

Milk marketing
in Addis Ababa,
Ethiopia



Azage Tegegne

Gender and Urban Agriculture

Urban agriculture can have positive and/or negative consequences for men and women. This will depend on the situation and conditions. Data gathered on urban agriculture demonstrates that it generally has a positive impact on household food security, and thus will be beneficial to women as they most often are responsible. This issue of *UA Magazine* explores exploring how urban agriculture relates to existing gender dynamics.

Initially, the focus of those working with urban agriculture was on the need for recognition of urban agriculture and on putting it on the policy agenda. Now, as many municipalities have recognised this importance, attention has shifted to the integration of urban agriculture in municipal development, that many different stakeholders are involved as well as the need for gender to be addressed in analysis and implementation. Regardless of whether men or women predominate in urban agriculture, in this issue it is shown that this differs per country, it is important to focus research, policies and action planning on both men and women, and to emphasise differences between them, acknowledging the inherent diversity. These gendered insights will help shape appropriate and relevant interventions. Therefore, this *UA Magazine* attempts to find answers to questions such as “If women engage in urban agriculture more than men, does this improve their situation? Why or why not?” and “If improvement of the situation is necessary, how can it be achieved for both men and women?”.

Gender can be defined as the socio-cultural construction of roles and relationships between men and women. Gender analysis involves the examination of their roles, responsibilities, and social status in relation to local cultural perceptions of masculinity and femininity that delineate access to opportunities and resources in a particular context (Hovorka, 1998). The notion of gender has been accepted throughout development activities, but is not always understood in the same way. A focus on power relationships between men and women, for instance, is very significant for different situations in urban agriculture. Gender can therefore not be taken for granted, but should be used as an essential analytical tool in unravelling the complexities of urban agricultural activities.

WHY DO MEN AND WOMEN ENGAGE IN URBAN AGRICULTURE?

Millions of urban farmers have managed to produce food in towns and cities without any official recognition or support. Urban agriculture has many positive characteristics:

- ❖ It enhances household food security given that produce is less subject to market fluctuations. This is largely women’s responsibility.
- ❖ It generates additional income from sales of surpluses and money saved on food expenditures, which can be used for other purposes. This may help women gain more independence, but also be very

Editorial

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attractive for others operating in the informal sector like young urban migrants as shown in the cases from Nigeria, Uganda and Ghana.

- ❖ It motivates men and women to go beyond subsistence farming and engage in related activities like small-scale food processing and marketing or more profitable urban agriculture micro-enterprises.
- ❖ It can be done in combination with other tasks and close to the home, which is especially important to women.
- ❖ It only requires relatively low level of capital, technology and inputs attainable and affordable for poor households, young urban migrants and women with limited education and resources (see the cases on Uganda and Nigeria, highlighting this issue).
- ❖ It stimulates the use of indigenous practices.

Engagement of urban households in urban agriculture can generally be divided into two scenarios. First, a family moves from a rural to an urban area, bringing along knowledge of rural practice, or the family simply keeps farming on its own land while the nearby city expands and takes over the formerly rural setting. Second, urban households already established in the city get involved in agriculture by choice or by need. The articles on Nepal and India (Kolkata) describe the first kind of situation and how the roles of men and women change. It is important to understand exactly what changes occur and how they come into being. The articles on Argentina and Peru, describe how urban households turn to agriculture, and how men and women take on different roles. In both cases the work in urban agriculture of the women was eventually valued well, but the burden on the women in the household did not change.

Palacios (2003), following Moser, suggests differentiating between practical and strategic interests/needs. Practical needs are “immediate needs related to the

inadequacy of their living conditions, such as the supply of food, water, health care and employment”. Satisfying these, does not imply changes in gender relations. Strategic needs “are related to the division of labour, power and control by the genders, and can include issues such as legal rights, eradication of household violence, equal wages”. Satisfying the strategic needs by improving gender relations helps women achieve greater equality and brings about shifts in the existing roles. Practical and strategic needs are of course inter-related, and involvement in urban agriculture can contribute to satisfying both needs.

There is a general notion that more women than men are active in urban agriculture, although this issue shows that in several (West African) countries this is not the case. The predominance of women urban farmers in other parts of Africa is mostly ascribed to the fact that women still bear the main responsibility for household sustenance and well-being. Women also tend to have lower educational status than men and therefore more difficulties in finding formal wage employment (Hovorka 2003). Men and women may differ strongly in their preferences and priorities in relation to their main roles and responsibilities, for example regarding production goals (enough food for consumption versus surplus products to sell at the market), preferred location of plots (women with young children often prefer to work close to the home), preferred mode of production (single versus multiple cropping), etc.

Especially married women with children benefit from involvement in urban agriculture. It can be done close to the home, little cash is needed, and it combines well with the prime responsibilities of women. Married women may have other reasons for being engaged in urban agriculture than just improving their families’ food supply. For instance, it is within the bounds of what they are culturally expected (and allowed) to do and having access to their own generated source of income strengthens their positions in intra-household conflicts. By growing their own food, women basically tend to focus on saving money on family cash expenditures, but for various reasons they may prefer to become active in another informal urban sector (like marketing in order to avoid the risks of

farming, such as in Ghana) or focus more on generating a cash income (for instance if the products are not considered safe for the household, as in Uganda). Clearly these considerations vary according to place and time, depending on the specific context.

The following issues can be considered those of key importance within the field of gender and urban agriculture.

ACCESS AND CONTROL OF RESOURCES

Two related issues can be distinguished: access to and control over productive resources (including land, credit, labour and information), as well as access to and control over the benefits of production. The latter is less prominent in this issue of *UA Magazine*.

While both women and men face constraints regarding access to land, women are further disadvantaged because they traditionally have less access to and control over land than their male counterparts. Men tend to have the first choice of any available vacant plots of land, which leaves women with low quality (see both articles on Uganda and Nigeria), less secure plots of land, or plots that are located at a considerable distance from their homes. The physical time and effort involved in travel is then considerable and therefore proves to be a significant constraint for women, especially the elderly or those with young children. Farming in remote and insecure places can also increase the risk for women farmers (as expressed by women in India and Nigeria in this issue). Thus it is important to acknowledge here that increasing access to land as such may not solve the problem of inequitable access to urban land between women and men (Hovorka 1998).

There are a number of external factors that can have a strong effect on gender relations in urban agriculture. Inequitable access to land and other natural resources, labour, information, etc., between men and women is highly influenced by structures or processes at the macro level. Socio-economic conditions clearly are at the root of the involvement of women (or lack thereof) in urban agriculture, for example social and cultural norms or the risk women are prepared or able to take in different economic situations (illustrated in the articles on West Africa). Cultural ideas determine which roles men and women

An urban dairy farmer



Azage Tegegne

play and which responsibilities within the household both have, or should have. This is highlighted in the Ghana article. The effect of existing inheritance customs and the laws and regulations on land very often disadvantage women. Often, traditions more than laws prevent women from inheriting and controlling land and animals on an equal basis with men, but situations change under urbanisation and as women take on different roles, as is shown in the articles on Nepal and Kolkata in India. In this regard, the term “gender contracts” was introduced by Lee-Smith (1997), which can be defined as distinct sets of social rules that make up invisible agreements governing what men and women can and cannot do, and which can be found in every society. Other factors are local and national policies, the education system, and environmental factors and organisations, like grassroots activism (NGOs/CBOs).

It is important to look closely at gendered relations of power in legal arrangements, and to check the relative strength and security of tenure based on gender. Women often have rights of renewable use (for example: harvesting leaves from trees), while men have rights of consumptive use (harvesting the tree itself). Resources can be divided into different categories, and women and men may have different degrees of control over each of the categories.

Besides gender differences in access to productive resources within households, one can also find gendered differences between female heads-of-households and male heads-of-households. Often, the first tend to own resources of a poorer quality that consequently result in lower production (see the articles on Uganda and Ethiopia). An important disadvantage for female-headed households is the fact that female farmers tend to limit their labour time in farm activities due to their strong commitment to domestic chores. Other disadvantages are limited education and therefore fewer opportunities for employment in the off-farm labour market.

Women more than men face a lack of inputs and working capital as well as a lack of access to knowledge (internet, radio, television, books, magazines) and interpersonal networks (e.g. extension services, private sector suppliers, consultants, neighbours, teachers/mentors, friends, relatives). Men and women differ

with regard to their knowledge of, for example, the cultivation of certain crops and animals, the application of certain cultural practices and the use of certain technologies. Limited information on and exposure to the use of modern inputs and technologies may also be the result of limited access to training courses offered by institutions or non-governmental organisations. The fact that women are less likely to benefit from research or extension services that fail to consider gender-specific differences regarding methods of plant production, crop species and use of compost, manure and fertiliser also plays an important role.

DECISION-MAKING

Control of resources and decision-making power are closely related but distinguishable issues. The role and bargaining power of women in decision-making should be looked at within the farm household and within the community or organisation. The decision-making power of women within communities can be highly influenced by the extent to which women’s group activities exist. These activities can be viewed as cooperative mechanisms through which women successfully pool resources, skills, information, time and energy (see articles on Argentina and Senegal). The strength of women’s social networks and cooperative efforts are noted as potential areas for successful development strategies in the urban agriculture sector (Hovorka, 2003). Women farmers may participate in governance, local politics and community groups, linking social activism and urban food issues (see the box on Zimbabwe, or the articles on Senegal, Argentina). Productive activities can help strengthen the position of women in the decision-making process within the household. For example, in Kampala, farming represents a means of economic self-reliance (see pages 32-35).

DIVISION OF TASKS

Most of the articles in this issue give a description and analysis of the different tasks men and women perform in the household and in urban agricultural activities. This division of tasks is subject to context-specific circumstances. In every city the division of tasks between men and women may depend on the cultural group they belong to and the socio-economic status of the household or products cultivated. However, obvious similarities

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exist. The more arduous activities are performed by the men (see the Ghana case), who usually are more actively engaged in irrigated dry season agriculture, while women are more involved in wet season farming. In some cases however, in the Nepal case, there is no taboo on men and women performing similar tasks, despite this division of tasks. This case, as does the case from Peru, do show changes in these tasks due to urbanisation or due to involvement of men and women in urban agriculture.

Women have many household (reproductive) tasks for which they remain responsible when they are assigned or take on more productive tasks in agriculture (see Argentina) or other formal or informal jobs outside the household. Often more of the tasks involved with urban agriculture are assigned to the women. There is also a

Gender, Urban Agriculture and Politics – A Testimony

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In 1997, I was working as a Town Planner in the town of Marondera in Zimbabwe. One morning, I was called to the Executive Mayor's office. When I went in, I could not find a chair to sit on, as the office was full of women, so I stood. The Mayor told me that because of a presentation on urban farming I had made to the council some time before he had an urgent task for me. He introduced the women in the room. They were members of ZANU PF's Women's League. They had asked the Mayor to allocate them pieces of land in the town, which they could use for growing maize, the staple food.

For me this was an unusual stakeholder group that I was not used to dealing with. As the Town Planner, I was often in the company of transport operators, land surveyors, civil engineers, and business- people looking for land to develop. Now I was dealing with a group of women from a political party that was requesting land for agriculture, in the city!

From my office, I gathered the town's layout map, and together with the Town Planning Technician, we went around identifying some pieces of land in the suburbs that could be allocated for farming. By then we did not call it urban agriculture, but just farming. By the end of the week, our survey was complete, and we presented our report to the Executive Mayor. The report showed the pieces of land marked on the layout plan, with temporary plot numbers we had allocated, and their approximate sizes in square metres.

The Mayor was re-elected for a second four- year term of office in 2000. At the completion of his term of office in November 2003, I called the Executive Mayor from my new office in Harare where I had moved to in 1999. I called to bid him farewell as we had worked together very well. He told me that at the time he had requested land to be allocated to the women, he was doing so only for political reasons. He had no idea he was reaching out to a wider population by making land available to the women for farming. The women were later instrumental in his re-election. Only now, he said, did he realise that urban agriculture was an important part of the urban economy, and that by working with women, he had empowered families to feed themselves.

For me, the assignment to identify land for allocation to the group of party women strengthened my interest in the linkage between gender and urban agriculture. When I travelled to Dar es Salaam, Tanzania, in 2000, I toured the Urban Vegetable Promotion Project sites. There, I saw young men and women balancing water cans watering vegetables they call *mchicha*. Back home in Zimbabwe, I followed the allocation of roles and responsibilities in urban farming. I realised most of the plots were 'owned' by elderly women. Men are involved in tilling the land, and carting away the produce from the fields. The women do much of the planting, weeding, applying of fertilisers, harvesting and selling of produce on the market.

From 2001, I started working with urban farming groups such as Musikavanhu Project in Harare. I learned that more than 90% of the membership of urban farming groups in Zimbabwe is women.

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difference in the division of responsibility for certain crops (cash crops and larger livestock versus food crops and small animals), and if they are not involved in agricultural production, women take up marketing (as in Ghana). Time is a limited resource and one effective strategy can be to increase the household production of fruit and vegetables, not just for the family's own consumption but also for sale. The response of women farmers to opportunities to grow more food or better-earning crops will depend on the extent to which they can influence the decisions in the household about cultivation, the use or sale of produce, and the distribution of benefits within the household.

Furthermore, women farmers not only take up reproductive and productive roles, but also participate in governance, local politics, and community groups, linking social activism and urban food issues (see the case of Touba Peycouck in Senegal, and the women's initiative in Rosario). Apart from the division of certain activities within the household, it is important to understand that gender issues also go beyond household level and thus have far-reaching consequences.

GENDER MAINSTREAMING

Gender mainstreaming requires a concerted effort amongst researchers, practitioners, and decision makers in order to strengthen linkages between research, programming and policy/planning initiatives around urban agriculture. Creating a foundation for gender mainstreaming around urban agriculture requires a solid research base, which explores conceptual issues and provides empirical evidence of men and women's differential, and often inequitable experiences with food cultivation and livestock rearing in different cities around the world.

Gender analysis provides an entry point into such investigations. This involves a two-tiered process of gender-disaggregated data collection, and gender interpretation and analysis of results. Hovorka (2001) outlines this process as follows. "First, researchers must collect information on the different experiences, needs, interests, and access to opportunities and resources of both men and women so as to establish an accurate picture of the local context. This stage of the research aims to answer the questions who, what, when, where, and

how urban agriculture systems function with regard to gender dynamics. Second, researchers must ask why such gender dynamics occur. It is not enough to document differences; rather researchers must probe deeper and examine the factors that create and influence differential opportunities and constraints for men and women at the local, regional and global level." The latter stage is particularly important for it allows researchers to reveal the "underlying power relations and structures that create imbalances and inequities between men and women" (Hovorka 2001). It is clear from this issue of *UA Magazine* that more research and discussion, with men and women, is required on this.

The development of appropriate methods for urban agriculture and implementation is a key step in mainstreaming gender analysis. The gender methodology developed through Cities Feeding People, IDRC (Hovorka 1998), was an important step. This report outlines specific gender questions and tools, and has been widely distributed to researchers and project personnel focused on urban agriculture activities around the world. RUAF organised a discussion on appropriate methodologies for urban agriculture in 2001/2002, including gender, which was reflected in *UA Magazine*, no. 5. The organisation of a gender expert consultation, later this year, will be a continuation of these efforts (see box). Certainly the commitment to gender analysis in urban agriculture research goes well beyond the availability of appropriate guidelines and instruments. Unfortunately, it is difficult to gauge the extent to which such methodological tools have been incorporated and/or adapted to research endeavours and development projects.

Theoretical and empirical research on gender and urban agriculture provide a springboard for programming, planning and policy initiatives. Research can reveal differences between men and women, identify the mechanisms that often keep women in a disadvantaged position, and establish the significance of urban agriculture in people's everyday lives. It also provides a springboard for support initiatives whereby, for example, researchers can identify the practical and strategic needs of men and women in order to formulate action-plans for urban agriculture activities. Women's groups and

their urban agriculture related collective practices could be promoted and involved in the community processes so that they will be recognised as social and political actors, thus converting urban agriculture into a citizen's concern.

Ideally, planning around urban agriculture should address gender issues, and specifically women's issues in two ways: first, by helping women to cope with their immediate, and often marginalised, circumstances, and second, by helping women achieve positive, structural change in their lives (Hovorka 2004). Identifying the type and scale of intervention (be it through programme, planning or policy avenues) should rely on a solid understanding of the local context and structural factors that delineate opportunities and constraints for individual producers. Short-term and localised interventions may involve small lines-of-credits or extension services, while longer-term and institutional interventions may require more substantial changes to legal frameworks, land allocations, and social norms that often marginalise women relative to men (Hovorka 2004).

It is important to recognise that urban agriculture projects and related policies can have differential impacts on men and women, depending on the degree to which gender has been taken into account during design and implementation stages. It is also necessary to recognise gendered structural inequities, which manifest themselves in urban agriculture dynamics. These issues require an emancipatory agenda in order to bring about gender equity. Gender mainstreaming around urban agriculture programming, planning and policy thus requires having emancipation (or transformation) as an inherent goal.

In summary, gender mainstreaming requires a combination of efforts at various scales of analysis and intervention. Gender analysis and methods are needed in diagnosing and exploring experiences, processes and structures associated with urban agriculture. Research should set the course for appropriate technological and policy initiatives. The integration of urban agriculture in programming, planning and policy development requires a solid understanding of key gender issues and dynamics. This special issue of *Urban Agriculture Magazine* provides a further step in the discussion on gender

RUAF's activities on gender

In order to provide the partners in the RUAF network with advice and guidance in identifying strategies to better integrate gender issues in their activities and to "gender mainstream" urban agriculture, RUAF has initiated a Gender Advisory Group. This group consists of people that have expertise and hands-on experience in gender issues and agriculture in an urban setting. Additionally, three working papers have been prepared. A first paper discusses key issues in the field of gender and urban agriculture, and offers a framework for the analysis of such issues. A second paper discusses specific gender mainstream strategies for the RUAF partners. A third paper describes a number of engendered PRA techniques that can be of use in gender analysis and planning. Furthermore, the RUAF partners are currently writing gender case studies, which will a/o serve as an input to the RUAF expert consultation on gender urban agriculture, which will be held in September 2004.

mainstreaming.

The advocacy of urban agriculture as a development strategy necessarily targets women in many contexts as the agents of intervention but care should be taken to adequately consider how potentially successful endeavours may alter their existing circumstances. It is important to analyse the benefits of urban agriculture to households, especially to women, compared to alternative economic and social opportunities that might be made

REFERENCES

- Hovorka, Alice J. 1998. Gender Resources for Development Research and Programming in Urban Agriculture. Cities Feeding People Series, Report No.26. Ottawa, Canada: IDRC.
- Hovorka, Alice J. 2001. Gender considerations for urban agriculture research. *Urban Agriculture Magazine* 5.
- Hovorka, Alice J. 2003. Gender and Urban Agriculture. In the Bibliography on Urban Agriculture, RUAF. www.ruaf.org
- Hovorka, Alice J. 2004. Urban agriculture: addressing practical and strategic gender needs. Unpublished manuscript (under peer review).
- Palacios, P. (2002) Why and how should a gender perspective be included in participatory processes in urban agriculture. In: Latin American Training Course on Urban Agriculture, Session 2, Proceedings. Quito: PGU-LAC.
- Lee-Smith, D. (1997) "My house is my husband" A Kenyan study of women's access to land and housing. Thesis 8. Department of Architecture and Development Studies, School of Architecture, Lund Institute of Technology, Lund University, Sweden.

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Gendered Urban Agriculture in Greater Gaborone, Botswana

Three key dimensions of urban agriculture in Greater Gaborone make it an interesting and insightful case study on gender issues: it is predominantly commercial, it is formally recognised, and an equal number of men and women participate.



Alice Hovorka

Participation in commercial urban agriculture in Greater Gaborone is gender balanced

Urban agriculture in Greater Gaborone has a predominantly commercial character whereby the bulk of produce is sold on the urban market. It did not emerge as a response to stifled economic opportunities in the city but rather through a favourable political economic environment, fuelled by government financial assistance for local businesses, as well as urbanisation trends (Hovorka, In Review a). A total of 114 commercial agricultural enterprises operate within Greater Gaborone, varying in scale and type of production. Persons involved

The focus should be on enhancing women's ability to participate in this urban economic sector.

with this urban economic sector operate exclusively for income-generating purposes. Past studies confirm this (Matsila, 1999; Mosha, 1999; Byerley, 1996).

The majority of urban agriculture operations in Greater Gaborone are formally recognised, often initiated by government grants, and stand thus in contrast to many African contexts where urban agriculture is an informal activity. Seventy-four percent of these operations are registered as companies, with business trade names, under the Financial Assistance Policy, or operate on "agricultural" land in urban and periurban areas. The remaining enterprises operate within the informal sector yet remain income rather than subsistence oriented.

An equal number of men and women participate in this urban economic sector with 44 percent of the enterprises being male-owned and operated, 47 percent female-owned and operated, and 9 percent male/female co-owned and operated. This is an important dimension given that in other African contexts women are relegated often to subsistence realms while men predominate in commercial forms of the activity. These three dimensions prompted an initial exploration of urban agriculture by the author, and particularly its gender dynamics, in Greater Gaborone, Botswana.

This article provides an overview of research findings and conclusions drawn from the study, as detailed in Hovorka (2003). Fieldwork for the study took place between October 2000 and September 2001 in Greater Gaborone, which includes Gaborone City, as well as the periurban villages of Tlokweng, Mogoditshane, Mmopane, Gabane and Metsemotlhabe. Semi-structured interviews were conducted with owners of 109 (out of 114) urban agricultural enterprises, 33 percent of which are located within the city proper. Access to these enterprises was facilitated by official records from the Ministry of Agriculture, Registrar of Companies, Tribal Land Boards and Department of Lands, as well as through key informants, private suppliers/distributors, veterinarians, farmers' organisations, and personal observation.

The key research question focused on the relationship between gender and productivity levels of commercial urban agriculture systems. Participants responded to questions relating to net outcomes, including gross earnings and quantity of foodstuffs, as well as a number of socio-

economic, location and environmental variables that affect their urban agricultural enterprise. Data analysis combined quantitative with qualitative methods in order to give the research both statistical and conceptual significance.

KEY FINDINGS

The research reveals that both men and women have entered into commercial agricultural production in equal numbers in Greater Gaborone and view this activity as an opportunity for economic and/or social empowerment. At the same time, however, gender segregation and inequality plague this urban economic sector and hinder its potential contribution to local economic diversification and food security.

The equal number of men and women participating in urban agriculture may be attributed to two factors. First, women's entry into commercial production in Greater Gaborone has been facilitated in part by the Financial Assistance Policy, which provides special eligibility terms for women qualifying for business grants. Between 1995 and 2000, seventeen grants were provided to women (compared to eleven for men) who might otherwise not have entered the sector. Second, and perhaps more significantly, analysis reveals that both men and women perceive of this sector as accessible and a key means to empowerment. In other words, commercial urban agriculture is not viewed as an inherently masculine or feminine realm. It is not surprising then that individual motivations for entering into production are diverse and complex but not specifically gendered (Hovorka, In Review b). Men and women equally draw on a number of economic motivations, and the entrepreneurs range from profit-motivated,

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including those who want to supplement their income, to those engaged in survival-oriented production. Men and women also equally draw on a number of socio-cultural motivations. These relate to increasing social status or perpetuating cultural norms through a sustained agrarian tradition, as well as enhancing self-empowerment or contributing to local food supply and national economic growth. Economic and/or socio-cultural motivations are influenced further through networks of family, friends, neighbours, private suppliers, and government channels. Beyond the gender-balanced entry into the sector, however, commercial urban agriculture in Greater Gaborone is clearly gendered. Men generate higher levels of gross earnings and contribute greater quantities and value of foodstuffs to the urban market than women. Gender differences in productivity levels stem from differential socio-economic status and income disparities between male and female entrepreneurs. Men feature prominently in middle- and high-income categories, while women are concentrated in the lower income brackets. Such income disparities are linked to the fact that men often have higher levels of education, hold full-time employment in addition to their agricultural enterprise, and live in a two-income household. Socio-economic gender differences have a major impact on women's access to productive resources, including capital, land, and labour, and more women than men operate enterprises informally. These discrepancies impact the spatial distribution of male- and female-owned enterprises across the urban landscape, reflecting the strong correlation between levels of capital and ability to purchase land for agricultural production. Men are located on plots of agricultural land that are more expensive, larger in size, and located throughout tribal, leasehold and freehold tenure categories. Women more often occupy tribal land that is allocated free of charge, and in some instances associated with the residential homestead.

Analysis reveals that women operate at smaller scales, with greater intensity, and within limited agricultural sub-sectors (namely broiler production) while men participate more broadly in terms of scale and type of agricultural production. Gender analysis along class lines reveals that low-income women operate highly efficient and effective broiler production systems,

drawing on their own resources (e.g. social networks, homemade equipment) to sustain production at the small scale. Their yields are consistently higher than the yields of those operating at higher income levels and larger scales. Yet their efforts are constrained by urban zoning, given that plots are relatively small (on average 4000 square metres compared with 4.8 hectares for those in the middle-income bracket), and their ability to accumulate enough capital to acquire larger plots of land is limited. Middle-income men and women operate independently and tend to be constrained by a lack of extension and support related to agricultural inputs, including training and information on commercial production and business management techniques. Middle-income women in some instances face a double burden because they lack adequate capital to support the daily operations of the enterprise, despite acquiring land and fixed assets through the Financial Assistance Policy. The few men and women operating in the high-income bracket rely on their own resources, and have significant options for larger-scale and diversified production systems.

IMPLICATIONS AND FUTURE DIRECTIONS

Gender segregation and inequality associated with commercial urban agriculture in Greater Gaborone is detrimental not only to the livelihood strategies of individual entrepreneurs, but to the functioning of the sector itself and the nation as a whole. Both men and women view entrepreneurial urban agriculture as a means to achieving economic and social empowerment. Unfortunately, women's opportunities within the sector are generally more constrained than those of their male counterparts. At the sectoral level, this inequality has profound impacts on the type and quantity of foodstuffs produced for the urban market. Not only are women limited in their ability to contribute substantial quantities of foodstuffs to the urban market, they are also marginalised to and within particular sub-sectors. With the broiler sub-sector reaching its saturation point in Botswana, it is questionable whether the market can accept expansion of existing enterprises, let alone the emergence of new operations in the area. This suggests that the future for women producers, who predominate in broiler production, is uncertain. Finally, gender

segregation and inequality in this urban economic sector threatens to undermine government efforts to diversify the economy through local entrepreneurial efforts and to enhance local food production. The potential contribution of commercial urban agriculture to both economic diversification and food security is stifled by gendered production dynamics.

Recognising the gender-segregated nature of commercial urban agriculture sets the stage for an action-oriented agenda offering tangible tools for redressing the imbalance. The equal number of men and women in this sector can be viewed positively given that in many African nations women are often absent from commercial production. The focus should be on enhancing women's ability to participate within this urban economic sector, particularly through increased access to productive resources. For example, financial schemes should be developed that support agricultural operations with capital for operational costs, along with fixed asset investment. Many female entrepreneurs, including those who received government grants for infrastructure, expressed their frustration with the lack of liquid capital available to keep daily activities running. Also, greater access to technical and business management aspects of agricultural production could complement such financial assistance in supporting female entrepreneurs, as well as their male counterparts, who struggle with limited access. Strategic planning around practical and strategic needs of men and women, paired with an analytical understanding of gender inequality, is essential in harnessing the potential of urban agriculture as a key dimension of urban development and sustainability.

REFERENCES

- Byerley, Andrew. 1996. Urban Agriculture in Botswana: A Preliminary Investigation of Extent, Issues and Potential. Working Paper 307. Uppsala, Sweden: Swedish University of Agricultural Sciences, International Rural Development Centre.
- Hovorka, Alice J. Forthcoming (2004). "Commercial urban agriculture in Greater Gaborone: form & function, challenges & prospects". Pula: Botswana Journal of African Studies.
- Hovorka, Alice J. In Review a. "Urban opportunities: entrepreneurial urban agriculture in Botswana". Unpublished manuscript.
- Hovorka, Alice J. In Review b. "Gendered experiences, changing gender relations? A feminist political ecology of commercial urban agriculture in Botswana". Unpublished manuscript.
- Hovorka, Alice J. 2003. Exploring the Effects of Gender and Commercial (Peri-)Urban Agriculture Systems in Gaborone, Botswana. Ph.D. Dissertation. Worcester, Massachusetts: School of Geography, Clark University.
- Matsila, G. 1999. Urban Agriculture: A Survival Strategy for the Urban Poor. The Case of Jwaneng. Unpublished Master's Thesis. Gaborone: Department of Environmental Science, University of Botswana.
- Moshia, A.C. 1999. The Practice of Urban Agriculture in Gaborone. Gaborone, Botswana: Department of Environmental Science, University of Botswana.

Urban Agriculture in Rosario: an opportunity for gender equality

Since the beginning of the 1990s urban agriculture has been serving as an alternative means of production and social inclusion in the city of Rosario, Argentina, for the victims of the economic crisis. Currently there are approximately 800 community farms in the city, involving around 10,000 people (mostly women), who are integrated into a commercialisation system made up of five weekly farmer's markets and an agribusiness for processing the crops produced.

Gunther Merzthal



Women are forced to take up a productive role

WOMEN FARMERS OF ROSARIO
In times of crisis, when men as well as women find themselves excluded from the labour market, women are forced to take up a productive role (generally in the form of generating secondary incomes), in addition to their reproductive tasks. Urban agriculture is an activity, which generates indirect income (through the resources freed up by the family's consumption of the food produced) and direct income. Next to these tasks, women are generally also in charge of assuming community roles, for instance participation in the Community Centres of Rosario.

Around 400 of the private and community farms in Rosario participate in farmers' markets and capacity-building endeavours of the Urban Agriculture Programme of the city. Of the participants, 63% are women and (only) 27% men. This makes it very important to work within each of the farms and community gardens, acknowledging the role of the women, to ensure that each worker has the same access to the various resources urban agriculture offers.

To improve the understanding of the roles and constraints of the women agriculturists in Rosario, a study was undertaken during the first half of 2003.

A survey with a sample of 63% of the women farmers was undertaken. Interviews were held with 401 women of 120 farms/community gardens, randomly selected per district.

From the interviewed women 66% were between 21 and 40 years of age and 75% had a minimum level of schooling, which facilitates working with these women in improvement of the activities. The majority of the women were single or separated (69%), and a majority had three children or less (58%).

THE ROLE OF WOMEN IN URBAN AGRICULTURE

Most of the women in the study feel that men and women can perform all tasks on the farm equally, which they do in practice. Locating the land, fencing, land clearing, planting, transplanting, irrigation, weeding, fertilising, preparation of compost, pest control, harvesting, processing and house-to-house sales are all performed by men and women alike. The tasks outside the farm, which require more public exposure and interaction, such as buying seeds, attending training, administering resources, selling in the markets, and farm co-ordination are performed by the women.

It should be noted that 93% of the women consider the farms as their place

NOTE

This article is a summary of a diagnostic study on the roles and functions of women community farmers in the city of Rosario, carried out in October 2003, by representatives of the Areas of Employment, Women, and Urban Agriculture of the Department of Social Promotion of the Municipality of Rosario and the NGO Rima.

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of work, and 92% say that they improve their family's nutrition.

DECISION MAKING AND CONTROL

In 50% of the cases the on-farm activities are determined by group-consensus. In 85% of the cases off-farm activities are decided upon by the women themselves or the group. It is also important to note that 100% of the women interviewed participate in the farmers' market sales or would like to. Regarding the administration of resources, it was observed that 59% of the women manage or would like to manage finances. One significant limitation, for both the men and the women, is the lack of access to and secure tenancy of urban land for urban agriculture.

CONCLUSIONS

Women carry out tasks similar to those of men and are recognised for their work by the group, although the women could benefit from additional support in taking on further responsibility and in increasing their empowerment. It is therefore necessary to work with women farmers in building awareness of and democratising the niches that offer them the greatest degree of freedom, especially with regard to financial management of processing, marketing and sales.

There is a further need for local authorities to develop adequate regulation of land use (by applying the ordinances already in force) and at the same time to promote secure tenancy. This should facilitate equal opportunities for men and women in production, processing and commercialisation activities. The access to productive resources (land, infrastructure, inputs and training), product transformation and commercialisation (participation in the farmers' markets and management of the income generated) needs to be more democratic and transparent.



Gunther Merzthal

Many tasks outside the farm are performed by the women

Irma Rodriguez, farmer in Rosario

Irma Rodriguez was born in Esquina, Corrientes Province. She started working at her first job in Esquina at 10 years of age, and for the past 32 years she has lived in Rosario, Esquina, where she has worked together with her family in the countryside. She attended school up to the seventh grade (the end of primary education) and is able to read and write.

Nowadays Irma marches in community demonstrations and prepares food for fellow demonstrators, in addition to all the work she does in the neighbourhood, in the gardens, and in her house. In the neighbourhood she helps at the Community Centre, where she is active in making bread, sewing, weaving, organising and preparing lunch for 130 kids every day, in addition to her work in the community gardens.

The first community garden was established at Battle and Ordoñez, on land that a neighbour lent to her. With the help of the knowledge Irma brought with her from Esquina, she and other local residents began cultivating medicinal plants. These plants have since been removed because the neighbour wanted to use the land. Afterwards, they found a larger plot of land, closer by, and started to work there. Antonio Lattuca and Raul Terrile (technical staff of the municipal urban agriculture programme) brought the owner of the land, Señor Roviralta, to speak with Juan Carlos (Irma's husband – although she introduces herself as single) and they managed to begin the paperwork necessary to allow the community to use the land for at least two years. This process is still in progress.

Irma's day begins at 6 a.m. She shares the housework with her four daughters, aged 23, 18, 13 and 10 years. Her husband chips in. Juan Carlos "...takes care of the gardens, takes care of the municipal paperwork, teaches the people who are in the field, brings tools or water....because he too is one of the workers at the gardens".

"...Through the gardens we learned about a wider variety of vegetables that we can eat. Before, maybe we went and bought lettuce and tomatoes. Today we have these in the garden and more. We have to

think that if we want to make a salad or something and we go to the garden, we get it there. (...) I think that produce from the garden is the best there is. It is the most expensive thing today in the fruit and vegetable markets. So now, you can at least think about having something to throw in your pot...."

In addition to providing salads for the family, the vegetables produced in the garden are sold in the neighbourhood and at farmers' markets. The products are divided among those who work on the gardens, used for the meals prepared in the community kitchen or even sometimes traded for other goods.

Irma says that her personal income is designated for her household. What she spends most on is food: "I mean you have to be able to buy yourself a little something once in a while, an ice cream or a piece of cake."

As far as her role as a woman and how she feels about it, Irma comments: "Everywhere they have invited me and they have accepted me; I haven't really felt discriminated against as far as I can remember...." Irma was also a candidate for City Council: "...I think that we women are gaining ground...there were more women Council candidates...." And she states that her idea was not to sit on a bench but to work in the neighbourhood in creating a garden/small farm where in addition to vegetables people could produce beef, eggs, and other products. She also feels that it is urgently necessary to keep people busy and get the young people off the streets.

Extracted and summarised from the document "Vision Reports of the women farmers in Rosario on their role and the secure tenure of productive land", written by Andrea Mazzuca and others. Rosario, November 2003.

Our Daily Realities: urban organic homegardens in Lima, Peru

Lima is historically known as the “Garden City” (Niñez, 1985). However, judging from its lack of greenery it is hard to imagine how it earned this name. Gardening on the Peruvian desert with an annual rainfall of 25 mm is a hard task. People have developed several strategies to irrigate their crops by using water of the Rimac river and tap water. Urban agriculture has many faces in Lima.

The municipality could be more active in supporting markets



Tasso Hetterschijt

Nothing is lost in the homegarden



Tasso Hetterschijt

In Peru there are about 25 million guinea pigs

Based on the destination of the products, the urban homegardens in Lima can be divided into four groups: those that produce for the household only; those that produce for the household and for informal sale to friends or family (in small quantities); and those that produce for the market.

URBAN AGRICULTURE

As part of a recent research project on agrobiodiversity in urban organic homegardens, a survey was conducted in two young towns and four slums in the Chorrillos district of Lima (1). Many towns like those in the research project, (Huertos de Villa, San Juan Bautista and the shantytowns Delicias de Villa and Andrés Avelino Cáceres) have been expanding since the 1950s, mainly because of migration of people from the highlands. Due to major cutbacks under the “Fujishock” in the 1990s, and the high cost of living, people took the initiative to grow their own crops in their backyards or in open spaces in these young towns. In the same period, NGOs took up this initiative and implemented projects to stimulate the establishment of homegardens and the production of micro-livestock (i.e. guinea pigs, chickens, rabbits and ducks).

Since the end of the 1980s IPAC has promoted urban agriculture with an emphasis on organic homegardens and guinea pig production. Some participants already had a kind of homegarden and guinea pigs, ducks, chickens, rabbits and birds. Other NGOs, such as IMAGEN EDUCATIVA, have also introduced hydroponic production of tomatoes and lettuce as an economic activity for low-income households in a certain part of Delicias de Villa (see *UA Magazine* no.10).

GUINEA PIG PRODUCTION

In Peru there are about 25 million guinea pigs (*Cavia porcellus*) of which 56% can be found in the provinces of the *Sierra* (INIA/CIID, 1999). Due to the migration of people from the *Sierra* to the capital, Lima can now also be considered as a

province with a high production of guinea pigs. Most of the migrants live in the young towns, which have the highest guinea pig production.

Guinea (or cuy) production in Lima has some advantages compared to production at the migrants' places of origin. These advantages are access to better breeds (Perú, Intí and Andina) and access to better and new management and production techniques. In the study, it was found that women do the majority of the work, while some of the management and production tasks are performed by men and women together. Guinea pigs are fed with leftovers, fodder crops (alfalfa, sorghum, elephant grass) and with concentrates like soya bean meal. The main activity, the production of fodder in the homegarden, is the responsibility of women (95% of respondents in the survey who indicated that they perform this task were women). The women perform the tasks of sowing and cutting the fodder crops and feeding the guinea pigs. In very few occasions fodder is bought at the market. There are several reasons for this, the most important of which is that fodder is too expensive (in the highlands in particular there is no money to buy concentrates or there is no access to this product). Also, in order to buy fodder, the women have to leave their homes to go to the market, which is considered a waste of precious time. Another reason to feed the guinea pigs fodder crops is that guinea pigs fed with only fodder crops produce the best-tasting meat. .

Guinea pigs are kept in cages or pens built by the women. These pens are cleaned every day, which is the responsibility of the women (98%). Some women receive help from their children. The manure is used to make compost, which is used in the homegarden; this is also mainly done by women, alone or together with their husbands.

Guinea pigs are consumed from the age of two months. They are slaughtered by

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the women (100%) and prepared in traditional dishes according to the customs of the places of origin of the women urban farmer. Almost all of the women questioned in the survey (95%) preferred to eat guinea pigs above all the other types of meat available. Therefore guinea pigs are also produced in order to sell them to neighbours and family. This is done on a small scale mainly by the women. According to literature, production of guinea pigs can lead to a better socio-economic situation, a better position for women, a higher level of self-esteem, and better relations within the family and the neighbourhood. Guinea pig breeding is also seen as a way for the women to combine household tasks with this income-generating activity. In addition, guinea pig production is considered an easy and not a time-consuming task. The earned money is put into the household and spent according to household needs. As one informant stated “A veces vendo por 5 soles en un día, pero son mis cinco soles para la comida de mi familia” (Sometimes I only earn five sol a day, but this is the money I spend on food for the family). Producing guinea pigs for the market changes the roles and responsibilities of men and women. When urban farming families have more than a hundred guinea pigs, men take over the selling of the guinea pigs. This is mainly because they do not have a job outside the house and they like to negotiate. Furthermore, it is not considered appropriate for women to go the markets in other parts of the city because they have to be at home to take care of their children and perform their household tasks. The women in the survey also responded that they do not have time for it.

ORGANIC HOMEGARDENS

The size of the urban organic homegarden varies from 25 m² to 900 m², with an average of 110 m² (n=109). The most striking differences between the different organic homegardens are their size, range, number and density of species and their design. The most frequently grown species are pacay (*Inga feuillei*), grapes, guanábana (*Annona muricata*), limes, sugarcane, squash, coffee, avocado, cassava, maracuya, membrillo (*Cydonia oblonga*), ricino (*Ricinus comunis*), sweet potato, papaya, lúcuma (*Lucuma obvota*), bananas, jackbean, medicinal plants and flowers.

Resources used in the organic homegarden are mainly re-cycled materials. The soil is prepared with compost made of green material and guinea pig manure. Women who do not have enough manure themselves also buy livestock manure from IPAC (1999). In the summertime almost no vegetables or herbs are grown due to the intense heat. Only some fodder crops are left and watered with wastewater from the kitchen. Crops are harvested when ready and are gradually eaten by the family. Only two women in the survey sold their crops at the local market. Leftovers are fed to the guinea pigs or used in the compost pile. The organic homegarden system is considered to be a closed system or as one informant put it “aquí se pierden nada” (nothing is lost). Women perform most of the activities in the organic homegarden (93%). They took their knowledge with them from the *Sierra*, or obtained it by observing men sowing or preparing the soil.

GENDERED LABOUR DIVISION

Traditionally, farmers were generally men. The women helped them with sowing the seeds and harvesting, but were mainly responsible for household activities. Gender roles have not changed so much over the years: men are now working outside the house or have small businesses (like the production of ornamental trees or guinea pigs), but women are still expected to work in the house, taking care of domestic chores and the children.

The livelihoods of urban farmers can be characterised as very dynamic, as the activities carried out by different members of the household change rapidly. As one woman explained “One day my children have work and the next day for whatever reason they do not have a job and come back to the house”. If the husband or the children are at home they also perform some tasks. Women are responsible for sowing crops, especially the vegetables: the ones who cook also decide what to grow.

Cultivation of crops and production of guinea pigs takes place near the home, which is easy to combine with the other household chores. This explains the success of the projects set up to stimulate the establishment of homegardens and the production of micro-livestock. Although everyone in the village is free to

participate, there are many more female than male participants. Most husbands do not want to participate because they consider the homegarden to be the domain of women. Men only participate when they work together with their wives or partners, or when they have their own businesses in ornamental plants and in guinea pig production (only two in this survey). Only one man is active in the marketing and selling activities, and his wife is more active in production activities.

POLITICAL PICTURE

In nearby Villa Maria del Triunfo, the Mayor supports urban agriculture although the municipality has no resources to carry out specific projects. In the municipality of Chorillos on the contrary, open spaces are considered to be green zones, public parks only. Urban agriculture is not considered important, and although it is permitted to have small livestock like guinea pigs, ducks, geese and chicken, the legal framework officially states that all animals are forbidden in the city. The municipality could be more active in supporting markets. These can be markets for the products of organic homegardens or other niche markets. The absence of markets and the unsupportive attitude of municipalities coincide with the general political restraints on urban agriculture, including restrictive urban policies, laws and regulations, uncertainty about property rights of land, lack of supportive services, and lack of organisation and representation of urban farmers.

NOTES

1 This article is an abstract of a thesis titled “Our Daily Realities: A Feminist Perspective on Agrobiodiversity in Urban Organic Homegardens in Lima, Peru”. The research was conducted from March to - June 2001 under supervision of Wageningen University and the International Potato Centre. The results are based on data provided by forty participants of the NGO Instituto de Promoción Agropecuario y Comunal (IPAC)

REFERENCES:

- Niñez, V. (1985). “Working at half potential: Constructive analysis of homegarden programs in the Lima slums with suggestions for an alternative approach”, In Food and Nutrition Bulletin 7, (3): 6-1.
- InIA/CIID (1999), “Evaluación del Proyecto Sistemas de Producción de Animales Menores en el Hogar en el Puru”, La Molina, Peru.
- IPAC (1999), Proyecto Solidaridad-Villas Informe Final”, Chorillos, Peru.
- Personal communication with Andres Dasso REDE.

Urbanisation and de-population of rural areas in Peru have advanced dramatically over the past 60 years. Today, almost three-quarters of the Peruvian population live in urban and periurban zones. As a result, the cities' resources and services, including health care, education, employment, and access to food, have become more and more stretched.



REDE

Training of trainers in urban agriculture, AUSAN project, January 00

When the Women Decided to Work the Gardens

Urban agriculture has steadily increased in the past few decades in metropolitan Lima, largely brought in by rural migrants. These new urban dwellers have maintained their agricultural ways, planting crops and raising domestic animals on a small scale on their home plots.

This context led the Resources for Development Association (REDE) to promote "communal gardens" in the southern cone of Lima beginning in 1994, as a way to fight hunger and malnutrition. REDE observed that the active intervention of women's organisations in the communal garden projects empowered these women. The women participate at different levels in public life, and this results in an increase in consciousness, well-being and available educational opportunities (1). REDE works with a "gender in development" focus in urban agriculture. The roles and the needs of men and women are analysed in order to empower women and improve their position as part of the betterment and transformation of society as a whole.

The initiative of the communal gardens was very well received by the population, which is predominantly made up of women who are of child-bearing age and members of large families. As the providers of food for their families, they see urban agriculture as an answer to their practical needs and as a way to fulfil their gender role, e.g. the production of vegetables and the preparation of the daily family diet.

A team of agricultural promoters was selected and trained to implement the REDE project, but also to ensure a multiplier effect through other women's groups in Lima and the provinces. This group of promoters later became the trainers themselves. The invitation to become promoters was extended to men and women, but it was the women who were most interested in this type of work. It should be noted here that there is a cultural acceptance by men of the idea that women and children carry out small-scale gardening and remain in their homes.

CHANGING ROLES

The garden became an empowering place for the women: it improved their self-assurance and self-esteem, heightened their expectations of life, and improved the division of labour with their spouses.

At the beginning, some men protested when their wives attended the training or provided technical assistance in the implementation of school or community gardens. This changed as these men witnessed the progress and the perseverance of the women in the gardens. The public recognition given by the authorities and the community to the work

of this group of women provided a lot of weight in the process of legitimisation.

Subsequently, after this recognition, husbands and sons started offering their moral and physical support to the women's groups by participating in the preparation of the land, collection of fertiliser and irrigation of the crops. The families began to appreciate the project as theirs, and to validate it from inside the home. There have been cases in which the husbands or sons replaced the women in the gardens when they had to other things, like attend meetings of their organisations (Clubs of Mothers, School Committees, Community Kitchens).

This experience motivated REDE to initiate a new stage of work at the end of 2002. With the help of German Agro Action, REDE launched a new initiative on urban agriculture that focuses on women with little children (under the age of five years). This project, which is in its initial stages, promotes the strengthening of women's roles.

Farmers in the district of Villa María del Triunfo



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REFERENCES:

- Niñez, V. (1985). "Working at half potential: Constructive analysis of homegarden programs in the Lima slums with suggestions for an alternative approach", In: Food and Nutrition Bulletin, 7(3):6-14.
- INIA/CIID (1999), "Evaluación del Proyecto Sistemas de Producción de Animales Menores en el Hogar en el Perú", La Molina, Peru.
- IPAC (1999), "Proyecto Solidaridad-Villas Informe Final", Chorrillos, Peru.
- Personal communication with Andres Dasso REDE.

Gender in Open-space Irrigated Urban Vegetable Farming in Ghana



Water has to be conveyed several times in watering cans

As in many other West African countries, men dominate in open-space urban vegetable farming in Ghana, particularly open-space irrigated vegetable farming. Women are found to dominate marketing of urban farm produce, partly because of the Ghanaian tradition that marketing in general is a woman's job, but also because Ghanaian women perceive marketing as more profitable, and less risky than farming.

Many studies, particularly in East and Southern African cities, report that the majority of urban farmers are women. This may lead to the generalisation that in any African city urban farmers are predominantly female. And this dominance of women is often attributed to the fact that women continue to bear primary responsibility for household sustenance and well being (Hovorka, 2001) largely due to traditional/cultural views and societal expectations. Women tend to have lower educational status than men, and thus have fewer opportunities for finding suitable wage employment in the formal sector (Obosu-Mensah, 1999). It therefore becomes imperative for women to seek other ways to fill the gap between their cash income and what is needed for household survival.

However, most of the open-space farmers in West African cities like Dakar, Lomé, Cotonou, Bamako and Ouagadougou are men. The situation differs from region to region, from country to country and even among the different farming systems (see also the findings of Kessler et al. on page 16).

STUDY APPROACH

Several studies in the three main cities in Ghana (Accra, Kumasi and Tamale)

show that men dominate open-space vegetable farming (Obosu-Mensah, 1999; Keraita, 2002). On average, less than 10% of the open-space farmers are women. Even in household backyard gardening, where the main purpose of production is subsistence and women were expected to be in the majority, an IWMI survey in Accra showed that the numbers of men and women were nearly equal (57% men; 43% women) with women usually being older than the men. A similar situation has been reported for Kumasi (Ayamba, 1999). Various studies have given reasons to explain why men dominate urban vegetable farming in Ghana.

In this study, a focus group approach was applied to verify these reasons and to ascertain whether any change had occurred over time. Farmers and vegetable vendors were engaged in group discussions at the farm and market levels. The majority of the market vendors were not members of farm households. The study sought to find out why men dominate open-space vegetable farming in urban and periurban Ghana and why women dominate the marketing aspect. In this study “vegetable(s)” refers to exotic varieties like cabbage, carrot, cucumber, lettuce, cauliflower, and spring onions.

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ACCESS TO LAND, OWNERSHIP AND TENANCY

Hasna (1998) reported that Ghanaians, both men and women, “assert categorically that women do not own land either in their marital or natal ancestral home” and implied that women are not able to cultivate because they do not own land. Our studies in Accra and Kumasi revealed that a slightly different situation prevailed with respect to urban open-space farming. Even though some Ghanaian communities disallow women from owning land, this pertains mainly to the rural areas and has little or no effect on access to land for farming in cities. Both male and female farmers explained that most land being cultivated belongs to the government (see for example Obosu-Mensah, 1999) and therefore access does

in open-spaces in urban Ghana is the arduous nature of most of the farm tasks. Cornish and Lawrence (2001), Cornish and Aidoo (2000), and Zakaria *et al.* (1998) reported that most tasks involved in urban and periurban agriculture are classified as male activities because of this. Table 1 shows a typical division of labour of farm tasks between men and women/children in open-space vegetable farming in urban and periurban areas. The production of vegetables is labour intensive. Land has to be cleared and prepared, followed by the raising of beds, nursing of seeds, transplanting, weeding, watering, etc. The arduous nature of farm work is illustrated in the following comments made by a typical woman farmer who had been cultivating in Accra for about 11 years:

“I started with five other women but they have all left because of the difficulty of the tasks involved. Talking about land clearing and preparation, forking of beds, spraying of chemicals etc., it takes much determination to continue cultivating. I mostly use male hired labour for land clearing and preparation. When I have not got enough money to hire labour, I do the land preparation myself, but then I’m able to cultivate only part of my plot.”

Land clearing and preparation are usually the most arduous tasks in any farming activity and are considered as male activities. Cornish and Aidoo (2000) reported that land preparation, which is carried out almost entirely by manual labour, is extremely arduous and 94% of those who do it are men. Also, most paid labour is engaged in land preparation. Whereas men could supplement their effort by providing paid labour,

independent women cultivators depend entirely on male labourers (paid labour) to carry out land clearing and preparation. Women with limited financial resources seek help from male farmers. They cultivate relatively small plots that can easily be managed. In the periurban areas, women and children usually carry water over 200 metres to barrels for irrigation. They do this either as paid labour or family labour. It should be noted that the task of carrying water can also be strenuous if done repeatedly. In effect, women who would like to gain a living from urban farming lose many opportunities to do so because of the above difficulties.

In urban Ghana, the standard method of irrigation is that water has to be conveyed several times in two 15-litre watering cans sometimes for a distance of about 100 m to irrigate the crops. This is physically demanding. Therefore, the male farmers produce the more water-demanding and more profitable crops like cabbage and cauliflower, while the female farmers grow less water-demanding and less profitable crops like okra, yoyos (*Corchorus sp*) and alefi (*Amaranthus*).

TRADITIONAL ROLES

A study of the traditional roles of men and women provides a supplementary explanation as to why men dominate open-space vegetable farming in urban and peri urban Ghana. Generally, farming is considered in most Ghanaian communities to be men’s work, particularly if it is market oriented. Cultural practice in some of these communities, especially communities in the Northern part of Ghana, forbids women from cultivating on their own, though there are some exceptions in which hard-working women may be given land to cultivate on their own (Danso, p.c). Zakaria *et al.* (1998) reported that it is still not acceptable for women who hail from Northern Ghana to farm by themselves in any city. Women mostly work on the farms of their husbands where they are made to focus on food crops for home consumption whilst the husbands concentrate on crops grown purposely for the market. The production of vegetables in open spaces in urban and periurban Ghana is purposely for the market, which also explains why few women are involved.

Traditional roles of men and women provide supplementary explanation

not depend on one’s gender but rather on the individual’s ability to lobby. Lobbying is based on one’s relationship (either a direct relationship or through a third party) with the owner/caretaker. However, in some periurban areas where sharecropping is used as payment for cultivating land owned by individuals, landowners or caretakers prefer that men rather than women cultivate their plots because they perceive that men are able to cultivate larger plots than women, hence providing them with greater benefit..

ARDUOUS NATURE OF FARM WORK

Our study revealed that the major reason for male dominance in vegetable farming

Division of farm tasks		
Tasks [x = usually applicable; - = less applicable]	Men	Women/children
Clearing the bush	x	-
Raising beds	x	-
Nursery	x	-
Planting and transplanting	x	x
Weeding	x	x
Fertilising	x	-
Spraying	x	-
Manual watering (conveying water from source to a medium, usually a barrel)	-	x
Manual watering (direct application to plants using bucket and can)	x	x
Mechanical watering (use of pump)	x	-
Harvesting	x	-

Source: Cornish *et al.* (2001)

Access to water is crucial

TWMI Ghana

UNWILLINGNESS TO TAKE RISKS, AND DEPENDENCY SYNDROME

Though nursery management is not arduous, it requires special knowledge and/or skills in early detection of pests/diseases and for the careful study of seedling growth. Vegetable seeds are relatively expensive and yet one could easily lose the seedlings without the necessary nursery skills and knowledge. Cornish *et al.* (2001) and Cornish and Lawrence (2001) reported that generally women do not have this knowledge, making nursery management a male task, occasionally assisted by women and children for watering. Our study shows that most women were reluctant to take on the risk of nursing their own seedlings. This makes it difficult for even the few women cultivating to become independent cultivators. Our interview with market vendors (mainly women) revealed that nursery management also deters women from engaging in urban vegetable farming. In their own opinions, women would not be able to master seed nursing like the men and depending on male colleagues is not reliable since the men have their own farm work to take care of.

ECONOMIC STRATEGY

Zakaria *et al.* (1998) reported that wives of male farmers in Accra gave economic reasons to explain why few women are active in vegetable farming. These wives chose to do something different from farming so that in times of crop failure there will still be some income for the household to live on. Cofie *et al.* (2003) reported that between 40 and 80% of urban farmers in Accra, Kumasi and Tamale consider urban farming to be their main income-generating activity. In fact, for some of these farmers, it is their only income source. They simply have not succeeded in securing another source of income or do not have extra time for a second job. Also, Zakaria *et al.* (1998)

reported the cost of transportation to and from the farm as an issue that deters women from cultivating (most men use bicycles, most women do not own one). These economic reasons were not reported in our study.

FEMALE DOMINANCE IN MARKETING

Women's dominance in marketing urban farm produce is partly attributed to the Ghanaian tradition that marketing of vegetables is a woman's job. Apart from this, most of the market women held the opinion that marketing is more profitable and less risky than farming, as in the latter case a whole season's harvest could be lost. Both men and women involved in marketing vegetables see marketing as a quicker way to make money on a daily basis, unlike farming, which takes some months before a farmer receives income from his farm activities. In our study, some male farmers thought it wise to retail their own produce on the market to make more profit. However, most of them were held back by the prevailing tradition that men do not retail vegetables.

Our study also revealed that generally Ghanaian women prefer trading to other jobs. Maxwell (1997), cited in Obosu-Mensah (1999), reported that urban retail marketing and petty trading are sectors that have long been dominated by women in West Africa, so it is not surprising that these are the most common ways for a women to earn a livelihood in Accra. In coastal West Africa, women handle 60-90% of domestic farm produce from point of origin to consumption. Women pursue marketing activities as their primary means of obtaining cash income for household expenditure. They play a major role in the marketing of vegetables. They are usually better at bargaining to obtain better prices.

CONCLUSIONS AND RECOMMENDATIONS

Urban open-space vegetable farming in Ghana is dominated by men mainly because of the arduous nature of most farm tasks. Traditional gender roles were also found to be a reason for male dominance in open-space irrigated vegetable farming. In Ghana, market-oriented farming is seen as belonging to men and open-space vegetable farming in this country is market oriented.

It is difficult for women to cultivate in the urban areas and they are often unable to take the necessary risks, preferring less risky activities like marketing, which is also a specialised area of urban agriculture. Women who express the need to enter farming should be provided with the facilities to do so. Credit schemes and subsidies are two possible ways of achieving this.

Finally, it is without doubt that there is gender differentiation in urban agriculture (farming and marketing of farm produce), which makes it necessary to include gender in an analysis of urban agriculture. Gender analysis is required in areas such as labour division between man and woman within and between farm and non-farm households. Also of importance is the analysis of differences in gender differentiation in the division of labour between rural and urban agriculture.

REFERENCES

- Ayamba, I. 1999. Backyard crop production in KMA. In: Kumasi Natural Resources Management Research Project (KNRMP)-Kumasi Urban Natural Resources Studies. R6799.
- Cornish, G.A., Aidoo, J.B. and Ayamba, I. 2001. Informal irrigation in the periurban zone of Kumasi, Ghana: An analysis of farmer activity and productivity. Report OD/TN 103. HR Wallingford.
- Cornish, G.A., Aidoo, J.B. 2000. Informal irrigation in the periurban zone of Kumasi, Ghana: Findings from an initial questionnaire survey. Report OD/TN 97. HR Wallingford.
- Cornish, G.A. and Lawrence, P. 2001. Informal Irrigation in periurban areas: A summary of findings and recommendations. Report OD 144. HR Wallingford.
- Hasna, M.K. 1998. NGO Gender Capacity in Urban agriculture: Case studies from Harare (Zimbabwe), Kampala (Uganda) and Accra (Ghana). Cities feeding people series Report 21.
- Hovorka, A.J. 2001. Gender and urban agriculture: emerging trends and areas for future research. In: Annotated Bibliography on Urban and Periurban Agriculture. Compiled for the Swedish International Development Agency (SIDA). Leusden, Netherlands: ETC Ecoculture. 165-176. <http://www.ruaf.org/bibliography/annotated/007.pdf>
- Keraita, B. 2002 Wastewater use in urban and periurban vegetable farming in Kumasi, Ghana. Unpublished MSc. Thesis. Wageningen University, The Netherlands.
- Obosu-Mensah, K. 1999. Food Production in Urban Areas. A case study of urban agriculture in Accra, Ghana. Ashgate Publishing Limited, Gower House, Croft Road Aldershot, Hampshire GU11 3HR, England.
- Zakaria, S., Lamptey, M.G. and Maxwell, D. 1998. Urban Agriculture in Accra: A Descriptive Analysis. In: Amar-Klemesu, M. and Maxwell, D. (eds) Urban Agriculture in the Greater Accra Metropolitan Area. Final Report to IDRC.

Women in Urban Agriculture in West Africa

In several West African societies, women traditionally cultivated local vegetables around the house. In the French-speaking countries of West Africa, temperate vegetable farming was introduced in the colonial time. Prisoners and local soldiers (men) were obliged to produce temperate vegetables for them. Later, these vegetables were also grown in school gardens.

This article is based on 2 studies in West Africa. The first covered Lomé, Tsévié (40 km north of Lomé), Conakry, Timbi Madîna (a small town in the Fouta Djallon, Republic of Guinea) and Rufisque (27 km East of Dakar); and was done from 1999 to 2002, financed by the EU-INCO. The second study was requested by IWMI and FAO in 2002, and was undertaken in Bamako, Ouagadougou, Cotonou and Lomé.

The first study showed an almost constant percentage variation of male and female farmers in each country. Each pair of cities, Conakry and Timbi Madîna both in Guinea, and Lomé and Tsévié, both in the South of Lomé, has the same percentage of female farmers (table 1).

Gender of farmers in various towns of West Africa

Gender	Conakry		Timbi Madîna		Rufisque		Tsévié		Lomé	
Female	271	67.9%	138	69.0%	114	35.5%	84	20.9%	81	20.3%
Male	126	31.6%	62	31.0%	207	64.5%	317	79.1%	317	79.3%
Information not available	2	0.5%	0	0.0%	0	0.0%	0	0.0%	2	0.5%
Total	399	100%	200	100%	321	100%	401	100%	400	100%

Source: Final Report of INCO Project, 2002

Except for the towns in Guinea, urban farming in cities like Bamako, Ouagadougou, Cotonou, Lomé, Tsévié and Rufisque is dominated by men. In Timbi Madîna the researchers found that many men happened to be working in Conakry or in a foreign country (Senegal or Ivory Coast) and therefore most women were compelled to cultivate in order to provide food for their families. In Conakry the main crop cultivated is sweat potato (leaves), which is a typical women crop.

In West Africa urban farms can be classified into at least four types of farming systems (see also *UA Magazine* no. 9):

- ❖ irrigated temperate vegetable farming, which is male dominated;
- ❖ traditional vegetable farming, which is female dominated;
- ❖ rain-fed staple food farming, which is male dominated;
- ❖ ornamental plant growing, which is male dominated.

This article will focus on the latter, female dominated vegetable production.



Angelika Kessler

Women in traditional fields in Bamako

TRADITIONAL VEGETABLE PRODUCTION

Traditionally West African dishes content a lot of leafy vegetable. For traditional reasons women are responsible to obtain this vegetables by growing or collecting them for the meals. In Lomé, Conakry and Bamako it was observed that women farmers in particular grow local vegetables like *Solanum macrocarpum* (gboma), amaranth leaves (fontété), sweat potato leaves, *Corchorus olitorius* (Jute's mallow, adèmè), spring onions for leaf consumption, bean leaves, peppermint, *Hibiscus sabderiffa* (osseille de Guinée, bissap, da), hot peppers, and local tomatoes, to name only the most frequently grown vegetables.

The poorer farmers particularly prefer production of leafy vegetables, as these can be harvested several times in one growing season, and provide a regular income. For example, sweet potato leaves are harvested every 10 to 14 days. The first harvesting is done 40 days after planting. So the invested capital returns rapidly to the grower and creates a regular income. By way of contrast, lettuce is harvested once, 30 to 40 days after seeding.

Farmers need fewer inputs for local vegetables and can produce their own seeds or buy them at cheaper prices compared to imported seeds for the temperate vegetables. Both women and men farmers use fertilisers in the towns where the study took place, although some differences in quantity of fertiliser applied by women and men were noticed. Women of Lomé use pesticides as well as men, and are well equipped with irrigation facilities.

Often, women are not able to invest in long-cycle or temperate vegetables like carrots, cabbage and eggplants since their

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capital will be fixed to the production for at least three months before they get the first benefit from their investment. For the more temperate vegetables more capital is needed. As temperate vegetable are more sensitive to pests, seeds are more expensive and they need more irrigation, which requires costly investments in irrigation facilities or labour.

MARKETING

Leafy vegetables have to be produced close to consumers, as there is often a lack of adequate storage and transport facilities in most West African countries to preserve and transport perishable produce to the markets. This gives the leafy vegetables a competitive advantage over expensive temperate vegetables consumed mainly in the capitals.

Women can raise their earnings by cutting the leaves and selling cut leaves at a higher price than unprocessed leaves. Women may sell their own harvest - processed or not - in the market or close to their homes in the quarters so they can do some household work while waiting for buyers. They make more profit marketing the produce themselves, but nevertheless, most vegetables are sold to retailers.

In Lomé and Cotonou the marketing of vegetables is dominated by women. They act as wholesalers as well as retail traders. A study conducted by ICRA in 2000 showed that vegetable traders in Lomé earned the largest profit margin.

Access to land and water

In Bamako and Lomé, women farmers cultivate smaller plots than male farmers. They exploit different areas than the men do, more often areas with bad soils, narrow strips or poor watering conditions. (Extreme low water quality was observed in Ouagadougou: in Kossodo women cultivate in the industrial zone of Ouagadougou and use industrial sewage.) A short irrigation period, or precarious land tenure, and no long-term location of soil use are typical conditions for women farmers. A short irrigation period can only be exploited by short-term leafy vegetables. As traditional vegetables require only low starting capital, the risk is lower. These competitive advantages allow women to cultivate areas that have poor characteristics but are close to their homes. Such conditions as well as their lower education level prohibit women from

switching over to temperate vegetables..

In Bamako, women grow vegetables close to water sources and housing areas in order to have access to cheap water for irrigation and also to travel shorter distances to the fields. However, this strategy carries the risk of losing the farms if additional buildings are constructed.

EXTENSION AND INFORMATION

In West Africa for traditional and historical reasons women don't grow the same crops as men. They use other networks of knowledge. Women didn't go to school where they could have learned about temperate vegetables (especially catholic schools are a common source of gardening knowledge in the South of Togo), but instead learned about the traditional practices from their mother or aunt. Most women also don't obtain information through labour migration like their men. They have mainly access to female key knowledge persons. The transfer of knowledge to women has to take place in local languages.

Despite the high number of women with membership in farmer groups, the women are less organised in groups to defend their interests. According to some of the respondents, the wives are asked to join in order to raise the percentage of women to get more subsidies or other benefits from donors.

Extension agents usually concentrate on temperate vegetable farming. The study found that only the few women who grow temperate vegetables have contact with the agricultural extension agents. Other female farmers have no access to extension services, except for those in Conakry, while up to 10% of the male farmers have contact with extension agents (which is still rather low).

The comparison of education levels of housewives and urban female farmers shows that illiterate women or those with primary school education practice urban and periurban agriculture. Women with higher education do not cultivate but prefer less labour intensive work. Men though, of all levels of education and training, are involved in urban and periurban agriculture. They don't lose social status by working on a farm even with university degree, at least as long as they earn enough.

Men have all kinds of other employment activities whereas women are mainly dealers and/or housewives. Women hardly employ hired labourers on their fields but usually ask their children to help.

CONCLUSIONS AND RECOMMENDATIONS

Leafy vegetables are inexpensive vegetables with a high nutritional value and are therefore particularly beneficial for the poor. Women earn money, sometimes even more than their husbands, and increase their food security by growing these vegetables.

The use of pesticides for leafy vegetables seems to carry some risk. These vegetables are harvested every 10 to 20 days, when the level of pesticide residues has not been reduced, since farmers spray up until 3 days before the harvest. However, since

Women use other networks of knowledge

traditional leafy vegetables are less vulnerable to pests, smaller amounts of pesticides are used on them.

Collaboration with and assistance to women farmers who grow leafy vegetables are needed to ensure their access to good irrigation water, and unpolluted land (as opposed to former waste heaps) and to ensure that they can produce good and cheap food for poor people.

More research focused on women in traditional vegetable farming systems is needed. Emphasis should be placed on increasing production without the use of pesticides, which are particularly harmful to the groundwater and the soil.

Assistance and extension should be adapted to women's networks and to women's education levels.

Collaboration with farmers can result in a fair representation of women in farmers' organisations and create the opportunity for women to gain access to land, water and assistance from development projects or extension services.

REFERENCE

Dosso, K., Guira, M. et al., 2000, Intensification durable de l'agriculture urbaine et périurbain à Lomé - Togo, Cas du maraîchage, Série Documents de Travail N° 91, ICRA, IFDC, Togo;

Small-scale food production is vital to the livelihoods of poor people

Urban poverty is an increasing problem. Around 70% of the world's poorest people are women, many of whom are widows or single mothers who are burdened with the full responsibility of feeding their children and older relatives. Small-scale food production as part of a range of opportunities is vital to the livelihoods of poor people and poor women in the city.

Angelika Kessler



Gender, Water and Urban Agriculture

The social, cultural, and economic climate of the city moulds the ways men and women can use and benefit from urban agriculture. It is widely recognised that urban agriculture provides benefits in the urban arena, but exactly how is not always clear or agreed upon among the major stakeholders. The studies referred to in this article allow for only a rudimentary gender analysis.

EXAMPLES FROM AFRICA

Under a project funded by DFID as part of the Engineering Knowledge and Research programme, HR Wallingford (UK) considered periurban irrigated cultivation in a study in Kenya (study 1) and Ghana (study 2). In another project the role of women in irrigation and gender-sensitive irrigation design in Kenya, Gambia and countries in Southern Africa were studied (study 3).

An initial survey among 152 cultivators in Nairobi (study 1) revealed that the majority (63%) were women, mostly between the ages of 20 and 45, the age group with the heaviest responsibility for family food security, and 86% of the respondents had no other income source. The majority of the irrigators had lived in the city less than 20 years. Typically

irrigation was new to them and at least half the sample had taken it up in the last five years (Hide and Kamani, 2000). Many farmers find that pumps are essential to their production system, but pump-use tends to be restricted for women because it is often too costly. Women also find pump-use a problem because they lack the technical skills to operate and repair the pump reliably. Female networks seldom include contacts with the required technical skills and women find themselves excluded from male networks, so they remain at the back of the queue for spare parts and repairs (Chancellor *et al.*, 1999; Berejena *et al.*, 1999). Easy sale of produce is important to these small producers. In Nairobi irrigators feel unconstrained by marketing problems and asserted that credit is seldom needed. Pollution levels were recorded to be high.

In contrast, in Kumasi (study 2) the majority of the irrigators are men working on rented or owned land (86%), although large numbers of women earn an income by carrying irrigation water to the vegetable plots, sometimes up to 200m from the source. Access to markets is more problematic than in Nairobi and incurs transport costs (the periurban area was wider than in Nairobi). Pollution levels are similar to those in Nairobi. Women appear not to face the same production risks as Kenyan women, but despite opportunities to earn labouring

wages they have little opportunity to engage in more empowering commercial activities. The on average low return on agricultural products will undoubtedly keep their wages low.

In both cities irrigators operate largely without government support or appreciation of their contribution to urban food security. Irrigation often facilitates income generation beyond subsistence needs, although results are still poor. Yet, if agricultural, water management and health advice were to be extended to these informal irrigators, particularly the largely poorly educated women, income generation could be much improved. A cost-effective way to achieve this pro-poor strategy could be through irrigator groups, but there is little evidence of these in either city.

In the studies that focused on the role of women in irrigation and the impact that design has on gender issues and periurban women in the Gambia, Zambia and South Africa (study 3), women were found to irrigate in groups. These "Group gardens" where each woman has her own plot, are popular in and around cities. Women often benefit from extension advice, particularly if they are supported by an NGO. Marketing is a widespread problem; the competition from commercial suppliers in urban areas is keen, keeping prices low for small resource-poor irrigators. Poor quality and

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low price is often the result of unreliable access to water. In backyard cultivation, tap water is used, although water harvesting systems are increasingly attractive as domestic water becomes more expensive. Many of the poorest women have no access to taps and cannot afford the basic water harvesting equipment. Group gardens meet their needs and often use source water from treatment works or pumped groundwater with the attendant quality problems. Costs and environmental risks are high, but cultivators weigh these against the reliability of that small vital trickle of cash.

Women in Zambia and Banjul maintain that it is important to sell only a little each day to meet daily cash expenses such as school, food and meat. The women have difficulty in keeping cash safe and prefer to earn each day just what is needed. This strategy is not consistent with economies of scale and quality control and helps to keep the small growers' margins low. Other issues women mention are their personal security while working in the plots (rape is a growing threat), and the security of equipment and the growing crops.

In general the issues raised by women in this study were the difficulties of obtaining resources for irrigation, such as cash for inputs and labour-saving machinery, personal safety in the fields and in domestic bargaining, and access to markets, by which they meant not only transport of produce to the market but also securing a pitch.

GENDER ISSUES

Lack of **gender-disaggregated data** is a major issue (Chancellor 1997). Without such information, discussion of the issues

remains theoretical and measurement of improvements and clear gender analysis are impossible. The disparate and informal nature of urban irrigation poses challenges, such as who has the duty to collect information and how attentive will they be to a gender-sensitive approach. Irrigators themselves prefer not to formalise their activities because for many it is an opportunistic activity, for some (many of them women) it is illegal, and for some it is intermittent and only one of many coping strategies. Irrigators, particularly women, need to become aware of how information can be used to their benefit.

In both rural and urban areas in Africa it is unusual for women to have equal **access to land and water**. Social and cultural practice and the economically disadvantaged situation of women contribute to this state of affairs. It is therefore remarkable that Kenyan women are so successful in establishing rights over informal plots. Poverty is undoubtedly a strong driving force, but it also commits women to a highly vulnerable life style. However, they are probably not the poorest, nor the weakest, but relatively energetic and determined women who are able to coordinate agricultural work and risks with their other livelihood strategies to sustain a small business.

In places where women cultivate in groups, **access to information** and advice is achieved and personal security in the field improved. Access to information is determined by what is offered, how it is offered and the capacity of the recipient to make use of the information. All the studies found women cultivators to be less educated than men in the sector, however, since little information is offered at all, they are not seriously disadvantaged by this. Agriculture ministries notoriously orientate their information flows to male farmers, neglecting women in part because it is seen as difficult or irrelevant to actively involve women and also because the lack of gender disaggregated data has left the ministries unaware of the potential present in women producers.

RECOMMENDATIONS

The long-term issues of sustainable food production and improved livelihoods for

poor women, as well as those of gender equity and consumer protection quality control, may well benefit from promotion of group activities or urban-producer associations through which information and advice could be channelled and regulations enforced.

Women could potentially make better use of urban resources such as small parcels of land, properly purified storm water and effluent. With adequate support their activities could be safer and more efficient than they are at present.

More information is needed to understand the impacts of economic and political constraints, gender issues and education, particularly relating to the management of technology in urban agriculture.

In the current climate of pro-poor intervention, it is important that further information be gathered and that new policy be informed by a clear understanding of the gender dimensions. Although irrigators prefer anonymity, women could improve their status by drawing attention to their contribution to food security and the potential for improving the health aspects of urban agriculture. There is now increasing pressure for authorities to include urban agriculture their policies and there is a real danger that negative attitudes, fed by fears for consumer health, could deprive poor people of an important and feasibly safe livelihood strategy.

Unless women are involved in making new policy, they will most likely be seriously disadvantaged by tighter legislation on issues such as pollutants and consumer health. Integration of gender analysis encourages a holistic approach rather than a narrow health or environmental focus.

In Kumasi the majority of the irrigators are men



IWM/Ghana

REFERENCES

- Berejena, E., Hasnip, N., Ellis-Jones, J. (1999) Gender-sensitive Irrigation Design, Part 5, OD143 HR Wallingford Ltd., OX10 8BA, UK (Study 3)
 Chancellor, F. (1997) Developing the participation and skills of women irrigators. Report OD135, HR Wallingford Ltd., OX10 8BA, UK
 Chancellor, F., Hasnip, N., and O'Neill, D. (1999) Gender-sensitive Irrigation Design, Part 1, OD 143, HR Wallingford, Ltd, OX10 8BA, UK (Study 3)
 Cornish, G. A., Aidoo, J.B. (2000) *Informal Irrigation in the Peri-urban Zone of Kumasi, Ghana*; OD/TN 97, HR Wallingford, OX10 8BA, UK (Study 2)
 Hide, J., Kamani, J. (2000) *Informal Irrigation in the Peri-urban Zone of Nairobi, Kenya*; OD/TN 98, HR Wallingford, OX10 8BA, UK. (Study 1)

Building Women's Capacities to Access Markets in the Periurban Interface: The Hardware and Software Required

In the periurban interface immense changes in livelihoods and land use occur. Expansion of cities led by globalisation and privatisation poses risks for existing livelihoods as well as opportunities for new livelihoods that make use of urban employment and markets.



Sangeetha Purushothaman

Periurban women producers selling in urban markets

The periurban farmers, both rich and poor, produce a range of products including perishables (fruits and vegetables) and non-perishables (grain). The bigger farmers sell the non-perishables to regulated markets and perishables to middlemen or through contracts to larger markets. Smaller rural producers tend to sell to middlemen, while the smaller urban producers,

Government initiatives are rarely designed for the poor, or, if so, fail to reach them.

either market their produce directly in urban markets or resort to middlemen. Poor women are more involved in production and less in marketing. Some women do sell directly but tend to be engaged in extremely small-scale selling and have limited informal market access, often utilising *shandy* (weekly) markets, road-side spaces and door-to-door selling, which constitute more transient, risky marketing methods under difficult, often unsustainable, conditions. There is a growing corporate interest in rural and periurban

markets in India, which represents a vast and untapped potential (Velayundan, 2003). There are several unexplored market niches, both rural and urban, which will be quickly filled once they are recognised by private capital. For example, today if urban hostels, canteens or hotels need a large quantity of regular milk of about 25 litres or more, there is no central point where they can meet this need. One can easily imagine that aggregation centres for milk will appear in the future, and it is expected that these centres will locate themselves just outside the city to meet this market demand. Companies will naturally locate themselves in the periurban areas, where the cost of land is low enough to afford the space needed to process large quantities of food but the location is close enough to the urban centres to allow the distribution of perishables, which need to be sold quickly.

Decision makers in urban and rural government agencies and in development agencies alike need to recognise that these changes

are already underway, and respond in ways that turn these changes into opportunities for new livelihoods for the periurban and rural poor.

Government agencies, banks and non-governmental organisations (NGOs) working with the poor started in recent decades organising large numbers of poor people into self-help groups (SHGs). In an assessment conducted in 2000 of constraints and opportunities faced by SHGs, one major finding was that while a very large number of poor women had now been organised, few could identify activities to improve the livelihoods of poor women (Purushothaman, Varma and Purohit, 2000). In the past, a woman entrepreneur would compete at best with another rural entrepreneur but today their competition takes the form of multinational and local companies reaping large economies of scale, and effectively cornering the market completely and shutting out access to markets for poor producers who produce on much smaller scales.

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What SHGs have done for poor women is to rescue them from the clutches of moneylenders. By creating a parallel banking system that makes flexible untied credit available to women for their consumption needs, SHG members tend to no longer remain indebted. But what the SHGs have not done for women is to provide them with adequate financial instruments for production, because they tend to replicate the high interest rate structures of moneylenders. These high interest rates are then reflected in the final price of their products, which turn out to be uncompetitive.

Increasingly, production centres are located in the periurban areas, which SHGs can link to but with a different set of financial products, a different type of capacity building and different kinds of infra-structural support. This paper discusses some of the practices in place which open up marketing avenues for the poor and for women.

BACKGROUND OF THE STUDY

In a participatory planning initiative undertaken in 2000 with the twin goals of natural resource management and livelihood enhancement in mind, communities in six villages in the periurban interface of Hubli-Dharwad, India, drew up action plans. One finding was that none of the plans or strategies of the government and NGOs really worked for the poor (Purushothaman and Purohit, 2002), but consisted of initiatives oriented towards those with land or assets. Separate meetings with landless men and women confirmed this lacuna in the action plans. Landless women were more tied to the villages due to reproductive responsibilities and fewer acceptable options for mobility compared to landless men, who have more mobility.

This initiative was followed by meetings with poor women's *sanghas* (groups) to plan more appropriate strategies. These meetings revealed that previous income-generation efforts failed because markets have changed and products made by the women's groups were now obsolete. Unfortunately for potters, plastic pots had flooded the market, and for basket weavers rubber baskets now had replaced bamboo woven baskets, and so on. Even those who produced food products, such as pickles, were disadvantaged by

companies that produced pickles or other products at much lower rates and in more attractive packaging and that used advertising and brand names to successfully corner the market.

To create new options for the poor to access markets, the government and NGOs started several initiatives, two of which are examined below:

- ❖ a local government pilot initiative to increase access for the poor to the *raythere santhe*, or farmers' markets, in Hubli-Dharwad and Bangalore ("the hardware") and
- ❖ a new initiative, entitled MOVE (Market Oriented Value Enhancement), funded by Natural Resources Systems Programme, DFID, that brings together marketing management experts and community-based organisations in Dharwad ("the software").

THE HARDWARE: THE FARMERS' MARKET

A *raythere santhe* or farmers' market was recently initiated in Karnataka based on the success of similar initiatives in Punjab (Apni Mandi), Andhra Pradesh and Tamilnadu. The farmers' market is conceived of as a forum for farmers to directly sell their produce to the consumer without middlemen. The local government in Hubli-Dharwad wanted a case study conducted to understand the barriers to success faced by the *rayethra santha*, since the state government intended to upscale this initiative state-wide to all districts in Karnataka. Thus a rapid appraisal was conducted in November 2003 including interviews with farmers who had been issued identity cards to use the *raythere santhe* in Hubli Dharwad and Bangalore. The following box highlights some of the results obtained from interviews with farmers who are regular sellers at the market, APMC officials, customers, and farmers with identity cards who are not selling their produce at this market, as well as from visits to the farmers' market and the main Hubli market.

For participating periurban farmers there are clear advantages, like a market space, a clean environment, and a fair rate as prices are regulated to be "reasonable". However, there are a number of points to improve upon. In the Hubli market, only 20 of the 80 booths were occupied on

The **objectives** of the *rayethra santha* scheme as outlined by the Agricultural Produce Marketing Commission are to:

- establish farmers' markets without any middlemen;
- provide a forum for direct interface between farmers and consumers and to provide necessary infrastructure facilities to enable the growers of fruits and vegetables to sell their produce directly to consumers;
- ensure a reasonable price to the growers of fruits and vegetables and to increase their bargaining power;
- ensure availability of fruits and vegetables at a fair price to the consumers;
- establish a marketing system which would provide an effective platform for adoption of fair marketing practices not only in terms of selling and buying but also in terms of grading, cleaning, packing and so on;
- establish a marketing system which would ultimately enable the farmers not only to develop themselves as good growers but also as effective and successful salesmen.

average. There were enough customers but farmers still sold most of their produce in the mornings to middlemen. In regular markets farmers only spend their mornings selling to middlemen (most farmers need to get back to work on their farms). Barriers included inadequate facilities in terms of bathroom and childcare facilities and inadequate bus services to the farmers' market, due to which farmers were unable to transport goods.

The *raythere santhe* is supposed to be attractive to customers because rates are lower than those at the regular market. However, prices were found to not be consistently lower. Every morning APMC officials, together with farmers, should set rates, which are between the wholesale and retail rates to benefit the consumer but simultaneously make the market unattractive to middlemen.

Another finding was that farmers were bringing large quantities of one product, which could not be sold retail, and were thus forced to sell to middlemen. Farmers should be encouraged to diversify production so that they can sell smaller quantities of different products consistently at the *raythere santhe* at this higher rate, which would simultaneously provide the variety demanded by urban consumers.

Finally, not all farmers can engage in direct marketing if it means having to sit at the market from 8 AM-8 PM. In Madurai, for example, this is not the case. The market starts at 6 or 7 AM and all produce is sold by noon. Farmers might have more incentive to sit at the market or have a family member do so if there are more consumers and if they earned a greater profit.

THE SOFTWARE: CAPACITY DEVELOPMENT TO ACCESS MARKETS

Under MOVE a small group of poor landless periurban women were selected, who are currently being trained in the basics of setting up and running small and micro enterprises to make themselves self reliant in the free market economy. These women are not fully motivated, and depend on subsidies and doles offered by the government and other agencies, while on the other hand they are unable to face hardships and problems. The project team has attempted to evolve a detailed methodology of converting these zero-level potential entrepreneurs into full-blown entrepreneurs, by increasing the motivational levels and providing them with skills to understand the market.

Motivational training is done by the NGOs and is something that only NGOs can do. What motivates a woman is different from what motivates a traditional entrepreneur. Women want to be seen as being able to contribute towards household decision making especially financial decision making and as leaders who can make decisions in their communities. Mobilisation of women into *sanghas* is a first step. These women then need to be taught the value of sharing risks and labour, and that unity among women contributes towards building and sustaining communities.

The *training on markets* is intended to help these women:

- ❖ understand the differences between rural, city and periurban markets in order to identify the best market in which to sell their products;
- ❖ learn skills to identify niches in markets, to distinguish between qualities of products and identify where they can best situate themselves;
- ❖ understand the value chain, or where to enter the market, for example at the level of selling jowar at 8 rupees a kg, selling flour at a higher rate, or rotis at 40 rupees a kg.
- ❖ broaden their focus from production only (and selling the produce) towards marketing as a means of making money;
- ❖ learn how to negotiate with retailers;
- ❖ learn about pricing and costing: instead of simply adding ten percent to the costs to determine price, the price

depends on many more factors and needs to be assessed based on the market;

- ❖ understand the consumer: understanding and establishing a direct relationship with the consumer becomes important.

MOVE is in its inception stages and it will take another year before it can fully materialise. Early results show that the participating women became more conscious of prices after visiting different markets where they learned how to negotiate prices. They have also become more confident, have a better understanding of value addition to products (roasting, sprouting of cereals, packaging, etc.), and with some encouragement they also came up with new product ideas. Finally, the women and NGOs working with them now understand the difference between PRA-based product identification and market-oriented product identification.

NEW HARDWARE AND SOFTWARE NEEDED

Government initiatives like the *raythere santhe* are rarely designed for the poor. Even when designed for the poor, they fail to reach them. While the farmers' market reached some farmers who could be considered poor, it would have been far more advantageous to even poorer farmers, who produce a fifth of the production capacity of existing farmers' market users and could then also sell all their produce directly to urban consumers.

Currently those who sell their products at the *raythere santhe* produce more than they can sell directly and thus are still forced to use the middleman.

Government initiatives typically only provide the "hardware", without providing any training to build marketing skills of those using the *raythere santhe*. While taking the initiative to provide infrastructure, transportation and other facilities, the government needs to be more tailored to the poor, particularly to women. Government rural credit provision programmes often come to a grinding halt in the periurban areas, the very space where credit is most needed. Access to formal banks and other financial institutions for the poor is declining in the face of the rapid retreat of government programmes, as urbanisation spreads and urban municipalities expand.

On the other hand, NGO capacity-building initiatives sometimes referred to as "software", do precisely the opposite. They build people's capacities to understand the market but do not provide the necessary infrastructure or credit. In fact, credit instruments promoted within CBOs can be detrimental to production while extremely beneficial for meeting consumption needs. One major contribution of NGOs, however, is the mobilisation of women producers, which is the building of social capital. There are several successful examples of how women, when mobilised, can more effectively negotiate with the market.

Building poor women's capacities to understand markets, mobilising them into groups to more effectively deal with other actors in the market, creating innovative financial instruments, and providing a marketing infrastructure are the most important components needed to facilitate access to markets for women. It is the combination of the software and hardware that will actually make the best use of the opportunities the periurban interface and the new markets afford.

NOTES

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REFERENCES

- Fisher, Thomas and M.S. Sriram (2002). Beyond Micro-credit: Putting Development Back into Micro-Finance. Oxfam, Vistaar Publications, New Delhi.
- M.S. Subhas (2003). "What are liberalization and Post Liberalized Markets?" Reading paper prepared for Training of Trainers in Building Market Linkages and Business Development Strategies using MOVE, August.
- Purushothaman, Sangeetha (2002). Capacity Development Of Grassroots Networks To Become Effective Partners In Local Governance For Poverty Eradication: Lessons from Below, written on behalf of the Huairou Commission, Paper commissioned by The LIFE Global Programme of IDG/BDP/UNDP, August.
- Purushothaman, Sangeetha and Simone Purohit (2002) Participatory Action Planning Process: A Process Document, submitted to the University of Wales, Bangor, United Kingdom.
- Purushothaman, Sangeetha, Rameshwari Varma and Simone Purohit (2000). Women's Access to and Control over Financial Resources: Towards Development and Redesigning Policy. Policy document commissioned by the Department of Women and Child Development, Government of Karnataka, September.
- Velayundan, Sanal Kumar (2003). Rural Marketing: Targeting the Non-urban Consumer. Response Books, New Delhi.

Women and Periurban Agriculture in the Niayes Zone of Senegal

Any project has to identify its stakeholders, their roles, the dynamics in decision making at different levels, and include the needs, priorities, role and importance of women and men. This gender analysis will show that there are varying levels of access to resources and power. Little research has been conducted on gender and urban agriculture in Senegal. In the following text the role of women in periurban agriculture in the Niayes zone is described based on case studies, and constraints and needs for further research are outlined.

Maty Ba Diao



Women actively work in urban and periurban market gardening

the distribution of labour in periurban zones seems to be changing

The periurban zone of the Niayes has a long tradition of market gardening and fruit and flower production in combination with small-scale animal husbandry, both for self-consumption and sale on urban markets. The first important migrations of shepherds towards the Niayes zone date from around 1915, while horticultural activities started in 1903 with the garden of Hann (Bellot and Denis, 1989). Nowadays several modern horticultural and animal industries attract development projects.

WOMEN IN PERIURBAN AGRICULTURE

Unlike the other West African countries, where the majority of women work in periurban and urban agriculture, in the Niayes zone, few women own farms. Women are involved in horticultural activities where they account for 20% of small farm holders, but the area cultivated seldom exceeds one hectare.

Women have only recently started to be counted in the modern crop export systems. The problem of their limited access to production factors (particularly water and land) is often the reason why women tend to specialise in horticulture or less water- and fertiliser-demanding crops, like leafy vegetables (the bissap *Hibiscus sabdariffa*, *Amarantha* *Amaranthus* spp, etc., see box).

Women actively work as part of the family or employed work force in urban and periurban market gardening. Harvesting, sorting and packaging of food groundnuts, tomatoes, or green beans (export products) are highly labour intensive. Exporters appreciate particularly the women in the labour force. Women and young girls represent 68% of the labour force involved in harvesting activities and 100% of those in sorting and packaging operations (Ba *et al.*, 2002). These agricultural activities are an important source of revenue for the poorest families living in the production areas. During harvest periods for market

Participation of the family members in the management of family livestock in the periurban zone of Dakar.

Tasks	No. of households	Men	Women	Children
		%	%	%
Contribution in equipment	148	60	30	10
Building of shelters	149	61	28	11
Food for the chickens	143	23	62	15
Watering of the chickens	144	21	64	15
Cleaning of shelters	141	19	65	16
Treatment of the chickens	117	32	56	12
Purchase of chickens	114	40	55	5
Marketing of chickens	86	37	57	6
Purchase of eggs	24	42	50	8
Marketing of eggs	23	30	65	5

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Reference: Mandiamy, 2002

Production and marketing of bissap (*Hibiscus sabdariffa*).

Keur Pathé Kane is a village located in the Niayes zone, the main horticultural region of Senegal. Situated 150 kilometres from the capital city, it has 944 inhabitants (489 men and 455 women). They are very active in market gardening and the main crops cultivated are tomato, bissap, eggplant and pement. Bissap is a leafy vegetable exclusively cultivated by women, on or next to their husbands' farms. Women run very small plots of land (180 - 750 m²) when under monoculture. During the rainy season, women take advantage of lands abandoned by their husbands and the availability of water and cultivate larger areas.

Depending on both the season and harvest frequency, the yield in leaves is between 100 and 200 kg for each 100 m². Because of the scarce nature of the product, dry season prices are more interesting and can be up to double that of rainy season prices. The marketing does not require long travel. The leaves harvested the day before are sold in the local market of (Mboro) or in the surrounding towns' markets. For more remote destinations, the businessmen (called bana-banas) come to buy the leaves at the farms.

The average annual income earned by each woman from the cultivation of bissap is 340,000 CFA.F (i.e. 520 euro). Their income from bissap cultivation represents 42% of the total agricultural revenues of women in the dry season and 48% in the rainy season. The importance of bissap in the economic life of the village is obvious. This crop, thanks to the revenues it yields, allows women to complement the financial contributions of their husbands and even in some cases to exceed them. Because of the low production costs and the revenues generated within a short time frame, the bissap is considered by women to be a crop that can help fight against poverty. It allows them to buy or pay for articles other than food: cloth, jewels, schools fees and medicines for their children. Women participate also financially in the different activities of the village. But despite these advantages, women are still confronted with constraints such as access to land and inputs.

Based on Diouf et al., 2002

gardening products (December-April), each labourer may earn between 1000 and 1500 CFA per day (656 CFA to 1 Euro) on average, and two or three members per family may be employed in this way.

Women are also given more responsibilities in the management of small ruminants and poultry in family husbandry (see table).

PROCESSING AND MARKETING

Processing and marketing of fresh vegetables are exclusively the tasks of women. Traditionally, the head of the family cultivated the land and led the cattle and his wives sold the surplus production at the market. Nowadays, however, the distribution of labour in periurban zones seems to be changing. The emergence of new realities may provide women with new economic environments (if the family tradition does not confine the women). Processing and marketing of agricultural products have become full-time activities. Many women have low but steady revenues on a daily basis to satisfy both their needs and the needs of their families. And women constitute an important economic force in the Niayes zone: 73% of them have revenues drawn from the marketing of miscellaneous agricultural products and 12% of them have revenues higher than 200,000 CFA F a month (305 euros, Kane, 1998).

The income generated by the different farming and marketing activities gives

women a certain autonomy for action not only within the households but also within the community. They organise tontines (see *UA Magazine* no. 9) and participate in the running of women's organisations, even if these are informal.

CONSTRAINTS

The sustainable integration of women in the economic system faces several obstacles (Ba and Guèye, 2000 ; Badiane *et al.*, 2002).

In general women have little access to information, training and advice on agriculture. A limited number of women have received agricultural technical training in the zone, but most of them are illiterate, despite literacy campaigns. This limits the efficiency of any learning process of technical and financial management. Moreover, women lack time, but this is often put forward by their husbands to justify the non-attendance of their wives at training sessions on farming techniques. But, indeed women lack time because of the burden of family tasks and their multiple functions. Their work days are long, between 12 to 15 hours a day.

Women have little access and control, particularly over production factors such as land, water, credit, farming equipment, quality seed, fertilisers, and pesticides. Women have no control over the land property. The plots they farm are lent to them by their husbands, leased or borrowed. Most of this land has a limited surface area and is of poor quality. Moreover, the lack of access to fertilisers and funds is a hindrance for the development of important agricultural activities. Women also lack decision-making power in the household and in several local decentralised bodies. Women are not well represented in decision-making bodies.

PERSPECTIVES AND CONCLUSION

Technical innovation is crucial to allow women to save time, increase their production potential and improve the quality of their lives and those of their families. Women should have access to production means, services, and fertilisers in order to get out of poverty and participate in sustainable development. They must be trained, informed and advised at the same level as men. Functional literacy seems to be an extremely useful means to master new production techniques and processing using a language they know.

Supporting measures such as the purchase of equipment that can alleviate women's workload must be promoted. These small achievements should be included in the requirements for the success of agricultural programmes in which women are involved. The alleviation of domestic work would allow them more time participate in training and animation sessions.

Understanding the role of women in periurban agriculture and supporting them in achieving this is one of the requirements for the success of any development programme or project. Gender analysis should not be considered as a separate component when elaborating the programmes. It must be taken into account in all stages, from proposal design and implementation all the way through to the collection, interpretation, analysis, monitoring and evaluation of the data.

Tools are available to assist in the integration of women, but this process must be guided by an orientation towards and greater inclusion of the concerns of both men and women. Further thinking and discussion on the approaches, research and planning tools and methods on gender and urban agriculture, like those initiated by RUAF, will allow us to fill this information gap on the gender dimension of urban agriculture in West and Central Africa.

REFERENCES

- Ba C.O., Ba Diao M., Dieng A., Fall A., Ndiaye A., 2002. *Etude sur les risques liés au travail des enfants dans l'agriculture et l'élevage*. Final report. Consultation ISRA/BEC, 95 p. + annexes.
- Ba C.O., Guèye A., 2000. *Guide d'intégration du genre dans l'agriculture urbaine: quelques aspects pratiques*. Cours méthodologique sur l'agriculture périurbaine en Afrique de l'Ouest et du Centre. ISRA/CRDI/CIRAD. Dakar, June, 18 p.
- Badiane A.N., Fall S.T., Ba Diao M., 2002. Genre et agriculture urbaine: théories, pratiques et politiques. In "Advances in crop-livestock integration in West African cities". Akinbamijo O.O., Fall S.T., Smith O.B., editors. ITC/ ISRA / CRDI: 159- 175.
- Bellot JM, Denis JP, 1989. *Dakar dans les prés de Sangalkam. L'influence de Dakar sur la proche campagne: cas de la communauté rurale de Sangalkam*. La péri-urbanisation dans les pays tropicaux. Espaces tropicaux, n°1. Talence: CEGET-CNRS; 76 p.
- Diouf M., Guèye M., Faye B., Diémé O., Gningue D., Ba Diao M., 2002. *Les légumes feuilles au Sénégal: gestion du germplasma et études éco-géographiques*. Rapport de recherches ISRA/IPGRI, 112 p.
- Kane R., 1998. *Etude sur femmes et instances de décision: cas du Sénégal*. PADLOS-CICLS: 82p.
- Mandiamy D., 2002. *Productivité des poulets dans les conditions d'élevage familiales en zone périurbaine de Dakar (Sénégal)*. Mémoire de DEA Biologie animale, Faculté des ST, UCAD, Dakar, Sénégal, 92 p.

Women in Senegalese Periurban Agriculture: the case of Touba Peycouck

In Senegal, urban agriculture has grown rapidly in response to the fragile nature of urban food security and to meet the market needs of the growing urban populace. Inadequate access to land, precarious land tenure, and insufficient water and manure make urban farming increasingly difficult, particularly for women whose access to land and capital is limited by a host of socio-economic factors.



Touba Peycouck's Bokk Jom group members with their composting pits

Soon after its creation in 1990, this Bokk Jom opened a small grocery shop, supported the village elementary school, and later opened a public phone booth and a small library. They also built a wood-fired oven for bread baking. In the mid-1990s they raised 500,000 francs CFA (2) and received a 5.7 million F CFA grant from the UNDP to embark on an ambitious development project integrating animal husbandry, agroforestry, and gardening. The Rodale Institute assists in training in gardening, agroforestry, and composting techniques. The Bokk Jom started a tree nursery and launched a large-scale reforestation campaign. The group purchased four local milk cows and had them artificially inseminated in order to produce offspring with higher milk production. They followed with the construction of a chicken coop and undertook a poultry production project that earned them more than half a million F CFA in profit. With additional technical training from Rodale, the Bokk Jom constructed several large composting pits to transform the cow manure and poultry litter into quality fertiliser. The compost is used for tree, garden, and field crop production.

Senegal's second largest city, Thiès, lies seventy kilometres east of central Dakar, but only thirty-five kilometres from the urban fringes. The Thiès region is home to 1.3 million people, which means that 14% of the national population is living on less than 4% of the country's land (6,601 km²).

In Thiès, the urban-rural interface is much more pronounced than in Dakar. Periurban villages remain largely agrarian but are deeply entrenched in the urban economy. Between 1985 and 1995, annual production averaged 40,000 to 60,000 metric tons, which together with that of the Dakar region, accounted for two-thirds of national vegetable production. Much of this production is periurban, and most of it is destined for consumption in Dakar.

One of the greatest problems facing agriculture in and around Thiès is insufficient recycling of organic material. In urban and periurban agriculture, the flow of food into the city centres increases as urban populations grow. However, these nutrients are generally lost to garbage dumps or sewage and are rarely returned to the zones of production, thus raising the nutrient deficit. Even though periurban farmers are aware of declining soil fertility, the tenuous nature of land tenure on the

urban fringes keeps them from expending labour or money on sufficient applications of manure or composted waste. This so-called "hit and run" farming, in which a farmer farms a plot intensively before he or she loses it to urban expansion, is common in Senegalese urban agriculture.

These constraints are often felt more acutely by women farmers whose access to land, manure and water is even more limited. In rural and periurban systems, where stabling or tethering of small livestock is common, women are deeply involved in the management of manure, gathering it and other household waste for disposal in the family *sëntaare*, or manure pile. However, the distribution of manure ultimately resides in the hands of the male head of household. While this rarely leads to conflict, the communal family fields take priority over a woman's personal plots. However, by actively managing a compost pile or pit, a woman may gain proprietorship over the final product as family members recognise the amount of labour she has invested in its production. More and more Senegalese women are joining cooperative women's groups, improving their access to knowledge of composting and other techniques to improve soil fertility.

Over the last few decades, the creation of *groupements d'interêt économique* (GIEs), or village and

neighbourhood cooperatives, as well as the creation of *groupements féminins*, women's groups, has been a vital source of empowerment for women farmers in Senegal, providing them with access to capital and training. In the past several years, many women's groups, urban and rural, official and unofficial alike, have embarked on successful agricultural endeavours, providing participants with income and incentives to stay in their communities of origin.

THE CASE OF TOUBA PEYCOUCK

Two kilometres south of Thiès lies Touba Peycouck (1), a village of 2,000 people. The activities of the GIE Bokk Jom of this village provide an inspiring example of grassroots community development. In the integrated system of animal husbandry, agroforestry, gardening, and field crops, women play the major role in maintaining the soil's fertility through their composting activities. However, women's limited access to resources continues to prevent equal participation in the periurban farming of Thiès.

Of the Bokk Jom's 72 members, 42 are women. Several administrative positions are held by women, including Assistant Secretary General and Treasurer. A revolving micro-credit programme provides women members with 6-month, 25,000 F

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CFA loans at 7.5% interest. Recipients have used these loans for various business ventures and none have defaulted on payment since the programme began. The incomes of members are higher than those in the rest of the village, and their access to training and status in the community have improved. When asked what women contributed to the Bokk Jom (3), several male members said the success of the ongoing composting and agroforestry projects is due to the high level of participation of the women.

After the fertilisation needs of the group's tree nursery are met, members have the right to use compost produced in the group pits on their personal plots. In addition to this compost, many women have started their own compost pits within their family compounds, which they fill with kitchen scraps, cooking ashes and manure from tethered livestock. Most women in the group own their own animals, on average three to five goats or sheep per person. The use of compost has spread rapidly throughout the village and into neighbouring villages. Ninety percent of produce is sold, usually to other village women who buy in bulk to sell at the markets in Thiès and nearby Rufisque and Bambey. Two-thirds of the remaining 10% is given away as gifts, and only a third kept for family consumption. While whatever revenue a woman earns from her gardening is her own, a large portion of it goes to purchasing food for the family. Indeed, her contribution may often be greater than that of her husband. Mamadou Gueye, the Bokk Jom president, underscored the difficulty in quantifying this contribution to family income: "*La plupart de ses revenus va*

directement dans la marmite!" (The majority of her income goes straight into the cooking pot!)

LESSONS AND POLICY RECOMMENDATIONS

The shortage of land in Touba Peycouck is a primary constraint. *The périmètre communale*, or village garden area, is divided into a hundred 20-by-20 metre (400 m²) plots. Based on selection criteria that included salary and available labour, village officials divvied plots out to the chefs de carrés, male heads of household. Women have access to garden plots only through their husbands or by renting plots for 25,000 F CFA for the October to June gardening season. Currently only a third of the Bokk Jom's women maintain their own plots, whereas all of the group's men are active in gardening. Women in one focus group complained that they had plenty of compost but no plot on which to use it. In addition, gardeners must pay 4,000 F CFA per month for water. These overhead expenses, as well as start-up costs of seed and equipment, discourage many women from gardening. Others abandon their plots during the gardening season if they are unable to make a profit, and turn to *petite commerce* in order to earn enough to cover expenses the following year.

As elsewhere in West Africa, women's role as urban agriculturalists is limited by these constraints, leaving the majority of production in the hands of male farmers. Nevertheless, cooperatives such as the Bokk Jom improve women's access to land and infrastructure by offering credit at reasonable interest rates, as well as by providing them with opportunities to pool resources. Most important, perhaps, and most difficult to quantify is the sense of empowerment and pride that membership elicits from female members. While the Bokk Jom's primary goal is not to improve the livelihood of Touba Peycouck's women, its success has directly benefited its female members by providing them with a solid organisational foundation and forum for cooperation. Nevertheless, patriarchal traditions within the community on the whole ultimately define the extent of women's participation in urban agriculture. Gender-specific initiatives providing assistance to cooperatives such as the Bokk Jom may ultimately be necessary to overcome these obstacles.

In a final brainstorming session (3) Touba Peycouck's Bokk Jom members came up with the following policy recommendations:

- Guarantee women equal access to land
- Provide incentives for sustainable agricultural production
- Promote women's groups and facilitate access to funding and credit
- Expand technical training opportunities for women
- Improve public health awareness and infrastructure

A recently passed law, *La loi d'orientation agricole*, addresses the first concern by guaranteeing equal access to land. The true challenge will be to enforce it. Some of the remaining recommendations may seem impossible to instate on a government level due to SAP-mandated cuts to public programmes and "free trade" regulations prohibiting agricultural subsidies. However, they provide a useful and relevant framework for NGOs and aid agencies working both with policy makers and directly with local populations. Groups like the Bokk Jom have been successful in addressing some of the very real constraints facing the farmers of Touba Peycouck and women engaged in urban agriculture throughout the developing world.

NOTES

- 1 Several villagers, exhausted by their financial burden, formed the village GIE, or Bokk Jom, in 1990 in an effort to improve their opportunities. In Wolof, bokk jom means to unite for a common cause.
- 2 The franc CFA, or West African franc, is fixed at an exchange rate of 656 F CFA to 1 euro.
- 3 Five focus groups consisting of four to eight people each held meetings in September and October 2003 in Touba Peycouck during the author's three-month internship at the Rodale Institute in Thiès. Further data come from Akakpo and Ki (2000) who surveyed 100 villagers to evaluate the impact of the Bokk Jom.

Peri-urban gardens of Touba Peycouck, 2 km south of Thiès, Senegal



Gender Dimensions of Urban Commercial Farming in Lagos, Nigeria

The high rate of poverty among urban households and the growing responsibilities of women to assure household survival have caused urban agriculture to become a crucial activity in Lagos. However, inadequate access to land and water are obstacles to efficient and effective agricultural practices. In comparison to men, women are the worst affected



women hold relatively small, less fertile land

Gender awareness in urban agriculture means understanding both men's and women's opportunities and constraints, providing greater scope and richness to solutions and avoiding a single conceptualisation of the needs, interests, and experiences of persons (Hovorka, 1998). This paper gives a situation analysis of the role gender plays in the urban agricultural context within metropolitan Lagos. It looks at the implications and also proffers possible solutions for policy options.

responsibility in the provision of food and welfare

More and more is now understood about the differences in urban food production by men and women in Nigeria. In Lagos, women have little access to productive resources yet they shoulder much responsibility in the provision of food and welfare for their households. Women dominate several urban agricultural activities especially those that have lower profit margins: they cultivate lower-value crops in low-quality areas.

Tackling these challenges requires appropriate, i.e. gender-sensitive and pro-urban- poor, policies. The result will not only create more jobs, but also

empower women to meet up with their reproductive and productive responsibilities and achieve sustainable urbanisation. So far, past national and state programmes on poverty alleviation and women's empowerment have not been able to achieve this.

Urban agriculture is a major livelihood asset for both men and women that enriches the nutritional and medicinal needs of the urban people. In a study carried out in Ibadan, Gbadegesin (1991) showed that agriculture offers income for many women in the city who lack proper education and training and formal employment. Urban agriculture plays an underestimated role in urban food security and a potential role in reducing dependency on urban food imports.

GENDER CHARACTERISTICS

A field study carried out by the authors in 2002 revealed that Lagos has a substantial number of farmers. The majority of the farmers are male (72%), but men and women dominate different sectors (see table). The situation refutes the common notion that women dominate urban agriculture, as is validated in cities like Nairobi, Kampala and others. Only 5% of the women respondents entered the activity more than five years ago. Most of

the farmers are married (75%) and have children, but only few of the male farmers live with their families. The majority of the male farmers are seasonal migrants who come to Lagos to cultivate during certain periods of the year. Many of the women, though, reside in Lagos with their dependents (have between three and nine children and several relations) with little or no support from their spouses.

The men spend more time (twelve hours a day or even more) working on the farm than the women. This can be attributed to the fact that quite a number of them (the migrant farmers) live in detached and uncompleted buildings on the farmland. Only a few couples are land and house owners and live around the farm sites. It is also revealing to note that the majority of full-time women cultivators are widows or divorcees and thus heads of household who do not have any other sources of livelihood.

Women cultivate crops such as melon, waterleaf, spinach, tomatoes, hot pepper, maize and okra, while men more often cultivate lettuce, carrot, cucumber, aloe vera, green pepper and India spinach, which sell for higher prices, but are more demanding in terms of nurturing. Men farmers operate in all seasons harvesting some

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Gender characteristics of farmers (percentages)

Sex	Population	Dependants	Full-time farmers	Part-time farmers	Cultivation	Marketing	Processing
Men	72	41	47	67	82	48	64
Women	28	59	53	33	18	52	36

Source: Field survey 2002

crops up to eight to twelve times throughout the year. Women are less active during dry and raining seasons, therefore more vulnerable.

There are few differences in the tasks carried out by men and



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Men spend more time working on the farm than the women

women farmers, except in irrigation. Weeding, which in the past used to be exclusively women's work, is now carried out by both male and female farmers. Marketing of the products, which has typically also been a women's task in West Africa, is quickly becoming more of a men's task.

Land is largely rented. A caretaker usually allocates about two plots of land to four to six farmers, especially among the migrant farmers, for a rent of between three hundred and one thousand Naira (2 to 7 US dollars) per month, depending on the size of the land. Many women are unable to cope with such payments, due to their poor production output and sales, and they have no proper access to the better land.

Male farmers in Lagos easily work together and protect their common interests. They encourage construction of common wells for irrigation and the collective purchasing of seeds and other inputs such as fertiliser and poultry waste. These communal efforts also include

joint marketing of products and encouragement of daily and monthly savings (locally called *ajo*), that are often reinvested in the venture. For example, the farmers work together to help sick members or accident victims get medical care, to bring deceased members back to their home towns and also to support the households. Many women claim that they are denied such opportunities even if they contribute to a group. They do not have a say in decision making.

IMPLICATIONS

Urban farms, especially those headed by women, are often located in unsafe and insecure areas on the edges of the cities, which lack basic services such as water and electricity. Farmers sometimes have to transport water over a distance of between 100 and 300 metres especially during the dry season. Most women depend on the assistance of hired labour and family members (children), which makes the production expensive and unprofitable, and in addition affects the quantity of time the children can spend at school. Limited access to resources (land, funds, irrigation, and machinery) puts an extra burden on the women farmers, which in combination with direct and indirect pollution, theft and insecurity, makes farming a tedious and difficult task to venture into for women. With few exceptions, the volume of the production output is also higher among men than women.

Gender disparities in Lagos' urban agriculture are such that more women hold relatively small, less fertile land that is less conducive for efficient farming practices. This has led to the

adoption of different farming methods, associated with adverse environmental impact and poor yields.

RECOMMENDATIONS

Urban agriculture has become a profitable enterprise which contributes to the improvement of the socio-economic status and the nutritional and medicinal well being of the people in Lagos. Women as well as men play a pivotal role in the practice and management of urban agriculture. Urban agriculture is a labour-intensive activity and land is the prime determinant. Because women are culturally responsible for the provision of food in most homes, in addition to caring for the well being of the entire household, adequate policies should aim at closing the gender gap in the access to land and facilities.

Enlightenment campaigns should make use of various media to educate and inform urban dwellers and landowners of the potentials of urban agriculture even for those who are already engaged in formal occupations. In this way, landowners would be more willing to lease unused or undeveloped land to farmers, thereby providing the farmers with more long-term security.

REFERENCES

- **Gbadegesin, A.** (1991), Farming in the Urban Environment of a Developing Nation: A Case Study from Ibadan in Nigeria. The Environmentalist, Vol. 11, No. 2, pp 102-111.
- **Hovorka, A.** (1998), Gender Resources for Urban Agriculture Research: Methodology, Directory and Annotated Bibliography, Cities Feeding People Report Series, Nr. 26, online document of IDRC, <http://www.idrc.ca/cfp/gender.html>

Integration of Gender in Municipal Policies in Port Harcourt in Nigeria

In and around the city of Port Harcourt urban farmlands have given way to urban development activities, especially mineral oil exploitation and development of land for housing. In this process, the inability of urban planning to cater for the growing needs of the urban farmers, especially women producing fresh vegetables and perishable fruits, is apparent and needs attention.

Margaret Jev



A woman farmer in her fields at the university campus

Urban agriculture was encouraged in Nigerian cities with the introduction of Operation Feed the Nation in 1979, when households were encouraged to plant food crops around their houses (Olomola, 1998). This opened the eyes of the poor urban residents, especially the women, to the prospect of growing food crops in the urban area in order to earn some income and at the same time provide some needed food items for their families.

Since that time, in Port Harcourt, roadsides, open spaces around houses, building set-backs, and large tracts of quasi-public land like the areas of the State University of Science and Technology are used as vegetable and cereal farms. Most of these urban farmers are women because traditionally it is women who plant vegetables and cereals and also harvest these for sale. The men on the other hand are mainly responsible for clearing land and making mounds for yams. Both men and women usually do the harvesting.

The urban floriculturists are predominantly male. They are also found along major streets and highways and in a few cases on vacant plots owned by investors who are keeping the land for future development. This is encouraged as the farmers protect the land from poachers and at the same time keep it clean at no cost to the owners. Although

Operation Feed the Nation lasted for only a short period, the urban agriculture idea is presently on the rise again due to rising unemployment and the high cost of living.

Development control officers in Port Harcourt are few in number and inefficient (sometimes even corrupt), and they are clearly more concerned with building development than the environment. In some cases they have fined the urban agriculturists, calling them illegal features of the urban environment. This has not gone down well with those concerned with farming, as urban agriculture is an important survival strategy for the poor in Port Harcourt, especially the women.

GENDER AND MUNICIPAL POLICIES

Although gender is clearly a major factor in urban land use, in Port Harcourt social differentiation between men and women is not considered in municipal decision making on land use, notably with respect to urban agriculture, which is being quietly ignored at the moment.

Women are predominant in urban agriculture, especially in the production of food items. This is a skill that they brought from their villages and that they are using to earn a living and at the same time for subsistence. Men are principally involved in horticulture, which is purely commercial. Production is insecure, however, as these farmers only have usufruct rights. While the men traditionally sell their ornamental flowers at the production location, women have to sell part of their produce in markets which are not located close to the fields. This increases the overhead for the women, which they can ill afford.

CHALLENGES

Urban agriculture is a beneficial land use and has come to stay in Port Harcourt. In fact, the area used is expanding. Neighbourhoods are beautified, food is produced, and urban waste may be converted into useful resources. A lot of idle land has thus become useful, and as a result the public and quasi-public lands are now being used (with permission) to serve the people until the owners need it.

However, urban growth in Port Harcourt has overwhelmed the planners, who seem to be unable to plan the dynamic growth of the city. Urban growth has overtaken the rather static master plan. There is a need, therefore, to involve the populace of the urban areas in the governance of the city to enable the planners to know where land is, what it is being used for and how the people will accept the policies being put forward for them. Women will especially benefit from this, as they are the main actors in crop farming and supporters of the households in proper food nutrition. The wellbeing of all the people in the city should be seen as an asset that can be assisted through urban agricultural planning in the city.

REFERENCES

- Olomola, Ade (1998) 'Urban Agriculture and the Implications for Urban Development in Nigeria'. In Adeniji, Kunle and Ogu, Vincent (eds) Sustainable Physical Development in Nigeria. Ibadan: Nigerian Institute for Social and Economic Research (NISER).
- Mundi, Ejifu (1999) 'Gender Issues Associated With Agricultural Production and Extension' In Oruwari, Yomi (ed.) Gender, Sustainable Development and The Urban Poor In Nigeria. (A book of Readings). Port Harcourt: Hisis Publishers Ltd.

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Urban Livestock Production and Gender in Addis Ababa, Ethiopia

The urban infrastructure of Addis Ababa has not sufficiently developed along with the vast horizontal expansion of the city in the last thirty years. With a population growth rate of well over 5%, the demand for cereal crops and animal products will continue to increase substantially. This requires an early intervention strategy to ensure an adequate supply of these products to the urban dwellers.



Azage Tegegne

Training of women on milking and milk handling at ILRI Debre Zeit Research Station

About 45% of livestock owners are women

Urban livestock production constitutes an important sub-sector of the agricultural production system in Ethiopia. There are about 40,000 crossbred and pure exotic cows in urban and periurban areas of the country. In Addis Ababa alone there are about 5200 dairy farms with some 58,500 cattle (almost 50 percent crossbred). If one takes an average of six persons per family household, this means that about 30,000 persons directly depend on incomes earned from the dairy sub-sector. Total annual milk production is estimated at 44 million litres and 83% is marketed, while the difference is used for household consumption. About 79% of the total production comes from urban producers.

From an economic point of view, cattle and poultry are the most important of all livestock, although goats, sheep and equines make a significant contribution to the urban economy and to the diet. Thus, urban livestock production plays a substantial role in reducing poverty and contributing towards food security in the city. Yet, livestock keepers in the urban area are still receiving little attention in terms of policy, institutional and technical support targeted at their needs.

The contributions of urban livestock production to overall development include income and employment generation, poverty alleviation, and improvement of human nutrition and health. The urban livestock production system is complex. It involves diverse activities, such as production, processing and marketing, and several technologies at each level in the commodity chain that makes up the system. The major players in the production, processing and marketing of these products are women.

GENDER AND LIVESTOCK PRODUCTION

In Addis Ababa city, about 33% of the livestock keeper households are headed by women. The unemployment rate Addis Ababa is about 47% and females account for 58% of the unemployed. There is a high dependency ratio; 69% of the total population depends on the remaining 31% of the society. A study undertaken by Azage Tegegne *et al.* (2002) in Addis Ababa showed that about 45% of livestock owners are women. The average age of women and men livestock owners is 55 and 57 years, respectively. The level of education of these farmers ranges from illiterate to secondary school (slightly more men than women). The

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majority of livestock keepers depend solely on livestock farming, while the rest are retired or civil servant men involved in livestock keeping.

From an economic point of view, dairy cattle, sheep and poultry are the most important livestock species, although goats and to a lesser extent equines make significant contributions to the urban economy and the food security and livelihoods of households. Women own about 43% of dairy cattle, 81% of chickens, 47% of sheep and 33% of goats. The average number of cattle owned is about 7 animals per household. Small ruminants are the most common livestock species next to cattle and chickens kept by both women and men urban livestock keepers (Azage Tegegne *et al.*, 2002).

Women are usually responsible for feeding large animals, cleaning the barns, milking dairy cattle, processing milk and marketing livestock products, but they received the assistance of men, female children and/or other relatives. Younger children, especially girls between the ages of 7 and 15, are mostly responsible for managing calves, chickens and small ruminants, while men and older boys are responsible for treating sick animals, constructing shelters, cutting grass and grazing of cattle and small ruminants.

The role of women in managing animals that are confined during most of the year is substantial and they are critically involved in removing and managing manure, which is often made into cakes and used or sold as fuel (Figure 3). In this regard, women have the major role in minimising environmental pollution and public health problems related to urban livestock production (Azage Tegegne *et al.* 2002; Odenyo *et al.*, 2002).

Constraints frequently mentioned by both men and women livestock keepers in the study are the high cost of inputs (feed and drugs), availability, cost and quality of concentrated feed and grass hay, the absence of a market for fluid milk (Figure 4) and the low prices of milk and milk products especially during the fasting period, poor reproductive performance of dairy cows, poor availability of AI technician and a shortage of semen. Problems such as a lack of skill development or training

(Figure 5) and technical advice on livestock production were reported more often by women (30%) livestock keepers than men (15%). Disease was reported by 45% of the households (44% women and 56% men) as the most important constraint in raising dairy cattle and chickens. Mastitis in dairy cattle and Newcastle disease in chickens are important threats to urban livestock production. Access to credit to improve or expand livestock keeping activities was reported as a constraint by 45% of the households (33% of women and 67% of men livestock keepers) (Azage Tegegne *et al.*, 2002).

RECOMMENDATIONS

Gender concerns should be appropriately addressed at all stages of the urban food and agriculture development cycle, including designing, planning, implementation, monitoring and evaluation of development projects. The participation and benefit of women in urban livestock production could be considered through adequate gender analysis of the current situation. Development projects must involve women in problem identification and programme design, identify ways and means for women to participate and



Azage Tegegne

Small ruminants play an important role in the household economy

benefit from projects/programmes, take measures to strengthen women's participation even further, ensure that the benefits reach women and men and they must include follow up and monitoring stages to check and make sure that interventions have met women's practical and strategic gender needs (Bogalech, 1998).

To enhance the status of women and to increase their productivity in urban livestock production, and to strengthen their decision-making power and



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An urban dairy farmer

leadership, recognition of their role and creation of favourable policy are essential pre-conditions. Research should also address gender issues and strive to develop appropriate technologies, such as improved butter churning, that are focused on the needs of women. It is also

Women have a major role in minimising environmental pollution and public health problems

essential to train women on the use of technologies, gender concerns, leadership and assertion techniques and business management and investment techniques to increase opportunities for economic gains. The experience of the International Livestock Research Institute (ILRI) in training women farmers on dairy production and management, milk hygiene and processing and marketing is a very good example. Agricultural extension should also develop a menu of extension models from which women's and men's groups could choose. In addition, provision of support for the establishment of women's and mixed-gender organisations, marketing associations or cooperatives, credit and saving unions will ensure effective and efficient market orientation of the production system.

REFERENCES

- Azage Tegegne, Million Tadesse and Zinash Sileshi. 2002. Scoping Study on Interactions Between Gender Relations and Livestock Keeping Practices in Addis Ababa, Ethiopia, Natural Resources International Ltd, Kent, UK.
- Bogalech Alemu. 1998. Women, Food Security and Agriculture. Proceedings of the Ethiopian Society of Animal Production (ESAP), pp.9-18.
- Odenyo, A., Azage Tegegne and Hanson, J. 2002. Alleviation of rural poverty and improved women's livelihoods through dairy development: The role of International Livestock Research Institute and its partners. Presented at the 3rd World Congress of Rural Women, Madrid, Spain, October 2-4, 2002.

Gender Analysis of Urban Agriculture in Kampala, Uganda

Urban agriculture in Kampala City takes place on undeveloped land including institutional and mailo (privately owned) land, but also on risky areas like former waste-dumping sites, scrap yards, wetlands and roadsides.



Women grow food crops that fetch lower prices.

Grace Nabulo

The major potential health hazards associated with urban agriculture have been classified as physical, chemical, biological and psychosocial (Cole et al., 2003). The physical hazards may include injury from sharp objects such as broken bottles and needles in waste dumps. Chemical hazards involve exposure through contact of chemicals with the skin, inhalation of dust from contaminated soil or gaseous emissions and through ingestion of food crops contaminated with toxic waste from soil and wastewater. Psychosocial hazards may arise from insecurity due to unclear land tenure, loss of farmland, fear of theft and violence or overload due to long hours of work. Biological hazards may be due to parasitic worms, bacteria and vector-borne diseases, such as malaria parasites hosted by certain food crops with life cycles in humans and other media. This paper focuses mainly on crop production in areas that are receiving solid or liquid waste in urban and periurban areas of Kampala City.

Former dumpsites are used to grow food crops and vegetables, and some of them provide shelter to farmers residing in temporary houses. In addition, wastewater is channelled from industries and the city's discharge into the wetlands. The farmers of these areas are thus exposed to multiple health hazards and improper management may lead to contamination of food crops and vegetables. This situation is disapproved of by municipalities.

Although deemed illegal by the urban authorities, urban agriculture activities continue to be practised by both men and women. However, the division of labour in urban farming households exposes men and women to different health risks (Flynn, 1999). Women are more vulnerable to health hazards due to the multiple roles they perform. For instance, women and children spend long hours selling food products by the road and are thereby exposed to heavy metal pollutants.

METHODS

A study was carried out in Kampala City in 2001/2002 through a formal survey. A total of 250 semi-structured questionnaires were administered to farmers who were involved in growing food crops on the former dumpsites of Lugogo, Kinawataka and Wakaliga, and the wastewater irrigated areas of Namuwongo along the Nakivubo channel (see figure 1).

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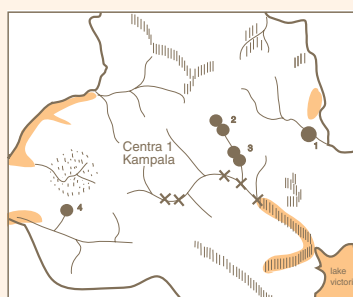
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Former Dumping sites in Kampala City



- /// Flooded areas
- river
- - - district boundary
- sampling sites
- 1. Kina Wataka
- 2. Lugogo I
- 3. Lugogo II
- 4. Wakaliga
- Wetland
- X flooded areas

DIVISION OF LABOUR AND BENEFITS

Of the farmers growing food crops on contaminated sites in Kampala City, 55% were women, 41% had no other occupation other than farming, and 63% of these farmers were women. A greater percentage of women than men (34% compared to 30%) consumed all the food grown, while 53% of the women and 67% of the men sold some of the food produced. The women who grow crops on contaminated sites in Kampala use it mainly to feed their families.

Only 9% of all the farmers grew food crops “purposely for sale” (14% of the women and 5% of the men). But these women sold all the food grown on contaminated sites to consumers and used the money to purchase other foodstuffs for their families. The major source of food in the study households was bananas (matooke), while *Colocasia esculenta* (cocoyam) and maize (*Zea mays*) were the most frequently grown food crops on these sites. Other crops included cassava (*Manihot esculenta*), sweet potatoes (*Ipomoea batatas*), beans and vegetables.

Men and women were generally involved in different agricultural activities. The men in this study were involved mainly in the cultivation of sugarcane and cocoyam in the wetlands, while the women grew maize, sweet potatoes and vegetables. The men spent longer hours in the gardens than the women.

The women grew food crops that fetch lower prices and require minimum capital, time and labour. This is partly because 70% of the women were married and had other traditional household roles to play like cooking for the family and caring for the children. Women therefore grew small-scale, perishable products that can be sold within the neighbourhood, either by the roadside, at a nearby market or at a stall in front of their homes. Moreover, most of the crops grown by men have a longer shelf life and can be transported long distances to reach a market.

The main benefit of urban agriculture and the reason most of the farmers cultivated was food: 41% of the respondents said they benefited from the free food, 21% from easy access to markets and 9% from economic empowerment. Moreover, 22% of the farmers would suffer an economic crisis if urban agriculture could no longer be

Attributes	All farmers (%)	Women (%)	Men (%)
Married	68	70	64
Farming is a major occupation	41	47	33
Have control over land	28	25	32
Dig and sell food products themselves	54	60	52
Own the food they grow	93	93	82
Spend income from UA on domestic needs	40	39	32
Use protective wear while working on land	38	37	42

practised (42% of the women and 22% of the men). Asked what they would do if stopped from using contaminated land, 12% of the men (and only 3% of the women) said they would change residence to where land is available; 14% of the men (and only 1% of the women) said they would not be affected. Women therefore benefit most from urban agriculture as a source of livelihood, food security and household income.

ACCESS TO LAND AND WATER

Only 28% of the farmers studied had control over their farmlands, 9% rented land and 22% used land that was freely available. The women grew food in high-risk areas, and therefore were more vulnerable to hazards. Most farmers did not have access to clean water: 17% got free water from a spring or well, 1% from a borehole and 77% bought either piped or spring water.

Fifty-six percent of the farmers (more women than men) did not use protective clothing while working on contaminated land (Table). In Uganda, cooking food is a woman’s responsibility. The study revealed that only 2% of the households that farmed on contaminated sites used electricity to cook, while 22% used firewood and 55% used charcoal.

RISK PERCEPTIONS

Over 80% of the farmers in Kampala were aware of the health risks of growing food in contaminated areas. Asked whether they approved of growing food on waste sites, 89% of the men and 84% of the women said they disapproved because it is not healthy, but they had no alternative since agriculture was their main source of livelihood, food security and income. Some of the farmers admitted to growing food on contaminated sites purposely for sale and not for household consumption. Lee-Smith (2003) observed that men and women perceive risks differently, depending on

what they know and what they stand to gain or lose, which also depends on what they value and who they are.

RECOMMENDATIONS

The Kampala City Council should integrate urban agriculture in its planning programmes as a mitigation measure to achieve a higher quality of food crops grown and sold in the city. The Council is currently reviewing Ordinances on Urban Agriculture and should liaise with various stakeholders like researchers, NGOs, development partners, institutions and landowners to help streamline policy initiatives in urban agriculture.

The council should facilitate the empowerment of urban farmers through environmental health education in relation to urban agriculture and necessary mitigation measures, such as use of low-cost treatment technologies of wastewater, use of appropriate farming techniques and careful selection of crops to minimise exposure to food contamination. The Council should empower the Urban Agriculture Office and its extension staff, and liaise with researchers together with the local Women and Youth Organisations at parish level to ensure implementation of the mitigation measures.

NOTE

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REFERENCES

- Cole, D.C.; Diamond, M.; Bassil, K. and H. J-Otazo (2003). Health Risk and Benefit Assessment in UPA. SSA Workshop on Health Risks and Benefits of Urban and Peri-urban Agriculture. Nairobi, Kenya. 9-12 June 2003.
- Flynn, K. (1999). Urban Agriculture and Public Health: Risk Assessment and Prevention for Contamination and Zoonoses. Cities Feeding People Program Initiative. International Development Research Centre, Ottawa (draft).
- Lee-Smith (2003), Risk Perceptions, Communication and Mitigation; Community Participation and Gender perspectives. Health Risks and Benefits of Urban Agriculture and Livestock in Sub-Saharan Africa. IDRC Workshop, Nairobi. 9 – 12 June 2003.

Gender and Access to Land for urban agriculture in Kampala, Uganda

Urban and periurban farming are increasingly important as a source of income and food for the urban population in Uganda. Access to land is a fundamental asset affecting women's role. Women lack access to land, and so do the poor marginalized migrant young men. Legal and policy frameworks are not fully promulgated for protection of urban farmers and women especially. Irrespective of some cultural inhibitors.

LAND AND GENDER

Most of the urban women connect land to shelter and agriculture, but men hold most of the land. Women in Uganda make up 51% of the total population 24.7 million people (UBOS 2002) and contribute more than 80% of food, provide 70% agricultural labour, 97 % have access to land while only 7% own land (Kiguli 1995). Men provide only 30-40% labour. .

Women, men and the children perform different roles within the household and in urban agriculture. Some roles are defined according to biological sex while others are through socialisation. Factors like ethnicity, customs and taboos determine the gender division of labour. The children assist the women in planting and weeding or tethering the animals. For some women are poor and cannot afford advanced technologies. The men usually focus on animal keeping but not growing vegetables and other food crops like the women.

There are also differences among women. Some women have higher incomes and reside in flats and planned residential areas although they carry out urban agriculture. Middle income women mainly keep animals (poultry) on a grand scale in their backyards or on the balconies, whereas the poor women with earning of less than \$1



Juliet Kiguli

Women continue to find means of survival strategies through farming.

per day grow mostly diversified crops on scattered plots in swampy areas.

ACCESS TO LAND

The majority of poor women who depend on land for their livelihood are either landless or have limited and insecure rights to land. In addition, they access land mostly as customary land but lack decision-making rights on how the land should be utilised. Plots of land utilised for urban agriculture range from less than 0.2 acres in the city centre to 3 acres in periphery areas. It was observed that most women access land through a male relation-father, husband, sons and brothers. Some women own the land but these are rather small areas. Access to land is a key factor affecting women's emancipation.

Women are more likely to have access to customary or mailo land, which they occupy as squatters. (Focus Group, Ndeeba Division - Kampala, 2003, unpublished)

These women, as squatters, have usufruct rights for food production and can be evicted any time. Without this security of tenure they are less concerned with sustainable environmental concerns such as land degradation and development of the land.

Urban women farmers reportedly emphasised in interviews: *Fellow women occupy the wetlands/swampy areas because land is cheap and readily available- I think...the poor access marginal lands, people with small means resort to the informal areas for mainly agriculture and then*

settlements develop in these areas overtime. (Married women in Kigobe-Rubaga Division-Kampala, 2003)

Urban crop production has been "feminised", as the men move out to other informal sectors like petty trading. It is common to find women as farmers and a few migrant men as hired labourers on small plots, scattered over the city and owned by women. Women could access land much easier than the young men due to cultural considerations like pity for AIDS/war disasters' implications and trust from landlords, and friendly networking. Women tend to concentrate their agricultural activities around the homes or seek out garbage areas or undeveloped land, to farm close to each other. They access land through various means such as squatting, borrowing, and searching for free unused pieces of land in the neighbourhood, which they clear for cultivation. Land inheritance, purchase and receiving land as gifts from close kin relations were the other forms of how women access land.

TENURE PATTERNS

In Kampala, about 60% of the land is held under mailo-land tenure system (see UAM no. 11), while the remaining 40% is under freehold and customary tenure. One acquires land through purchase, which requires huge financial resources. Poor women do not own land but many have access to plots on mailo-land or public land. Most women access land for urban farming through their spouses, older women own patches through arrangements of borrowing while middle aged and younger women rent, squat or purchase user rights. All a result of marriage, age, income, social relations and distance.

Access is a key factor determining the practice of urban agriculture in Kampala city. Most women are landless, and the majority of women interviewed that use land in Kampala, hold no control over it as they are squatters or borrow the land. Again others have access to land, but no right in decision-making on how to utilise the land. The few women who own land through inheritance, cannot sell it, because

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the land belongs to the family and selling requires written documents. Marital status greatly determines ownership and access to land. The level of income and amount of savings determine access to land. Another issue that affects the access and ownership of women is the limited education.

A married woman would use the land next to the house for farming but the husband determines which type of crops to grow and how to utilise the output. One woman said: *I grow sugarcane and vegetables for sale, but my husband has restricted me to which types of crops to grow. He does not want sugarcane or banana trees* (Interview with middle aged married woman, Ggaba Water Zone-Kampala).

The Land Act of 1998 (section 28) caters for women in respect to land ownership, however enforcement is difficult as it is not locally interpreted. It is apparent that the ordinary women do not understand the laws. These have not been translated into the indigenous languages to facilitate the women fight for policy change and improvement of the law.

FARMER INITIATIVES

Women continue to find means of survival strategies through farming. Non-government organisations fighting for the rights of women to land are mushrooming (like the Uganda Land Alliance and UWONET). Women have formed associations to improve their involvement in urban agriculture and welfare in general. For instance, Ggaba Women's Development Association is a group of women led by a local council leader (also a woman) who meet on a monthly basis and have neighbourhood support networks. They collect membership fees and access loans and use the rotating fund to buy agricultural inputs. They meet their household needs. Urban women create social networks to ameliorate the effects of urban poverty and in this way can become agents of change (Ssewakiryanga, 2002).

Women borrow land from other persons, for instance from some rich single women (like those from the Ganda royalty who inherited land from their fathers) and may return part of the harvest to the owner. Other women work as hired labourers and through this way they access land and grow food crops for themselves and their families. Another strategy is that women encroach on wetlands. They hire male migrant

labourers to clear the wetland for growing yams and sugarcane.

Women have been economically empowered and increased their decision making level at the household. The women have also saved money and gained access and ownership to land. Some are able to pay school fees for their children, yet this has been an outstanding male role. Those

Women continue to find means of survival strategies through farming.

belonging to the farming groups have gained access to new farmer technologies to ensure food security for the families.

CONSTRAINTS

There are various types of conflicts and tensions encountered by urban farmers. These range from land boundaries to evictions by environmental NGOs (e.g., NEMA), city council authorities and landowners. Poor policies and laws deterring women from gaining access to land. However, co-spouse ownership is high on the parliamentary debate agenda. Women also lack access to new technologies and information on agriculture e.g., improved machinery, fertilizers and seeds, and the predominant male extension workers face cultural inhibitions in approaching female farmers. Finally, reproductive and domestic roles such as child-care interfere with the female labour and time contribution.

RECOMMENDATIONS

Farmer participatory diagnostic research should be carried out and include urban women to identify gender needs and problems specific to kampala city dwellers. This is to ensure that gender disaggregated data is generated through research, and utilised by the government and city administrative authorities to promote gendered planning and development. Gender responsive development planning is a prerequisite as it identifies the inequalities existing between men and women. Land laws and, property rights need to be revised in favour of women as majority farmers. Already gender sensitisation in relation to improving the justice system is funded by DANIDA, a Danish donor organ. The agricultural policies should be

decentralised and attention be paid to female headed households and farms which are increasingly involved in the urban cash economy

Empower women with income generating skills through trainings as part of capacity building so that they can make decisions in the household and on farming methods if they have access to their own resources. Women farmers in the city must be realised and allowed to participate in on-farm and adaptive research/demonstrations at district farm institutes that teach new crop technologies.

Technologies must be gender sensitive to enable women to operate them. For example, light hand hoes requiring less energy designed specifically for women while heavy ones are for the men.

Women need access to land and so do the marginalised migrant young men who practise urban agriculture. Policy support is necessary to redistribute the land.



Other women work as hired labourers

NOTE

Urban farming started in kampala as a result of socio-economic and cultural features as studied by Dan Maxwell and Samuel Zziwa in 1992, later by Gertrude Atukunda, Juliet Kiguli and Augustus Nuwagaba in 2001 who targeted the urban poor. Two types of people farm, Traditional landlords and migrants to the city in search of employment. Almost 50% land in Kampala is under urban farming.

REFERENCES

- Kiguli Juliet, 1995, Report on Strengthening capabilities of women for effective participation in national policy making for development management in Africa with emphasis on the agricultural sector, Uganda, UN/IDEP/Economic Commission for Africa, Dakar-Senegal
- Ssewakiryanga Richard, 2002, The Role of Women Social Support Networks in Coping with Urban Poverty: case study of Kisenyi and Kifumbira slums in Kampala city, Working Paper No.16, Kampala: NURRU publications.
- Uganda Bureau of Statistics (UBOS), 2002, Provisional Census Results, Kampala: UBOS.

Urban and Periurban Agriculture in Namibia

In Namibia, urbanisation has attained explosive rates since independence in 1990 caused by rapid migration of rural people to the urban areas in search of employment. As the driest country in Africa, Namibia's agricultural base is weak. Most vegetables and fruits sold in urban centres of Namibia are imported from South Africa. Despite this, intensive urban farming activities take place both on a commercial and a micro scale in backyards, open spaces and along river courses.

There is very little information available on this type of farming in Namibia. A study was therefore conducted to collect, synthesise and analyse all available information in two municipalities in Namibia, namely Windhoek and Oshakati (1). The study reported on here consisted of a desk study and a field study (see Dima and Ogunmokun, 2001 and Dima *et al.* 2002) between April and May 2001. A total of 244 respondents were interviewed (101 in Windhoek and 143 in Oshakati). In Windhoek the sample was selected from seven northern and western informal settlements, while in Oshakati the sample was selected from six areas across the whole town. It should be emphasised that the survey concentrated in the areas of informal settlements in Windhoek whilst it had a more balanced coverage in Oshakati.

URBAN AGRICULTURE IN NAMIBIA

Lau and Reiner (1993) reported that in good rainy seasons commercial crop production and marketing by smallholder farmers existed in urban/periurban areas of Namibia long before the colonial era. By 1931, local vegetable production constituted almost 42% of Windhoek's fresh produce market's annual turnover. However, the South African officials cut off research input and other official support. Furthermore, events related to the planned incorporation of Namibia as a fifth province of the Republic of South Africa resulted in policy shifts around 1968/70 which seriously stifled vegetable production in the urban and periurban

areas. In 1973, the Director of Agriculture for the South West Africa region stated "Namibia was approximately 90% dependent on South Africa as regards vegetables" (Lau and Reiner, 1993).

Immediately after independence, the new government gave little priority to horticulture production, preferring to concentrate on livestock and dryland farming. However, the continued rate of urbanisation and lack of income-generating opportunities for recent immigrants to urban areas have resulted in a change in the way government sees horticulture. Moreover, Namibia still depends heavily on South Africa for 80-90% of its total consumption of fruits and vegetables (MAWRD, 1996). So, with the objective of improving the eating habits of the local population and of reducing imports from South Africa, the Ministry of Agriculture, Water and Rural Development (MAWRD) through the Namibian Horticultural Development Initiative is supporting several initiatives to improve vegetable production. However, there is still no clear policy on urban and periurban agriculture.

MIGRATION, LAND OWNERSHIP AND CONTROL

The results of the survey show that two-thirds of the respondents are young people in the age range of 21-40 (66.3%), the majority of whom (58%) are single, 23.4% married and 13.5% cohabiting. The figures confirm the migratory patterns in the country. Most of the respondents in Windhoek (82%) have moved recently to their plots. This confirms the high migratory rate into Windhoek in the last six years. For both Windhoek and Oshakati combined, 48% of the respondents owned their houses, while 52% were tenants. More respondents in Windhoek (72%) owned their houses than in

Oshakati (31%). In Windhoek 66% obtained their plots through the municipality and the remaining 34% through other means, while in Oshakati 51% acquired their plots through headmen and 47% through the municipality.

In Windhoek, the men (63%) have more control over the land than the women (17%), whereas in Oshakati there is more of a joint control of land by both men and women reflecting perhaps a more liberal male attitude in Oshakati than in Windhoek. Generally, there is joint ownership of land (20% and 64%), tools (35% and 51%) and produce (48% and 45%) in Windhoek and Oshakati respectively. However, in Windhoek the men are more in control of cash (39%) compared to the women (16%). Unfortunately no comparative figures were obtained for Oshakati.

INVOLVEMENT IN URBAN AGRICULTURE

In Windhoek, the main sources of income for the household heads are employment in private companies (48%), government employment (18%) and self-employment (17%). The majority (35%) of the respondents' spouses in Windhoek are not employed. Interestingly, 9% of the spouses get their income from farming (urban agriculture). In Oshakati, 35% of household heads are employed by government, 19% in private companies, 13% in farming (urban and periurban agriculture) and 8% are selfemployed. However, the highest category of source of income for women in Oshakati is farming (21%).

In Windhoek, 79% of all respondents in the informal settlements are involved in urban agriculture in one form or the other (72% crops only, 5% both crops and livestock and 2% livestock only). In Oshakati 70% are involved in urban agriculture (50% crops only, 13% both crops and livestock and 7% livestock only).

Women constitute the majority of urban farmers (Windhoek 54% and Oshakati 58%). The proportion of men farming is higher in Windhoek (31%) than in Oshakati (13%). A higher proportion of other household members are involved in farming in Oshakati (29%), than in Windhoek (15%). Most of the other farmers in Oshakati (22%) are school children who learned gardening in school. Over 80% of the respondents

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started their gardens on their own initiatives, without any outside influence. These respondents also had gardening experience from the rural areas before they moved to either Windhoek or Oshakati.

The main reason for urban farming is to provide food for family members (Table 1). The majority of respondents stated that they produce vegetables only during the summer to benefit from the summer rains (90% in Windhoek and 72% in Oshakati).

PRODUCTION

Water was reported to be a serious limiting factor to urban farming. Many farmers (91% in Windhoek and 57% in Oshakati) use tap water as the main supplementary source of water, probably due to the fixed water tariff irrespective of the level of consumption. But in the last two years, the two municipalities have adopted the use of pre-paid water metres in the informal settlement areas. Consequently, many farmers in Oshakati have stopped using tap water for growing vegetables. 77% of Windhoek respondents and 43% of Oshakati respondents perceive the use of grey water as bad for growing crops.

More people in Oshakati use fertilisers than in Windhoek (52% against 33%). The commonest form of fertiliser used by Windhoek respondents is digested manure from the Gammans Water Works. Its usage is an indication that the people do not have any health and cultural worries about using human faeces as fertiliser. The other sources of fertiliser are household wastes, fresh animal manure and inorganic fertilisers. In Oshakati, 23% of the producers use fresh animal manure followed by compost, household waste, inorganic manure and digested manure in that order. There is no gender differentiation in the use of fertilisers in both towns. However, more women than men use compost for fertilising their soil.

Urban and periurban producers grow a wide range of crops and fruit trees. The most common crop grown in both towns is green maize (88% of all urban farmers in Windhoek and 70% in Oshakati). This is surprising considering that maize requires a minimum of 500 mm of water, while the average annual rainfall for

Reasons for gardening

N =	Windhoek			Oshakati		
	Male % 28	Female% 50	Total% 78	Male % 18	Female% 72	Total% 90
Food	100	100	100	100	100	100
Extra Income	11	14	13	6	19	17
Employment	4	12	9	11	3	4
Hobby	18	4	9	44	31	33

Source: Survey data

Windhoek is 280 mm and about 400 mm for Oshakati. Despite this, most of the urban farmers prefer to cultivate maize and use irrigation to supplement the rain. The other common crops grown in both towns are beans (42%), tomatoes (41%), pumpkins (26%), watermelons (24%), sweet potatoes (23%) and peppers (17%). The main reason for producing crops is for household consumption in order to improve the household food security and nutrition situation. The remaining products are either given as gifts or sold for income. The major crop sold is maize, though tomato and pepper in Windhoek and fruits and sugar cane in Oshakati are also popular crops for sale. Most of those who sell do so in order to gain extra income. None of the respondents in Oshakati depend on urban farming as a means of employment. However, 6% of the male and 2% of the female respondents in Windhoek considered urban farming as employment.

Few urban producers are involved in keeping livestock (Windhoek 6% and Oshakati 24%). The types of livestock kept are chickens, goats and turkeys. Some local pigs and cows were noticed in Oshakati, but no one claimed ownership of these animals, possibly because the farmers are aware of the by-law prohibiting these animals in the municipal areas.

CONSTRAINTS TO URBAN AND PERIURBAN AGRICULTURE

Urban and periurban agriculture producers are faced with numerous problems. These include shortage of water, pests and theft of the produce. Another important problem facing urban farmers is the lack of information regarding vegetable production generally, but specifically on improving water use, identification of pests and diseases and how to combat them, and on effective marketing of their produce. This is partly because of the absence of extension services for the pro-

ducers. The expectation of the producers in Windhoek (67%) and in Oshakati (41%) is to expand the area cultivated under vegetables. The absence of a national policy on urban and periurban agriculture continues to be a serious obstacle.

RECOMMENDATIONS

Urban and periurban agriculture is practised by over 70% of the residents of Windhoek and Oshakati. Several governments in Southern and Eastern Africa, including Ethiopia, Malawi, Kenya, Tanzania, Uganda, Nigeria, Zaire and Zimbabwe, are creating agencies to manage urban agriculture.. The absence of a proper policy on urban and periurban agriculture in Namibia is a serious constraint to its intensification and development.

It is, therefore, recommended that the Ministry of Agriculture, Water and Rural Development in consultation with the municipalities and the Ministries of Environment and Tourism, and Regional and Local Government and Housing and other stakeholders evolve a policy on urban and periurban agriculture. Furthermore, it is recommended that the small growers be assisted to organise themselves into producer cooperatives so that they can break into the main market.

NOTES

1 The full report of the study is available on the RUAF web site.

REFERENCES

- Dima S. J. and Ogunmokin A. A. 2001. An overview of socio-economic and gender aspects of urban and periurban agriculture in the city of Windhoek. In Baudoin W. and Vink, N. (editors): Proceedings, Department of Agricultural Economics, University of Stellenbosch and Food and Agriculture Organization of the United Nations, Rome.
- Dima S. J., Ogunmokin A. A. and Nantanga. 2002. The status of urban and periurban agriculture, Windhoek and Oshakati, Namibia. http://ftp.fao.org/sd/sdww/nam_periurban_02.pdf
- Lau and Reiner 1993: 100 years of Agriculture in Namibia.
- MAWRD. 1996: Overview of Horticultural Production and Marketing in Namibia. April 1996.



Kanhaiya Sapkota

Most of the households are involved in farming

Gender Perspectives on Periurban Agriculture in Nepal

While rural agriculture in Nepal is predominantly subsistence oriented, agriculture in and around the urban areas is more market oriented. Although periurban agriculture has been practised for a long time in Nepal, there is no government policy in place to regulate it.

Manahara, the low-lying area of Bhaktapur district located in the Kathmandu Valley, is typical for this area. The land is intensively cultivated and suitable for all-seasonal crops, but it is mainly used for the production of horticulture crops. Because it is located near the major market centres, it is the main source of perishable vegetables for the people in the city of Kathmandu, and the farmers can easily access necessary inputs.

ACCESS TO LAND

Most of the land in the area is under cultivation. About 70% of the land is classified as *khet* (fertile irrigated land) followed by *bari* (rainfed land, about 11 percent) and *parti* (barren land, about 8 percent).

Traditionally, there were two major land tenure systems in Nepal: *Raikar* and *Kipat*. Under the *Raikar* system, land was considered to be the property of state, but it could be awarded to an individual upon payment of annual rent. With the land ownership certificate, land could easily be traded. Originally, it implied a direct relationship between the state and the cultivators and resulted in the creation of a number of secondary forms of land tenure systems (Regmi, 1977). Under the *Kipat* system, land was allocated to a community or special group (and could not be given to

individuals outside the community). A landowner under *Kipat* obtained the land by virtue of his or her membership of a particular ethnic group. After the revolution and subsequent land reforms of 1950, this community-based land tenure system was gradually merged with the state tenure system. The currently prevailing tenure types are *raikar* and *guthi*; but the government has initiated the process of converting all *guthi* lands to *raikar*, except certain types of *guthi* such as *raj guthi*.

Transfer of ownership from one generation to the other has resulted in land fragmentation. Because of this scattered nature of farm parcels, and the economically nonviable size of the plots, farmers are hindered from adopting productivity-enhancing technologies.

Land fragmentation has its roots in the traditional Hindu law of succession, whereby all the male offspring are entitled to the parental property, including land. This right of use would normally be passed from fathers to sons, and only unmarried daughters above the age of 35 would have the same right. A new amendment to the Land Act (in 2002) provided daughter-in-laws and unmarried daughters under the age of 35 the same right.

DECISION-MAKING

In the area under study, almost all of the land is under male control even though women are significantly involved in almost all aspects of agricultural production. Their share in decision-making is not commensurate with the amount and type of agricultural work they perform. Men generally control decision-making. Decisions regarding the type of crops to cultivate and tools to use, the purchase of inputs, and when to sow, fertilise, irrigate, weed and harvest mainly rest with the men. Women make

the decisions in the household and in that way have to some extent a role in decision-making. Basically they are involved in preparing food, cleaning the house, caring for the children and in other indoor activities.

Agricultural activities in the rural areas were found to be clearly gender based: ploughing, sowing, application of manure and fertiliser and marketing of products (if done) are performed by men, while the women's domain covers transplanting and storage of grains, weeding, harvesting, carrying heavy loads (on their heads), and winnowing. In periurban agriculture the situation is somewhat different. Although some tasks are performed predominantly by either men or women, there is no gender taboo or restriction on any kind of work. Men and women, and sometimes even children, are equally allowed to take part in most of the activities related with this type of agriculture.

Men do have complete control in financial matters, like marketing, allocation of generated income, land selling and land rental transactions. But they always share their ideas with the women and make decisions jointly. Crop choice is dependent on a number of environmental and economic parameters, not all of which are under the farmer's control, but the amount and type of family labour available influences crop choice.

FARMING ACTIVITIES

In the area under study, a clear division in gender responsibilities in periurban agricultural activities was found, which has only just begun to change due to urbanisation. Land preparation (hoeing), which is carried out almost entirely manually, is extremely strenuous and about 95% of those doing the work are men. It is also the task that involves the

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most paid labour. But during the harvest, more than 60% of the work is performed by women. Manure/compost transportation to the field and levelling/smoothing of land are basically the women's tasks, but there are no restrictions against the participation of men. This varies per crop variety and the availability of labour. Basically, there are no gender restrictions regarding the preparation of land for vegetable cultivation. Nevertheless, because periurban agriculture in Nepal is not yet highly commercialised, gender relations have not changed very much.

Weeding is an extremely labour-intensive procedure and it is not unusual to see entire families – men, women and children – weeding together. Hired labour is almost never used for this activity. In practice, there is a gender-based knowledge of seeds and seed management, but verbally both men and women express their knowledge of storage, conservation and selection methods of seeds. Women have the additional burden of household or domestic activities, but they nevertheless contribute their spare time to help their male partners in the field. They are involved in all aspects of farming activities.

LABOUR

Most of the households are involved in farming, which is their main source of income. Some people have started to combine agriculture with other jobs. The change from being only a peasant to combining urban labour and agricultural activities is becoming more common. In the past women spent their time on agricultural activities together with the household activities. Although not yet very commercial, periurban agriculture is market oriented, and as a result it is changing the economic and social status and role of the women.

Women farmers spend their mornings working in the household and in the afternoon they perform farm activities with other men farmers. Most of the farmers walk to their fields, which does not take more than 30 minutes (back and forth). Their parcels of agricultural land are near the residential area, which allows them to keep a close eye on the land. They spend most of their time on farm work, including land preparation, harvesting and processing the products.

Gender Division in Periurban Farming Activities

Nature of work	Gender distribution		
	Male	Female	Both (Male+Female)
Collection of raw materials for composting			✓
Manure/compost preparation			✓
Manure/compost transportation to the field		✓	
Chemical fertiliser application	✓		
Manure/compost application			✓
Land ploughing	✓		
Levelling/smoothing of land		✓	
Sowing of seed			✓
Weeding			✓
Irrigation			✓
Pesticide spreading	✓		
Harvesting			✓
Cleaning and processing the vegetable products for sale			✓
Weighing of the vegetable products for sale	✓		
Transportation of products to the market	✓		
Sale of products at the market	✓		
Financial management relating to agriculture	✓		

Source: Field Survey, 2002.

They also expect their children to help during their leisure time with certain types of farm work (the children bring *Khaja* (a small lunch) to the farmers from the house, help to apply compost or manure on the fields, etc.)

Most of the local farmers are middle class. The system of exchanging labour, as practised in the rural areas of Nepal, is gradually disappearing. Labour relations are also changing due to urbanisation and there is little payment in kind, since vegetables rather than grain are cultivated in the study area. On the other hand, the study area is small and not completely commercialised in nature, so there is little land consolidation. Most of the farmers have small parcel of land and seldom have to hire in labour for agricultural activities, except for land preparation.

Labour opportunities are available throughout the season in the study area. Seasonal women labourers come from different parts of the country. Some of them carry sand from the nearby river or are involved in land preparation and management. Men are often involved in carrying chicken manure to the fields. According to the local farmers, seasonal hired labourers are relatively cheaper than local hired labourers and hard working, and in addition (according to both the local farmers and the labourers) they share their local knowledge of

agriculture practices. There is no real division of labour here, although men generally do most of the heavy work (carrying fertilisers/chicken manure, etc.) and the women perform the tasks that require more dexterity (weeding, harvesting, processing, etc.). And these women remain responsible for household work.

RECOMMENDATIONS

There is no strict division of tasks in periurban agriculture in Nepal. Men and women participate equally in these activities. On the other hand, there is a growing improvement in the farmers' economic status because of the nearby urban markets and the role of the cash economy. Periurban agriculture in Nepal is not yet fully cash oriented, which is why gender relations have not changed very much. But women have started to work outside the farm and it is expected that with increasing commercialisation, the women's labour will be increasingly replaced by outside labour.

REFERENCES

- Regmi, M.C. 1977. Land Ownership in Nepal. Adroid Publishers, Delhi.
- Sapkota, K. 2003. Continuity and Change: Knowledge and Practice of Peri/Urban Agriculture. A case of Manahara Low/Lying Area, Madhyapur Thimi Municipality, Bhaktapur District, Nepal. MPhil Thesis. Department of Geography, University of Bergen, Norway.

Women Fishers in Periurban Kolkata

East Kolkata Wetland has been recognised as a highly productive, remunerative and employment-generating eco-system. The area acts as a catalytic agent to change the city waste into protein-rich fish and is also a source of major supplies of vegetable, fruit and horticultural products.

Bengal women actively participate in a number of income-generating activities for their families. The project reported on here was undertaken to develop an understanding of trends in fishery development, their implications for the periurban fishing community of Kolkata and the role of women. The study was done in three different periurban systems: in Sardarpara, a tribal village; in Parganas, Udayrampur, a cosmopolitan village; and in Mudiali, which is a government-controlled cooperative society. The survey was undertaken jointly with medical camps, with the help of NGOs. Fisherwomen and young girls were interviewed and group discussions were held highlighting many topics like their professional occupation, creative activities, compulsory activities, financial security, health care, education, housing, child rearing, transport, etc.

FINDINGS

The people of these periurban villages live a short distance from the metropolitan city but are deprived of basic needs and amenities. Average family size is 6–7 members, including 3–4 children per family. In every second house there is a woman above 45 years of age, but the aged members of the family are not being looked after properly. The mortality and the birth rates are high. Most of the women are suffering from

various diseases and need basic medical treatment, more nutritious diets, etc. Many men are addicted to alcohol and need counselling.

In *Sardarpara village* there are 35 fisher families belonging to one tribal group. The families in this village are very united, and there is low participation of women in the money-earning activities. This is attributed to the low rate of literacy among the women, the daily and seasonal workload in the household, and cultural and social taboos. The women do not allow men to do household chores, as this is not part of their tradition. Women undertake typical activities like gardening, collecting fuel wood (from distant places), and raising and grazing cattle, pigs, and chicken. In spite of their tremendous workload fisherwomen get scanty reward and recognition. A low percentage of girls get an opportunity to go to school. Fisherwomen receive little encouragement or guidance from governmental authorities.

In *Udayrampur village* women not only perform similar activities as those mentioned above in their roles as wives and mothers, which engage them from dawn to dusk, but also undertake income generating activities that include cleaning tanks, rearing fish, collecting fish feed, and raising rabbits. The reasons for this are that these women have the advantages of both village and city life; they have a higher literacy rate, and are economically more independent and less subjected to social taboos. Both men and women stressed that fish culture practices could be further improved (with respect to fish diseases, the lack of indigenous technical knowledge and lack of investment), but that their livelihood situation has improved considerably (access to good protein-rich food, improved accommodation, possibility for their children to go to school) through increased income from ornamental fish culture and establishment of a cooperative society that also includes female members.

In Mudiali Nature Park the inhabitants cultivate edible fish and are involved in eco-tourism in the very heart of the city. This has improved the economy for the

local people. Women participate in the local economy as daily labourers (in tailoring or as servants) and animal (deer) husbandry. Health complaints, such as backaches, eyesight problems and pollution, are different from those in the villages described above.

COMPARISON

The socio-economic status including education level of the women of Mudiali and Sardarpara is below that of the women of Udayrampur village. In Mudiali and Udayrampur, the amount of time spent on household activities is less (like collecting fuelwood) and earnings of the women are higher than in

closer to the city the women are better off

Sardarpara. In these villages, people have also (improved) access to doctors, the market, and information. Food intake is relatively poor in Sardarpara (rice and dal, but rarely fish) while in Udayrampur fish is present in the daily diet. Women are responsible for basic housekeeping in all three locations. One common problem shared by the women of the three villages is the high rate of alcohol abuse of their husbands. Other common problems are a lack of 24-hour electricity, poor housing and low income.

A main conclusion of this study is that the periurban areas of Kolkata need to be attended to by the government, especially with respect to education and health care. There are differences between urban and periurban fisherwomen in income, literacy, health care and transport. Closer to the city the women are better off, but they face other problems. Awareness-raising activities are necessary in the following areas: drug and alcohol abuse, health care, legal rights for the underprivileged classes of women, and self-employment. The Government of West Bengal has supported women cooperative societies and women fisher groups and training programmes in fish processing (fish pickles, papads, etc.). Training in micro-enterprise development for entrepreneurship is another priority.

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Urban Agriculture, Household Organisation and Female Autonomy: a case study in southern Mexico City

San Luis Tlaxiataltemalco is a town of the Xochimilco Delegation in the southern zone of Mexico City, which has a population of 12,553. Agricultural micro-enterprises have developed around production in greenhouses. This study (1) found that the establishment of such enterprises has proved to be a valid strategy for the farming families to generate income, but it also serves to improve the decision-making power and freedom of movement of women.



Alejandro Chiriboga

Farming in Quito, Ecuador

Agriculture plays a significant role in the lives of people in San Luis. Since the end of the 1970s agricultural production has taken place mainly under greenhouses, which make use of the old agricultural and landholding practices. Greenhouse production of decorative plants and flowers still largely has a household character, although day-labourers are hired while family members are engaged in non-agricultural salaried and non-salaried activities.

DIVISION OF LABOUR

On average 67% of the households involved in this activity employ an average of three family members. The gender division of labour is such that the men concern themselves with the productive activities, especially the physical labour. The women dominate the commercial arena. A few activities are performed together with the men. Besides these tasks, for which the women do not receive remuneration, women are in charge of all tasks related to household maintenance, thereby doubling their responsibilities. The production under greenhouses is a profitable activity for families as a source of income and for subsistence.

SOURCES OF INCOME AND PARTICIPATION OF WOMEN

Of the 185 households interviewed, 45% see the greenhouse production as their primary source of income, followed by paid work (35%) and non-paid activities (20%) outside agriculture. Despite higher income and education levels among those households that earn an income outside agriculture, the greenhouse farms occupy a significant proportion of the active population

of the town, in part because of the employment of family labour.

The production of greenhouse plants (as with other small businesses and informal commerce) depends on the participation of women household members. Both the families involved in greenhouse production and those working in the informal sector could be characterised as predominantly extended, while the nuclear family is predominant among the households employed in the formal non-agricultural sector. The extended family arrangement favours the formation of agricultural and non-agricultural micro-enterprises and the participation of women family members, particularly those who are older and have less schooling. The productive units and points of sale are close to the home, which makes it easier for the women to combine these activities with their household chores. But since the women working in greenhouses do not receive an income, the greenhouse business facilitates female participation but does not necessarily improve income-generating possibilities for women.

ECONOMIC AND DOMESTIC ACTIVITY

While more women can be found in agricultural and other informal activities, men dominate the paid jobs. The greatest income disparities are found among the husbands and wives of the greenhouse growers; nearly none of the women receive any income while a third of the men earn six or more times a minimum salary, and nearly half of the men earn from four to six times a minimum salary. The greenhouse production is

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Governador Valadares, Brasil

therefore profitable for the family, yet these enterprises do not allow women access to their income. What little they earn is invested completely in the household and not in themselves.

Independent of any economic or productive activities, nearly all women spend over 60 hours per week on various domestic chores. Women greenhouse growers and other women who do not

Low payment goes along with high workload but also higher autonomy of these women

receive a salary. In the case of the male heads of household, in general they do not spend much time doing domestic work, although those involved in non-agricultural, non-salaried work are somewhat different, as a fourth of them dedicate 35 to 59 hours weekly to household endeavours.

In the households of San Luis, there is a heavy work burden regardless of the kind of activity one is engaged in. Women have double and triple workdays. Nearly half of the women of the town are engaged in an economic activity, yet this does not exclude them from long hours of domestic work and in the case of those who work in greenhouses, generally this does not mean that they will earn any income. The agricultural micro-enterprises are a viable economic option for the family but they do not contribute to gender equity, as they increase the women's workload but not their personal economic status.

FEMALE AUTONOMY

Two dimensions of female autonomy were studied in San Luis: decision making and freedom of movement of female family members (especially the wives). While it is true that the women

involved in greenhouse production work more but receive less income than wage-earning women, what is interesting is that they enjoy greater decision making ability and freedom of movement compared to these women and especially compared to those who are non-economically active. This is true despite the fact that their level of education is slightly lower than those earning an income outside the household. In this sense, agricultural micro-enterprises have the capacity to employ older women and those with less schooling, which has a positive effect on the women's autonomy, although their workload increases and their incomes do not. This positive effect that economic activity has on the women's autonomy is in stark contrast to the lower access to income that greenhouse household women have compared to wage-earning women. Furthermore, it shows that a higher level of education is not necessarily a determinant for improved decision-making capacity and freedom of movement for women.

In the context of urban agriculture, notably greenhouse production, participation in economic activity and older age are variables that are positively correlated with the potential for women to make decisions and move about freely. Among those who work outside the home, these indicators of autonomy are slightly higher among non-salaried, non-agricultural workers and greenhouse growers. Women members of households who work in greenhouses and non-agricultural, non-salaried women are, on average, older than salaried women, and with age generally comes more decision-making capacity and mobility.

Older age is a factor, which carries much weight in terms of female autonomy in the town of San Luis, while educational level does not seem to have an effect in this sense.

One important element that may contribute more to the greater mobility of women who work in greenhouses and those who work in non-salaried employment outside of agriculture than age and schooling is the extended character of the family. Given the fact that in these types of homes there are other women who can care for the children, there are more possibilities for

the wives to leave the house and less need for them to negotiate or ask permission for this privilege. The greater mobility of these two groups could also have to do with the type of commercial activities that they undertake. Even when they do not receive income, they handle money, leave the house, buy and sell and are in constant contact with people outside of their homes. Nevertheless, it still may be that this situation does not afford them the autonomy that they would like, insofar as in some cases the extended family system may diminish their decision-making abilities due to the presence of older women or other male family members.

Other determining factors that seem to affect female autonomy in this town are the socio-cultural dimension, given the economic predominance of men over women in agricultural and other activities, and the structure and forms of family organisation. In this sense, the social norms and values that emphasise subordination seem to make it difficult for women engaged in family agro-businesses to economically support themselves through the resources that they generate, which tends to counteract the effects of their access to decision-making power.

FINAL COMMENTS

The present study sought to approach the issue of how agricultural micro-enterprises can generate alternatives to salaried work and can impact women's economic participation and autonomy in these household productive units, from within the context of urban agriculture. In some ways, the agricultural micro-enterprise represents a survival alternative given the scarcity of well-paid urban employment and facilitates for female economic activity, however the women who work in greenhouses do so without pay. In spite of this lack of autonomous income, these low-educated and older women seem to enjoy greater autonomy than salaried women and above all housewives, possibly due to their engagement in commercial tasks.

NOTE

This article is a synthesis of a doctoral thesis written in pursuit of the title of Doctor of Population Studies from the Colegio de Mexico.

MIND THE GAP, MAINSTREAMING GENDER AND PARTICIPATION IN DEVELOPMENT.

Nazneen Kanji. 2003. IIED, IDS. UK. ISBN 1 84369 466 2
This publication, no. 4 in the series on institutionalising participation, highlights lessons from gender mainstreaming work for those who seek to institutionalise participation. After a discussion on (changes over time of) conceptual frameworks, strategies, and the suggestion that there has been a shift from participation to governance (along with the shift from women in development to gender in development), the tensions between gender mainstreaming and participatory development are explored. Suggestions are made to overcome this tension.

QUESTIONS OF DIFFERENCE: PRA, GENDER AND ENVIRONMENT, A TRAINING VIDEO.

Irene Guijt. IIED. ISBN: in English: 1 904035 83 3 (also available in French and Portuguese).
This two-hour video with provoking images can be used to stimulate discussion and to lead into class-based exercises. A summary is given of the key elements for using PRA to understand gender and environment. The video is structured in thematic segments of 2-14 minutes. In that way users can select those of interest or for specific training. The three case studies show workshop participants using PRA methods to explore gender and the environment.

WORLD URBANIZATION PROSPECTS: THE 2003 REVISION

United Nations, Department of Economic and Social Affairs' Population Division March 2004.
Available online as PDF file at:
<http://www.un.org/esa/population/publications/wup2003/2003WUPHighlights.pdf>
This revised issue presents estimates and projections of the total, urban and rural populations of the world (21 regions, 5 major areas and 228 countries). It also provides estimates and projections of the population of urban agglomerations with 750,000 inhabitants or more in 2000. An interesting fact is that almost all population growth expected for the world in the next thirty years will be concentrated in the urban areas. The smaller urban settlements (with fewer than 500,000 residents) of the less developed regions will be absorbing most of this growth. Thus it is expected that the majority of the urban dwellers will be residing in the smaller cities.

THE IMPORTANCE OF WOMEN'S STATUS FOR CHILD NUTRITION IN DEVELOPING COUNTRIES.

Lisa C. Smith, Usha Ramakrishnan, Aida Ndiaye, Lawrence Haddad, and Reynaldo Martorell. IFPRI Research Report 131
Until recently the role of women's social status in determining their children's nutritional health went largely unnoticed. This report uses data from 36 countries in three developing regions to establish empirically that women's status, defined as women's power relative to men's, is an important determinant of children's

nutritional status. It finds that the pathways through which status influences child nutrition and the strength of that influence differ considerably from one region to another. This research proves unequivocally that where women's status is low, policies to eradicate gender discrimination not only benefit women but also their children.
<http://www.ifpri.org/pubs/abstract/abstr131.htm>

WASTEWATER USE IN IRRIGATED AGRICULTURE, CONFRONTING THE LIVELIHOOD AND ENVIRONMENTAL REALITIES.

Edited by Christopher A. Scott, Naser I. Faruqui, and Liqa Raschid-Sally. CABI/IWMI/IDRC 2004. ISBN 0 85199 823 2. 240 pp. CABI Publishing [<http://www.cabi-publishing.org/>]
(In Press: available May 2004)
The use of urban wastewater in agriculture is a centuries-old practice that is receiving renewed attention with the increasing scarcity of fresh water resources in many arid and semi-arid regions of the world. Driven by rapid urbanisation and growing wastewater volumes, wastewater is widely used as a low-cost alternative to conventional irrigation water: it supports livelihoods and generates considerable value in urban and peri-urban agriculture despite the associated health and environmental risks. Though pervasive, this practice is largely unregulated in low-income countries, and the costs and benefits are poorly understood. This book critically reviews experience worldwide in the use of wastewater for agriculture through a series of peer-reviewed papers defining and elaborating on the issues at the centre of the debate around wastewater use in agriculture. Toward better understanding the global extent of wastewater use in agriculture, a methodology is developed and applied for selected countries to quantify the magnitude of wastewater use in agriculture. The editors conclude with a prognosis of future challenges and realities of wastewater use in agriculture.

PUBLICATIONS OF THE SUSPER PROJECT

The RUAF Library received activity reports of the CIRAD and AVRDC project "Sustainable Development of Periurban Agriculture in South East Asia". The topics of these reports are (for full reference please check the RUAF web site or the SUSPER web site:

- Off-season tomato and year-round vegetable production under shelter in Hanoi.
- Protected year-round and safe vegetable production
- Aquaculture Systems in Ho Chi Min City
- Strategies of stakeholders in commodity chain supplying to Hanoi Market
- Spatial and institutional organisation of vegetable markets in Hanoi
- Negotiation tools for vegetable commodity chain in Vientiane.

WOMEN AND ENVIRONMENTS (WE) MAGAZINE

Since its founding, at the first UN-Habitat Conference, in 1976, Women & Environments International Magazine has grown into a well-established magazine with over 2000 readers worldwide. It is one of the longest surviving feminist magazines in Canada. Its writers, readers, and editors are people who inspire and create environments more responsive to women's needs through action, education, and research. Issue 44/45 dealt with the subject of Urban Agriculture, while the latest issue of May 2004, focused on Cities for Women.

www.thefoodproject.org/BLAST_brochure.pdf

BLAST is a global network of youth and adults working together to build sustainable food systems. BLAST (Building Local Agricultural Systems Today) is The Food Project's national initiative to train the next generation of youth and adults to work together for sustainable food systems. The Food Project is based in Boston, USA. More on The Food Project: <http://www.thefoodproject.org/>

www.lpp.uk.com

DFID's Livestock Production Programme (LPP) has announced the launch of its new web site. It has become even more user-friendly, and the emphasis of the site is now on providing users with information on the outputs of the programme. The site is divided into sections. Next to an overview of the programme, and a 'Network Forum', a 'Virtual Library' is available, which lists all the research outputs generated by LPP-funded projects in a range of media.

www.greenscom.com

The greenscom partners critically look at the governance of the balance between urban open spaces and built up areas. This balance should contribute to the quality of urban life and the conditions for urban nature. The site should improve communication and participation in decision making. It also provides a link to the urban green toolkit, which contains among other things an introduction and a guide to the toolkit and information on theory, practice, lessons learned, growth and planning tools.

www.generoyambiente.org

This site (in Spanish only) on gender and the environment aims at improving access to research experiences and the facilitation of exchange of experiences that promote the incorporation of gender and equality in environmental management.

www.fao.org/gender

This is a Gender and Food Security site of the Food and Agriculture Organization of the United Nations. It contains articles on themes such as agriculture, division of labour, forestry, environment, nutrition, population, fisheries, rural economics and education, extension and communication. Furthermore, a thorough set of statistics and other information on projects and programmes is available.

www.un-instraw.org/en/research/gaemsd/index.html

This site also deals with gender aspects of environmental management and sustainable development. The web site was set up on the occasion of the Johannesburg Summit 2002 and as part of INSTRAW's networking and information activities. Its web pages feature valuable resources on gender aspects of environment and sustainable development. There is an open discussion forum on the topic of "Gender Aspects of Environmental Management and Sustainable Development: Emerging Issues and Challenges", a searchable database of relevant sources of knowledge and information, with abstracts and links to on-line publications, and links to relevant sites and organisations.

www.aviva.org/

Aviva is a FREE 'Webzine' (internet magazine) run by an international group of feminists based in London. The web site provides a free listing service for women everywhere who would like to come in contact with each other, and it acts as web site 'host' to Women's Groups and Services globally. The web site is funded by advertising and sponsorship.

www.utoronto.ca/iwsgs/we.mag/

WE (Women & Environments) International Magazine is a Canadian journal which examines women's multiple relations to their environments - natural, physical and social - from feminist perspectives. Since 1976 it has provided a forum for academic research and theory, professional practice and community experience. The magazine is associated with the Institute for Women's Studies and Gender Studies, New College, University of Toronto. Editorial board members view the collective editing and production of WE International Magazine as a contribution to feminist social change. Featured articles are available in full-text in HTML format. The latest issue of WE Magazine featured women in cities.

www.carbon.org/

The Institute for Simplified Hydroponics is a non-profit corporation and international non-government organisation (NGO) founded in 1995 that supports, among others objectives, efforts to introduce simplified hydroponics to reduce hunger and poverty. The institute supports community efforts and helps research institutions and others introduce successful gardens in 14 countries (mostly UN-supported projects). On www.HydroponicTech.com you will find many references to books and other projects.

www.reddehuertas.com.ar

The Network on Gardens in Argentina "Red de Huertas" (in Spanish) produces an electronic bulletin "INFOHUERTAS" aimed at linking community development and organic gardening. It is a meeting place of many different gardeners, and it is linked to the national programme: ProHuerta.

www.eat-the-view.org.uk

The 'Eat the View' initiative aims to help consumers understand the connections between the food they buy and the countryside they value, and to work with others to develop projects to achieve this aim and to improve the market for regional produce. It contributes to these goals through its own actions and in partnership with many other organisations. Local Food Works is a partnership project between the Soil Association and the Countryside Agency. The aim of the project is to aid the development of local and regional food networks.

www.nwp.nl

This is the site of the Water Information Network (WIN). WIN provides information on water subjects and knowledge from third parties in a particular field. It has a vast database with news facts, project descriptions, events information and contact addresses.

DEVELOPMENT GATEWAY

The site <http://www.developmentgateway.org/> is run by the not-for-profit Development Gateway Foundation in collaboration with a variety of cooperating organizations. Since December 2003, this includes RUAF. ETC agreed with the Development Gateway to add short thematic information and links to events, websites and books to the thematic sections of Urban Development and Food Security. This submission of information is coordinated three times a year by the *UA-Magazine* Editor. Upon entering the development gateway you enter "urban" in the search engine on this site to view a wide range of materials amongst others on urban agriculture. You can also sign up for updates on new content, access a database containing many projects, or practitioners on urban development and food security, and post resources of your own.

WASTEWATER FACT SHEET IWMI

IWMI the RUAF Partner in India and Ghana jointly prepared a paper on the reuse of (untreated) wastewater in urban agriculture based on the results of the regional workshops on this subject organised last year in Ouagadougou and Hyderabad. The paper was presented and distributed during the World Water Forum in Kyoto, Japan. IWMI-Ghana further produced the Key Fact Sheet on Reuse of Wastewater in Urban Agriculture. These materials will soon be available on www.ruaf.org

INTEGRATION OF URBAN AGRICULTURE IN MUNICIPAL SUSTAINABLE DEVELOPMENT

IPES/UMP-LAC, in cooperation with CGIAR-Urban Harvest, organised a seminar for local authorities of the Southern and Eastern Cone of Lima (9 municipalities) on the role of urban agriculture as an engine for economic and social municipal development. The seminar facilitated the inclusion of urban agriculture in municipal policies and networking between these municipalities regarding urban agriculture. As a result of the event, the participating local authorities signed a Declaration of Local Authorities of Southern and Eastern Cone of Metropolitan Lima - Peru that expresses their political commitment to include urban agriculture in the municipal policies.

HAVANA DECLARATION ON FOOD SECURITY, NOVEMBER 2003

Representatives from 21 cities in Latin America signed this declaration on November 20, in Havana, Cuba, compromising them to work on the food security in their cities. Urban agriculture as such was not mentioned, but clearly those working in this area may feel politically supported by this statement. The municipal leaders met at the workshop "Feeding Latin American Cities", which was organised by FAO Regional Office for Latin America and INIFAT, and in the Cuban capital.

LIVESTOCK PRODUCTION

The Livestock Production Programme (LPP) of DFID is funding a research project: "Livestock and Urban Livelihoods: Developing appropriate extension dialogues

with the landless". This project is led by the University of Reading, UK. A scoping study was funded on urban livestock keeping in East Africa (Kampala, Kisumu, Nairobi, Dar es Salaam and Addis Ababa). A workshop concerning these findings was held in March 2003 at ILRI and as a result of that workshop, city focal points were organised. For more information on the projects and access to a virtual library visit the web site: <http://www.lpp.uk.com/>

FARMING SYSTEMS UPDATE

The Farming Systems Update of the International Farming Systems Association (IFSA) brings news on activities and events related to farming systems in the broadest sense, covering regional associations, international events, publications and web sites, training opportunities, etc. New subscribers can send a message addressed to mailserv@mailserv.fao.org - in the body of the message write Subscribe Farming-Systems-Update-L. You can write to the editors for copies of earlier Updates or other news about the Farming Systems Associations. john.dixon@fao.org

DELNET PROGRAMME SUPPORTING LOCAL DEVELOPMENT

The Delnet Programme of the International Training Centre of the International Labour Organization (ILO) of the United Nations combines remote training, information and networking and works with more than 1000 institutions in 53 countries. For more information at the Delnet International Training Centre of the ILO, in Turin Italy, see their web site <http://www.itcilo.it/delnet>

EVENTS

INTERNATIONAL COURSE, "DESIGN, ANALYSIS AND MANAGEMENT OF URBAN AGRICULTURE FOR RESILIENT COMMUNITIES" (WAGENINGEN, THE NETHERLANDS)

6-17 December 2004

ET-RUAF and the International Agricultural Centre are jointly organising this two-week international course on urban agriculture, which aims at people involved in policy formulation and action planning in the South and the North. The course addresses promises and drawbacks of urban agriculture, and discusses practical experiences, challenges and breakthroughs as brought forward by the participants. Throughout the course participants share their own experiences and design a plan of action for the solution of an actual urban agriculture related issue in their home city. More information:

http://www.iac.wur.nl/iac/index2.htm?courses/urbag_courses.htm

INTERNATIONAL SEMINAR "DEVELOPING SUSTAINABLE CITIES" (MEXICO CITY)

25-27 November 2004

Together with this seminar, the fourth meeting of the Assembly of the Latin American Network on Urban Agriculture will be held. More information can be obtained from Mr. Gabriela Arias gabaher@prodigy.net.mx

WATER, SANITATION AND HYGIENE FOR ALL - BUILDING COALITIONS FOR THE MILLENNIUM DEVELOPMENT GOALS (DAKAR, SENEGAL)

22-26 November 2004

The Water Supply and Sanitation Collaborative Council (WSSCC) is organising "Global WASH Forum 2004" in cooperation with the Ministry for the Environment and Sanitation of the Republic of Senegal. The aim is to learn more about how successful water, sanitation and hygiene programmes, sector reforms

and development partnerships are leading to the eradication of poverty. The forum also aims to strengthen regional and national partnership initiatives pursuing the goals of the World Summit on Sustainable Development. Visit the web address: <http://www.wsscc.org/dakar/> or contact the forum manager Darren Saywell at: wsscc@who.int Tel: + 41 22 917 8657, Fax: + 41 22 917 8084

AGRO-ENVIRON SYMPOSIUM 2004 "ROLE OF MULTI-PURPOSE AGRICULTURE IN SUSTAINING THE GLOBAL ENVIRONMENT" (UDINE, ITALY)

20-24 October 2004

The first Agro-Environ symposium was organised in Faisalabad, Pakistan, in 1998. This is the fourth in a series of workshops that aims to be a platform for idea sharing and networking between organisations involved in agro-environmental issues. In the theme of the forthcoming Agro-Environ symposium urban agriculture definitely has its place. More information: www.dpvta.uniud.it/~agroenv

THE 2004 GLOBAL ENVIRONMENTAL CHANGE INSTITUTE ON GLOBALIZATION AND FOOD SYSTEMS (NICOYA, COSTA RICA)

24 October – 6 November 2004

This workshop and science-policy forum is organised by the IHDP (International Human Dimensions Programme on Global Environmental Change) and IAI (Inter-American Institute for Global Change Research) at the Mesoamerican Institute of the National University of Costa Rica in Nicoya.

For further information. <http://www.ihdp.org>

INTERNATIONAL CONFERENCE "THE RURAL SYSTEM: A CHALLENGE FOR PLANNING BETWEEN PROTECTION, SUSTAINABILITY AND CHANGING MANAGEMENT" (MILAN, ITALY)

13-14 October 2004

This international conference with a focus on multi-functionality of agriculture will also tackle the issues at stake in the periurban areas. Three sessions will cover environmental functions, market issues and planning. The event is promoted by the Direction of Agriculture in Lombardy Region and the Polytechnic of Milan.

For more information: www.cedat.polimo.it/convegno

INTERNATIONAL WORKSHOP "URBAN AGRICULTURE, AGRO-TOURISM AND CITY REGION DEVELOPMENT" (BEIJING, CHINA)

8-12 October 2004

The conference aims to present and discuss the Chinese experiences with urban agriculture and mobilise technical support from international institutions, and thus to assist local governments in making development policy and promoting creative research in urban agriculture. Subjects to be addressed are theories and practices, suburban and rural agro-tourism, and urban-rural linkages. The workshop is organised by the Department of Urban and Rural Development, IGSNRR, Institute of Urban Agriculture, Beijing Agriculture College, and Beijing Geographical Association and is supported by RUAF. Contact Information: Dr. Cai Jianming, E-mail: caijianmingiog@263.net

AMERICAN COMMUNITY GARDENING ASSOCIATION CONFERENCE (TORONTO, CANADA)

1-3 October 2004.

The American Community Gardening Association (ACGA) is a non-profit organisation of professionals and volunteers who seek to promote community gardening and greening to improve the quality of life. This year's conference theme, "Gardens of Diversity, Growing Across Cultures" is especially significant for Toronto, known as garden city, and is hosted by a partnership of FoodShare Toronto, the Toronto Community Garden Network, and the City of Toronto. The conference also celebrates the 25th Anniversary of the American Community Gardening Association. Visit: <http://www.communitygarden.org/conf/index.html> or <http://www.foodshare.net/upcoming04.htm>

INTERNATIONAL COURSE ON LAND MANAGEMENT AND INFORMAL SETTLEMENT REGULARISATION (ROTTERDAM, THE NETHERLANDS)

October 2004

The course aims to address the global problems of slums and informal land developments. It is organised jointly by the Institute for Housing and Urban Development Studies-IHS, The Netherlands, and the Lincoln Institute of Land Policy, Cambridge, USA. This four-week course is addressed to professionals, senior executives of government and non-governmental organisations and researchers directly involved with housing and land policies. Deadline for applications is 31 July 2004 (the application form can be downloaded from www.ihs.nl, under education/application forms). A limited number of fellowships will be offered to applicants on a competitive basis according to professional experience, affinity with the theme and relevance of the course to his/her current work. For more information about the content of the course, please contact Mr. Claudio Acioly (c.acioly@ihs.nl) or Martim Smolka ([mmolka@lincolninst.edu](mailto:mamolka@lincolninst.edu)). For any questions regarding the application procedure, please contact admission@ihs.nl.

"INTERNATIONAL PANEL/NETWORKING ON CREDIT AND INVESTMENT FOR URBAN AGRICULTURE", AS PART OF THE SECOND WORLD URBAN FORUM, UN-HABITAT (BARCELONA, SPAIN)

13-17 September

An international panel is being organised by IDRC, IPES/Urban Management Programme (UMP-LAC/UN-Habitat) and RUAF to be held during the World Urban Forum. The aim is to share and disseminate information and experiences with regard to different innovative forms of financing of urban agriculture. Key presentations will combine viewpoints of international agencies (like IDRC, UMP, international banks) as well as local actors (local and national government representatives, credit cooperatives). The guiding theme of the WUF panel is the role of different actors in helping urban and periurban producers become more autonomous and sustainable. The objective is to challenge current development and support models and to move urban agriculture from a heavily public-subsidised model, through co-managed schemes, to co-ops and in the end to self-sustaining enterprises. For more information on the World Urban Forum: www.unhabitat.org; More on the Panel on Credit and Investment: Marielle Dubbeling, m.dubbeling@etcnl.nl

SPECIAL SESSION ON THE USE OF WASTEWATER IN IRRIGATED AGRICULTURE "THE WATER CHAIN APPROACH" (MOSCOW, RUSSIA)

9-10 September 2004

At the 55th Meeting of the International Commission on Irrigation and Drainage (ICID), a special session will be organised on the issue of wastewater use for agriculture. The session will address the thematic aspects: *use of domestic wastewater in agriculture, trade-offs in wastewater irrigation, treatment technologies, nutrient management, field- and farm water management, economics and water pricing, and Design approach*. The special session is co-organised by Wageningen University, IWMI, FAO, IWA, WHO and ICID. On the following day there will be an ICID Workshop titled *Management of Poor Quality Water for Irrigation: Institutional, Health & Environmental Aspects*. Open contributions for the workshop are welcome. Visit the ICID web site at: www.icid.org, or <http://www.dow.wau.nl/iwe/-ICID%20Moscow/040206-ICID-Special%20Session.pdf>. For information on the special session contact Dr Frans Huibers, E-mail: frans.huibers@wur.nl, and for information on the ICID Workshop contact Dr R. Ragab, E-mail: Rag@ceh.ac.uk

EXPERT CONSULTATION ON GENDER AND URBAN AGRICULTURE (LOCATION TO BE DETERMINED)

September 2004

This Expert Consultation, "Women Feeding Cities" will be organised by the RUAF partners in cooperation with CGIAR-Urban Harvest and with financial support of CTA. The aim will be to take the discussion of the last few years on Gender and Urban Agriculture, including in this magazine, a step forward. The focus will be on the formulation of guidelines; methodology development and refinement; the development of gender training; and developing partnerships with organisations active in gender issues and with networks of women's organisations. www.ruaf.org

REGIONAL DISSEMINATION WORKSHOP "ACCESS TO LAND FOR URBAN AGRICULTURE" PRESENTED BY THE URBAN POOR RESEARCH PROJECT (HARARE, ZIMBABWE)

26-27 July 2004

This regional dissemination workshop will be conducted to share results from the three city case studies of Dar es Salaam, Kampala and Harare. The workshop will synthesise the similarities and differences between the case study cities, identify issues for regional initiatives in terms of policy and practise and follow up. It is expected that policy makers and city council officials will attend the meeting. For more information contact The Regional Director, MDPTel. 263-4-774385, or E-mail gmatovu@mdpafrica.org.zw

CONGRESS ON AGROFORESTRY (ORLANDO, USA)

27 June - 2 July 2004

Agroforestry professionals world-wide, from academic institutions and government organisations, the private sector and voluntary groups, will gather for this 1st World Congress of Agroforestry in Orlando, Florida, USA. The main objective is to share knowledge and develop strategies for research, education and training in agroforestry. Visit the congress web site for further details: <http://conference.ifas.ufl.edu/wca>

URBANAG-2004 CONFERENCE (BRISBANE, QUEENSLAND, AUSTRALIA)

24-25 June 2004

This is a conference for professionals in urban agriculture disciplines and government policy planning focusing on urban agriculture opportunities for sub-tropical Brisbane in Australia. The two-day event is expected to be the first of a series of urban agriculture conferences organised every two years, to alternate every two years between Brisbane and Singapore.

Further information: Geoff@networx.info

EMERGING ISSUES ALONG URBAN/RURAL INTERFACES: LINKING SCIENCE AND SOCIETY (ATLANTA, GEORGIA, USA)

13-16 March 2005

Auburn University's Centre for Forest Sustainability, Forest Policy Centre, and Environmental Institute invite paper/abstract submissions for this upcoming conference. The event seeks to discuss emerging urban/rural interface issues. Support from the National Science Foundation, makes it possible to provide grants for 25-35 undergraduates and graduate student participants. The deadline for submission of abstracts is November 15, 2004. More detailed information, including electronic submission of abstracts, is available on the conference website: <http://www.sfw.s.auburn.edu/urbanruralinterfaces/>.

IUAES CONGRESS ON "MEGA-URBANIZATION, MULTI-ETHNIC SOCIETY, HUMAN RIGHTS AND DEVELOPMENT IN CALCUTTA, INDIA"

12-15 December 2004.

Soheila Shahshahani, a member of the Commission on Nomadic People and a member of the International Union of Anthropological and Ethnological Sciences (IUAES) Executive Committee, is organising a panel discussion on "Pastoral Nomads in Urban Areas". She seeks abstracts from those wishing to join a panel at the congress. Abstracts, of no more than 200-250 words, should be submitted by 15 June 2004 to Soheila Shahshahani, Shahid Beheshti University, Executive Secretary of the Commission on Urban Anthropology, BP 19585-193, Tehran, Iran. Tel. & fax: 0098 254 746; E-mail: Soheila@Kanoon.net; or web site Ms. Shahshahani: <http://www.anthro-iran.com/> General web site of the conference: <http://www.iuaesintercongresscalcutta-2004.com/>

WATER WEEK AND WATER SYMPOSIUM (STOCKHOLM, SWEDEN)

16-20 August 2004

The World Water Week in Stockholm is internationally known as a global platform for continuing dialogue on critical water issues. A series of seminars, side events and ceremonies and the Stockholm Water Symposium are planned. The 14th Stockholm Water Symposium has the title "Drainage Basin Security - Regional Approaches for Food and Urban Security". For further information contact Ms. Katarina Andrzejewska, E-mail: sympos@siwi.org, or visit the web site www.siwi.org