the land, methods of waste management) and to assist the allotment gardeners in learning the required practices and applying them.

An effective instrument to encourage private land owners to make vacant land available to urban-poor groups interested in farming appears to be the increase of municipal taxes on idle urban land and *reduction of taxes for land owners who make idle land available for (temporary) farming*.

c. Demarcation of zones for urban agriculture as a form of permanent land use and its integration into city land use planning.

The acceptance of urban agriculture as a permanent form of land use and its integration into city land use planning was a third strategy discussed. Important lessons were shared on this subject (case Accra, Ghana; Dar es Salaam, Tanzania; Harare, Zimbabwe; Kathmandu, Nepal).

Generally, *restrictive policies regarding urban and peri-urban agriculture do not work*: urban agriculture persists under all policy environments. Under restrictive policies, problems associated with urban agriculture stay unattended and its potentials are not fully utilised. Hence, *legalisation of urban agriculture and demarcation of special zones for urban agriculture* is strongly advocated by many practitioners: legalisation and zoning will enhance security of use and thus investment in and productivity of urban agriculture. Legal protection of urban agriculture – in certain parts of the city – will make it more sustainable and ensure maintenance of green zones in the city. In order to conserve open spaces in this manner, it is vital that sufficient is done to safeguard it from city expansion. However, it is recognised that zoning in itself is not sufficient: maintenance of these zones strongly depends on the *political will of the local authorities* and the *practical, technical and financial capacity of the municipality* (monitoring, technical support). An interesting comparison can be made between the experience of Hubli-Dharwad, India, where the Green Zone is being pushed outwards since the municipality needs the income from sales of public land for construction, and the experience in Beijing, China, where the Green Belt close to the inner city is strictly protected as the importance of recreation and urban greening, as well as the production of fresh food is recognised.

Another noteworthy condition is the provision of adequate services to urban farmers, preferably through *development of multi-stakeholder support programmes* (case Guateng Province and Potchefstroom, South Africa; Dar es Salaam, Tanzania; Havana, Cuba; Banjul, the Gambia), in order to:

- Educate urban and peri-urban farmers on safe and hygienic food production;
- Make urban agriculture more productive and competitive, for example to shift from maize and similar inappropriate production systems under urban conditions to short-cycle production of vegetables, herbs, flowers or mushrooms; or to shift from free roaming cattle to confined keeping of smaller animals like pigeons, guinea pigs or rabbits;
- Enable the combination of urban food production with other desired functions such as greening, park management and recreation, safe composting and reuse of urban organic wastes, water drainage and storage.

A final important lesson in enhancing sustainability was the location of zones designated for agriculture in areas that are not well suited for construction or where construction is not desirable, as on flood plains, under power lines, in parks or in nature conservation areas.

The cases presented at the conference indicate that the *integration of urban agriculture into city land use plans* requires an (inter-) active process involving various types of stakeholders with varying interests, perspectives and roles. Formation of a *Multi-stakeholder Platform on Urban Agriculture, Food Security and Environment*, bringing together municipal departments, NGO's, farmer organisations, universities and other local stakeholders is important (case Harare, Zimbabwe; Kisumu, Kenya; Kampala, Uganda; Rosario, Argentina; Valadares, Brazil) in enabling such an interactive process.

An inventory and classification of vacant open spaces in and around the city and evaluation of the suitability and availability of these for urban agriculture is often the first step in such a multi-stakeholder planning process. This is followed by joint consensus building on the most optimal forms of land use from the social and economic points of view, as well as from the environmental and health perspectives (case Rosario Argentina; Cienfuegos, Cuba; Piura, Peru; Dar es Salaam).

Exploring *the linkages between urban agriculture and other urban issues* such as local economic development, recycling of urban wastes, urban greening and park management, keeping flood plains

free from squatting or construction, mitigating the effects of HIV-AIDS, and reclaiming certain degenerated areas is also of key importance. This, in effect, is exploring the role urban agriculture can play in the realisation of broader urban policy goals and in multi-functional land use (see e.g. the Agri-park project in Hyderabad, India).

The experiences shared indicate that *to enable the development of adequate by-laws, ordinances, norms and regulations* regarding urban agriculture, it is important to:

- Make examples of such norms and regulations available to municipalities;
- Develop a thorough understanding of customary and formal land rights and the local ways in which poor and powerful people create and secure access to land. A general trend in the peri-urban zone is that customary rights (those predominant in the rural areas) are being pushed aside and replaced by formal ownership rights (case Accra Ghana; Bamako, Mali);
- Develop effective guidelines regarding management practices to be adopted by each type of urban agriculture in each different location with active farmer participation (i.e. the consultative workshops involving urban farmers, various types of technicians, city planners and other stakeholders in Rosario, Argentina and Kampala, Uganda).

The *establishment of one central coordinating municipal office* has been of great value in various cases (e.g. Dar es Salaam, Tanzania) as well as the involvement and collaboration of various municipal departments, sometimes even working as an interface between the municipality and the Ministry of Food and Agriculture (case Harare, Zimbabwe; Addis Abeba, Ethiopia; Accra, Ghana).

In addition, the participants in the E-conference have observed the importance of *assisting urban and peri-urban gardeners and farmers to get themselves organised and to voice their interests* in dialogue with policymakers, city planners, health and environmental authorities, agricultural support organisations and other stakeholders (case Banjul, the Gambia; Rosario, Argentina; the Copperbelt, Zambia). Organisations of urban farmers can also play an important role in farmer education on appropriate land use and management practices and ensure adherence to related municipal norms and regulations. The capacity of municipalities to enforce such regulations is often limited (see case Kathmandu, Nepal). However, one should carefully balance the need for farmers to be in formally organised with their inherent wish to maintain flexibility and autonomy (case Kano, Nigeria).

Another crucial lesson is the provision of more insights to municipal planners on the risks and benefits of each type of urban agriculture. *Effective guidelines on the management practices to be adopted by <u>each type</u> of urban agriculture and the conditions under which such types of agriculture are acceptable in certain locations* need to be developed.

Several participants point out the *need for adaptations in national laws in order to enable new developments at local level*. The example in Harare, Zimbabwe, calls for the revision of the Town and County Planning Act to include urban agriculture as an accepted form of urban land use. But several inspiring examples at national level show how experiences at local level have led to changes in national laws e.g. the inclusion of participatory management of urban open spaces in the National Human Development Policy of Tanzania.

In certain other countries, the initiatives to develop new policies for the integration of urban agriculture in land use planning are being undertaken at the national level, e.g. the Inter-ministerial Committee on Urban Agriculture and Environment in Benin and the Zambian National Commission on Food and Nutrition. Reports from Kenya indicate that the new government is taking steps to develop a new land policy, integrating urban agriculture along with housing rights for the poor and adequate water and sanitation. In this context it is also worth mentioning the initiatives developed by the Municipal Development Programme in Harare, MDP-RUAF, to organise a successful Ministers Conference on urban and peri-urban agriculture, as well as the integration of urban agriculture in the NEPAD Sustainable City Initiative.

Difficulties encountered by municipalities when applying such strategies

During the E-conference several problems encountered by municipalities in optimising the agricultural use of urban and peri-urban spaces were mentioned.

The awareness of local policy makers of the economic, social, health and environmental benefits of urban agriculture is often limited due to the *lack of well- packaged information in a language understood by decision makers*. This is especially true regarding the realistic assessment of the health and environmental risks associated with urban agriculture and available strategies to reduce such risks. What sometimes may be clear is the importance of urban agriculture for the urban poor at *household level*. But what the contribution of urban agriculture can be at *aggregate level* for the realisation of the municipal policy priorities is much less clear.

Although land tenure raises important technical and procedural questions, it is ultimately a *political issue*, since rights over land cannot be isolated from packages of rights in general.

Municipalities encounter difficulties in translating their policy intentions, regarding facilitating access to land for urban agriculture, into effective municipal by-laws, norms and regulations that are financially sustainable and that are easy to control and maintain without major externalities. The development of adequate municipal policies, by-laws, norms and regulations regarding urban agriculture is hampered by the *lack of good examples of effective policies and regulations*. Municipalities sometimes have a *limited capacity* to formulate policies on urban agriculture – and related support programmes – or to control and enforce the adopted by-laws and regulations. The integration of urban agriculture into city development and land use plans is often restricted by the *lack of knowledge* of municipal planners on the *practical methodologies* that enable such integration.

A serious complication is that there are often *different systems of legislation relating to land*, and different forms of tenure, co-existing in the same city, or between an urban area and its surroundings. Often there are a *large number of institutional actors* varying in size and legal status, who have - sometimes - overlapping jurisdiction over urban land that further limits the capacity of city authorities to regulate urban land use.

Several participants also pointed out *the need for adaptations in national laws* in order to enable new developments at local level.

Gender differentiation of access to land and water

The topic of gender and access to land aroused quite some discussion, which led to interesting observations. Gender differentiation of access to productive resources and gender division of labour in agriculture have *to be analysed in each city and for each urban farming system*, specifying constraints and opportunities for men, women and children.
One has to be careful with transferring knowledge about gender in rural agriculture to urban agriculture, since the urban context and conditions may lead to important changes in the cultural definition of roles, in the division of labour and in access to productive resources.

Both women and men use social relations and networks through which households and individuals within households seek to get and secure access to land and water. It is often reported that the location of the plots is of special importance for the women involved in urban agriculture because of safety, costs of transport, time spent in travelling to and fro, and the possibility to combine urban agricultural practices with household chores.

Despite the vast social and cultural differences, the cases from Ghana, Nigeria and India have at least one common feature - it is mainly men who hold land titles. As a consequence, women's access to credit and finance is limited. In the case of divorce, marriage or inheritance, women members often have more difficulty to maintain their rights to land than their male counterparts. However, in both

situations women may get access to land through leasing (mainly short-term). Reports from West Africa indicate that it is mainly the men who do the urban agriculture production, although the women may "help" their husbands. Women urban farmers tend to use the more marginal lands, have smaller plots, use irrigation water of lower quality, and use fewer inputs. Women tend to grow short-cycle leafy vegetables for home consumption and sell the surpluses, while men focus more on temperate vegetables only for sale. In the Indian case, women lease agricultural land and do most of the production and marketing work themselves, while their husbands areinvolved in some sort of urban job.

Participants recommended that *urban agriculture projects should specifically target women* in order to overcome present gender differentiation regarding access to land. Female-headed households should be specifically targeted and assisted to access land close to their homes. Special attention has to be given to selling and processing of products, and more research has to be undertaken on gender differentiation of access to productive resources in urban agriculture.

Other themes discussed were the reuse of waste water, the use of compost for urban agriculture, the 'hot' issue of livestock in the city, the innovative urban and peri-urban systems for land confined conditions, the minimal plot size and the use of GIS for matters of urban agriculture. For a more extensive overview of the discussion, please visit www.ruaf.org/E-conferences.

4. OVERVIEW OF THE EXPERIENCES PER CITY (AND RELATED DISCUSSION)

Introduction

This paragraph brings together the participants' experiences per city where the experiences were gained, together with the questions and remarks raised by other participants (often with experience in the same city). Three city cases served as a basis for starting off the discussions in the conference (see cases annexed).
We have included the names of the authors[4] of the various contributions and we have added the list of participants with email addresses in order to enable further contacts, exchange and cooperation.
The text in bold reflects the diversity of strategies and policies applied by the various cities and other organisations to optimize agricultural land use in the urban areas.

Cagayan de Oro, the Philippines

Dr. Robert Holmer wrote about:
* The creation of **community (allotment) gardens on privately owned land leased by associations of urban poor** interested in gardening for food and income. Important learning points: the importance of a good understanding of the local social relations before group formation, the importance of active involvement of the municipality, the importance of training (both on cultivation and management practices as well as the social values required for community gardening, e.g. by involving NGO's).
* The **formulation of a City Ordinance that regulates the use of vacant land for urban agriculture**, provides tax incentives for land owners that rent out land for agriculture, and requires that space is reserved in new residential schemes space for allotment gardening.

These experiences roused the interest of participants from other countries. It was suggested to also give attention to **land owned by parastatals and other semi-public organisations** (see also the Zambia 'negotiation case').

Questions were raised by *Prof. Emmanuel Olofin* on how to replicate this allotment gardening approach under negative policy conditions (e.g. in Kano, Nigeria).
Mr. Jacky Foo asked about the possibilities to make the allotment gardens economically sustainable (farmers do not yet pay any rent, production/marketing capacity is still low, investments are done by international sources).
Ir. Henk de Zeeuw was interested to know whether it would be possible to apply this approach at a reasonable scale.
Yang asked how the cultivating capacity of the gardeners will be enhanced.

Mr. Julius Bona further explained the backgrounds of some of the problems encountered in the allotment gardening project. What stands out is the need to carefully communicate the project concepts, aims and approaches to the farmers, local community organisations and staff at various levels of the organisations involved in the programme, a strong emphasis on a participatory approach linked with capacity building at various levels and a lot of attention to the process of inter institutional cooperation.

The Copperbelt, Zambia

Gail Steckley, Mike Muleba and Henri Loongo wrote about the application of an **"interest-based negotiation" process involving large institutional land owners, "illegal" poor urban farmers of that land, and a facilitating/mediating neutral party** (in this case an international NGO) in order to

[4] Some participants did not inform us about their academic title.

come to formalised leaseholds that satisfy the needs of the poor farmers as well the interests of the owners.
Important learning elements brought forward: the need to organise the urban farmers in order to be able to voice their interests, the need to search for win-win solutions of interest to both parties, the role and objectivity of the facilitator, the importance to involve the municipality (legitimacy of the process, effect on local policies regarding urban agriculture and up scaling), the need to develop and agree on guidelines for land management by the farmers and the importance to train the urban farmers in adequate agricultural practices to secure higher productivity (shift from maize to vegetables!) and maintenance of soil fertility. Problems were encountered regarding the participation of women due to the large distance between the houses and the field plots.
Ms. Eunice Njogu and others expressed that the approach followed by CARE is a good example for other NGOs and CBOs.

Rosario, Argentina

Di Bernardo et al et al wrote about:
* The **(participatory) inventory of vacant open land in the urban and peri-urban area, its actual use and the classification for its suitability for (certain types of) urban agriculture**, as a basis for the development of land use plans, and its integration into municipal land use policies. For each of the resulting **typologies**, potential agricultural land use is defined, either in terms of farming or crop systems (for example home gardens) or in terms of mixed land use where production for food and income is combined with other functions such as recreation, green space, nature and landscape, water storage/flood plain, etcetera).
In the resulting **typology,** agriculture for food and income is combined with other functions for each location in the city: recreation, green space, nature and landscape, water storage/flood plain, etcetera).
The inventory showed that a. large amounts of vacant land are available (not only in Rosario but also in Cienfuegos, Cuba and Valadares, Brazil). Hence, land availability in itself is not a problem, access is the main issue; large part of these lands are potentially suitable for urban agriculture.
Alongside the suitability of the land, one should also determine its availability and accessibility for agricultural land use, e.g. municipal land areas that are less suitable for construction (roadsides, river margins, public parks, flood plains) have a high availability/accessibility for agriculture.
* **Consultative workshops with urban farmers in existing agricultural areas involving farmers as well as technicians, municipal officers of various departments and NGOs/CBOs** to arrive at agreements on required improvements in the management of the farms in relation to improvements in the legal status of the agricultural land use.
* As a result of the above participatory action-research and multi-stakeholder approaches, urban agriculture is now officially recognised as a form of urban land use, and is integrated in the city land use and urban development plans. Urban agricultural land use (in suitable / accessible locations) is being promoted as part of the municipal programmes for food security, environmental management and income generation.
* The creation of a **Municipal Land bank** that will facilitate identification of potential urban agriculture areas and negotiation of their use.
* The **development of community gardens on suitable vacant public land made available by the municipality on lease.** This approach seeks to make optimal use of the available underutilised resources: vacant lots, unemployed labour, urban wastes, abandoned infrastructure. The municipality signed agreements with groups of urban poor interested in farming in community gardens granting them temporary user rights. The community gardens can be only for food production or combine other functions (multifunctional land use, e.g. combining production with recreation). The Parks and Public Spaces Department has integrated community gardens in their natural parks, assuring an aesthetic design of the gardens (use of aromatic plants, fruits and crops of different colours). The Hydraulic Department promotes agro-ecological urban gardening on river margins to support soil management, water infiltration and to prevent housing developments in these areas. Areas of 250 m² for home consumption or 500 m² for marketing are provided per family, associated in groups of 5-15 families.

Problems encountered: a part of the vacant lots are degraded and careful analysis of the risks and limitations of its use is needed; the legal status of many vacant plots is unclear.

An important lesson learned was that t**he municipality accepted urban agriculture as a legal land use form and integrated it in urban land use planning and development programmes, due to various factors**:
- the *mobilisation of the urban poor or farmers expressing their needs and proposing urban agriculture as a development strategy* (in Rosario for example 1500 women gardeners gathered last August to discuss strategies to improve their access to land)
- the *involvement of local NGOs and universities* presenting data on land availability, actual presence and impacts of urban agriculture
- the *political recognition of the issue by an outside agent, such as the UN* (in Rosario the UA programme,a dn specifically action-research activities in relation to access to land is supported by UMP-LAC/UNHABITAT,IPES and IDRC)
- the *collaboration among different municipal departments* (strategic planning, housing, parks and gardens)

Overall strategies for facilitating access to land for urban agriculture should include:
1) **setting up of a city committee** and a **programme for urban agriculture** etc.
2) **incorporation of urban agriculture in land use plans and city development plans** (on neighbourhood or city level)
3) **development of a facilitating legal framework** (temporary user rights, fiscal incentives)
4) **use of specific instruments like an urban agriculture Land Bank, GIS, participatory diagnosis and action planning, multi-actor budgeting**

Henk de Zeeuw found both the methodology used to arrive at a classification of vacant open spaces for various types of agricultural use, and the concept of multi-functional use of open urban spaces of high importance. It makes clear for policy makers that urban agriculture is not just about food and poverty (something temporary in their view) and shows urban planners how to integrate urban agriculture into their land use plans. This case illustrates clearly that, in the search for affordable land for urban agriculture, it contributes enormously when there is a supportive municipality. He wanted to know about the costs of this exercise; is Rosario a special case or can this process be repeated easily elsewhere?

Kano and other cities in Nigeria

Emmanuel Olofin and Dr. Adamu Tanko wrote that the Land Use Degree (Act) excludes urban agriculture as a formal urban land use and that there is no formal and coordinated institutional effort to manage the existing problems in urban agriculture and support the urban farmers.
In the peri-urban areas one finds an overlap of customary rights (that are predominant in the rural areas) by formal statutory ownership rights that are predominant in the cities. Formal pow ers facilitate a change in land use from agriculture to other uses. Land fragmentation and the insecure land tenure prohibit investment and development of more productive urban agriculture.
They recommended that the municipality should demarcate tracts of land that are not well suited for development of urban structures (flood plains of rivers, along railway tracks) for agricultural use, and allocate such land to farmers. To convince the local authorities, the provision of good examples of policies and leg al instrument regarding urban agriculture is needed as well as the involvement of NGOs to stimulate awareness and to promote coordination and cooperation regarding urban agriculture with active involvement of the urban farmers.

Ms. Kathleen Flynn-Dapaah reacted that her research in Kano shows that urban farmers value autonomy and often prefer other forms of cooperation than cooperatives, which do not always work.

Dr. Kenneth Lynch et al indicate that urban agriculture in Kano seems to develop especially in peri-urban areas where land use rights are ambiguous due to the overlap/clashes between the traditional customary rights and the commercial land markets and therefore "niches" exist that can be made use of by the urban poor. Kano and other West African cities apply **"accommodative" strategies by making land available to resource poor urban people for restricted periods under certain management conditions e.g. crop choice, no building, waste management, etc. (negotiated use rights)** which has certain advantages for the owners of the land: protection against squatting/building, flood protection, prevention of illegal dumping, a/o).

Mr. Kalliro Nicolis suggests the creation of allotment gardens in the poorest parts of Kano, since the urban setting requires an adapted organisational and technical design.
Mr. Niyi Adediran (Banjul, The Gambia) reacts by stressing that urban farmers need to be assisted in forming cooperatives and using the strength of unity to press their demand for recognition and secure land rights.

Oluyinka Olukosi states that also in **Ife-Ife** (Southwest Nigeria) a change to more intensive and productive forms of agriculture is constrained by the land tenure situation (the chiefs allocate available land to individuals for seasonal cropping every year).

Ms. Vide Anosike indicates that in **Lagos** many urban farmers abandon their plots due to the negative image urban agriculture has among citizens, a/o due to perceived negative environmental and health hazards, the unproductive techniques applied and the constraints encountered. Urban farmers need assistance to reduce the environmental and health risks and to become more productive.

Olukosi Oluyinka informs that in **Ede** (Nigeria) "would-be" urban farmers created allotment gardens on "no man's land" outside the city with micro-credit from a financial organisation. In Nigeria vast tracts of such land "without owners" exists. Could policies be developed to make such land available to "would-be" urban farmers?

Dr. Margaret Pasquini indicates that in **Jos (**Nigeria) she encountered clear examples of competing customary land claims. The Hausa, who have been very successful growers for generations, are now being pushed out by local customary land owners, who had previously rented their land to these vegetable specialists. This trend of indigenisation of land tenure for dry-season irrigated vegetable production had already started during 1993-96.

Kampala, Uganda

Dr. Julius Kyaligonza wrote that researchers and NGOs in Kampala have developed a conscious strategy to make the municipal authorities appreciate the role of urban agriculture by a) researching the presence, benefits, risks and reasons for doing urban agriculture, b) carefully **"packaging" research results into user-friendly information for politicians, planners, managers** and other stakeholders; c) facilitating the **involvement of municipal officers and managers in a consultative process with urban farmers and other stakeholders.**

Mr. Elijah Musenyente spoke about the **development of model farms for/with disabled persons** in Kampala practising organic farming on small areas of land, with recycling of household wastes, rainwater harvesting, IPM, etcetera.

Nairobi, Kenya

Dr. Washington Olima expressed the need for the following measures:
* drawing up a city food policy;

* integrating urban agriculture into physical development planning by designating zones for urban agriculture (especially near processing industries);
* providing temporary occupancy licenses to farmers on public land demarcated for a future alternative use;
* setting clear rules for the relations between land owners and urban farmers;
* supporting the formation of associations of urban farmers and enhancing the economic profitability of urban agriculture.

Dr. Diana Lee-Smith indicated that the urban poor create access to land by all available means including networking, negotiation and invasion. She explained that major land invasions by slum dwellers were a usual phenomenon since corrupt politicians instigated such evasions (land grabbing). The new government is making an effort to reduce these practices. Under these conditions it becomes possible **to develop a new land policy integrating urban agriculture along with housing rights for the poor and adequate water and sanitation. The Nairobi Environment, Food Security, Agriculture and Livestock Platform has been established** with the integration of urban farmers and is developing a Plan of Action for 2004 that will be implemented with support of the Ministry of Planning and Local Government.

Ms. Njeri Lynne Karanja is setting up a **demonstration project with gardens for production of vegetables/herbs with groups of poor urban women** in the Central Business District of Nairobi, actively involving the municipal council.

Ms. Catherine Kilelu points out that in Nairobi access to existing agricultural land is dominated by local informal social networks while access to public land may be created by the municipal authorities.

Mr. Mario Cepeda reacts that, as in Nairobi, also in **Mexico City** powerful persons sent poor people to tracts of land left idle in order to claim occupancy rights. Therefore, it is difficult to imagine that the municipality will develop and enforce guidelines for the regularisation of urban agriculture.

Accra, Ghana

Dr. Pay Drechsel pointed out that in Accra urban agriculture is an accepted form of legal land use. Crop cultivation on open plots has to be registered; for backyard cultivation no registration is needed. Up to ten goats and sheep can be held in the premises for domestic and religious purposes, elsewhere a permit is needed; this also applies for cattle and pigs. But obedience is limited as well as the (means for) enforcement. Since 1977 (decentralization) a **Metropolitan Director of Agriculture works at the interface of the Municipality and the Ministry of Food and Agriculture.**
Agricultural land use as such is accepted, but the use of waste water to irrigate the crops is not and this in practice reduces the acceptability of urban agriculture for policymakers and urban agriculture remains informal with no cross-sectoral attention for urban agriculture by the local authorities (another important issue is the frequent informal and unhygienic slaughtering). To overcome this constraint, **guidelines for the management of wastewater reuse in agriculture were developed that can be used by municipalities** to assure a good balance between safeguarding public health and farmers livelihoods.
He also indicated the importance to **differentiate between different types of urban agriculture and to identify and quantify the benefits and risks related to each type of urban agriculture in certain locations.**

When doing so, one should clearly differentiate between the impacts of urban agriculture for the livelihoods of the individual urban farmers and the aggregate value of urban agriculture for the city. In this way it becomes possible for the local authorities to analyse whether/why it is worthwhile to invest in urban agriculture.

Kathleen Flynn-Dapaah pointed out the importance of good knowledge of the local specific social systems that create access to urban/peri-urban land, and **to study the mechanisms used to build tenure relationships** (both by/among farmers as well as by other interest groups). The creation of access to land / more security of land use is not just a technical bureaucratic issue but a **social issue and continuous power struggle** (both about the land itself as well as about how land rights are defined). Through investing in social relations and networks, households seek to gain and secure access to resources (cooperation between kin, marriage, participation in local organisations, churches, cooperation between women, etc.).
She recommends that comprehensive policies regarding access to land for urban agriculture should be build on in-depth knowledge regarding the daily negotiations on use and ownership rights, and not only on Geographic Information Systems and quantitative surveys.

She also suggests to use a more African concept of the city (including lots of open and productive spaces) and to "politicise" urban agriculture: urban agriculture as an alternative to unsustainable food systems, a movement to more healthy cities, and an integral part of urban systems.

She indicated various **options for creating access to land and enhancing security of land use for agriculture: green belts, land banks, licensing, fixed-term agreements, land rents, temporary rights to use vacant land, community gardens;** Farmers differ in their preference for certain options depending on their goals (e.g. subsistence or commercial farmers) and local conditions.

She pointed out that tree planting is one of the strategies used to strengthen land tenure security viz competing interests within the community or viz outsiders e.g. the State that wants to expropriate the land will have to compensate for the loss of the trees and hence may hesitate to do so due to scarcity of financial resources.

The Ghanaian Land Registration Act allows **registration of multiple land use rights to one single plot**, which from the urban agricultural point of view is a very positive fact since one plot may have different users (at different moments or for different uses at one point in time).

Mr. Emmanuel Obuobie stated that in irrigated agriculture in Accra, Kumasi and Tamale less than 10% of urban farmers are women, but that there is little gender differentiation in access to land since a. most land is government land, access depends more on ability to lobby for land and c. the arduous nature of the agricultural work (land preparation, irrigation).
However, women may have less power when lobbying for land and are not allowed to own land according to law.

Adamu Tanko reacted that there is a strong cultural bias, and that this is the ground for the gender differentiated access to land: women are culturally not allowed to leave their homes and work on the land.

Kathleen Flynn wrote that research in Accra shows that gender dynamics of resource relations are closely related with social relations and networks through which households and individuals within households seek to get and secure access to land and water.
In Afuaman, "natives", old newcomers ("pioneers"), new newcomers ("strangers" and "outsiders" ("citizens") have different opportunities to exert rights to land. A division, that is continuously contested and negotiated, the result of which is influenced by socio-economic status, gender, ethnicity and age.
Example: a native woman that marries a "stranger" may loose her hereditary right to a plot of land. But also, a poor woman who does so may have more chance to loose her hereditary rights than a richer woman.
Most farmers are males and land rights are mainly held by men. However, women have found creative ways to find access to land by investing in social relations. For example, women joined a Women's Movement and jointly approached the Military Base that leases out public land and obtained a 60 ha irrigated plot in usufruct. Also women invested in relationships with neighbours and special

friendships to access land (and labour) for their market gardening. For example, younger near landless women associate with elderly widows who have land to reap mutual benefits: the labour of the young ones helps the widows to cultivate the land and retain their land rights while the younger women in return gain access to the land of the widow.
Women also used participation in an agroforestry project as a way to get more control over the use of land of their husbands.

Mr. Emmanuel Opare (farmer leader of the Vegetable Farmers Organisation in Accra) wrote: I have my land at the military barracks. I get the land for free from a caretaker without formal knowledge of the military officials, which means I can easily be evicted. I use partially treated water from a treatment plant nearby, but the caretaker often uses this water for a fishpond.
Access to land may be obtained through either a link with the stool owning the land (if you have good relations with him), by buying or renting (if you have the financial means) and by good relations with the care taker of the land (if you can lobby well).
Access to land is difficult in Accra due to the type of chief in the area and the behaviour of the landlords and natives (stool), no provision being made for land for agriculture in the city plan, the difficulty to access government municipal land or plans to develop those sites, encroachment by estate developers and double sales of land.
A woman may access land through her husband (owner or caretaker) or in her own right when she is a widow.
The suitability of the land for agriculture depends on its fertility (often land that one gets is underdeveloped and not very fertile), its distance to the market (transport is very expensive), the duration of the lease (often temporary and insecure unless one owns it), availability of water: no water at all, clean piped water (but water company prohibits its use for agriculture).
My advice to the Mayor would be to create a "*green belt zone" to be used us farming areas.* There are idle lands in and around the city of which some are not fertile. This land should be allocated to farmers' organisations or co-cooperatives and other committed individual farmers as well. The city authorities should tax the farmers and take some percentage from their income as repayment for the creation of the green belt.
Sorted organic waste from the market or households should be dumped on the fields for decomposition. After that the Ministry of Agriculture should provide ploughing machines to incorporate the decomposed waste into the soil before farming starts within the green belt zones.
Water should be provided to the farmers with the needed micro irrigation technologies.
The food crops to be grown in these green belts should preferably be vegetables that are not eaten raw.
Poultry farms could be added to the sites to reduce farmers' transport costs for bringing in additional soil inputs.
The benefits of such green belts would be: 1. increase in job creation, 2. increase in food production, 3. increase in revenue to the city authorities, 4. the city will be cleaner, 5. will add to the beauty of the city.

Nadhyapur - Thimi, Nepal

Mr. Kai Weise writes that:
* The municipality established a **"reserved zone"** presently used for agriculture. This zone is **reserved for agricultural use** and development of urban infrastructure is prohibited. Exceptions are allowed only on good grounds and after public discussion.
* A Regional Planning Association assisted the municipality in the **development of adequate (zoning) by-laws and regulations regarding urban agriculture.** These by-laws function mainly on the basis of incentives and deterrents rather than coercion and control.
* **urban agriculture - support programmes in the agricultural zones are under preparation**.
Important lessons learned are: the need to differentiate between temporary use by urban agriculture of vacant plots and urban agriculture as a permanent form of land use (e.g. a designated zone), the need to distinguish different types of urban agriculture, the limitations of municipal zoning plans and regulations, the importance to assist urban farmers in the transition to more productive and competing

forms of agriculture (create access is one thing, make agriculture competitive with other land uses is another thing), to focus on areas where agriculture has a better chance to be competitive (e.g. flood plains), relate urban agriculture to the recycling of urban organic wastes which makes it more interesting for the municipal authorities. Problems encountered include the low esteem of agriculture among the young people (and also therefore the need to "modernise" urban agriculture) and the political instability / change of government. He also indicates that the economy of urban agriculture is a critical issue.

Prof. Axel Drescher reacted that *Weise* is right in pointing out the economic dimension of urban agriculture. We need to apply the methodology of environmental economy to assess the health and environmental costs of non-treatment of urban waste water, the non-collection and recycling or urban solid wastes, the costs/benefits of open space management by urban farmers, etc.

Mr. Saryug Yadav added that land in Nepal is not a property in the western sense but linked with social, ethical and economic concerns. A fast fragmentation of agricultural land is ongoing since people are less interested in farming and want to sell their land for housing and other purposes.

Mr. Kanhaiya Sapkota further explained the traditional forms of land tenure in Nepal. Before 1964 land was State property (*raikar*) or property of the Communities (*kipat*). The 1964 land reform recognised the rights of registered tenants (introducing a sort of dual ownership). But tenants lack formal registration documents and therefore investment in the land is low; As a consequence its productivity is low.
Women are involved in all aspects of production but their share in decision making is not in relation with their labour inputs and women are not involved in land use rights and related transactions.

Mr. Ram Bhandari indicated that the municipal demarcation of urban agricultural zones may conflict with national Nepalese laws regarding land ownership which give ample rights to the holder of the land. The municipality may demarcate public land for urban agriculture, but probably one cannot force private owners to dedicate to urban agriculture.
He also indicated that there are vast socio-economic differences between the various parts of the Kathmandu valley and pleaded for integration of the representatives of the various sub areas in the land use planning process.

Mr. Koen Enserink remarked that wastewater irrigation is especially important to farmers in the peri-urban and urban area of one city in the valley, namely Bhaktapur. Farmers in that area plug domestic sewer lines and re-direct the overflowing sewage into their vegetable fields. The city officials are somewhat aware of the practice but there are no laws or regulations on the use of wastewater for irrigation in the city of Bhaktapur or anywhere else in Nepal.

Harare, Zimbabwe

Mr. Kudzai Chatiza mentioned that the Town and County Planning Act does not recognise urban agriculture as a legal land use. This has tended to limit the support to urban agriculture, even from city managers and planners with a sympathetic stand on urban agriculture since they lack the policy framework within which to respond to the growing agricultural activity in the urban spaces that they plan for and manage. Recognition of urban agriculture would create more equal conditions for urban agriculture to compete with other land uses.

Mr. Percy Toriro reacted that the Town and County Planning Act also not formally prohibits urban agriculture, although it contains measures to control it. He informed that among the urban farmers in Harare only a small percentage formally acquired land; the majority of urban farmers (estimated to be 80%) simply occupied land they considered to be idle. This comprises open spaces, river banks, under-developed private or public land. I am currently undertaking a mini-survey on conservation and tenure security and preliminary findings are that where there is tenure insecurity, there is little or no

investment in conservation, since the farmer is concerned only in short-term gains. In contrast, farmers who were formally allocated land tend to conserve 'their' land. This finding may have an important policy impact. As a Town Planner in Harare, I personally started to lobby for the acceptance of urban agriculture after being impressed by good conservation measures of one community group.

He also indicated that **lobbying and advocacy by urban farmers and other organisations works.** The acceptance of urban agriculture in Harare was largely due to lobbying by the concerned groups and advocacy by other organisations.

He continues to review the local policies regarding access to land for urban agriculture from a historical perspective. In the seventies, the Harare Council **zoned some 50 hectares of land in Mabvuku low-income suburb for agricultural use by urban poor**. However, the Council still only recognises the rights of the households the land was originally allocated to and not of those who have bought or rented parts of this land from the original allotees.
In the eighties the **City Council formally identified and demarcated allotment gardens and allocated land to the cooperatives managing the allotment gardens.**
One of the objectives of the Master Plan for Harare read: "identify and zone land for residential agriculture within the city" As a consequence **agricultural zones were included in land use plans** at lower levels, but only included privately owned land which provided little room for the urban poor. Due to the crisis in the nineties, competition for agricultural land in the city became very strong and households started to farm on lands that are ecologically fragile, such as borders of water courses, vleis, hill sides and tops).
In all these years legislation has been ad-hoc and inconsistent and its implementation depended strongly on the opinions of the sitting magistrates.
Recently **urban agriculture was formally recognised at local and national level as a legitimate land use form and an important strategy to urban poverty alleviation (Nyanga Declaration).** This already has its effects a/o that agricultural extension and other support services are provided now to (some) urban farmers too.

He also indicated that **community mobilization** has worked well in the capital Harare. Here a group of urban farmers who organised **a cooperative have gained access to and reclaimed land formerly used for sand poaching by building materials suppliers**, with the support of both the Harare City Council and local residents.

He also mentioned that **the involvement of the Association of Urban Planners in a Forum on Urban Agriculture** and the sharing of experiences, research data, site visits, discussion of good practices, etc. lowered substantially the resistance of the urban planners and made them cooperate in the search for ways to accommodate urban agriculture by developing responsive plans. However, the planners still lack skills and good examples.

He indicated that there is a need to come up with pro-people by-laws to protect the urban farmers in Harare, if there is an uncaring council. Current by-laws appear ambiguous and inconsistent with other levels of statutes: e.g. the Harare Master Plan has the promotion of urban agriculture as an objective but there is no such guarantee in certain lower-level statutory plans. Legislation must be accompanied by relevant regulations so that there is no subjectivity based on officers' perceptions of urban agriculture.

More importantly there is need to educate the Mayor and most technocrats on the benefits and risks of urban agriculture and the measures to be taken to ensure sustainability of urban agriculture. Exchange of information of identified models and successful cases will also assist local authorities and town planners to accept urban agriculture in the early stages.

The types of urban agriculture to be practised can also have a bearing on acceptance. In Harare, urban agriculture has been in some cases associated with cutting down of trees; agroforestry and bee-keeping as an example will certainly be welcomed by many. Integration of urban agriculture into waste

management will also help in Harare, where we are struggling with refuse collection. Advice on the types of crops to be grown would also help since some crops (tall) have been disliked for harbouring thieves in certain areas.

Mr. Takawira Mubvami mentioned that problems regarding access/security relate to the duration that urban agriculture is practised. Research results indicate that those who have been in it for longer periods (e.g. over 5 years) are more concerned with expanding their holdings. Those who have their plots only for a short period are more concerned with issues of security of tenure whilst those who do not have land yet are still trying to work out means of getting access to land. Those who have practised for long periods and have secured tenure have in most cases moved from subsistence to some form of commercial agriculture.

He indicated that in Harare **entering into lease arrangements with private and institutional land owners (schools, churches, hospitals, army, etc.) has worked quite well.** Leasing is advantageous to the owners as their compound is well maintained, green, and free from external influences. For the farmers, the advantage is that they know the duration of the lease and can manage accordingly. On open access public land the duration over which the land is available is not predetermined. This leads to low investments on the farm and thus to low productivity and subsistence orientation. This again may confirm the negative image that many local authorities have of urban agriculture (temporary, low productive, not economic).
He recommended to focus on land use rather than ownership and to involve urban farmers groups in land use planning.

Mr. Shingirayi Mushamba saw **the integration of home gardens in new settlement schemes as an important option since home gardens are not a contentious issue with local authorities and not restricted**. He wondered what the minimum size of the plots should be.
Planting of fruit trees along streets and growing of vegetables and fruits in parks were mentioned as promising options. However, in the latter case protection against theft is an issue and it may be difficult to get permits for erecting fences for aesthetic reasons.

Percy Toriro indicated that the legislative framework is important, but that the political will to implement the framework is even more important. This was lacking for a long time in Harare.

Tinashe Nhemachena agreed with *Toriro* regarding the need to enhance security of agricultural land use (although it may be difficult to realise) and said that the municipality should include urban agriculture when designing the layout of urban areas so that it functions according to set environmental guidelines.

Hubli-Dharwad, India

Dr. Robert Brook wrote that, despite the many urban agriculture activities, especially urban livestock, there is no official recognition of urban agriculture and that no support programmes exist. However, the **municipality maintains a green belt around the city**, where agricultural land remains, but even in these areas, developers can request changes to the plan. The green belt is not static either, and moves as the city grows.
The Karnataka Municipal Corporations Act 1976 includes **legislation regarding keeping livestock in urban areas.** This act sets out that permission is required to keep more than ten animals within a corporation area. The Act states that dairy and poultry units should not be established in the vicinity of human population in the urban area. Before keeping medium- to large-scale dairy and poultry farms, the entrepreneur has to get no-objection certificates from the neighbours around the proposed unit and a health certificate, as pre-requisites for obtaining a permit. The local government's attitude towards urban livestock seems to become more restrictive.
He recommended that agricultural land use zones should be created under the condition of pre-defined management practices which should be monitored and that in these zones and equate veterinary

services and education of the urban farmers (e.g. on stall rearing, on safe use of waste water) to be provided.

Beijing, China

Dr. Liu Shenghe, Prof. Cai Jianming and Mr. Yang Zhenshan wrote that from 1985 to 2002, the area of cultivated land shrank with 41% because of urbanisation. **Efforts have been taken by the local government to reserve a certain amount of cultivated land for agricultural use only in the inner suburban zones of Beijing in order to maintain a sustainable urban ecological environment and to provide vegetables and food locally**. The "General Urban Plan of Beijing (1993-2010)" directs new urban development to the outer suburbs and remote counties, rather than the inner suburban zone. **"Ordinance for the protection of the primary agricultural land in Beijing"** was issued by the Beijing Municipal People's Congress in 1994. It stipulates that, "The requisition and occupation of primary agricultural land should be strictly controlled" (Article 15); "All units and individuals are strictly forbidden to leave cultivated land unused or let it lie waste" (Article 18).
Increasingly, the local inhabitants of the near suburban areas of Beijing are choosing for higher paying jobs in the city. Migrants from outside Beijing work as agricultural labourers or tenants in order to meet the requirement that agricultural land is not left idle. The migrants rent the land from local village committees or directly from the farmers, for whom leasing land has become an important revenue earner. Land without greenhouses are rented for 5 years (the migrant is expected to build the greenhouse), land with greenhouses are rented for 1 year only.
The authors recommend improving the modes and conditions of the land leases to migrants.

Emmanuel Olofin reacted that one-year leases are too short to guarantee maintenance of soil fertility and investments to increase productivity.

Mr Yang Zhenshan responded that it is difficult to acquire longer term leases due to the rapid city development. But more important than duration is the security of the lease. However, the duration of the lease strongly affects the land use efficiency. **Often groups are able to obtain better lease conditions than individuals.**
He also indicated that the urban sprawl meets different reactions in different regions and this had to be taken into account (quick selling of land and shift to urban jobs, urban sprawl as an opportunity to get out of agriculture), versus adaptation of farming systems to changing conditions and continued farming (urban sprawl as an opportunity to improve income in agriculture).

South Africa

Ms. Constance Windberg cited from the work of Aussi Austen et al. that urban agriculture is finding a growing acceptance among local authorities in South Africa with regards to the needs of the urban poor and the potential of urban agriculture for food security and local economic development. However, no clear policy guidelines are available yet.

In **Guateng province** (Johannesburg, Pretoria) the **Dept of Agriculture, Conservation Environment and Land (DACEL)** supports group of marginalised people (unemployed, female headed households, HIV-Aids affected) to produce their own food (with training, seeds, equipment) if they have land with security of tenure (this makes access to land the crucial issue for these groups).

In **Cape Town,** the NGO **Abalimi works with schools that hand over land for agriculture to the poor in the neighbourhood.**

Mr. Lulama Ludumo Sombalo wrote that the municipality in **Khayelitsha** (close to Cape Town) **moved farmers from Green point to Macassar and supplied them with plots of land of 100 to 200 m2 free of charge**. However, ownership of land is problematic, since no title deeds were provided and

land policies are complex and poorly understood by the urban poor. Vacant land is available (road reserves, under power lines, in storm drain system, land earmarked for schools, churches, etc.) and could be made productive by its provision to urban farmers for temporary use.

Mr. Ayanda Obose shared that the **Department of Agriculture of Western Cape Province supports urban food security in various ways, on request of organised groups (this year 136 grant applications).**
Most critical problems are lack of access to land and water (and where this is available there is little cooperation between owners and potential users) and livestock keeping (diseases, smell, conflicts with neighbours, competition for land). He plead for the creation of an inter institutional platform to develop joint support strategies for urban agriculture in order to ensure higher yields, better land use management, food safety, problem solution.

Dolph Swanepoel and Ms. Ina Meyer reported that in Ikageng, Potchefstroom**, the Direction of Health and Environment is implementing an Eco-Garden project** that has reached out to 3000 households, schools, clinics, churches, day care centres and guesthouses. Circular gardens with wet pipe irrigation using kitchen water are created to grow vegetables, herbs, flowers on municipal wasteland (which is abundant). Vermicomposting is applied and nutrition and gardening education is provided.

Mr. Hennie Eksteen indicated that many urban farmers in **Mpumalanga** Province continue to grow maize which is not recommended (long season, lot of water needed, low success rate, not suited for small parcels, low income). So the big question is how to facilitate the shift to another urban farming system focussed on organic vegetable growing with use of compost and in combination with constructed wet lands to purify the waste water for irrigation.
He also pointed out that in his view the local government will not provide land for urban agriculture that can be sold or developed since they try to attract investment. This means that ecologically fragile spaces are used for urban agriculture (close to streams, marshy vleiland, etc.). So, careful land management is of high importance. The provision of a permit or other ways to secure tenure would be helpful to stimulate that people act responsibly.

Cienfuegos and Havana, Cuba

Dr. Alejandro Socorro Castro wrote that the "Optimisation of Land Use for Urban Agriculture" project is being carried out simultaneously in three cities in the region: Governador Valadares, Brazil; Rosario, Argentina; and Cienfuegos, Cuba, and supported by UMP-LAC/UNHABITAT, IPES and IDRC. An action-research process was implemented consisting of different interrelated phases, with the objective of building local capacity for the integration of urban agriculture into urban land use planning.
* A **participatory diagnosis** studying the actual and potentual productive use of land was carried out, through interviews, surveys, workshops and an analysis of the current practice of physical planning. Participating organisations, like the University of Cienfuego and the Provincial Department for Physical Planning received training on GIS and community mapping during thisprocess.
* A **GIS tool** was designed and implemented with indicators for the efficiency of urban land use.
* This tool was used in a participatory way in the process of **elaborating concerted land use maps** followed by the **elaboration of an action plan**.
In Cienfuegos most of the vacant lands available are state or institutionally owned. Large areas earmarked for future construction or industrial lands are given out to farmers for temporary use in crop or animal production. Specific groups (the elderly, disabled, youth) have specific rights to the land. Also specific land areas are zoned for permanent urban agriculture.

An important aspect demonstrated was that the optimisation of land use is not a passive process of applying geographical and statistical tools, but rather an **active process**, which requires a sort of

anthropological intervention in full interaction with the surrounding context, which is characterised by social, economic, environmental, institutional, and political relations.

The experience has demonstrated the importance of consensus-building in land use, not only from the technical point of view or in terms of the use of productive inputs, but from various sectoral perspectives related to ecological, economic, socio-cultural and institutional dimensions. Urban agriculture is an activity which is guided by the characteristics of a certain agro-ecosystem, but is also subject to the particularities of urban ecosystems, which are characterised by complex relationships which can pose problems to its sustainability. The optimisation of urban land use as a process of participation and multi-sectoral integration represents a space for consensus building and the strengthening of governance, and an exercise of participatory democracy applicable to other processes of consumers.

Ms. Pamela Morgan adds that in **Havana**, Cuba urban small spaces are used for urban agriculture by using **permaculture practices in "organoponics"** (raised beds with mixtures of organic materials placed on whatever surface available including rooftops) to grow vegetables and medicinal plants year-round within cycling distance of the consumers (hence reduction of energy costs in transport, packaging, etc). Water is always a critical factor: rain water storage and reuse of grey household water from apartment blocks is an important option to be explored.
Some of the other ongoing activities in Havana Cuba include: research on **fruit trees suitable for urban areas** - non damaging root systems and establishment of a **"food forest" in municipal parks** as demonstration/promotion sites for citizen's initiatives; **extension support education on composting/nutrient management and IPM**; **evaluation of suitability of old buildings for rooftop and balcony gardening**; **established procedure and protocols for the use of vacant land for urban agriculture; state supported interchange of experiences**.

Constance Windberg cited Food First's book on Cuba:
* **Establishment of an Urban Agricultural Coordination Group** at National, Municipal and neighbourhood level that coordinates production and distribution of food and provision of support services
* **Clear principles for planning urban agriculture**: uniform distribution throughout the country and a logical relation between the number of dwellers and the production per region; crop-animal integration; intensive use of organic matter/wastes/by-products; use of every available patch of land, intensive production, intensive use of science; fresh supply directly.

Bangalore, India

Ms. Almitra Patel informed that the **Bangalore Development Authority** is applying the Green Belt concept for many years including **long term protection of vine yards and orchards**. However, it is likely that the **Green Belt will be lifted and shifted outward**. This may lead to the loss of the orchards/vineyards. Efforts are being made now to safeguard these areas by introducing the **Agri-Park concept:** The orchards and vineyards are developed into a green recreational space for outings, ecological education etc. BDA leases the land to farmers who bid for a contract and who under guidance of a multi disciplinary steering group apply organic farming, with reuse of organic wastes, rainwater harvesting, controlled flooding/drainage etc.

Some innovative **municipalities like Vijayawada have started to involve farmers (mainly urban) in order to develop and maintain their parks** since most Indian cities are unable to do so. 75% of the funds needed to develop the park and 50% of the annual maintenance costs are granted to each group that deposits Rs 50.000 and develops/maintains an agri-park.

She also informed that the City Commissioners in India do not have the power to grant leases for longer than three years duration - at most 3 + 3 years lease can be managed.

She expects most success of **approaches in which the owners of vacant land -whether public, corporate or private- are directly approached in order to seek a win-win situation for both parties** in which the owners gain protection against squatting, dumping of garbage/debris, get trees planted at no cost if they want etc., while the landless acquire access to land for a certain period. Practical examples include a school in a slum area, a welfare association, and women's cooperatives, that all manage to get access to vacant land in this way. The main risk is that some local leaders "hijack" such social projects for private gains.

The State Forest Department is promoting tree growing. Also quick growing / short lived species may be included (more apt for land insecure urban farmers) as well as street trees. The National Tree Growers Federation manages a Land Trust Scheme for collective afforestation in urban areas.

Ms. Ranjini Gupta responded by saying that most municipalities are slow to create composting sites and are resistant to allocate land for urban agriculture (what they see as a waste of valuable land). Hence **the need to force the municipalities by law to establish waste recycling regions in the periphery of the cities (composting plants and reuse in agriculture).**

Hyderabad, India

Dr. Stephanie Buechler shared that the existing sewage system of Hyderabad cannot cope with the increasing amount of sewage water. The amount of wastewater released by the city is 600,000 m3/d. 19% of this wastewater produced by the city and by industry receives primary treatment, while only 3% receives secondary treatment before it is disposed of in the river Musi. 78% of the wastewater receives no treatment at all. Peri-urban farmers (90%) use the polluted river water to irrigate Para grass (and the other 10% to grow flowers, coconut and other fruit trees). The Para grass is transported daily to the city and sold to urban farmers who keep buffaloes for milk in sheds adjacent to their homes. The security of land rights of the peri-urban farmers is weak. The city has tried to convert land along the Musi river downstream of the city into public gardens and roads. More resourceful households have been able to file legal cases and get compensation (cash or replacing land). Poor farmers are unable to do so.

Ms. Gayathri Devi informed that land in peri-urban Hyderabad India land is normally in the name of the husband and inherited by the male members of the society. Only in case the family has no sons or if the sons are still under 18, the woman gets the land title. In the case of divorce, the title stays with the husband. Dowries for daughters are normally settled in cash and jewellery, while the land is reserved for the sons. Both men and women can lease land. Many land owners find female renters more reliable. Access to water depends on closeness to the river rather than gender.
It is mostly women who work the peri-urban land (who rent the land from landowners) while the husband seeks an urban job. The women arrange for transport (by male transporters) and sell the products in the city (Para grass, vegetables).
The urban dairy farmers include both men and women but women do most of the work.
Due to low access to education, the opportunities for women to get a job outside agriculture are limited and less rewarding.

Bamako, Mali

Dr. Dieudonné Zallé, Ms. Fatima Meite and Mr. Amadou Konate reported that agriculture is taken into account in the main outline of the city planning but in the struggle between the quest for land for agriculture (urban agriculture is expanding in order to meet the growing demands of the urban consumers) and for construction, the latter always gets the upper hand (the area available for market gardening has gone done to 20% of what was available thirty years ago).
Access can be obtained through customary rights, renting (expensive), loaning (mostly temporary) and buying. More than 70% of the farmers do not possess the land. Traditional institutions that regulate

customary rights to the land owned by the community and its management are weakening due to the intermixing of population and social disintegration of the communities. **Positive law, e.g. the National Land code Act, takes customary rights into account e.g. by referring cases of conflict to the customary institutions before taking formal decisions.**

One has to clearly distinguish between intra and peri-urban agriculture. Their characteristics and problems/constraints are quite different and require a different policy response. In the intra-urban areas available spaces are very small and production modes tend to be intensive with high added value. In the peri-urban areas (which in Bamako partly are "hemmed in" in the city along the river Niger and the railway tract) field plots are larger and housing is separated by larger open spaces. The two situations have to be analysed separately.

Piura, Peru

Ir. Luz Maria Gallo Ruiz shared that the city of Piura together with smaller urban centres are located in the middle and lower parts of the river Piura. The NGO Luz Maria is involved in, together with the Piura River Management Authority, the local municipalities, governmental organisations supported by the international cooperation engaged in the following process:
1. **participatory diagnosis of the watershed area** of the river Piura;
2. development of thematic maps: a. risks and consequences of the actual use and threats (disorganized urban sprawl, erosion, tree cutting/burning, etc.) b. potential use (b1 according to the local users, b2 according to the technicians);
3. joint **development of alternative strategies to diminish the threats and to realise the potential uses**;
4. **drawing of rural/peri-urban/urban land use maps**, indicating the spaces earmarked for livestock keeping, for cropping, for recycling of urban wastes, etc. The maps will orient future development actions in the area;
5. (in process:) the development of clear **guidelines regarding the use of natural resources** by urban and peri-urban farmers and the employment of officers who will **assist** the urban farmers to apply sustainable land use and management practices.

Dar es Salaam, Tanzania

Mr. Martien Hoogland reported that urban agriculture in Dar es Salaam is an important source of income for many categories of inhabitants of Dar; youths are an important group. urban agriculture is practiced on open spaces e.g. in river valleys as a non-permanent land use. Mainly green leafy vegetables are produced which are sold fresh on the day of harvest. Revenues and labour per unit of land are high, but nevertheless revenues per labourer are low because of limited availability of land. Although land is plentiful at the borders of Dar, the cultivation takes place mainly on open spaces in the city centre and especially along side roads in order to keep transport costs low. Inputs like seed, manure and chemicals are bought. Production and marketing is mostly an individualistic activity and hardly any cooperation was observed. Investment in irrigation is low, which can partly be attributed to the fragmentation of land use (many borders to cross) and the weak land rights of producers, which hampers investments in irrigation. Cooperative selling of vegetables is not successful a/o because of problems in regular supply and quality of product. Group formation around lobby for land is limited. It mainly exists along some roads, where **nursery owners are organised in groups of ten on request of the municipal administration in order to get support in finding alternative locations in case of removal**. **The municipality also assists some organised growers on open spaces in finding new land, but this assistance is limited because the municipality does not control and allocate intra urban open spaces**. They do control land in the peri urban area, which is far away and not attractive. The weak tenure right of urban farmers is a serious bottleneck for organising urban farmers.

Dar es Salaam was the first African city to experiment with the Sustainable Cities Programme (SCP) of the UN-Habitat programme. SCP introduced EPM (Environmental Planning & Management) in 1992. EPM consisted of establishing stakeholder meetings or work groups on important planning issues (like urban agriculture), both at city and at local level. This EPM resulted in a **city work group on urban agriculture, which defined an action plan and local pilots**. The work group **distinguished between UA (the market chain) and land use (what is happening with the open spaces) and sub work groups were set up for both issues.**
EPM resulted both in a **strategy on the market chain of urban agriculture and on land use and included in the Strategic Urban Development Plan (SUDP)**, the central framework for planning in Dar es Salaam, which is the main general planning document of Dar es Salaam.
Management of Open Spaces has entered the National Human Developments Policy (a general policy on land use, published by the Ministry of Lands) although the strategy is contradictory. Conservation of open spaces is proposed, but it is also observed that insufficient work is done to safe guard them from city expansion.

It seems that pilots and strategies on use and management of open spaces by urban farmers are less elaborate and successful than the strategy on the market chain of urban agriculture. In 2003 the open space in two of the pilot areas is not managed anymore, while the open space plan for Mzambezi valley still had to be executed. Planners and specialists often do not see urban agriculture as a permanent activity in spite of propaganda favouring land for urban agriculture
There is no clear responsibility on urban agriculture within the central city administration while there are no permanent areas designated / designed for urban agriculture while open spaces are taken up by city expansion.
Despite a number of externally-supported development programmes (e.g. GTZ Vegetable Promotion Project UVVP), urban agriculture seems weakly organised in Dar es Salaam in 2003. Producer groups are weak and hardly supported by NGOs, contacts with the extension service have decreased and contacts with local politicians are absent and a marketing strategy does not exist.

EPM operates at municipal level but much depends upon the ambition of the local EPM co-ordinator. The municipal department of agriculture can play an important supportive role in setting up pilots, but their input is limited by shortage of funding. Their budget is hardly sufficient for running costs, while the number of pilots on urban agriculture (like mushroom cultivation) is limited. EPM is further limited by the weak organisation of urban agriculture groups, the weakening relation with the extension service since the ending of the UVPP programme in 2001, and the resistance of municipal civil servants to organising stakeholders, for fear of competition.

It is proposed that at the level of the DCC a functionary is made responsible for urban agriculture who will coordinate the survey of open space land use in the municipalities and prepare meetings of the municipal departments of agriculture on action plans suggested for intervention in the market chain (product innovation like the mushrooms; processing orange into juice) and the use and management of open spaces, and will approach donors for acquiring co-funding for the implementation of action plans
Development of urban agriculture and establishment of viable groups of urban farmers is dependant on permanent land use. It must be supplemented by a thorough policy on the market chain (including irrigation, processing, etc.) which gives solidity to the urban agriculture groups.

Ms. Petra Jacobi reacted saying that in Dar they learned [in the UVVP project] that the **existence of municipal by-laws for urban agriculture** does not necessarily lead to a big impact for the practitioners in the field. It is really **important to provide clear procedures on how to access land and other resources and make them known at all levels** (I still believe in the EPM process, despite the difficulties mentioned by Hoogland).
There is a need for coordinated activities and joint forces among the players to implement them: government, civil society and also the private commercial sector. **There has to be ONE clear driving force with the mandate for urban agriculture on the political level** (also known to farmers!), **support structures with sufficient funding** as well as **strong demand from organised farmers**. The

experience from Dar was that this coordination on political level was missing; however various government bodies claimed they would do it...

Cotonou, Benin

Ir. Virginie Assagbo Miguel stated that an **InterMinisterial Committee on urban agriculture** has been established, involving the Ministries of Agriculture, Environment and Internal Affairs (representing the municipalities).
In Cotonou, 400 ha have been earmarked for urban agriculture. Professional vegetable growers, the jobless and civil servants are the main categories of urban farmers. Women are mainly involved in urban agriculture through the selling and processing of products. Excessive use of chemicals is made.

Governador Valadares, Brazil

Ms. Ivana Lovo reported on the **multi-stakeholder policy and action planning process focusing on the integration of urban agriculture in the municipal land use planning**, in which several municipal offices (Planning, Environment, Agriculture, Building) as well as various civil society organisations (University, Pastoral organization for Children, Association of community vegetable gardens, and the Association of inhabitants of Governador, Valadares) participated. The programme is supported by UMP-LAC, IPES- Promotion for Sustainable Development and IDRC.

In the first stage of the process, **existing information** of relevance for the planning process (municipal land register; studies and municipal plan on reducing poverty; studies and plan for sustainable rural development; health register; information about the system of urban garbage collection and disposal, etc.) was brought together and analyzed. In addition a **statistical survey was implemented to identify the number of residents that are involved in urban agriculture in the city and their characteristics.** Firstly, information available in the register of the Single Health System (that includes information on green area, cropped area and types of crops per household) was combined with information from the register for the garbage fee collection (that includes the number of residences in each district of the city). On the basis of that information a systematic survey regarding the socio-economic characteristics of the families involved in urban agriculture (gender, age, destination of the production, social and economical classification, a/o) was carried out. Complementary studies were undertaken on the availability of water, and the levels and value of production and marketing.
The studies showed that:

- A substantial amount of land (37% of the total city area) with good agricultural potential is available in the city including vacant public land, backyards; public and private institutional compounds, domain zones along railroad and highways, banks of rivers and creeks; parks and other green areas; lakes/ponds and a natural reservation area;
- Nearly one third of the urban households is involved in urban agriculture in an informal net of relations (mainly fruits, vegetables and herbs; livestock is only a secondary activity);
- The total value of intra-, peripherical and rural-urban agriculture reaches a value that equals 3.17 % of the city's GDP (gross domestic product), of which 17 % by households in the informal sector.

In a second stage, a **typology** was developed **to characterise the urban open spaces regarding its potential to be used for urban agriculture**, including intra-urban spaces, peripheral urban spaces, and rural urban spaces. With help of GIS and the municipal registration database it was possible to elaborate land use maps with the different types of land available for urban agriculture.
In a third step **Participatory Rapid Appraisal Techniques** were applied to collect information regarding **urban agriculture conditions and practices** in the identified areas (first meeting) and discussion and analysis of the **main problems encountered** and possible solutions (second meeting).

A third meeting took place with participation of representatives from the study areas, from the municipal entities, and civic organizations in order to discuss difficulties and solutions pointed out by

the residents of the study areas and develop **proposals for inclusion in public policies and programmes** in the city of Governador, Valadares in order to stimulate sustainable urban agriculture.

Through a **system of tax reduction the access of interested urban poor to the many vacant private plots have been stimulated.** Private land owners can sign an agreement with the municipality to lease out the land to individual or an association of community gardeners providing them with temporary user rights of their land. The gardeners have to fulfil certain responsibilities and take good care of the land. The private owner receives a reduction in property tax. Apart from the fiscal incentive, the use of the plot provides the owner a guarantee against illegal squatting.

A proposal is developed and handed over to the Municipality to **incorporate UA in the City Master Plan**. Also a **system of differentiated water tariffs** is being developed to promote storage and use of rain water and grey water in urban agriculture.

Banjul, the Gambia

Mr. Niyi Adediran informed that in the Greater Banjul area, urban agriculture is widely practiced by micro and small farmers and a handful of medium-sized farmers. The first group consists of individual farmers - men and women practising crop farming and horticulture on open spaces of land that have been obtained by negotiation with owners. Some have also rented such land while others have just encroached on lands by the roadside or on vacant public and private land. For these groups there is certainly no security of tenure and no incentive for conservation. An on-going inventory indicates that there is close to five thousand such plots in the Greater Banjul area. Another category of smallholders are the backyard gardeners. Nearly 80% of households in peri-urban Gambia own such gardens and plant mostly *Amaranthus, Sorrel, Bitter tomato, and grains.* Chickens, goats and sheep are also kept. Medium-scale horticultural production is done by retired or in-service civil servants (mostly doctors) and organised women's groups working on land provided by the local authority in person of the chief. There are six such farms with land area ranging from five to fifteen hectares and membership ranging from 70-350 women. Consequently, unit land per person is still small (0.015-0.200 ha) but functional. There is only one large horticultural farm the production of which is actually targeted at the European market.

Under the land law of The Gambia, there is no clarity regarding the status of urban agriculture although extensive rearing of livestock is prohibited in kanifin areas (high-density industrial layouts). The land in each district is under the control of the chief with a clause that the minister or his appointee could in the interest of the state withdraw any land for public use without compensation. Generally, urban agriculture is encouraged and women in particular are supported in urban agriculture.

Bajulundung Horticulure Garden is one of the **medium-sized farms run by a women's group that receives financial support of the government and NGOs and technical support from the agriculture department and Taiwanese government.**
The gardens are semi-mechanized and water is supplied to concrete tanks located within plots from overhead tanks. Main crops: maize, groundnut, bambara nut, lettuce, cabbage, onion, and tomato. There are also fruit trees. Some crossbred cattle are kept for milk production and an improved income base. Generated manure is used in the gardens. Horticultural wastes are also fed to the animals with additional supplements in times of feed scarcity. Quite a lot of biomass(leaves from the farm) is utilised to feed the goats owned by the women, which are kept in the village.
Chicken manure is used on the farm, but this is bought in.
The output from these gardens goes to the local market, where the group has a shop and a storehouse run by the group shopkeeper and to hotels and restaurants to cater for the tourist industry. Between 15-20 % of the produce is shared for home consumption.
The main problems encountered by BHG: lack of water for dry season production, which is related to lack of land ownership as well as lack of credit to invest in irrigation systems.

Algiers, Algeria
Mr. Abdel Malek Boudjenouia wrote that since 1987, access to public land is made more difficult. Farmers use all kinds of creative strategies to access land, including concessions, sub-leasing, partnerships between farmers and owners.

Mexico, Mexico
Mario Cepeda reported that the **Department for Integrated Development of the Family is supporting home gardening by providing extension and seeds to groups of women**. But the Water Authority controllers did not like it that much.

Libreville, Gabon
Mr. Jean Hervé indicated that in Libreville, access to land and water is not so much of a problem for the urban farmers, unlike access to improved technologies, extension and credit is.
The **ONG IGAD is implementing a programme on urban agriculture focussed on urban unemployed youth and women groups** educating them in biological back yard gardening.

Bouake, Ivory Coast
Valentin Ngoussan reported that land insecurity in the peri-urban villages is increasing both due to the accelerating pace of spatial extension of the city as well as to the economic crisis leading to an increasing amount of low-income people looking for access to land for urban agriculture. The increasing pressure and scarcity negatively affects the productivity of agriculture (fear to invest).

La Paz, Bolivia
Ms. Gaby Gómez-García informed that since 1996 the municipalities in Bolivia have the authority to create municipal districts in the peri-urban areas and to regulate its land use, taking into account the cultural backgrounds of the residents of these areas. However, most municipal governments are poor and without technical capacity to develop adequate policies and norms for these areas, which are mainly occupied by poor households. The continued rural-urban migration makes that the problems in the peri-urban areas grow.

5. THE THREE CENTRAL CASE STUDIES

5.1 CASE ROSARIO, ARGENTINA

Optimization of Use of Vacant Land for Urban Agriculture in the Municipality of Rosario, Argentina

Marielle Dubbeling (IPES/UMP-LAC)[5]

Introduction

This paper describes the results of a process of participatory consultation and action planning developed in the city of Rosario (Argentina) with the purpose of providing poor families with secure access to vacant lots for farming. The process, implemented from September 2002-December 2003, has led to the formulation and institutionalization of an enabling regulatory and legal framework for urban agriculture. The process was promoted by the local government of Rosario, non-governmental institutions, universities and the community. Currently, 10,000 families are involved in the urban agriculture programme and occupy more than 60 ha of private, institutional and municipal land.

Background

The city of Rosario (Argentina), with 17,869 ha, lies in the core of the Metropolitan Area, which bears its name. According to preliminary data from the National Population Census of 2001, it is ranked third among the most populated cities of the country. According to the same source, it has a population of 1,164,800 inhabitants.

During the last thirty years, the systematic enforcement of neo-liberal policies and the opening of markets have led to the economic failure of most of the industries located in the area, as well as to the disappearance of a large number of small and medium enterprises historically relevant as important sources of employment.

The belt around Rosario grew over time as an area with irregular settlements, mostly inhabited by groups of poor families, as result of the level of unemployment in the region and a strong rural and urban immigration from provinces in the north of the country.

Unemployment and its effect on the lack of social coverage for growing groups of the population fostered activities conducted by several NGOs that progressively assumed a greater role in social development programs, with UA as one of the key axis of their work. On its part, the municipality progressively transformed its development experiences into social programmes and policies aimed at tackling the situation of these sectors excluded from the formal labour market.

As in many cities in Latin America and the rest of the world, Urban Agriculture activities arrived in Rosario hand in hand with the economic crisis.

One of the strengths of the city for the development of urban productive activities is the existence of numerous public and private vacant lots that can become suitable production areas for groups of poor families. Within this framework, facilitating land access and tenure of these productive spaces to low-income sectors is key in order to achieve their social inclusion in society.

The project "Optimization of the use of vacant land for Urban Agriculture"

The municipality of Rosario implemented a programme for the **"**Optimization of the use of vacant land for urban agriculture through participatory planning and management, to promote municipal food sovereignty and participatory governance". This project was developed as part of a programme that is simultaneously being carried out in three cities in the region: Governador Valadares in Brazil, Cienfuegos in Cuba and Rosario in Argentina, promoted by the Urban Management Programme-

[5] This paper is based on project documents elaborated by Elio Di Bernardo, Laura Bracalenti, Laura Lagorio, Virginia Lamas and Marina Rodriguez of the Centro de Estudios del Ambiente Humano (CEAH) , Facultad de Arquitectura, Planeamiento y Diseño, Universidad Nacional de Rosario, Argentina

Regionmal Coordination for Latin America and the Caribbean (UMP- LAC) as part of the United Nations Program for Human Settlements UN-HABITAT and the United Nations Development Programme (UNDP), the International Development Research Centre in Canda (IDRC) and IPES – Promotion of Sustainable Development (Peru).

In the city of Rosario, the project is co-ordinated by the Municipal Urban Agriculture Programme, which is implemented by the Secretariat for Social Promotion of the Municipality of Rosario, the Centre for Agro-ecological Production Studies (CEPAR) and the Centre for Human and Environmental Studies (CEAH) of the School of Architecture, Planning and Design of the National University of Rosario. Community based institutions and NGOs, such as Nacimiento, have actively participated in this initiative. Also several municipal departments involved in the management of urban land, such as the Secretariat of Planning through the Master Plan, the Public Housing Service, the Parks and Gardens and the Topography and Cadastre Offices gradually got involved in the project. The strong involvement of the team that prepares the Master Plan of the city resulted in a notable boost of the project.

Urban land use is a dynamic and complex process, where many variables inherent to the various dimensions of social and economic development interact in the same territory. An attempt was made to optimize the use of municipal land for Urban Agriculture, by analyzing the social and productive as well as the aesthetic and environmental potentials thereof in the specific urban context of Rosario. Urban Agriculture (UA) in Rosario is mainly a spontaneous practice of diverse types of production implemented by underprivileged groups, making use of the fact that UA requires little capital and can make good use of available idle resources (vacant land, unemployed labour, abandoned infrastructure, organic waste). UA provides jobs and food to poor social sectors, can co-exist with other kinds of activities (residential, recreational, educational, etc.) and preserves green areas that provide environmental services.

Vacant land in the city and its productive use

The city has a large amount of vacant or partially vacant land (in total 35% of the municipal area), much of which has the potential to be used for UA given its closeness to marginal settlements and existing housing projects. In fact, a high percentage of urban gardens –spontaneous or fostered by the municipal Urban Agriculture Programme – are located in these areas and are managed by the population living in irregular settlements or shantytowns.

Most of the plots currently in use for UA were peacefully "taken" by the people ("peaceful usurpation") or obtained from public entities or the municipality under an Ordinance that promotes the temporary assignment of public and private land for community and productive use.

The Ordinance stimulates the establishment of community gardens on vacant public and privately owned land. In the case of public land, user permits may be obtained from the relevant authorities. In the case of privately owned land, land owners are invited to temporary lease their lots to the Municipality for a period of two years. The municipality on their turn leases the land to urban farmers or farmers groups. During this period the private owner is exempted from paying property taxes over the land. (See the full text of the Ordinance in the Web page of RUAF (www. Ruaf.org/E-conferences)

Many of the vacant lots have been degraded as a result of numerous urban activities and others have characteristics that limit their use in UA (low quality of the soil, lack of water, location). Therefore, it is important to carefully analyze the situation of vacant urban and peri-urban land in order to determine its potential for UA.

In order to be able to do so, in Rosario a framework was developed with the relevant variables that determine whether a vacant plot can be used successfully in UA or not. Subsequently the required data were collected and applied to characterize all available vacant open land in the city area. The main

method of data collection and interpretation applied was through participatory base-line studies and analysis.

Having done so, it became much easier to integrate urban agriculture in formal city land use planning and to take decisions where land would be destined to UA, for how long and under what preconditions it should be managed.

Diagnosis and planning of land use

Detection and characterization of municipal non-built up land

The available vacant open spaces in the city were identified on the basis of the *interpretation of digitized photogrammetric mosaics* [6]. Only lots of more than 5,000 square meters in peripheral areas, and more than 2,500 square meters in intra-urban areas were identified. These minimum plot sizes were chosen, considering them as a minimum and sound basis for collectively cultivated areas that provide sufficient production and allow commercialization.

The identified vacant open spaces were *classified* on the basis of the following *typology of vacant spaces* and with use of recently updated cadastral information regarding the *type of ownership* of the vacant lots:

Private spaces	1. Private vacant 2. Private with fiscal debts
Green areas	1. Squares 2. Urban / recreational parks
Institutional spaces	Hospitals, Schools, Jails, Public buildings
Public spaces	Municipal, provincial or national
Areas not suitable for construction	1. railway tracks 2. river/stream banks 3. sidewalks/ roads/ quarries 4. corridors along highways 5. Flood prone areas
Ecological reserves/protected areas	1. Ecological Reserves 2. Parks and forests
Treatment areas	1. Sanitary landfill

A geo-referenced base map of all vacant open spaces was developed, which is used for the planning and monitoring of urban agriculture in the Municipality of Rosario.

Development of assessment criteria

The following concepts [7] were developed for the participatory base line studies regarding vacant land in the city:

- **suitability** (whether or not the land parcel qualifies for UA), and
- **accessibility** (whether or not it is possible to get access to this land for urban agriculture).

To define the **suitability** of the land, the following variables were selected:

- *environmental quality* (degree of chemical and biochemical pollution),
- *soil quality* (based on technical agronomic - productive considerations),
- *current and previous uses* (e.g. dumps, industry or other hazardous activities)

[6] ([6]) This material was handed over by the Office of the Master Plan. The scale of the mosaics is 1:3000 (scale which allows to clearly observe the level of resolution of the image). In total 182 mosaics were used.

([7]) These concepts and their corresponding variables were defined by consensus during the participatory workshops held with gardeners and municipal officials (see participatory consultation below)

- *water availability & supply*
- *location* (with regards to the poor population groups interested in UA)

For the vacant land identified as suitable (with help of the variables listed above) the **degree of accessibility** was determined on the basis of the following variables:

- *legal status of the vacant land* (type of ownership, subject to juridical-legal proceedings due to bankruptcy: unknown owner, sold, leased or assigned to other institutions or persons recently)
- *current regulations of access and tenure of land for UA* (the existence and scope of duly regulated ordinances that foster, promote and formalize the assignment of land for alternative uses like UA)
- *fiscal debt* (the identification of plots with fiscal debt is an important land management strategy as it facilitates negotiation between the land owners and local government: swapping fiscal debts for access to land for UA)
- *public policies and plans* (urban development projects included in the Master Plan, in the Public Housing Service, in Public Works, etc., building spaces and areas destined for projected green areas, specific uses and locations; date expected for the beginning of works and phases thereof; location and status of land to be protected from illegal occupation)
- *value of the vacant land* (indicator of the attractiveness of the vacant land for the real estate market; land value is required also to enable eventual expropriation of the vacant land earmarked for UA).

Participatory Consultations

The baseline study combined different sources of information:

- Available land use planning documents and other secondary information,
- Interviews with technicians, municipal officials and urban producers,
- Participatory workshops held with representatives of 70 community gardens located on the flood areas of the Ludueña and Saladillo streams (see below),
- Meetings with municipal departments, Universities, NGOs,
- Consultations with food self-production programmes such as Prohuerta (at national level) and Crecer (at municipal level).

Based on the identification of the availability of vacant areas and the characterization of potentially usable land, the for UA most suitable and accessible land areas were identified (see maps Nº 1 and Nº 2 in www.ruaf.org/E-conferences).

Participatory workshops with urban farmers

The first participatory workshop: **"Presentation of the optimization of land use project"** was aimed at socializing the contents and purposes of the project, sharing information on study areas and collecting data on the difficulties experienced by each group during the process of development and production of the gardens. Cartographic maps were prepared to show general information on land use, regulations, ownership etcetera. The maps also served for participants to locate their urban gardens and potential vacant land areas for UA[8]:

The Second Participatory Workshop: **"Status of existing gardens"** aimed at making an in-depth characterization of the gardens in operation (social groups that participate therein, organisation and management practices, problems experienced) as well as at collecting supplementary information to determine the suitability and level of accessibility of identified vacant lots.

Participatory land maps were prepared with the social actors, detecting the restrictions identified for the integration/inclusion of UA in land planning, municipal programs and policies, and collecting

[8] Based on this experience, it is recommended to use maps on a scale that allows good visualization of land parcels and the inclusion of street names. We therefore recommend to use maps at a scale of 1:1000, appropriately associated to general maps (area and city), indicating street names and names of neighbourhoods.

practical solutions and strategies formulated by the social actors responding to the identified restrictions.

The Third Participatory Workshop, **"Development of proposals**" further developed understanding of the problems identified to gain secure access to land; to define the conditions or requirements that a group or organization wishing to benefit from the assignment of a lot must meet; to determine the feasible commitments that beneficiaries can assume and to collectively build on the recommendations that will be considered in the development of a municipal legal framework that will facilitate the assignment of lots to be used in Urban Agriculture.

Participatory workshops with municipal departments
The proposals made by the community were disseminated among several municipal departments During the two inter-departmental workshops, the community proposals were analyzed in order to define the restrictions and possibilities of UA in Rosario. These workshops aimed at elaborating "Proposals for the organic integration of Urban Agriculture in municipal public policies in Rosario" (see chapter 3: Action Plan)

Soil quality and management study; manual

The community workshops also led to the identification of the need to improve the quality of the land in the areas identified for UA.
In order to identify through what measures this could be done a study was implemented including the identification of characteristics and soil quality of land areas used for or with potential for Urban Agriculture and the development of proposals regarding recovery and maintenance of soil fertility and appropriate crop choice per type of soils. On the basis of the study, a manual of techniques for the management and recovery of several soil types with specific restrictions was developed specifying adequate crops and cultivation techniques for lowland areas, former dump sites, flood prone areas, decapitated soils, a.o.).

Action Plan

The Action Plan prepared in Rosario incorporates activities aimed at the design of vacant spaces for productive use, the improvement of the quality of soils to facilitate their use in UA, and the formulation and institutionalization of facilitating public policies.

Design workshop

In June 2003, a **"Comprehensive Design Workshops"** was implemented to enable the definition of guidelines for the design of UA spaces.

These workshops provided a space for debate and proposals open to technicians working in the project and to members of municipal planning units, and resulted in:

- *Development of Maps with proposed Land Use*. The *Proposed Land Use Maps* represent plots of land suitable for UA, characterized by their degree of accessibility. These maps are useful tools in the planning of land potentially usable for UA.
- *Design of Garden Parks in public spaces or along banks of urban streams* (see 3.2)
- Development of different set ups for the organization and management of the gardens taking into account the local land characteristics (soil type, location, orientation, relation with roads, flood risk, etc.)

Proposals for the organic inclusion of Urban Agriculture in Municipal Policies.

Integration of UA in the overall Urban Design
The Master Plan is a public municipal agency that works on two issues. On the one hand, it interprets the processes of change in the physical and spatial aspects in the city, and on the other hand it defines –based on that interpretation– land strategies, spatial and functional policies and programmes and urban development projects to transform the city (physical projects / regulatory projects / management projects).

As a result of the participation of the Master Plan team in the UA project, it included the following among its objectives:

- Integration of social and productive programmes, such as UA programmes, with city planning and environmental programmes in order to recover landscape and re-habilitate neighbourhoods,
- Promotion of active involvement of various actors in the implementation of these programmes and projects,
- Linking these programmes to other public activities and projects (green areas, equipment, housing, infrastructure, transportation, etc.) so as to strengthen the urban rehabilitation or renovation strategies of the Plan,
- Generation of a new type of public space in the city and city periphery , that could be called "Garden Parks", with innovative characteristics by combining recreational, green and productive land uses
- Consolidation of the management of Urban Agriculture by incorporating it in its general programme.

"Setting up a Municipal Land Bank for UA"
The objective is to carry out the permanent identification and inclusion of vacant land suitable for UA in the Municipal Land Bank of the City of Rosario, in order to facilitate the process of assignment of this land to UA community groups.

"Decentralized system for the management of vacant lots for UA"
The management and administration of vacant lots for UA has been centralized in the Secretariat for Social Promotion (which manages the municipal Urban Agriculture Program).
On its turn, the Secretariat co-ordinates its activities with the Cadastre and Planning Office and the Parks and Promenades Department. Requests for the (temporary) use of vacant lots will be qualified and prioritized using several criteria defined in the participatory workshops, such as community commitment (to work as a group, to co-operate with other neighbourhood organizations), the time the group of gardeners has been operating and their level of responsibility (to keep the land in good condition). Groups of unemployed persons are given priority.

Annexes (see www.ruaf.org/conferences):

- Municipal Ordinance for temporary allocation of vacant plots
- Map identifying the vacant plots
- Map identifying plots that are most suitable and accessible for UA

5.2 CASE CAGAYAN DE ORO, PHILIPPINES

Allotment Gardens for Cagayan de Oro City: Improved Access of the Urban Poor to Land for Agriculture [9]

Robert J. Holmer[10], Merlito T. Clavejo[11], Stefan Dongus[12], Axel Drescher[13]

Introduction

Community gardens are defined as gardens where people share the basic resources of land, water, and sunlight. This definition includes both allotment and common gardens. Allotment gardens are characterized by a concentrated area consisting of several small parcels of about 200 to 400 m^2 that are assigned to individuals or families who are usually organized in an association. Allotment gardens differ from common gardens in such a way that the parcels are cultivated individually while in common gardens the overall area is tended collectively by a group of people (MACNAIR, 2002). An allotment garden is made legally available by the city authorities to the association to be used exclusively for growing of vegetables, fruits and cut flowers, but not for residential purposes. Mostly it includes a shed for tools and other garden implements.

Since March 2002, a project is implemented in Cagayan de Oro, Southern Philippines, to establish four pilot allotment gardens in different parts of the city with financial assistance of EuropeAid's AsiaUrbs Program. Those gardens shall serve as a model and learning center to enable a future extension of allotment gardening in Cagayan de Oro and other Philippine cities. The allotment garden project is coordinated by Xavier University College of Agriculture and the city government of Cagayan de Oro in cooperation with two project partners from Germany, namely Schelklingen City and the Albert-Ludwigs-University, Section Applied Physiogeography of the Tropics and Subtropics (APT), Freiburg City. The project has also a community-based geographic information system component (GIS) under the auspices of the Belgian cooperators Dinant City and the Facultés Universitaires Notre Dame de la Paix (FUNDP), Namur City.

Historical Background of Allotment Gardens in Germany

The history of allotment gardens in Germany starts in the early 19^{h} century, when the first Allotment Gardeners Association was founded. The idea of Allotment Gardening reached a first peak after 1864, when the so-called "Schreber-movement" started in the city of Leipzig in Saxony. A public initiative decided to lease areas within the city making it possible for children to play in a healthy environment, and in harmony with nature. Later on, these areas included actual gardens for children (the German term *"kindergarten*" was coined during these days), but soon adults were tending to take over and cultivate these gardens. This kind of gardening on allocated areas rapidly gained popularity (KASCH, 2001).

During the period of industrialization allotment gardening became essential to ensure food security for the large number of impoverished workers and their families who migrated from rural areas to the cities to find employment in the factories. Very often, these families were living under extremely poor conditions – a socioeconomic situation somewhat similar to the booming development of Philippine cities today. To improve their overall situation so-called "gardens for the poor" (later termed as "allotment gardens") were established when cities, factories and monasteries provided plots for the

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urban poor allowing them to grow food for their families and to keep pigs, chicken, and other small domestic animals.
The aspect of food security became even more important in the first half of the 20th century. During World Wars I and II, the socio-economic situation was very miserable particularly in terms of the nutritional status of people. Many cities were isolated from their hinterlands, and agricultural products from their rural surroundings did not reach the city markets anymore or were sold at very high prices at the black markets. Consequently, food production within the city, especially fruit and vegetable production in home and allotment gardens, became essential for survival.

The importance of allotment gardens for food security was so obvious that in 1919, one year after the end of World War I, the first legislation for allotment gardening in Germany was passed. The so-called "Small Garden and Small-Rent Land Law", provided security in land tenure and fixed leasing fees. In 1983, this law was amended by a "Republic Act for Allotment Gardens"[14] (GRÖNING & WOLSCHKE-BULMAHN, 1995).

The importance of allotment gardening in Germany has shifted over the years. While in times of crisis and widespread poverty (from 1850 to 1950), allotment gardening was a part time job, and its main importance was to enhance food security, its present functions have to be seen under a different point of view. In times of busy working days and the hectic urban atmosphere, allotment gardens have turned into recreational areas and locations for social gatherings, and are considered as a beloved hobby for millions of practitioners. Nowadays, allotment gardens are conceived as an integral part of the public green belt area in cities (CROUCH, 2000, DRESCHER, 2001).

Objectives

The objectives of the pilot project in Cagayan de Oro are:

- To facilitate legal access of urban poor families to land for agricultural activities
- To improve the nutritional status of the urban poor through year-round availability of affordable, clean and healthy vegetables, particularly in terms of micronutrient, vitamin, phytochemical and protein supplies.
- To institutionalize the participatory community-based support to the city's integrated solid-waste management program.
- To substantially reduce the amount of solid waste dumped to the city landfill site due to recycling of materials and converting biodegradable matter into compost.
- To strengthen the urban environmental resources management by the community-based use of geographic information systems.
- To avail of baseline data to support the elaboration and implementation of legal codices, administrative and technical regulations in the field of solid waste management and urban agriculture, particularly allotment gardens, rehabilitation and protection of the environment, land use and public health.
- To foster the cross-sectoral collaboration between city government and research institutions as well as with other government and non-government organizations at local and international level.

Methodology

Identification of pilot areas
In three of the four pilot areas (barangays[15] Bugo, Gusa and Lapasan) the city government of Cagayan de Oro conducted earlier an UN-supported household waste segregation program. However, the segregation of wastes could not be sustained since – among other reasons - a viable outlet for the large biodegradable fraction was lacking. The College of Agriculture of Xavier University then recommended linking the solid waste management component with the production of vegetables in

[14] Bundeskleingartengesetz
[15] barangay = smallest local government unit in the Philippines

allotment gardens using compost made from the biodegradable wastes of the surrounding community. Expertise on composting and production of vegetables in an urban setting were gained earlier in another EU funded research project (HOLMER, 2000). The German partners Schelklingen and APT agreed to contribute their expertise on the administrative aspect of allotment gardening, particularly on legal aspects and community organizing.
The fourth pilot allotment garden in barangay Canitoan is located close to the city's controlled landfill site. It was selected to be used by the Cagayan de Oro garbage pickers, one of the most socially disadvantaged groups of the city. The garbage pickers are one of the major stakeholders of the AsiaUrbs project. They agreed to collect the wastes from the private households in the project pilot areas, which are segregated into three fractions, namely (1) biodegradables, (2) recyclables, and (3) residual wastes (see also **figure 1**).

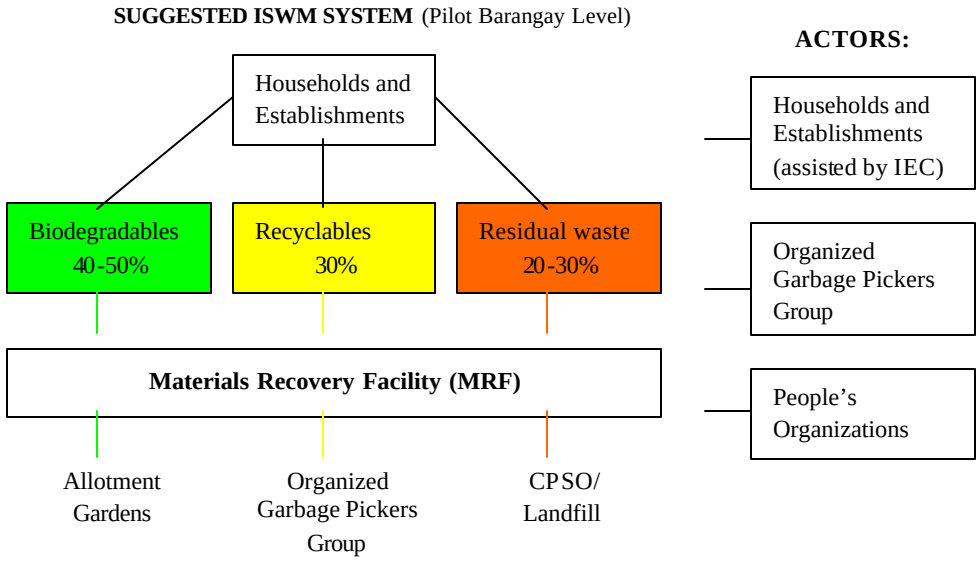

Figure 1: Integrated Solid Waste Management Framework of the AsiaUrbs Project

All the three fractions are brought to a centralized collection center, the so-called Materials Recovery Facility (MRF), which is mandated by Philippine law (R.A. 9003)[16]. The MRF is established within the allotment garden. While the garbage pickers keep the recyclable fraction as the payment for their collection services, the biodegradable wastes are composted by the allotment gardeners. The remaining residual waste is collected by the City Public Services Offices for final disposal at the landfill site. As an additional benefit from the project aside of getting the recyclables, the garbage pickers are also provided with their own allotment garden at Canitoan as a complementary source of livelihood.

Selection of beneficiaries

The pilot allotment gardeners of the AsiaUrbs project can be categorized into two main groups:

- Those that already have taken up urban agriculture as part of their survival strategy. However, due lack of space, these activities were confined to production of vegetables in containers (such as used cans or plastic bottles) or in tiny patches along the roadside.
- Those that are in need of alternative sources of subsistence and income but have not taken up farming due to lack of access to land (such as the garbage pickers of the landfill site).

The project steering committee composed of members of the different project stakeholders defined the following qualifications for pilot allotment gardeners:

- Low family income
- Residents of the pilot barangay with barangay clearance

[16] Republic Act 9003 (Ecological Solid Waste Management Act)

- Residing near the project site
- The beneficiating families are not related to each other up to the 3rd degree of affinity
- Willingness to do the actual garden work
- Willingness to cooperate and share experiences (i.e. follow recommended standard operating procedures, do composting at allotment garden area, cooperate during interviews, keep records of allotment garden activities such as production data, sales, etc.)
- Willingness to abide to provisions set by the project (i.e. through memorandum of agreement)
- Willingness to act as trainers for other interested parties after the project funding has ended to expand allotment gardening also to other areas of the city

Initially, the identification of allotment garden beneficiaries based on the above-mentioned criteria was left to the communities. This resulted, however, in certain constraints and inequalities (to be described later) that led to following optimized flow of activities for membership application as agreed upon by the project steering committee:

- The Information & Education Campaign Group (IEC) with assistance of Allotment Garden Technical Working Group (AGTWG) and a barangay organizer promote goals and objectives of allotment gardening to all households of the pilot area
- Interested households submit their application through the project assistant to the AGTWG
- The AGTWG pre-screens applicants and forwards a list of final candidates to the barangay council for approval. The AGTWG ensures that all major fractions of the community are represented.
- Barangay council approves/disapproves membership
- An acceptance ceremony will be conducted with a pledge of commitment by the beneficiaries.

General provisions set by the project

The following general provisions for allotment gardening were set by the project:

- One pilot allotment garden consists of eight individual families units
- Every individual family unit has a maximum area of 400 m^2 which is tilled by the family members at their own responsibility
- Allotment gardens are provided solely for agricultural purposes. No residential structures are permitted.
- The beneficiaries are expected to provide labor as their counterpart. Labor costs will not be shouldered by the project.
- The beneficiaries are expected to continue allotment gardening after the project period has ended.
- Composting of the biodegradable wastes coming from the integrated solid waste management component of the project will be done by the beneficiaries in the allotment garden area following the standard operating procedures provided by the AGTWG.
- The beneficiaries will form an allotment gardening association in which every family head is represented.
- Beneficiaries receive technical assistance from the AsiaUrbs project in forming an association.
- Association receives training on allotment gardening and composting organized by the AG Technical Working Group
- Association receives from the AsiaUrbs project agricultural equipment, tools and supplies necessary to start the operation

- Association receives assistance in availing land to be used for allotment gardening
- Association receives regular technical assistance in allotment gardening through a technician of the AsiaUrbs project who will visit the pilot area at least once a week.
- Member beneficiary rents tools and equipment from the association.
- Association opens an account from a reputable bank or cooperative where membership fees and other dues are deposited.

Identification of allotment garden sites

Suitable areas for allotment gardens were selected based on the following criteria
- Land that suits basic agronomic standards (leveled, not water logged, etc.)
- Accessibility to water and transportation
- Non or reasonable rental cost
- Coherent area of at least 3200 m^2 to accommodate 8 family units of 400 m^2 each
- Located within the pilot barangay.

Most of the open spaces in Cagayan de Oro are privately owned. Hence there was a need to advocate and promote the project goals and objectives not only to the respective barangay but also to private landowners. The areas in Bugo and Gusa were identified with assistance of Allotment Garden Technical Working Group (AGTWG) of the project, the barangay council and the beneficiaries. In both cases the land is owned privately. In Bugo, the landowner did not ask for rental payments but offered her area to be used for community purposes, while in Gusa, the allotment garden area is composed of two adjacent lots that are owned by different proprietors. In both cases, the owners agreed to the provisions set by the project. Land rentals are paid according to the usual rates for agricultural land in Cagayan de Oro and surrounding provinces. The area in Lapasan was identified by use of GIS at city hall. The AGTWG then made an ocular inspection of the area and after its approval, the barangay chairman approached the owner for a leasing agreement without rental payments. In the case of Canitoan, the land is owned by Xavier University who made the land available to the beneficiaries without rental payments.

In all cases, memoranda of agreements were issued between all stakeholders that clearly state the provisions of the project. The landowner leases the area to the newly established allotment gardeners association, not to the individual members. The memorandum of agreement provides legal security for all parties: for the urban poor the access to land solely for agricultural purposes assuring the landowner that his property will not be squatted. As regards the time of tenure, both parties agreed to have initially a short-term pilot phase only to evaluate the benefits of the project before subjecting to a long-term agreement. Hence, the memoranda of agreement stipulate a typical "win-win" situation as a necessary prerequisite for a successful implementation of the project activities.

Allotment Garden Set-Up

The size of every family allotment unit is 20 m x 20 m = 400 m^2 with eight (8) beds planted to vegetables belonging to different botanical families (cucurbits, solanaceous crops, legumes, leafy vegetables, etc.). A pilot barangay allotment garden consists of eight individual allotment units, having a net overall area of 3,200 m^2 and a gross over-all area of 4,000 m^2. The area is fenced, with entrance, tool shed, nursery and water supply. Surrounding areas can be planted with border crops.

One important aspect of the allotment garden is the compost heap for the biodegradable household wastes. The compost heap thus links the allotment garden with the integrated solid waste management program of the pilot community. Since more than 50 % of the household wastes in Cagayan de Oro are biodegradable (SCHNITZLER & HOLMER, 2002), its conversion into compost and safe application in the allotment garden significantly reduces the residual waste to be dumped at the controlled city landfill.

Results

The main results after 18 months of project implementation are:

- Allotment garden sites in all four pilot areas were selected and corresponding memoranda of agreement signed between all stakeholders
- Allotment gardens in Bugo, Gusa and Canitoan are established, the one in Lapasan is on-going
- The recruitment of beneficiaries is completed in all areas except in Bugo where the allotment gardeners will be reorganized in such a way that all sectors of the community are represented.
- Several trainings of allotment gardeners were conducted with weekly follow-up visits at the allotment garden site by the project assistants
- Continuous activity monitoring and evaluation is done to enhance the beneficiaries' understanding of the project. This active interaction with the community increased the mutual trust between the beneficiaries and the technical personnel.
- Formation and registration of the Philippine Allotment Gardeners Association (PAGA) with corresponding constitution and by-laws was completed in December 2002.

As regards the cost of establishing one pilot allotment garden, the project spent approximately 337,640.00 PhP (6,400.00 US $). This includes human resources, capital outlay, consumables, trainings and overhead costs.

Table 1: Cost for establishment of one allotment garden in Cagayan de Oro (Perspective of funding agency)

Item	Usage/Amort.	Unit	No. of units	Unit rate (in PhP)	Costs (in PhP)	Costs (in USD)
1. Human resources						
1a Agronomist for supervison	2 gardens	per month	12	5000.00	60,000.00	1,132.08
2. Captial outlay						
2a Land preparation	12 months	per month	1	5000.00	5,000.00	94.34
2b Land rental	12 months	per month	12	500.00	6,000.00	113.21
2c Water pump	60 months	per piece	1	12000.00	12,000.00	226.42
2d Bucket drip irrigation set	60 months	per unit	8	11000.00	88,000.00	1,660.38
2e Tools	60 months	per set	1	18000.00	18,000.00	339.62
2f Wheelborrow	60 months	per piece	1	3000.00	3,000.00	56.60
2g Toolshed and Nursery	60 months	per piece	1	15000.00	15,000.00	283.02
2h Fence for allotment garden	60 months	per piece	1	13000.00	13,000.00	245.28
3. Consumables						
3a Agricultural inputs (seeds, etc.)		per month	12	2800.00	33,600.00	633.96
3b Gasoline		per month	12	1000.00	12,000.00	226.42
4. Others						
4a Training for allotment gardeners		per training	2	10000.00	20,000.00	377.36
4b IEC materials		per month	4	2000.00	8,000.00	150.94
5. Total direct costs (1-4)					**293,600.00**	**5,539.62**
6. Overhead (15 % of 11)		per month			44,040.00	830.94
7. Total costs (5+6)					**337,640.00**	**6,370.57**

Size: 3200 m ^{2}, used by 8 families tilling 400 m ^{2} each, Investment costs for 1 year

The beneficiaries received all project assistance as a grant fund channeled through the association. Except for the area in Gusa, the landowner also did not request any rental fees for the land. The only counterpart that is expected from the beneficiaries is the labor to maintain the allotment garden. The beneficiaries are, however, expected to contribute certain payments to the association to make the project sustainable, i.e. to avail of the necessary resources to add new members and to replace

damaged tools and other equipment. Following **table 2** shows the suggested payments of each member to the association:

Table 2: Suggested monthly payment of one allotment gardener to the association

Item	Amortization (months)	Unit	No. of units	Unit rate (in PhP)	Costs (in PhP)	Costs (in USD)
2. Captial outlay						
2a Land preparation	12	per month	12	52.08	625.00	11.79
2b Land rental	12	per month	12	62.50	750.00	14.15
2c Water pump	60	per month	12	25.00	300.00	5.66
2d Bucket drip irrigation set	60	per month	12	22.92	275.00	5.19
2e Tools	60	per month	12	37.50	450.00	8.49
2f Wheelborrow	60	per month	12	6.25	75.00	1.42
2g Toolshed and Nursery	60	per month	12	31.25	375.00	7.08
2h Fence for allotment garden	60	per month	12	27.08	325.00	6.13
3. Consumables						
3a Agricultural inputs (seeds, etc.)		per month	12	350.00	4,200.00	79.25
3b Gasoline		per month	12	125.00	1,500.00	28.30
7. Total costs (3+2)		**per month**	**12**	**739.58**	**8,875.00**	**167.45**

Size: 400 m^2 per one family

Discussion

A first evaluation of the project results show that

- The pilot allotment gardens established enabled urban poor of Cagayan de Oro to have legal access to vacant land in the city for agricultural purposes.
- The private landowners who participated in the project are so convinced about the concept that they offered already other areas in Cagayan de Oro to be used for allotment gardening. The overall area offered totals to 5 ha of open land. Landowners from other cities in Mindanao who visited the project sites expressed interest to introduce the concept in their areas. The landowners were particularly convinced that their areas will not longer be idle but productive and that their property is secured from illegal squatting which is conceived as a constant threat for open spaces.
- The allotment garden is essential for a successful solid waste management program in the area. The residual waste of the 150 pilot households to be brought to the landfill area could be reduced to 33 %. 55 % of the household wastes are biodegradable and went to the compost heap in the allotment garden while further 12 % are recyclables and marketed by a garbage picker's organization.
- The project gets full support of the local government units. A city ordinance on the use of vacant lots in the city is in preparation to further promote allotment gardening (i.e tax incentives for landowners that make land available for urban agriculture; requirement to allocate space for allotment gardening in residential areas such as subdivisions)

Not everything went smoothly, though. Among the constraints encountered were the following

- Different perceptions between community and project had to be settled (what technologies to use, how will the project money be spent, misconceptions regarding roles and responsibilities)
- The organization of the allotment garden beneficiaries in Bugo proved to be problematic. It was overlooked that the community in the pilot area consists of two major fractions that are hostile towards each other. In the beginning, only members of one fraction were represented among the allotment garden beneficiaries not allowing members of the other fraction to join. As a result, the allotment garden project was identified by the community as a project of the fraction leader but not of the city government and its partners and, hence, did not get the full support. In the meantime,

the problem was addressed in such a way that the barangay is now involved in the re-organization of the beneficiaries assuring that members of all fractions are equally represented.

- Also in the other allotment garden groups certain internal dynamics had to be considered. However, those were already settled. A good social preparation and mutual understanding of the project objectives among all stakeholders is thus a necessity for success.
- Certain fears and objections within the community had to be overcome. Residents were particularly worried that the compost heap in the allotment garden may be odorous. However, the compost heaps established so far are properly maintained and thus not offensive to the neighboring community.
- A certain level of "dole-out" mentality is still wide-spread among beneficiaries. So far no rental payments were submitted to the association.

Based on the experiences of setting up the first allotment gardens in Cagayan de Oro, the following recommendations are given:

- Further advocate and promote project objectives to private landowners, local government officials and the public in general to extend allotment gardening to other areas of the city
- Include value formation in training programs to strengthen the allotment gardeners association
- Consult the city council on strategies on how to ensure long-term tenure of the allotment gardens (i.e. proposal to purchase land from private landowners)
- More research is needed particularly on integrated pest management strategies to reduce dependence on chemical pesticides

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5.3 CASE THE COPPERBELT, ZAMBIA

Facilitating Land Access for the Copperbelt's Peri-Urban Farmers: an Interest-Based Approach

Gail Steckley (CARE Canada) and Mike Muleba (CARE Zambia)[17]

Introduction

Lack of secure access to land is a significant constraint to the ability of peri-urban residents in Zambia's Copperbelt Province to realize the potential of urban agriculture as a livelihood strategy. This paper explores CARE's role in facilitating the resolution of land disputes affecting poor peri-urban residents using an "**interest-based negotiations**" approach. The Copperbelt Urban Livelihood Project (CULP) is currently operating in seven settlements in peri urban areas of Ndola and Kalulushi districts (see figure 1). By helping farmers to organize into associations that could have a legitimate, credible voice, CULP made a real negotiation process possible. As a third party, the project then facilitated negotiations, based on identifying common interests and potential for mutual gain for both the land-owners and the peri-urban farmers.

Background to CULP and the Peri-Urban Copperbelt

Zambia is one of the most urbanized countries in Sub-Saharan Africa. The 1990 census indicated that 42% of the total population lives in urban areas. Numerous reports indicate that poverty is deepening in the country as a whole and especially in the crowded urban communities. As a result of the presence of the formerly vibrant mining sector, the Copperbelt is Zambia's most urbanized province. However, since the late 1980s, employment in the mining sector has declined dramatically. Repeated rounds of "retrenchments" have left more Copperbelt households reliant on the informal sector for their income and food production with each passing year.

CARE started the Copperbelt Urban Livelihoods Project (CULP) in the nineties to help alleviate the growing poverty in these peri-urban areas. CULP addresses household livelihood security both through immunity and household needs. It is structured along the following "lines of action":

- Building Institutional Capacity and Enhancing Personal Empowerment Skills;
- Community-Managed Infrastructure and Environmental Health and Sanitation;
- Livelihood Improvement (Agriculture and Small Economic Activities Development (SEAD);

The strategic aim of CULP's activities is to promote the empowerment of individuals and organisations/partners by assisting them in enhancing their capacity to secure their livelihood and to improve their environments. To implement its activities, the project is structured around three sectors which are a set of linked community and household-based strategies intended to contribute towards this goal.

[17] The original paper was presented at the Urban Poverty Conference of CARE International / Urban Insaka, February 2001 The paper was slightly edited by RUAF for this Electronic Conference. Henry Loongo, loongo@zamnet.zm, is the current contact person for the CULP-project.

Figure 1: Zambia's Copperbelt Area where CULP has been active

CULP's baseline study was conducted in four peri-urban settlements in January 1997. It was found that agricultural production made a significant contribution to household economies, both in terms of generating cash income, and in providing subsistence food production.
Although the survey was not able to measure accurately what proportion of total food consumed, was produced by the household, the poorest households reported spending as much as 90% of their income on food. This suggests that household food production was and is a very important strategy for improving food security. The better-off households, have a highly diverse household economy, and rely on a variety of income generating businesses, and formal and informal employment as well as agricultural production.

Peri-urban farmers in Ndola and other Copperbelt towns are typical for developing country cities as described by Mougeot: "most urban farmers are low-income men and women who grow food largely for self-consumption, on small plots which they do not own, with little if any support or protection." (Mougeot, 1999). The baseline survey clearly showed that peri-urban agriculture in the Copperbelt is responding both to supply-side and to demand-side factors. For the poorer households, however, demand – the need to grow food for home consumption – is particularly pressing. Mougeot gives weakened purchasing power, retrenched public service and formal employment as the main factors that make it more difficult for poorer urban households to purchase all the food they need. This is certainly true of the Copperbelt, where years of decline in the mining sector have displaced thousands from formal employment.

In terms of access to land, The Land Tenure (1998) and the Agricultural baseline (April/May 1999) surveys commissioned by Oxfam Zambia in selected settlements in three urban centres on the Copperbelt, highlighted the following issues:

- There is land pressure in many Districts in the Copperbelt Province because people, including many urban and peri-urban dwellers, see small scale farming as a means of survival. With more and more people being retrenched from formal employment, the problem is getting worse with time;
- A problem of land tenure insecurity for those who have land and lack of access to land for those who want it exists. Many people do not have a clear idea of the land acquisition or de-gazetting process;
- Most of the farmers in the Province are actually "squatters", because they are occupying land that is not legally theirs. Most of the land occupied is Institutional (i.e. ZCCM land), large commercial farms and forests. Many charcoal burners who have turned to agricultural activities after depleting

the forests originally continue to occupy these lands. Self-imposed chairmen who have little or no regard for the forest itself normally allocate these "forest farms".

The Problem: Entrenched Positions: Land-owners versus Peri- Urban "Farmers", two cases

In each of the settlements in which CULP is operating, a portion of the residents has established informal (illegal) means to access land for farming over many years. The number of peri-urban residents who had actually secured title to land is less than 5% in most settlements – (Hansungule et al. 1998).
One of the priorities identified during participatory needs assessment exercises was to gain more secure access to land, whether through lease-hold or other agreements, or through actual issuance of title. Although most of the farmers with whom CULP was working were farming land that was outside the direct control of municipal authorities, CULP's approach to trying to facilitate more secure land access included involving municipal, parastatal and other actors in an open negotiation process.
The following section describes two cases in which CULP has helped to facilitate the process of land acquisition for peri-urban farmers.

CASE 1: ZAFFICO *(Zambia Forestry and Forest Industries Corporation)* and the peri-urban farmers of Ndola:

ZAFFICO is among the most important landowners in the area of Ndola, holding approximately 36,000 hectares. The presence of squatters in the Copperbelt is quite rampant. Among the most affected areas is the land controlled by ZAFFICO. This has been compounded by the fact that at when the forestry company was first initiated, individuals were allocated plots of woodlot to clear and burn charcoal as payment for the job done. After clearing the land, many settled in those areas and started utilizing the land for agricultural purposes. In addition, ZAFFICO controls some land that is unsuitable plantations. Those areas have regularly been encroached by farmers, with tacit acceptance by ZAFFICO. However, population pressure has also forced farmers to enter into areas that are used for plantations. These include open compartments (after trees are cut off it takes seven years before planting seedlings there), those with small seedlings (it takes five years before crops will be affected by the tree shade). Destruction of seedlings in those compartments is costing ZAFFICO considerable time and money (investment on seedlings, labour and machinery depreciation). Apart from direct cutting of seedlings, farmers set fire to clear plots of land, putting the trees at risk. Sometimes they cut grown tree for housing and timber for making furniture.

Realising such destruction, ZAFFICO tried to give permits to some trusted individuals who were then put in charge of a number of farmers as a way of mitigating the devastating effects of uncontrolled land use. The company also established security towers to watch over the plantations and arrest those trespassing, confiscate their tools and bicycles and sometimes prosecute them. These efforts were unsuccessful, and uncontrolled use of plantation land continued to overwhelm the company's resources. A possible alternative in some cases could have been to de-gazette the land and give some pieces to the squatters. However, this was not feasible because ZAFFICO leases the land from the forestry department under the Ministry of Environment, who in turn holds that land on behalf of the President and the state. Any de-gazetting has to be endorsed by the President.

The Forests Act CAP 311 is the main piece of legislation for setting aside land for the specific purpose of creating forests. This Act, which was under revision two years ago, provides the framework for the conservation and development of forests, which are "owned " by the President. These forests are vested in him on behalf of the Zambian people. This means then, that the President has power and can actually give specific directives on the use of these forests. Section 8 of the Act provides for the establishment and disestablishment (de-gazetting) by the President of the Republic of Zambia.

In the last few years, perhaps due to the ever increasing need for farming land, the President has been petitioned by many to de-gazette forests. However the process for doing so is a long and complex one, perhaps to ensure that people are discouraged from quick " fix it " solutions to land issues which would lead to the depletion of Zambian forests. Below is the de-gazetting process obtained from the Act:

1) Local officials in an area prepare and submit their request for de-gazetting a particular portion of the forest to the Local Council and Local Department of Agriculture;
2) The Local Council studies this request, in consultation and collaboration with the Local Department of Agriculture, and then passes a Council Resolution;
3) This Council Resolution is then submitted to the Provincial Permanent Secretary at the Provincial Headquarters, in this case – Ndola, who studies it with the Provincial Forestry Officer;
4) The Council Resolution is then taken to the Department of Forestry in Lusaka who study it and also make recommendations and pass the documents over to the Ministry Permanent Secretary;
5) The Ministry Permanent Secretary in turn gives the documents to the Minister to study and prepare the Ministry Position;
6) The Ministry Position is then finally given to the President of the Republic of Zambia for action.

Until the President has issued a Statutory Instrument in connection with a particular request for de-gazetting, whatever land in question legally remains in a forest area.

Clearly, gaining access to this complex process is beyond the means of most peri-urban farmers, at least in the short term and if acting alone.

CASE 2: Mindolo Farm College and the Peri-urban farmers of Kalulushi:

In the settlement of Chibote, agricultural production is a particularly important livelihood strategy (CULP Baseline Survey, 1997). Most of those who were practicing agriculture at the time of the baseline survey were doing so on land belonging to Ministry of Agriculture, Food and Fisheries (MAFF), at the Mindolo Farm College. This land had been expropriated in 1981 from the Mindolo Ecumenical Foundation (MEF), which had owned the land from 1968 and started to operate in 1971. After nationalisation, more and more of this land was unutilised or under utilized by the Farm College. Throughout the period of nationalisation, Chibote and surrounding residents were farming in the Mindolo farmland with no opposition: the government was using it as a training school and were not utilising all the land (4000 hectares). The farmers were practicing both rainfed and irrigated (dambo) agriculture, allowing them to produce both staple crops and vegetables.

In 1997, after sixteen years of legal disputes, MEF once more took over ownership of the Farm College. Immediately after getting the land back the MEF farm manager held a meeting with the Chibote community and advised them to stop farming on the farm. The community did not resist but rather tried to persuade the farm management to give them some time. After protracted debate with the community, the institution proposed to get armed security guards to stop anyone from trespassing on the farm.

Continued meeting with the farm management revealed that they had intentions of intensifying the production and land use on the farm ("to become the bread basket of the Copperbelt"). That intensification plan left no room for further encroachments by the farmers. At this point the community vowed never to leave the farmland but to continue co-existing with MEF.

CARE started to facilitate discussions between the two parties, proposing some kind of partnership for co-existence. The proposal was to allow farmers a small portion of land in exchange for labour, given that the management had no intentions of mechanising the operations. Unfortunately, the proposal was turned down and instead security was tightened.

Seeing that no land solution was in sight for Chibote residents, the community initiated negotiations with the Kalulushi Municipal Council. Council suggested an alternative plot of land but it was not clear whether the land had been allocated to someone or whether it belonged to council, ZCCM or state. To date the records over that land are not clear and it remains unused.

In both cases, the parties involved had strong positions. In the case of the farmers, their positions were based on their basic human right to have access to adequate food. Historically, the mining sector in the Copperbelt had attracted them or their parents or grandparents to give up life in the rural areas for life in the city – or at least on its periphery. Now that the mines could no longer support them, and the ties with the rural areas were broken, they were doing what they needed to do in order to survive. It was difficult for them to negotiate, since the cost of losing all access to the land was so high – if they couldn't continue to grow food and cash crops, they really didn't know how they would feed themselves and their families. Essentially, their "BATNA" (Best Alternative to a Negotiated Agreement" (Fisher et al, 1991) was increased hunger and desperation.

In the case of the landowners, the positions were founded more on economic rights, but their positions were equally strongly held. The landowners essentially felt that there was nothing to negotiate; in their view, the other side had no rights. Patterns of fear and mistrust had evolved over the years, and little effort had been made to talk to or negotiate with the other side. Shortly before CULP became involved, incidents that verged on violence had occurred at the Farm College, and Mindolo had decided to hire armed guards to protect their land. ZAFFICO knew they had a problem, and that illegal, uncontrolled of forest-land was out of control. But they believe there was no one to negotiate with who could really represent the farmers and ensure that any agreements would be respected.

The Approach: Facilitating Interest-Based Negotiations to Secure Access to Land

CULP assisted the farmers to establish Farmers Associations, with a legal status, leadership and organisational credibility, and in this way to gain a legitimate voice with which MEF and ZAFFICO

could negotiate. The latter two parties realised that the potential now existed for the farmers to organise themselves and use the land in a controlled manner.
Roger Fisher and William Ury, in their book *Getting to Yes* (1991) outline an approach to negotiating agreement without giving in. This approach, described as "principled negotiation", is based on identifying and negotiating for *interests* rather than *positions* and is widely used in teaching conflict resolution and conflict management skills. The key steps of this approach look very similar to those used by CULP, and are:

- Separate the people from the problem.
- Focus on interests, not positions.
- Invent options for mutual gain.
- Insist on using objective criteria.

CARE's role was primarily one of helping to identify those interests, and to develop "wise" solutions that would allow them to be met. As a facilitator, we helped the parties to the negotiation to get beyond the positions they had been espousing for years. In the following the two cases will be analysed following these key steps, both in order to be able to replicate and strengthen the approach, and to teach it more explicitly to CBOs and other partners.

Separate the People from the Problem

"Negotiators are people first..." (Fisher et al, 1991).

As a more-or-less disinterested third party, CARE-CULP was able to bring the sides together. Until CULP's involvement, there was a lot of talk on both sides, but little talk to each other. By bringing the parties together, CULP ensured that each side learned more about the other's needs, and developed a shared ownership of the problem. In the case of MEF, although no agreements have yet been reached, it appears that the management is becoming more inclined to take the needs of the farmers seriously. It is becoming increasingly difficult for them to maintain their argument that they would be fully utilizing all their land once they knew the families who would be affected. Although they don't necessarily agree with the farmers' point of view, they have begun to understand it. The idea of land that could be used to grow food instead lying idle is becoming a problem for them.
For the time being, farmers have found other arrangements at a greater distance from their homes, and at higher cost in terms of both time and, in some cases, land rental payments. Although a few individual farmers have managed to secure agreements with MEF to use small portions of land in exchange for labour, no overall agreement has yet been reached.

In the case of the negotiations with ZAFFICO, CARE-CULP introduced ZAFFICO management to trained, elected and qualified Farmer Association leaders. In this case, by bringing the parties together face-to-face, CARE helped to open a negotiation process that previously had been impossible, precisely because there were no people involved. ZAFFICO had no way to differentiate among the farmers who were using their land, and no way to identify individuals who could present the farmers with any legitimacy, or ensure that agreements made could be respected. Once they met the leaders of the farmers' associations, they had to challenge their perceptions that all the people using their land were disorganized and unreliable. Separating the people from the problem is crucial, but another important role of NG0s in land disputes may be - as in this case - bringing the *right* people together.
Emotions were high and were blocking the process in Chibote. Before a negotiation process was established, Mindolo had reacted to the continued presence of the farmers on the land by hiring guards and threatening to arm them. There was a serious risk of personal injury as prominent community leaders were seen to be inciting continued use of the land in the face of Mindolo's insistence that they vacate it. CARE had to act carefully in this instance, as some of the Chibote residents who CARE had trained as community facilitators were taking the lead in trying to ensure continued land access for the community. If CARE had not taken steps to involve Mindolo and the Kalulushi Municipal Council in open negotiations, and had merely, worked with the community members and facilitators, we could have been perceived as taking sides and lost our ability to facilitate the negotiations. However, by

facilitating on open, multi-party discussions, CARE was able to help the people involved deal with the *problem,* rather than with the people.

Focus on Interests, Not Positions

Two sisters argue about an orange. Their positions are the same. They both want the orange. They finally compromise and get half each. One grates the peel for a pie and throws away the pulp; the other presses her half, drinks the juice and throws the peel. Was compromise the best solution? Given the positions, it appeared to be. However, a negotiation on the basis of interests could have found a better result - more juice, more peel, more pulp!

Both cases bear some similarity to the sisters and the orange. ZAFFICO needs land to plant, grow and harvest trees. The George farmers need land to grow food. Although the farmers tended to believe that ZAFFICO did not need all their land, ZAFFICO in fact needed flexibility to ensure fallow land to plant new seedlings each year, that the land already planted with seedlings would not be burned or planted with crops that would compete with the seedlings for light and nutrients, and that land planted with larger trees would be left undisturbed. MEF intended to use all their land eventually, but at least in the short term, did not have capacity to do so. However, they were afraid to allow the farmers to farm, fearing further entrenchment of their presence.

CULP helped the different sides understand **why** one seemed to be so adamant about their position: the importance of protecting tree seedlings; the lack of alternative land in Kalulushi that is suitable for growing food; the land-owners 'fear of uncontrolled use and belief that the farmers were unskilled and disrespectful of the land. This helped to surface the perceptions that the different sides had about each other.

There is no question that when the issue is access to land for poor people, their **basic human needs** are at stake. By making it more difficult for the landowners to ignore this interest, it helps to get beyond the opposed positions. The interests of the farmers become part of the problem that needs to be resolved. Making the different **interests** explicit is a crucial part of the process. The two sides may genuinely not know or understand the other's interests. In the case of ZAFFICO and the George farmers, the farmers had little understanding of the overall impact of uncontrolled cultivation of food crops on ZAFFICO's tree production. In Kalulushi, although Mindolo knew that many people had been farming the land for years, they were not fully aware of the lack of available alternative strategies, nor did they understand the importance of this farming to the basic needs of very poor and vulnerable households.

By talking about interests, and by presenting the fact that farmers were now organized and representative, accountable leadership, the negotiation process began **looking at new possibilities**. Previously, both ZAFFICO and Mindolo cases had been bogged down in their bad past experiences (burning of trees; uncontrolled use of land); and by perceptions (farmers never do what they say they will do; if we grant access to some, what next?). CARE helped the parties to begin looking ahead at what could be accomplished with interests in mind. They also began assessing alternatives. If things continued as they were, ZAFFICO would continue to be plagued by uncontrolled land use by unknown squatters - this was untenable for them. The alternative of negotiating with an organized group that claimed they could and would adhere to certain conditions was clearly preferable to the status quo. A similar alternative presented itself in Kalulushi.

Invent Options for Mutual Gain

Mutual gain follows from an understanding of each others' interests, and by looking forward at possible new solutions. Any agreement that allowed the members of the farmers' associations to secure to land for a definite period was preferable to the current, highly insecure situation. The associations could in return offer the following benefits to the landowners:

- Organized farmers protect land from encroachment by others and ensure adherence to conditions by their members;
- Farmers weed and care for land where they are farming;
- Farmers learn new techniques that can increase yield with less use of chemicals;
- Farmers improve soil through use of green manure and/or legumes (nitrogen fixer), benefiting both crops and trees;
- Mindolo doesn't need to hire guards/security.

Convincing the land-owners that mutual gain was possible was one of the key steps in this process. On the surface, they had all the power. Ideally, by having your BATNA (Best Alternative to a Negotiated Agreement) clearly in mind at the start of negotiation, one can avoid making an agreement you should reject, and be able to make the most of what strength or assets available. Again, superficially, it would appear that the farmers' really did not have alternatives to fall back on. In fact, though, in the absence of a negotiated agreement, they would most probably continue to do what they had always done: illegal use of the land, despite the edicts of the landowners. Although the cost of doing this was increasing, this was still a feasible solution: neither ZAFFICO nor Mindolo could hope to fully control illegal use of their land. Once the farmers were part of an organized Association with credible leadership, they had a new and valuable asset: their ability to offer controlled land use and thereby reduce the costs and risks to the landowners.

The role of CULP in this process was:
- Assisting the farmers to organize themselves into associations, that made agreements on controlled land use possible;
- Training the farmers in improved land use practices that would add to the fertility of the soil instead of depleting it.
- Working with the two sides to bring this opportunity for mutual gain to their attention and to convince them that agreement was a preferred alternative to no agreement.

Unfortunately, in the case of MEF, no agreement has yet been reached between the Chibote Farmers Association and the management of the Farm College, although the college has recently changed its plan from becoming "the bread basket of the Copperbelt" to focussing on providing training and skills development. They are therefore no longer planning to fully utilize the land, and have admitted that land will continue to lie unused if no other solution is found. For the time being, most of the farmers have moved elsewhere, at considerably greater distance from their homes. Only a few have secured individual agreements with MEF to farm in exchange for labour. However, thanks in large measure to the open negotiation process facilitated by CULP, the search for "options for mutual gain" continues. CULP and the Farmers Association remain hopeful that they will be able to convince MEF – now that it is clear that they have large tracts of unused land – that controlled, responsible use is preferable to uncontrolled squatting, which is otherwise bound to result.

Insist on Using Objective Criteria

In order to ensure that the different interests of the parties are met, and to preclude fruitless arguments in the future about the extent to which they are, it is essential to agree on how to evaluate the success or failure of the agreements. Without agreement on clear indicators, ZAFFICO could easily argue that farmers are still burning and damaging trees, when in fact, those actions could be taking place on land that was not part of the agreement, and is not within the control or responsibility of the Farmers Associations. Together with the community, ZAFFICO developed the following indicators to measure success and ensure renewal of the annual leasehold agreement:
- No construction of shelters, structures or any additions of other activities not agreed upon by both parties;
- Farmers shall not remove, transfer, convert or utilise any plantation timber in the operation area(s);
- No damage to any trees by use of defective tools, ridges, and access roads is tolerated
- Farmers to dispose of debris following the stipulated means directed by the cooperation;

- Farmers nearby should put out any fire starting with a radius of 2 kms.;
- Any farmer who through negligence or carelessness damages standing trees, or access passages shall compensate the corporation and/or have the agreement terminated;
- Any farmer growing crops other than those specified (legumes, green manure, maize) shall have the crops removed, destroyed and/or have the agreement terminated without notice.

Related Issues

These two cases show, and several recent cases underline this, that organized and accountable farmers associations can in many cases overcome lack of secure land access, which is a key constraint to the viability of peri-urban agriculture as a livelihood strategy.

The following related areas should be explicitly addressed at the same time in order to ensure that the process is as successful and replicable:

Ensuring full participation of women

This should particularly be achieved in the farmers associations, in the negotiation of land access, and in securing access to land title. Currently, Farmers Associations formed with CULP's support include over 6,000 members, of which 59% are men and 41% are women. Typically, though, women are even less able than men to negotiate the legal hurdles associated with gaining secure land access or title. Formalization of urban agriculture could lead to increasing commercialisation and subsequent dominance by men (Mougeot, 1999). Women experience greater time constraints, making it very difficult for them to travel the distance to their plots on a daily basis, and may have less access to the resources necessary to scale up to commercial production. This needs to be monitored as the Farmers Associations continue to grow and as their production practices become more sophisticated.

Monitoring impact of ZAFFICO conditions on farmers' productivity

If increased productivity (in terms of yield and income) can be measured, then there is further incentive for the farmers to respect the conditions. CULP is contributing to this process through the introduction of various improved agricultural practices, including green manure, and gains are already apparent, but must be thoroughly documented by the Farmers Associations.

Helping CB0s, Councils and others to develop interest-based negotiation skills themselves

There is not always a third-party able or willing to facilitate as CB0s lobby for their interests and rights. This capacity is already becoming evident among the Farmers Associations, as they have successfully undertaken negotiation with various local chiefs.

Changing the policy environment

To this point, CULP has been promoting Urban Agriculture by helping farmers to organize themselves, to gain access to inputs and land, and to improve agricultural practices. Municipal Councils in both Ndola and Kalulushi have seen the potential benefits of organized urban agriculture, and have started to identify and allocate plots to Farmers Associations. However, this is occurring without an official policy or plan for its continuation or expansion. CULP and others NGOs or urban policy institutes could plan an important in further legitimising urban agriculture in Zambia by assisting Councils to develop such plans and policies.

Taking greater advantage of "backyard gardening" opportunities

While land access is a key constraint to extensive agricultural production, most peri-urban settlements in the Copperbelt do provide adequate space for rainfed backyard gardening. Most residents grow small patches of maize and vegetables in close proximity to their homes. However, official Council

policy still discourages the growing of maize in urban areas, and to date, CULP has not offered intensification training that would permit farmers to enhance their existing production.

Conclusion

Throughout the developing world, urban agriculture is "a sizeable supplier of certain foodstuffs to growing urban sectors, poor and not so poor, and quite a critical factor in poor households' nutrition (Mougeot, 1999). Reliable and secure access to land often is a major constraint to realizing the potential of urban agriculture as a livelihood strategy. Attempts by poor urban residents to gain access to land are often fraught with conflict and arguments about appropriate land use policy. Land access is a major concern for residents of the Copperbelt's peri-urban areas, many of who rely on agriculture both to produce food for household consumption and to generate cash income for the purchase of basic necessities. Some farmers have secured access to land through informal agreements with local chiefs or private landowners. In other cases, they have "squatted" over many years on land belonging to various state or parastatal agencies. These arrangements are highly vulnerable to changing circumstances, as was evident when the GRZ returned ownership of Mindolo Farm College back to Mindolo Ecumenical Foundation.

CULP has demonstrated that NG0s can play an important role in improving security of land tenure for peri-urban farmers, by facilitating interest-based negotiations between landowners and aspiring farmers.
At least three components were crucial to the success of this process:

- *Organization of farmers* into groups with responsible leaders who could be held accountable for the actions of their membership;
- *Willingness and ability of the farmers to adopt appropriate land-use practices* that will ensure adequate protection of the land. In this case, the training that CULP provided in improving soil fertility and rational use of pesticides and other inputs greatly improved yields and reduced the depletion of soil nutrients;
- *Credibility of NGO or other third-party facilitator*, who must have a relationship of trust and respect with land-owners, responsible agencies (municipal councils, parastatals, private land-owners) and with the farmers, in order to bring the concerned parties to the table and to help them identify common interests and options for mutual gain that can lead to agreement.

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ANNEX 1 LIST OF CASE STUDY PAPERS SUBMITTED DURING THE E-CONFERENCE

The full text of the papers can be found at: www.ruaf.org

Submitted by / author	Document
Kathleen Flynn-Dapaah	The Political Economy Aspects of Land Use Planning for Urban Agriculture in Accra, Ghana
Shenghe Liu, Jianming Cai and Zhenshan Yang	Migrants' Access to Land for Urban Agriculture in Peri-urban Beijing
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ANNEX 4: ABOUT THE ORGANIZERS

Urban Management Programme

The Urban Management Programme (UMP) was launched in 1986 as an initiative of UNDP, UN-HABITAT, the World Bank and several bilateral partners (currently the UK, Sweden, Switzerland, the Netherlands and Germany).

UMP is one of the largest urban global technical assistance programmes of the UN system. Phase 3 of the programme (1996 - 2001) saw concrete activities in 120 cities in 57 developing countries in Africa, the Arab States, Asia and Latin America and the Caribbean. This was achieved through the programmes' six regional and sub-regional offices, 19 regional anchor institutions and over 40 national and local institutions and other networks of community-based organizations, NGOs and municipal associations. In Phase 4 (2001 - 2006), the programme is working to institutionalize UMP participatory processes, consolidate experiences and deepen knowledge and understanding on urban management.

UMP has an explicit focus on activities that impact the living conditions of the poor in cities and towns. The programme continues to develop and apply urban management knowledge in the fields of participatory urban governance, alleviation of urban poverty, urban environmental management and HIV/AIDS. Gender is a cross-cutting theme throughout.

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Resource Centre on Urban Agriculture and Forestry (RUAF)

RUAF is an international programme that facilitates the integration of urban agriculture in the policies and programmes of national and city governments and international organisations, by collecting and disseminating research data and project experiences in the field of urban agriculture, promoting networking and exchange of experiences in the field of urban agriculture and by strengthening local capacities through training workshops and assistance to formulation of policies and action programmes.

The RUAF programme is implemented by a network of institutes that act as regional resource centres on urban agriculture: UMP-Lac in Quito (Latin America), MDP in Harare (South and East Africa), IAGU in Senegal (Francophone West Africa), IWMI in Ghana (Anglophone West Africa), CEDARE in Egypt (North Africa and the Middle East), IWMI in India (South East Asia) and IGSNRR (China).
RUAF is coordinated by ETC Foundation, an independent professional -but not-for-profit- organisation that supports local initiatives aimed at sustainable urban and rural development.

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