Chapter 4

MUNICIPAL POLICIES AND PROGRAMMES ON URBAN AGRICULTURE: KEY ISSUES AND POSSIBLE COURSES OF ACTION

‘Local governments should show a clear commitment to the development of urban agriculture, mobilising existing local resources, integrating urban agriculture in the municipal structure, expanding it nationwide, and allotting funds from the municipal budgets for carrying out urban agriculture activities.’ Quito Declaration, signed by 40 cities (UMP-LAC, 2000).

Introduction

Chapter 1 showed that urban and peri-urban agriculture can make important contributions in responding to various important challenges that cities are currently facing. The size and urgency of these challenges require innovative solutions and the promotion of safe, sustainable and multi-functional urban and peri-urban agriculture is certainly one of them.

Once governmental authorities and support institutions (public, non-profit, private) better understand urban agriculture and the contributions it can make to their policy goals and to addressing key urban challenges, they are likely to seek to facilitate its development by means of proactive policies and intervention strategies.

Such policy development starts from the recognition that:

• Urban and peri-urban agriculture are an integral part of the urban socio-economic and ecological system. Urban agriculture is a dynamic, although largely informal, economic
sector that quickly adapts to changing urban conditions and demands and involves large numbers of urban poor.

• Urban and peri-urban agriculture have an important role to play in strategies that seek to address key urban challenges such as rising urban poverty, increasing food insecurity, growing fresh water scarcity, the need to adapt to climate change and growing urban waste disposal problems.

• A number of health and environmental risks are associated with urban and peri-urban agriculture that need to be properly attended. Simply prohibiting urban agriculture, or just tolerating urban agriculture without taking proper guiding measures, have proven to be ineffective policies for the reduction of such risks. Pro-active policies are needed to optimize the benefits of urban agriculture whilst reducing associated public health and environmental hazards, mainly resulting from improper management and/or improper location of urban agriculture.

• Urban and peri-urban agriculture constitute an important safety net for the urban poor in times of economic or food crisis. However, support to urban and peri-urban agriculture should go beyond periods of crisis and should be made a component of more comprehensive strategies to build sustainable and resilient cities that are socially inclusive, food-secure, productive and environmentally healthy.

Policies and interventions on urban agriculture may be oriented towards various development perspectives or visions (as discussed in Chapter 1):

• the social perspective, with an emphasis on subsistence-oriented urban agriculture with strong impacts on food security and social inclusion of disadvantaged groups;

• the economic perspective with an emphasis on poverty alleviation and local economic development through stimulation of market-oriented types of urban agriculture;

• the ecological perspective with an emphasis on the ecological roles of (especially multi-functional types of) urban agriculture, productive reuse of urban wastes, city greening, adaptation to climate change (by reducing energy use, enhancing storm water infiltration and capturing CO₂).

When developed in a participatory way, these policies and programmes will respond to the local conditions and priorities and result in a specific mix of the three perspectives that is typical for the respective city. It is important to note that policies and programmes need to be differentiated for the main types of agriculture and for different zones of the respective city.
This chapter will describe the various policy instruments and intervention strategies that city governments may apply to promote and regulate the various types of intra- and peri-urban agriculture. A series of key issues for the development of safe and sustainable urban agriculture is presented. For each of these key issues a number of recommended policy measures and courses of action are discussed that have arisen in the multi-stakeholder processes implemented in the 20 RUAF partner cities (as discussed in Chapters 2 and 3). That is to say that the suggested policy measures and action strategies are based on the practical experience of local governments and their partners that has been gained over the last 5 years.

**Policy instruments**

Cities (and national governments) generally have four types of policy instruments to support urban agriculture development. Contrary to what is generally believed, legislation is just one of the instruments. Others include: economic, communicative/educative and urban planning and design instruments. Each instrument is based on a specific assumption regarding how the behaviour of actors in society can be influenced, and will be described in more detail below.

**Legal instruments**

The logic underlying legal instruments is that actors (such as citizens, industries or public institutions) can be forced to adopt a certain desired behaviour through legal norms and regulations (such as laws, bye-laws or ordinances) and that it is possible to control whether these actors adhere to the given rules and norms. Actors who do not adhere to the rules will be sanctioned. This policy instrument is especially useful in cases when: 1) The desired behaviour cannot be realized in another way; and 2) The rules can easily be controlled. In addition, legal instruments are used in case the other instruments (economic, educational and design) require an adequate legal basis. As such, the urban agriculture programme in Governador Valadares (Brazil) or Lima (Peru) were formalized by law (Governador Valadares, 2003; Merzthal and Soto, 2006).

Application of legal instruments is, however, not without some common challenges. An increasing number of laws, bye-laws or regulations may lead to contradictions (what is allowed or promoted in one law or regulation may be prohibited or restricted in another). This situation
often occurs in relation to urban agriculture due to its multi-sectoral character. For example, a city can have a formal policy that supports urban agriculture while at the same time, the same city's environmental or health regulations still prohibit or severely restrict it.

Moreover, the mechanisms to enforce legal instruments are often weak due to the related costs or lack of political will, leading to a low level of control and sanctioning of undesired behaviour or to unequal treatment of the various actors. This leads to a situation in which some actors' activities are sanctioned while others are not. Such a situation (prohibited in law, but tolerated in practice) is quite common where urban agriculture is concerned, especially in cities in sub-Saharan Africa.

An alternative legal instrument to issuing general bye-laws, norms and regulations, is a contract or covenant. In this case, the government and certain actors sign an agreement in which the community actors (e.g. urban farmers' organizations) agree to adhere voluntarily to certain norms and regulations, often in exchange for certain support by local government or other organizations (for example, access to municipal land, obtaining a license for a farmers' market and technical support). Whereas a municipal bye-law or ordinance generally contains do's and don'ts that apply to all citizens, the covenant is an agreement made voluntarily between local government and specific actors in a city that applies only to those groups. This makes it possible to establish more specific norms and regulations for specific situations or specific groups of actors.

**Economic instruments**

The logic behind the application of economic instruments is the assumption that community actors will adopt a certain desired behaviour if this gives them some economic gains (or losses if they continue with the undesired behaviour). Local governments, for example, may grant tax incentives or subsidies if actors adopt the desired behaviour, or levy special taxes for undesired behaviour (similar to a levy on cigarettes or alcohol). Such economic instruments also need a legal basis, but the essential element is not the law itself but the economic incentive or loss that encourages (or is supposed to encourage) certain behaviour.

Several municipalities grant tax exemptions to land owners who allow poor urban farmers use of vacant private land. For example, the municipality of Governador Valadares (Brazil) exempts private landowners from progressive property taxation if their lands are put to productive use (Governador Valadares, 2004). Other cities have reduced the tariffs for irrigation water or provide incentives for composting and reuse of household wastes. Economic support can also be given through supply of irrigation water, tools, seeds and compost to urban farmers.

This policy instrument is especially useful in cases when the economic incentive is easily recognizable and substantial enough to have an effect and is directly related to the desired/undesired behaviour (as in the case above: leasing vacant private land to urban poor).
Challenges related to the application of this instrument include the fact that: 1) The costs of the policy measure may become unfeasible when many actors make use of it; and 2) Levies and subsidies can enhance social inequity if there is no way to ensure that a community’s most vulnerable groups are the ones that benefit primarily from the economic incentive.

**Communicative / educative instruments**

The assumption behind the use of communicative/educative instruments is that people will adopt a certain desired behaviour if they are well informed about the positive effects of the desired behaviour as well as the negative effects of the undesired behaviour. Persuasive tools can include media programmes, extension visits, training courses, leaflets and websites.

Such instruments can be applied to make people understand the importance of the desired change and to assist them in the change process. Well-known examples include media-campaigns to discourage smoking or to promote the use of condoms to combat HIV/AIDS. In relation to urban agriculture, a municipality may provide technical training to urban farmers, or provide education on healthy food, food growing and food preparation to schoolchildren and parents.

Communicative/educative instruments are often used as a complementary approach to other policy instruments, since the lack of an adequate communication and education strategy may strongly reduce the effectiveness of the other policy instruments. In this context, the importance of designing and implementing a strategy to communicate municipal urban agriculture policies and policy instruments to the target group should also be emphasized.
Urban design instruments

The logic behind urban design instruments is that actors will adopt a certain desired behaviour if their physical environment has been designed in such a way that they are more easily prompted to act in a certain way. For example, if public dustbins are widely available, people will generally throw less litter on the street. Examples related to urban agriculture include zoning (setting aside and protecting certain areas of the city for agriculture); combining or separating certain land uses depending on the degree of conflict or synergy between them; and the inclusion of space for home or community gardening in social housing and slum upgrading projects. Several cities have already included land designated for urban agriculture in their urban land use plan or social housing schemes.

Current situation regarding use of policy instruments for urban agriculture

A review of existing policy documents on urban agriculture (Wilbers and De Zeeuw, 2006) reveals that many cities still mainly use legal instruments, which often have a ‘reactive character’. This means that action is taken only in the form of sanctions in case the community actors do not follow legal rules and regulations properly. In such cities urban agriculture is often restricted or at best tolerated if the capacity of the city to enforce the existing regulations is too limited.

On the other hand, many examples of the use of economic, educative and design instruments can be found, often in cities that apply a more proactive, enabling and development-oriented approach to urban agriculture. As stated above, economic, educative and design instruments have to be combined with supporting legal instruments in an effective ‘package’ of policy measures in order to arrive at a development-oriented policy on urban agriculture.

In Kampala, Uganda, urban agriculture recently has been formally accepted as a legal form of urban land use and urban agriculture has been included in the city’s poverty alleviation and social development strategy. However, the policy relies mainly on legal instruments: city ordinances on urban agriculture, fish, livestock and meat, which restrict unwanted behaviour by establishing a system of licences, regulations, control and sanctions (Azuba and McCans, 2006; IPC, 2007). While these restrictions make sense from a health and environmental point of view, they need to be combined with complementary policy measures to support
and stimulate urban agriculture (e.g. training, marketing support and access to land) and to ensure that the urban poor will benefit from this policy and not just see their opportunities restricted by the new ordinances. Kampala city council is actually developing such complementary programmes.

In Rosario (Argentina) the emphasis is mainly on economic and communicative/educative instruments (Municipality of Rosario, 2002). Rosario has chosen an approach that focuses on stimulating good behaviour through positive incentives including property tax exemption for landowners, provision of seeds, water and tool sheds, farmer education and technical assistance. All of these incentives are financed and supported by the municipality or collaborating organizations.

The second approach is more programme-oriented, enabling, while the first approach is more regulatory and restrictive. Combined use of the various policy instruments probably leads to the best results.

**Courses of action for municipal policy making on urban agriculture**

The Multi-stakeholder processes in the 20 RUAF partner cities show that urban policy makers can substantially contribute to the development of safe and sustainable urban agriculture. A number of important areas for policy intervention could be distinguished:

- creation of a conducive policy environment and formal acceptance of urban agriculture as an urban land use;
- enhancing access to vacant open urban spaces and the security of agricultural land use;
- enhancing the productivity and economic viability of urban agriculture by improving access of urban farmers to technical assistance, markets and credit;
- promoting social inclusion and gender equity;
- taking measures that prevent/reduce health and environmental risks associated with urban agriculture; and
- inclusion of urban agriculture in local climate change adaptation and disaster risk reduction strategies.

Systematization of the experiences gained in the various RUAF partner cities, complemented by experiences of other cities, has led to the identification of recommendable policy measures and strategies in each of these areas of intervention that might be considered when developing urban agriculture policies and programmes in other cities.

Selection of certain policy measures or actions by a specific city will depend on the characteristics of the city, the priorities and strategies defined in the dialogue between the stakeholders and the assessment of costs and benefits related to implementation of certain policy measures and actions.
Creation of an enabling policy environment

Integration of urban agriculture in city development plans. Formal acceptance of urban agriculture as an urban land use and its integration into municipal city development and land use plans and policies, is a crucial step towards effective regulation and sustainable development of urban agriculture in a city. For this purpose, the city of Ndola (Zambia) included urban and peri-urban agriculture in its Strategic Development Plan 2005–2015; Amman (Jordan) integrated urban agriculture within its new Master Plan; Bogota (Colombia) recently integrated urban and peri-urban agriculture within its Economic, Social and Environmental Plan 2008–2012, while the city of Bobo Dioulasso (Burkina Faso) integrated urban agriculture within its Schéma Directeur d’Aménagement et d’Urbanisme (RUAF Foundation, 2009b).

Revision of existing policies and regulations. Another important step cities could make is to review existing policies, bye-laws, norms and regulations influencing urban agriculture, in order to identify and subsequently remove unsubstantiated or unnecessary legal restrictions that may exist and to integrate more adequate measures to effectively stimulate and regulate the development of sustainable urban agriculture.

Kampala (Uganda), Dar es Salaam (Tanzania), Havana (Cuba) and Harare (Zimbabwe) are examples of cities that revised or are revising their bye-laws and regulations in order to replace colonial bye-laws and international sanitation standards that were seen as excessive, unenforceable or inappropriate to local conditions (Azuba and McCans, 2006; Jacobi et al., 2000; Ministerio de la Agricultura y Grupo Nacional de Agricultura Urbana de Cuba, 2004; Mutonodzo, 2009).

‘Our bye laws were outdated’, admits Winnie Makumbi, former Kampala City Minister of Social Improvement, Community Development and Antiquities. ‘They failed to recognize that many residents derive their livelihoods from urban farming. We realized it was up to us as political leaders to initiate the policy changes that would support urban farming practices’ (RUAF Foundation, 2009a).

Adequate institutional arrangements. To enable such policy revision and/or the formulation of new policies and programmes on urban agriculture, municipal authorities may select the department that will act as lead agency and/or establish an interdepartmental committee on urban agriculture. They may also invite relevant local actors to take part in a multi-stakeholder platform on urban agriculture (or
‘food policy council’) that will jointly analyse the presence, role, problems and development perspectives of urban food production, distribution and consumption in the city-region and coordinate the process of municipal policy development and action planning. Also, inclusion of urban agriculture in the municipal budget is crucial. Next to funds to finance the urban agriculture programme, also the means for the functioning of the coordination department, interdepartmental working group and the multi-stakeholder platform have to be included.

Cities like Nairobi (Kenya) and Accra (Ghana) created a municipal agricultural department (IPC, 2007; RUAF Foundation, 2009b). In Villa Maria del Triunfo (Lima, Peru) an urban agriculture sub-department was created under the Department of Economic Development (Merzthal and Soto, 2006). In 2001, the city of Rosario (Argentina) made its Secretariat of Social Promotion responsible for the coordination of the new Urban Agriculture Programme (Terrile and Lattuca, 2006). In Cape Town (South Africa), an inter-departmental working group was established in 2002 to coordinate the activities of the various municipal and Provincial departments active in this field (town planning, health, finance) and to facilitate integrated policy development (Visser, 2006; City of Cape Town, 2006), while in Bulawayo (Zimbabwe) an Interdepartmental Committee on Urban Agriculture was created in 2007 to coordinate the activities of various municipal departments (Mubvami, 2006).

Multi-stakeholder platforms on urban and peri-urban agriculture have been established in various cities in the last few years, in which municipal departments, NGOs, farmer groups, private enterprises, financial institutions, community organizations and universities are collaborating in the development of urban agriculture policies and programmes on urban agriculture and urban food security, in various cases with support of the RUAF Foundation (see the cases presented in the preceding chapters) but also many others on own initiative and without external support.

In North America (e.g. Toronto and Vancouver in Canada and Portland and Chicago in the USA) and Europe (e.g. in London, UK and Copenhagen, Denmark) more and more ‘food policy councils’ are being established involving business and community groups in the development of policies and programmes that promote urban food security and facilitate the development of equitable urban food systems (see Toronto Food Policy Council, 2009; Mendes, 2006; Cooley, 2006).

**Measures to enhance access to vacant urban land and land tenure security**

Increased access of the urban poor to land and water and especially enhanced security of land use needs to be given proper attention. City governments may facilitate access of urban producers to available urban open spaces in various ways. Below, a number of such measures are presented.
Demarcation of zones for urban agriculture and integrating these into city development and land use plans. Dar Es Salaam and Dodoma (Tanzania), Dakar (Senegal), Maputo (Mozambique), Bissau (Guinea Bissau), Pretoria (South Africa), Kathmandu (Nepal), Accra (Ghana) and Beijing (China) are examples of the many cities that have demarcated zones for urban agriculture as a form of permanent land use (Dubbeling, 2004; Mbaye and Moustier, 2000; Fang et al., 2005). These zones are intended to support agriculture and/or to protect open green areas from being built upon, to create buffer zones between conflicting land uses (e.g. between residential and industrial areas) or to reserve inner city space for future uses. In Beijing (China), specific urban agricultural types and activities are promoted in various (peri-)urban zones of the city. In Ho Chi Minh City and to a lesser extent in Hanoi (Vietnam), areas in and on the periphery of the city are also set aside for aquaculture (Bunting, et al., 2006).

Such urban agricultural zones are more sustainable if located in areas that are not well suited for construction or where construction is not desirable, such as flood plains, under power lines, in parks or in nature conservation areas. The City Master Plan of Setif (Algeria) includes the creation of a green strip west of the city on the flood-prone fields of the Boussellam wadi valley (Boudjenouia et al., 2006). Zoning in itself is, however, not sufficient to maintain these open spaces. Political will from, and proper control by, the local authorities coupled with practical, technical and financial support for the urban producers in these zones – to stimulate the development of sustainable and multi-functional agriculture in these zones – is very important.

Making an inventory of the available vacant open land within the city. Contrary to common belief, surprisingly high amounts of vacant land can be found even in highly urbanized areas that may be used for agriculture on a temporary or permanent basis. In the city of Chicago (USA), researchers identified 70,000 vacant lots. Various cities, like Cienfuegos (Cuba), Piura (Peru) and Dar es Salaam (Tanzania) have made an inventory of the available vacant open land within the city (using methods like community mapping and/or GIS) and analysed its suitability for use in agriculture, which creates a good starting point for enhancing access, especially of the urban poor, to land for urban farming (Socorro, 2003; Dongus, 2001).

Temporary leasing of vacant municipal land. Various cities, like Havana (Cuba), Cagayan de Oro (the Philippines), Cape Town (South Africa), Lima (Peru), Bulawayo (Zimbabwe) and
Governador Valadares (Brazil) have formulated a City Ordinance that regulates the (temporary) use of vacant municipal land by organized groups of urban producers (Potutan et al., 2000; Holmer et al., 2003). The vacant land (including land that is earmarked for future use but is still temporarily available, underutilized land around public facilities or road verges or land that is not fit for construction, such as flood zones, land under power lines or buffer zones) is leased for the short or medium term to organized groups of urban poor for gardening purposes (in the form of multi-annual specific leaseholds or occupancy licences). Often, the contract with the farmers includes conditions and eventually some restrictions regarding the required land, and crop and waste management practices. However, often those in need of land are not aware of such opportunities so information campaigns are an important accompanying measure.

If preparation of formal land lease contracts is too time and labour consuming, civil society organizations may liaise between the city (as land owner) and community gardeners who want to use the land. This is done for example in Amsterdam (the Netherlands), where the local Association of Gardeners (7,200 members) rents over 250 ha of municipal land from the city. The Association then rents garden-plots to individual members. This income allows the association to maintain fences and other infrastructure and to provide certain services to its members (such as training events and waste disposal) (Wilbers, 2005).

Promoting use of vacant private lands. The City of Rosario (Argentina) provides a tax reduction to land owners that lease their land to urban producers (levying municipal taxes on land laying idle might be a complementary measure) and created a Land Bank which brings those in need of agricultural land in contact with landowners in need of temporary or permanent users (Municipality of Rosario, 2003). Also, the city of Cagayan d’Oro (the Philippines) assists urban poor associations to establish allotment gardens on privately owned land. Other examples of tenure agreements between urban producers and owners of private or semi-public estates with idle areas can be found in Accra-Ghana (hospital grounds), Harare-Zimbabwe (golf club), Santiago de Chile-Chile (school yards), Dar es Salaam-Tanzania (university campus) and Port-au-Prince-Haiti (church grounds).

Taking measures to improve the suitability of available areas of land. The City of Cape Town (South Africa) not only provides access to vacant land but is also assisting urban gardening groups in removing debris from that land, ploughing it, delivery of compost, etc. (Visser, 2006). In New York (USA) community groups and volunteers, with the help of the Department of Sanitation, clean out derelict open spaces in their neighbourhoods in order to start community gardens there. A study by Pothukuchi (2006) revealed that the opening of a community garden leads to an increase of the prices of residential properties within 300 m of the garden, and that the impact increases over time, with the greatest impact being in the most disadvantaged neighbourhoods.
Providing assistance to reallocation of urban producers that are poorly located (and where their farming activities may cause serious health and/or environmental risks). For example, in Jakarta (Indonesia) 275 dairy cattle farmers with over 5,500 cows have been reallocated from the inner city (where they caused disease and waste problems) to a peri-urban area (Purnomohadi, 2000). Cape Town (South Africa) is planning a similar action creating new livestock kraals in the peri-urban area for the intra-urban herd owners.

Including space for individual or community gardens in new public social housing and slum upgrading schemes. Cities like Vancouver (Canada), Colombo (Sri Lanka), Kampala (Uganda), Rosario (Argentina), Dar es Salaam (Tanzania) and Chicago (USA) are experimenting with the inclusion of space for home and/or community gardening in new public housing projects and slum upgrading schemes. In Belo Horizonte (Brazil), spaces for home gardens or community gardens, street trees for shade and fruits and ‘productive parks’ were included in the ‘Villa Viva and Drenurbes’ housing schemes (Governador Valadares, 2003).

Promotion of multifunctional land use. Under certain conditions urban farming can be combined with other compatible land uses. Farmers may provide recreational services to urban citizens, receive youth groups to provide ecological education, act as co-managers of parks and their land may also be used as water storage areas, nature reserves, firebreak zones and flood zones, for example. By doing so the management costs of such areas may be reduced, and protection against squatting and re-zoning may be enhanced.

In Bangkok (Thailand), for example, aquaculture in urban or peri-urban lakes or ponds is combined with recreational activities like angling, boating, or a fish restaurant (Bunting et al., 2006). In Calcutta (India) the maintenance of the wetlands, agriculture and aquaculture are combined with wastewater treatment and reuse. The Municipality of Beijing (China) is promoting the development of peri-urban agro-tourism both in the form of larger agro-recreational parks as well as family-based agro-tourism through which farmers diversify their activities by offering services to urban tourists (food, accommodation, sales of fresh and processed products, functioning as a tourist guide and horse riding). The local government further made agro-tourism part of municipal and district level planning by: establishing an agro-tourism association and information dissemination service; assisting interested farmers with business planning, tax exemptions and funding of infrastructure development; and providing subsidized water and electricity (Fang et al., 2005).

Other municipalities like Pretoria (South Africa) and Rosario (Argentina) entered into a partnership with producers to manage municipal open green spaces, thus saving the municipality considerable maintenance costs.
Measures to enhance the productivity and economic viability of urban agriculture

The potential for improving the efficiency of various urban farming systems is high. The urban agriculture sector tends to be highly dynamic, in part because of its proximity to urban consumers, but its development is restrained amongst others due to urban farmers’ limited access to training and extension services. Agricultural research and extension organizations and other support organizations (i.e. credit institutions) have – until recently – given relatively little attention to agriculture in the urban environment. And where this has happened, most attention has been given to the larger scale, capital intensive and fully commercial farmers, especially peri-urban irrigated vegetable production, poultry and dairy production.

Important measures that can be taken by municipal governments to enhance the productivity and economic viability of urban agriculture include the following:

Provision of training and extension services to urban producers. Governmental organizations, educational institutes, NGOs and the private sector can be stimulated by the municipal government to provide training, technical advice and extension services to urban producers, with a strong emphasis on ecological farming practices, proper management of health risks, farm development (e.g. intensification and diversification), enterprise management and marketing. Cost-sharing systems (farmers, municipality, government organizations and private enterprises) are needed to ensure the sustainability of such activities.

For example, the Cape Town policy on urban agriculture (South Africa) calls upon the services of the research, training and support organizations in and around the city to provide the urban farmers with training on business administration, technical skills and marketing (Visser, 2006). The Botswana policy paper (Hovorka and Keboneilwe, 2004; Keboneilwe, 2006) on urban agriculture assigns a critical role to farmer education through the production of books, brochures, posters and community-level demonstration projects and advocates the integration of urban agriculture into the formal training and education system (such as agricultural colleges and technical schools). In Chicago (USA), the Food Policy Council is the platform where the municipality and NGOs, for example, Heifer and Growing Power, coordinate their activities regarding capacity building and training activities for community gardeners.
Strengthening farmers’ organizations. Most urban farmers are poorly organized and usually operate informally. They therefore lack sufficient access to decision-making processes and power to be able to voice their needs. This limits the representation of their interests in urban policy making and hampers their participation in development programmes. Well-functioning farmers’ organizations can negotiate access to land, adequate tenure arrangements and access to credit. Such organizations may also take up roles in farmer training and extension, infrastructure development, processing and marketing and control/certification of the quality of marketed products. In Bangkok (Thailand), for example, associations of aquaculture farmers have been instrumental in negotiating fair prices for producers or negotiating contracts directly with wholesalers and retailers.

More efforts are needed to identify existing farmers’ organizations and informal networks of (various types of) urban farmers, to analyse their problems and needs, and to find effective ways to help them develop further. Municipalities may stimulate their own departments, as well as universities, NGOs and CBOs present in the city, to actively support capacity development of farmers’ organizations and to strengthen the linkages between these farmers’ organizations and private enterprises, consumer organizations and support organizations.

The PROVE programme of Brasilia FD (Brazil) has stimulated urban producers to establish producer associations and their capacities have been enhanced to gradually replace the government officers in their supporting role (Homem de Carvalho, 2005). In Rosario (Argentina) the Municipal Urban Agriculture Programme supported the establishment of the Urban Producers Network and helped to establish working relations between urban producers and various government and non-governmental organizations. In Beijing (China), agricultural cooperatives have been created, often closely linked to village-level management, which facilitate capacity building and joint marketing (Liu et al., 2003).

Development of appropriate technologies. Urban agriculture is performed under specific conditions that require technologies that differ from those used in the rural context. Such specific conditions include limited availability of space and the high price of urban land, proximity to large numbers of people (and thus a need for safe production methods), use of urban resources (organic waste and wastewater) and possibilities for direct producer-consumer contacts. Most available agricultural technologies have to be adapted for use under these conditions whilst new technologies have to be developed to
MUNICIPALITIES can provide budget and expertise for local technology development, and/or to stimulate research organizations and universities to put urban agriculture issues on their research agenda and to undertake participatory action-research with urban producers. Also, more coordination between research institutes, agricultural extension organizations, NGOs and groups of urban farmers could be promoted. Further, special attention should be given to the introduction of ecological farming practices (such as integrated pest and disease management, ecological soil fertility management and soil and water conservation), space intensive and water saving technologies, health risk reducing practices and the creation of farmer study clubs and field schools that actively engage in the technology development and assessment process.

The national urban agriculture programme in Cuba undertakes a large amount of practical research to develop technology that is appropriate for urban conditions including agro-ecological production methods that do not harm the environment (Ministerio de la Agricultura y Grupo Nacional de Agricultura Urbana de Cuba, 2004). The Botswana policy paper (Keboneilwe, 2006) on urban agriculture urges research and extension institutions to develop and disseminate technologies among small-scale urban farmers. The following technologies are mentioned: 1) Adaptable cultivars (e.g. cabbage, tomato, onion); 2) Water saving techniques (e.g. drip irrigation system or micro-irrigation system); and 3) Appropriate production practices (e.g. hydroponics, concrete benches, protected agriculture). In Gampaha and the Western Province (Sri Lanka) ‘no-space and low-space’ technologies are being developed and disseminated to households that lack access to land (RUAF Foundation, 2009b; and the ‘Building synergies to promote urban agriculture in Gampaha, Sri Lanka case study in Chapter 3).

Enhancing access to water, inputs and basic infrastructure. Access to a year-round supply of low cost water is of crucial importance in urban agriculture as well as access to (composted or fresh) organic materials and other sources of nutrients (like wastewater). Municipalities can play an important role in enhancing access of urban farmers to water and production inputs. The city of Bulawayo (Zimbabwe) provides treated wastewater to poor urban farmers in community gardens (Mubvami, 2006), while the city of Tacna (Peru) has agreed to provide urban farmers with its treated wastewater in return for their assistance to maintain public green areas. The City of Gaza (Palestinian Authority) promotes the reuse of ‘grey’ household water in home and community gardens (Laeremans and Sourani, 2006). Mexico City (Mexico) promotes systems for rainwater collection and storage, construction of wells and the establishment of localized water-efficient irrigation systems (e.g. drip irrigation) to stimulate production and to reduce the demand for potable water (Silva-Ochoa and Scott, 2002). The municipality of Cape Town (South Africa) assists community garden groups with basic infrastructure (a fence, a tool shed, a tank and hoses for irrigation) and allows them to
use up to a certain amount of piped water daily free of charge (Visser, 2006). They have also transferred an old industrial site and building to Abalimi (an NGO that supports 3,000 urban producers) to be converted into a place that includes a packaging shed for green vegetables, demonstration ground for ecological production technologies and a training centre. The city of Havana (Cuba) facilitates an adequate supply of quality seeds, natural fertilizers and bio-pesticides in small quantities to urban farmers through a network of local stores and is supporting the establishment of decentralized low-cost facilities for compost production and the installation of composting toilets (Ministerio de la Agricultura y Grupo Nacional de Agricultura Urbana de Cuba, 2004).

Enhancing access of urban farmers to credit and finance. Improvement of the access of urban farmers to credit and finance (with an emphasis on women-producers and resource-poor farmers) is very much needed. Municipalities can stimulate existing credit institutions to establish special credit schemes for urban producers (e.g. by creating a guarantee fund) or to allow the participation of urban producers in existing credit schemes for the informal sector. In Brasilia FD (Brazil), the PROVE programme provides urban producer associations with a nonmonetary guarantee in the form of ‘Mobile Agro-industries’ (metal frames that can be transported on a truck). Since these frames are mobile and durable, they can be used as collateral for a commercial loan (Homem de Cavalho, 2005).

The inclusion of urban agriculture in the municipal budget is also an essential component in the promotion of urban agriculture activities. In many cities, the City Council allocates resources to support its policy and programme on urban agriculture (infrastructure development, training, marketing support, start up kits, etc.).

Facilitating direct marketing by urban farmers. Due to the informal status of urban agriculture and the usual exclusive focus on food imported from rural areas and from outside the country, the creation of an infrastructure for direct local marketing of fresh urban-produced food and local small processing of locally produced food has received little attention in most cities. However, some municipalities do facilitate the marketing of surpluses by poor urban farmers by providing them access to existing city markets, assisting them in the creation of farmers’ markets (infrastructure development, licences, control of product quality), authorising food box schemes and/or supporting the establishment of ‘green labels’ for ecologically grown and safe urban food. An example is how the Budapest municipality (Hungary) assisted Biokultura,
the local organization of urban and peri-urban farmers, to create a weekly organic farmers’ market. As a result, Biokultura now has its own organic certifying institute.

Many cities in the USA and Canada also provide space for farmers’ markets for organized local farmers. Examples include the city of Vancouver (Canada) and the work of the Rainbow Coalition in Milwaukee and Chicago, which organizes the cooperative sale of organic farm produce through farmers’ markets and food box schemes (Vancouver Food Policy Task Force, 2003).

The municipality of Governador Valadares (Brazil) has prioritized the marketing of urban agricultural products in different ways: 1) By providing incentives for the formation of cooperatives for the production and commercialization of products; 2) By creating sales and distribution centres as well as farmers’ markets in the city; and 3) By buying agricultural products from urban farmers’ groups to supply to schools, community kitchens, hospitals and other service organizations.

The creation of networks connecting local farmers to buyers for restaurants and institutional food programmes including, for example, airports and government-, health- and educational- institutions, could play a role in maintaining the viability of small urban and peri-urban farms.

Supporting micro-enterprise development. Various municipalities are promoting the development of small-scale enterprises: suppliers of (often ecological) farm inputs (such as compost, earthworms, open pollinated seeds and plant materials and bio-pesticides) and processing enterprises (such as food preservation, packaging, street vending and transport) by:

• providing start up licences and subsidies or tax reductions to micro- and small entrepreneurs;
• providing technical and management assistance to micro- and small enterprises;
• providing subsidies and technical assistance for local infrastructure and equipment for small-scale food preservation and storage facilities.

In Ghana, the Tema Municipality has cooperated with the Ministry of Food and Agriculture to establish a milk collection system to encourage dairying in the peri-urban areas of Tema. In Brasilia FD (Brazil), the PROVE programme supports the development of small agro-processing and/or packaging units managed by urban farmers’ groups and assists them in setting up quality labels and other marketing strategies. The PROVE products began to be sold in supermarkets as a result of an agreement between the local government, supermarkets and producers. Based on this example, agro-industries were also established in Rosario (Argentina), the products of which are sold at weekly urban markets and in municipal offices, for example.
The small-scale of production and rapid turnover of capital of small urban producers also often impedes them from buying even small amounts of good-quality inputs at affordable prices. Therefore, some municipal programmes develop mechanisms for collective purchasing and sales in small units to urban farmers. In Havana (Cuba), farmers’ stores (Tiendas del Agricultor) have been installed in various neighbourhoods. In these stores, urban farmers can buy equipment, seeds, natural fertilizers, and bio-formulas in small quantities and at low prices. In addition, these stores offer technical assistance.

**Measures to promote social inclusion and gender equity**

Urban agriculture projects may be designed that specifically involve disadvantaged groups such as youth, disabled people, women heading a household with young children, recent immigrants without jobs, or elderly people without a pension, and with the aim to integrate these groups into socio-economic city-life. Many of these groups are especially at risk of food insecurity, given their often lesser access to rural and urban land, as well as to technical assistance and credit resources.

Gender affirmative actions. The percentage of poor female-led households is generally increasing and in many cities, women constitute the majority of the urban producers. However, they often experience limited access to education, land ownership and access to financial resources. In Fortaleza (Brazil), Banco Palmas created the Incubadora Femenina, a food security project seeking to involve women at risk (Melo Neto Segundo, 2002). The project provides information, facilitates visits to farmers’ markets and manages an ‘urban agriculture laboratory’ where women learn farming activities. Women are thus assisted to start their own family farming operations and to cultivate fresh vegetables and medicinal herbs. The municipality of Oña (Ecuador) promoted the use of municipal and private land for farming as part of the municipal Economic Development Plan, prioritizing women and senior citizens. The micro-credit PROQUITO programme, in the municipality of Metropolitan Quito (Ecuador), offers preferential access to credit for urban agriculture to women who are heads of households and to people under 30 years of age, two groups that have the highest unemployment rates in the city (IPES/UMP-LAC, 2002).

School and children’s gardens. Amongst many other cities, the cities of Antananarivo (Madagascar), Rosario (Argentina), Bulawayo (Zimbabwe) and Gampaha (Sri Lanka) are promoting school garden programmes. Extensive evidence exists that school-based garden programmes have significant health effects on young people. In these non-traditional learning labs, children become familiar with fresh and nutritious food, especially the fruits and vegetables critical to reducing obesity and chronic diseases. It is precisely these foods that are missing from poor urban children’s usual diets. School garden programmes teach a skill and a lifetime hobby that provides exercise, mental stimulation and social interactions.
receive a practical introduction to biological and environmental sciences, mathematics, geography and social studies.

Supporting youth entrepreneurs through urban agriculture. For a growing number of urban youth, males and females, in the face of shrinking formal employment, market-oriented urban agriculture and related enterprises provide a relatively accessible entry into the urban job market. Young people can earn an income, save on food, learn another trade and perhaps set up a small business. In Portland (USA), a youth employment programme, Food Works, engages 14-21 year olds in all aspects of planning and running an entrepreneurial farm business (Janus Youth Programs, 2009, www.diggablecity.org). Working side by side with gardens’ staff, community residents, local farmers, business owners and non-profit leaders, Food Works’ Crew Members learn business, leadership, organic agriculture and other work skills. Similar youth-oriented programmes are currently being set up in Freetown (Sierra Leone) and Porto Novo (Benin).

HIV/AIDS mitigation through urban agriculture. Families affected by HIV/AIDS tend to have higher expenses due to costs related to treatment of the infections and special diet requirements of the infected persons. Meanwhile, family income tends to decrease due to loss of strength and status of HIV/AIDS-affected family members leading to further socio-economic deterioration. Urban agriculture projects can make important contributions to mitigate the impacts of HIV and AIDS at the individual, family and community level. Its benefits include improved nutrition of HIV/AIDS-affected families, savings on food expenditures, added income from the sale of surpluses, and community mobilization to respond to HIV and AIDS. In Bulawayo (Zimbabwe) 12 allotment gardens were recently established by the city council in selected areas in the high-density and low-income areas of the city. The beneficiaries of the garden allotments are HIV-affected households, the elderly, widows and the destitute. In order to avoid the stigmatization associated with HIV, each garden draws from a mixed group of beneficiaries. The garden allotments, which largely produce vegetables, have contributed to food security and local community development. The HIV-affected households also feel less discriminated against now as they work with other community members in their gardens (Mubvami and Manyati, 2007).

Supporting migrants. In Cologne (Germany) intercultural gardens are promoted to allow immigrants to rent plots of land and start gardening (Stiftung Interkultur, 2009). Migrants
(from Turkey, Iran, Congo, Cambodia, Japan and Poland) work alongside German-born residents, pursuing their gardening hobby, carving out a niche for themselves in a foreign country and improving their language skills. Many of the migrant gardeners cultivate crops and herbs from their home countries, which they otherwise cannot obtain in Germany. In Beijing (China) half a million peri-urban migrants are producing a large share of the city's fruits and vegetables consumption, without any acknowledgement or support until recently. The Beijing Agricultural Bureau is now supporting these migrants to form cooperatives and provides technical assistance in ecological production techniques and marketing (Liu et al., 2003).

**Measures to reduce the health and environmental risks associated with urban agriculture**

Rather than restricting urban agriculture, out of an often unspecified fear of health and environmental risks associated with urban agriculture, cities can instead better design a series of accompanying measures to reduce these risks. The following measures are regularly recommended to reduce risks that can be associated with urban agriculture.

Improved coordination between health, agriculture and environmental departments. The first measure to be taken is to create mechanisms of cooperation between agriculture, health and environment/waste management departments to assess actual health and environmental risks associated with urban agriculture and to design effective preventive/mitigating strategies for which the participation of all these sectors is required. In Kampala (Uganda), health, agricultural and town planning specialists have closely cooperated in the development of the new ordinances on urban agriculture livestock and fisheries (Yeudall et al., 2007). In Phnom Penh (Cambodia) steps are being taken to improve the coordination between municipal departments, universities and private organizations for controlling and monitoring the microbiological and chemical quality of wastewater-fed fish and plants in order to reduce a number of health problems (especially skin infections) related to wastewater-fed aquaculture (Bunting et al., 2006). In Kumasi (Ghana) small kits have been made available to various local organizations to periodically test the quality of the irrigation water. The Accra Metropolitan Assembly has drafted revised bylaws on the use of wastewater and has supported an awareness campaign on health risk minimization strategies in production and marketing (Farm to Fork) of urban vegetables (Obuobie et al., 2006). The Ministry of Housing, Construction and Sanitation of Peru (MVCS) is formulating policy guidelines for the promotion of the productive use of treated wastewater in intra- and peri-urban agriculture and the recreational use of wastewater (including the irrigation of parks and other public green areas).

Health considerations when setting aside zones for urban agriculture. Many cities identify zones where certain types of urban agriculture are allowed (often defining required management
practices) and other types are excluded (due to expected negative effects in the given local circumstances) in order to reduce health and environmental risks. When preparing such a zoning and related regulations, factors such as population density, the ecological sensitivity of the area concerned, closeness to polluting industry and closeness to sources of drinking water should be taken into account. Furthermore, the available means to enforce zoning and related regulations should be taken into account.

A city may want to avoid free roaming cattle and major concentrations of stall-fed dairy cattle or piggeries in central districts (to avoid traffic congestion, bad smells, flies and waste management problems). Further, intensive horticulture and poultry keeping in areas that are sources of drinking water (risk of water contamination) or mono-cropping in river stream beds (erosion problems/siltation of dams) might need to be avoided. Proper location of crop fields in relation to sources of contamination is also important in order to reduce the effects of air pollution. Within 50–75 m of a main road, leafy vegetables can better be avoided; and production of food crops close to industries that emit certain toxic elements should also be discouraged.

Farmer education on the management of health and environmental risks. Health risks associated with urban farming can be reduced substantially if farmers are made well aware of these risks and know how to prevent them. Examples of preventive measures that can be implemented by farmers themselves are the following:

- Apply ecological farming methods to reduce risks related to intensive use of agrochemicals.
- Adopt adequate animal waste management, regular cleaning and disinfection of stables and proper handling of animal feed in order to prevent health risks related to raising animals in the proximity of homes.
- Use of adequate irrigation practices and proper crop choice can reduce health risks related to the use of wastewater. Untreated wastewater should preferably not be used for food crops (especially not fresh leafy vegetables), but may be used for growing trees or shrubs, crops for industrial use and other non-edible plants (such as ornamentals and flowers). In Xochimilco (Mexico) urban producers have shifted from vegetable growing to a lucrative floriculture when untreated canal waters have become unfit for food growing (Canabal, 1997). In Hyderabad, India, farmers have shifted from the production of paddy to fodder
grass production when river water that is used for irrigation gradually became more polluted (Buechler and Devi, 2006).

- Food fish farmers in Bangkok (Thailand) facing increasing pollution and food safety problems have been encouraged to switch to ornamental fish production. Vegetable producers in Ho Chi Minh City (Vietnam) have begun cultivating ornamental plants for the urban middle class to reduce the risks of growing vegetables with wastewater. Municipalities in Ghana, Jordan and Senegal are field testing the various methods and procedures proposed by the WHO to reduce the risk of use of wastewater in urban agriculture in situations where comprehensive wastewater treatment is too expensive and not feasible in the near term - as is common in many cities in developing countries - (WHO, 2006; Drechsel et al., 2009).

Education of food vendors and consumers. During production, processing and marketing crops can become contaminated. Access to clean water and sanitation facilities should therefore be provided in markets and food-hygiene training should be provided to small food processors and vendors. Consumers need to be educated regarding the washing or scraping of crops, heating of milk and meat products and securing hygienic conditions during food handling. Consumers also need education regarding the importance of fresh nutritious foods and medicinal herbs and their preparation. A United Nations Food and Agriculture Organization (FAO) project on making street foods safer in Dakar (Senegal) is training food vendors, food inspectors and consumers in food hygiene issues. In Accra (Ghana) a multi-partner project resulted in the training of more than 3,000 street food vendors on improved hygiene practices as well as increased consumer awareness.

Prevention of industrial pollution of soils and water by industry. Contamination of soils, rivers and streams by industry is a growing obstacle to safe urban food production. Separation of city waste (residential and office areas) and industrial waste streams and treatment of industrial wastes at the source should be promoted. In areas where contamination might occur (such as downstream of industrial areas) periodic testing of soils and water quality in agricultural plots might be needed. Increasing pollution and contamination of the city’s domestic wastewater with industrial wastewater effluents is a major constraint to the continued viability of irrigated urban agriculture as well as to aquaculture. In many South-east Asian cities, the continuity of the existing potential for growing aquatic vegetables and fish using urban wastewater will depend on the city planners’ ability to coordinate and develop strategies for effective separation of toxic industrial waste from domestic sewage. There are already encouraging examples in Hanoi (Mubarik et al., 2005) and Ho Chi Minh City (Vietnam) of relocation and zoning of urban industries to industrial parks which allow for more effective treatment and monitoring of effluents. In the medium term, enforcing existing pollution control legislation to control contaminants at their source and monitoring and regulating industrial wastewater discharge in public water sources can be effective in reducing health risks.
Inclusion of urban agriculture in local climate change adaptation and disaster risk reduction strategies

The World Meteorological Organization (WMO, 2007) has recommended an increase in urban and indoor farming as a response to climate change and as a means to build more resilient cities. Various cities are already including urban agriculture as part of their strategies to reduce their ecological foodprint, knowing that urban agriculture has lower energy use (less transport, less cooling, more fresh products sold directly to consumers) and enables cyclical processes and effective use of waste (such as use of urban organic wastes as compost or as raw materials for production of animal feed; and use of excess heat of industry in greenhouses). Urban and peri-urban agriculture also contributes to keeping flood plains and wetlands free from construction and storing and infiltration of excess storm water.

In order to strengthen climate change adaptation in urban areas, the city government may take measures such as:

• preferential food procurement from family and community-based farms located within the city region (for government canteens and school feeding programmes, for example) and facilitating direct marketing of fresh and ecologically produced food from regional sources (less packaging, transport and cooling);
• protecting and stimulating sustainable urban and peri-urban agriculture in flood zones and wetlands and on steep slopes in order to prevent construction in such areas, to slow down water runoff and facilitate infiltration;
• promoting/maintaining multifunctional parks and greenbelts and promoting agro-forestry, involving urban poor and farmers in the maintenance of such green zones (multi-functional land use) in order to reduce the urban heat islands effects, reduce runoff and enhance biodiversity;
• facilitating (safe) reuse of urban wastewater and organic wastes in order to reduce the disposal of wastes into open water systems, reduce fresh water use, promote recycling of nutrients and reduce emissions of methane from waste dumps. In that context, a shift to decentralized and low-cost treatment of wastewater allowing the reuse of wastewater and nutrients close to the source needs to be supported (for example, through stabilization ponds, a cluster approach and constructed wetlands) as well as the decentralized collection and (co-)composting of organic wastes and excreta systems. The health risks associated with the productive reuse of untreated waste water (and polluted streams) have to be reduced through complementary health risk reduction measures as outlined in the new WHO guidelines for safe use of excreta and wastewater (WHO, 2006).

Interesting experiences with the planning and implementation of such urban agriculture related adaptation measures to climate change are being gained by the Climate change programme for Asian cities of the Rockefeller Foundation (Rumbaitis del Rio, 2009). Investing in climate adaptation must involve low-income groups (who often live in the areas most vulnerable to...
climate impacts) and fully involve them in plans to reduce flooding and other risks (Reid and Satterthwaite, 2007). In order, for example, to create and maintain a buffer between the city and the river, especially in view of possible changes in the river’s water table, the cities of Zwolle (The Netherlands) and Rosario (Argentina) have decided to protect the flood zone from urbanization and maintain it as an attractive multifunctional area for agriculture, nature and recreation. Climate change adaptation through urban agriculture links enhancing urban resilience with better living environments, increased food security and income and, most importantly, enhances the adaptive management capacity of the urban poor.

The IASC Task Force on Meeting Humanitarian Challenges on Urban Areas (IASC, 2009) recommended that in the aftermath of humanitarian crises, support programmes should focus on the revival and diversification of livelihoods for the most vulnerable groups, rather than seeing food distribution as their main intervention. This should be done especially through enabling various forms of urban agriculture and related community-based agro-enterprises (such as compost making, food processing, transport, marketing and home-based manufacturing of tools) by providing tools, seeds, access to land and essential services (including training, organizational support, and training for entrepreneurs).

Integration of urban agriculture into national policies

The overview provided above indicates the wide range of policy measures and actions that municipalities may apply to stimulate and regulate the development of urban and peri-urban agriculture depending on local conditions, needs and policy priorities.

But the local stakeholders will also need the support from national policy makers. Local initiatives on urban and peri-urban agriculture are often constrained by restrictions in mandates and in national legislation. This makes local authorities sometimes hesitant to develop more pro-active policies and programmes on urban agriculture as long as no adequate policy, financial and technical support is provided from the national level.

Urban and peri-urban agriculture needs to be integrated in national policies, such as the agricultural policy, the national food security and poverty reduction strategies, national SCP (sustainable consumption and production) and Agenda 21 plans etc. Several developing countries have already taken such initiatives: Cuba some time ago developed a comprehensive policy to support highly productive – and mainly ecological – urban and peri-urban agriculture. This started off as a crisis measure (oil crisis) but has become a crucial component of its national agriculture and food security policies. Brazil developed an urban agriculture programme as part of its ‘Zero Hunger’ policy. Sierra Leone included urban agriculture in its ‘Operation Feed the Nation’, Ghana in the national food and agriculture sector development policy (FASDEP II) and Sri Lanka in its National Campaign to Motivate Domestic Food Production 2007–2010 while China included it as a central component in its ‘New Countryside’ policy (RUAF Foundation, 2009b).
In countries where such initiatives have not been taken yet, it is recommended to undertake a scoping exercise to review past research, ongoing and new initiatives, needs and opportunities, potential actors at all levels as a basis for selecting priority areas, setting targets and defining policy measures and actions required. An important step will be the creation of an institutional home for urban agriculture. Conventionally, sector policies have been defined under the assumption that agriculture refers to the rural sphere. As a consequence, urban and peri-urban agriculture often does not receive proper attention and support either from the agricultural institutions or from the urban authorities. The Ministry of Agriculture seems in most countries the best equipped to take a coordinating role regarding urban and peri-urban agriculture, but experiences to date reveal that close cooperation with other Ministries is also required (Health, Social Development, Economic Development) and that these Ministries have to play an active role in the design and realization of urban agriculture programmes (either as part of their own sector policy or as inputs to the agricultural policy or programme).

**Final remarks**

Conventionally, city governments looked upon agriculture as a relic that had survived from rural–urban migration and was incompatible with urban development. The expectation was that agriculture in the city would dwindle as cities and urban economies would grow. Urban agriculture was not given any policy attention, other than restricting it as much as possible or permitting it only temporarily at certain sites.

The many examples given in this book demonstrate that local authorities in many countries have recognized that urban and peri-urban agriculture form an integral part of the urban socio-economic and ecological system, link to several critical urban challenges, and deserve proper policy attention and support.

Such recognition has led to policy changes in many cities and the design of action programmes on urban agriculture, involving various stakeholders from governmental and private sectors.

The urbanization of poverty and food insecurity have become serious concerns and national governments and international agencies are increasing their support for the development of safe and sustainable urban agriculture systems and the integration of these within the urban planning system.
With this book we have sought to share the experiences gained and lessons learned in the RUAF ‘Cities Farming for the Future’ programme (2004–2008) in two partner cities and by so doing to provide some building blocks for stakeholders in developing countries to participate in policy formulation and action planning on urban agriculture.

After an introduction to urban agriculture and a discussion of potentials for responding to key challenges with which cities in developing countries are confronted (Chapter 1), we have presented the Multi-stakeholder Policy formulation and Action Planning approach as applied by RUAF CFF in 20 cities in close cooperation with municipal authorities, urban farmer groups, universities, NGOs, governmental organizations and other stakeholders in urban agriculture (Chapters 2 and 3).

In this chapter (Chapter 4), we have shifted focus from the participatory process of policy and programme development through to the question of what kind of policy measures and actions best promote the development of sustainable and safe urban agriculture.

We hope and expect that the readers of this publication will have been stimulated to engage in participatory planning on urban agriculture in their own cities, combining the lessons learned from participatory multi-stakeholder processes with the lessons learned regarding effective policies and courses of action for the development of sustainable urban agriculture.

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