CHAPTER 2

Gender dimensions of urban and peri-urban agriculture in Hyderabad, India

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Abstract

This chapter attempts to understand and analyse the gender dimensions of urban and peri-urban agriculture in the case-study areas of Hyderabad, India. A number of households, especially migrants from drought-prone rural areas, depend on wastewater-irrigated urban or peri-urban agriculture for their livelihood and food security. Data have been collected by participatory rapid appraisal tools for this study; the tools included needs assessment; activity profile; access and control profile; and decision-making matrix. The important lessons learned from the study are (1) that the culturally prescribed gender division of labour in urban agriculture does not accord completely with what men and women do in practice; (2) that women contribute a significant part of the household income; (3) that crops and activities that have higher rates of return tend to be controlled by men, whereas women farmers view urban agriculture more as a way of securing food security for the households; (4) that the location of an activity influences the degree and type of involvement of women in agriculture and dairy activities; (5) that men have better access to resources such as credit and land than women, owing to their cultural advantage in a patriarchal society; and (6) that affiliations such as caste, class, and ethnicity affect gender relations and gender roles in urban agriculture. Recommendations proposed include gender-positive / gender-sensitive allocation of land, training, education and capacity-building, projects, policies, and research which contribute to economic growth as well as to social equity.

Introduction

Agriculture has always been associated with rural areas, even though in many parts of the world it has been practised in urban and peri-urban sites for centuries, contributing to the employment and food security of those involved in its production and sale. The purpose of this case study is to understand the gender issues in urban food production and household food security in the study area and to identify the strategies that the South Asia regional office of International Water Management Institute (IWMI) should
apply in order to mainstream these issues in its future research projects and policy recommendations.

**Study location**

The study was conducted in Hyderabad, India, one of the fastest-growing cities in the world. The city is spread out over an area of 625 km², with a population of 6.7 million (The Hindu newspaper, 16 April 2007). Various crops irrigated with wastewater are cultivated in the urban and peri-urban areas of the city along the Musi River, which flows right through the centre of the city. Within Hyderabad, an urban location called Kachiguda and two peri-urban locations called Pirzadiguda and Parvathapuram (see Figure 2.1) were chosen for the study in order to understand the contributions of urban and peri-urban agriculture (UPA) to the livelihoods of the people, and especially the differences in gender roles and benefits.

Kachiguda is an urban location almost in the centre of the city. Most of the urban farmers who farm along the Musi River live in the Kachiguda neighbourhood. Many varieties of crops are grown on the river bed (which usually floods in the monsoon season, but remains dry for the rest of the year), on a 5 km stretch along the Musi River. The average landholding size here is one acre (0.4 ha) of irrigated land (Buechler and Devi, 2002). The main crops grown in urban areas are Para grass, green leafy vegetables, banana plants, and coconut palms. Para grass is cultivated as fodder for cows and buffaloes that are raised in urban areas for milk. Much of the land dedicated to fodder production is rented to dairy producers from the yadava caste, whereas most of the land in the urban areas on the Musi flood-plains is owned by people from the kachi caste, whose members came originally from Uttar Pradesh state and are Hindi-speaking. At present there is no provision to transfer the land titles, because the government stipulates that this land is a riverbed and cannot be bought or sold. Therefore, the names on the land titles have not changed even with the deaths of two or three generations of titleholders (Buechler et al., 2002).

Pirzadiguda and Parvathapuram, two peri-urban study areas in Hyderabad, are located about half a kilometre away from each other. Many of the Muslim and Hindu families in these areas were dependent on urban agriculture in 2004. About 150 households have migrated in the last 15–20 years from the district of Kurnool, a drought-prone area. Although they originally came as field labourers who cut wastewater-irrigated fodder grass, many have been able to buy livestock and rent land for fodder grass and vegetable production. As the city increases in size, most of the land under cultivation in this location is now being converted into plots for construction (Buechler and Devi, 2003). The key farming activities in the urban and peri-urban areas are still dairy, Para grass (fodder grass), and leafy vegetable production. Most farmers in this area lease between half an acre and one acre of land to cultivate leafy vegetables or Para grass. Since 2004, however, this scenario has changed considerably. There is a significant decrease in wastewater-irrigated areas in the urban and peri-
urban study locations, for various reasons: the increasing value of land for real estate; the booming economy of the city, which offers numerous employment opportunities; and the high opportunity cost of working on a farm versus other types of employment. Exact estimates of the land lost under cultivation to real estate are not available, but the current research approximates that more than 50 per cent of the land previously under vegetable and Para grass production in the study locations is now lost to real estate and other commercial purposes and displaced to areas farther away from the city.

**Methodology**

Data collected over different years have been used to present the results in this study. From August to October 2002, for a larger study sponsored by the UK government’s Department for International Development (DFID), on livelihoods along the Musi River, 105 questionnaires were used to gain information from wastewater users (one male and one female member of each household) as well as to vendors in urban, peri-urban and rural sites. From March to April 2003, data were collected about household food security, through the application of a new questionnaire on income and food expenditure patterns in the urban and peri-urban sites of the city. In August 2004, new questionnaires were applied to a sub-sample of the respondents who had been interviewed previously, with the breakdown as follows: 22 respondents (12 women and 10 men) for the urban sites and 30 respondents (18 women and 12 men) for the peri-urban sites. The activity
profile, access and control profile, and the decision-making matrix were applied to all the respondents interviewed for the urban sites in August 2004, and the reasons for their responses were discussed. The results of the two profiles and the decision matrix were triangulated with previous interviews in 2002 and 2003, and all the different views are considered and incorporated in the analysis. This chapter is based on the knowledge and experience gained from the previous studies and the new data collected from the study sites in January 2008. Additional participatory rapid appraisal (PRA) tools are applied to a smaller group of urban and peri-urban farmers in the current study sites, with a total sample size of 52 (29 women and 19 men) farmers and four key informants (two women and two men). The participatory appraisal tools used for this study are preference ranking; problem matrix; needs assessment; activity profile; access and control profile; and decision-making matrix.

Gender analysis in peri-urban study areas

The current section presents the outcomes of the analysis related to each of the tools used in this study.

Gender differences in farming preferences

By direct matrix ranking, the participants identified and prioritized their farming activities and discussed their related preferences, opportunities, and constraints associated with them. Understanding preferences is critical for choosing appropriate and effective interventions (World Bank, 2001). Results show that men gave their first preference to dairy, their second to vegetable production, and their third to both Para grass and paddy. Higher profit margins and marketability of the product were important criteria for men. Women gave their first preference to leafy vegetable production, their second to Para grass production, and their third to dairy. Important criteria for the women’s ranking were the degree of risk and the ability to manage the activity independently while still being able to manage their household chores and child-care responsibilities.

Gender division of labour

The livelihoods of urban farmers are dynamic, and the activities of the farmers change rapidly in response to changes in the local economy, availability of new opportunities, and rising education levels of the family members who want to move out of farming to desk or office-based jobs. However, little change has been seen in the division of labour between men and women or the kind of activity that they perform in agricultural fields, in the household compound, or in the community in general. Key-informant interviews and data from the questionnaires have been analysed to produce a profile of the division of labour between female and male urban farmers (see Table 2.1).
Table 2.1 Gender division of labour in urban agriculture in the study areas

<table>
<thead>
<tr>
<th>Socio-economic activity</th>
<th>Females (♀)</th>
<th>Male (♂)</th>
<th>Locus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Child</td>
<td>Adult</td>
<td>Elder</td>
</tr>
<tr>
<td><strong>1. Production of goods and services</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Para grass</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation</td>
<td>++</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Harvesting</td>
<td>++</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Transport as head loads</td>
<td>++</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Driver of fodder transport vehicle</td>
<td>+++</td>
<td>Field to market yard</td>
<td></td>
</tr>
<tr>
<td>Sale in the market</td>
<td>+++</td>
<td>Field to market yard</td>
<td></td>
</tr>
<tr>
<td>b) Dairy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bringing fodder from market to cattle shed</td>
<td>+++</td>
<td>Field to market yard</td>
<td></td>
</tr>
<tr>
<td>Feeding the cattle</td>
<td>++</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>Cleaning the shed</td>
<td>++</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Milking the cows</td>
<td>+</td>
<td>+++</td>
<td>Within home</td>
</tr>
<tr>
<td>Cleaning the milk cans</td>
<td>+++</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Taking cattle to river for bathing</td>
<td>+</td>
<td>+++</td>
<td>Outside the house</td>
</tr>
<tr>
<td>Selling the milk</td>
<td>+++</td>
<td>+</td>
<td>At home</td>
</tr>
<tr>
<td>Selling the milk</td>
<td>+</td>
<td>+++</td>
<td>Outside the house</td>
</tr>
<tr>
<td>c) Leafy vegetables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land preparation and planting</td>
<td>++</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>Weeding</td>
<td>++</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>Irrigation</td>
<td>++</td>
<td>+++</td>
<td>Within the field</td>
</tr>
<tr>
<td>Harvesting</td>
<td>++</td>
<td>+++</td>
<td>Within the field</td>
</tr>
<tr>
<td>Transport</td>
<td>++</td>
<td>+++</td>
<td>Field to market</td>
</tr>
<tr>
<td>Sale in the market</td>
<td>++</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td><strong>2. Social reproduction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child care</td>
<td>++</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>Care of sick children</td>
<td>+</td>
<td>+++</td>
<td>Taking children to hospital</td>
</tr>
<tr>
<td>Care of the elderly</td>
<td>++</td>
<td>+</td>
<td>Within home</td>
</tr>
<tr>
<td>Care of the elderly</td>
<td>+</td>
<td>+++</td>
<td>Taking elderly to hospital</td>
</tr>
<tr>
<td>Household management</td>
<td>++</td>
<td>+++</td>
<td>Within home</td>
</tr>
<tr>
<td>Collect water</td>
<td>+++</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td><strong>3. Community management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation (Part.) in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyderabad Farmers’ Association</td>
<td>+</td>
<td>+++</td>
<td>In the local community</td>
</tr>
<tr>
<td>Part. In Kachi Association</td>
<td>+++</td>
<td>+++</td>
<td>In the local community</td>
</tr>
<tr>
<td>Part. In Kachi Women’s Association</td>
<td>+++</td>
<td>In the local community</td>
<td></td>
</tr>
<tr>
<td>Part. In Yadava Caste Association</td>
<td>+++</td>
<td>In the local community</td>
<td></td>
</tr>
<tr>
<td>Part. In Fodder Grass Farmers’ Committee</td>
<td>+++</td>
<td>In the local community</td>
<td></td>
</tr>
<tr>
<td>Part. In Uppal Farmers’ Association</td>
<td>+++</td>
<td>In the local community</td>
<td></td>
</tr>
<tr>
<td>Part. In Self Help Saving Groups</td>
<td>+++</td>
<td>In the village</td>
<td></td>
</tr>
</tbody>
</table>

A child is a girl or boy below the age of 16 years. An elderly person is a person 60 years old and above.

+++ indicates that frequency is high
++  indicates that frequency is medium
+   indicates that frequency is low

No major differences were noticed in the activity profile of men and women in the urban and peri-urban areas, except in dairy production, and they are therefore not listed separately.
Production of goods and services

- **Para grass**: In Para grass production, men are more involved than women. Women harvest the crop and also carry it to the truck that transports the grass to the market. A man carries a head-load of 70 kg per trip, and a woman carries 30 kg of head-load per trip from the field to the truck. Women’s participation in the grass market is limited by a number of factors. The profit margins are higher for fodder grass than for other crops such as leafy vegetables. Therefore men want to control the income from fodder grass. It would not seem to be a limiting factor that heavy loads of grass have to be loaded and unloaded from transport vehicles, since women carry loads of grass from the field to the trucks. However, the kind of garment that is culturally acceptable for women to wear (the sari) limits movement of the legs, restricting women’s ability to climb into and out of the trucks to unload the fodder grass (Buechler et al., 2003).

- **Milk**: In milk production, men and women play equally important roles. In intra-urban areas most dairy producers belong to the *yadava* caste community. The economic status of the household influences the extent to which women are involved in production activities. In intra-urban areas, since the *yadavas* are reasonably well-off, women are less involved, whereas in the peri-urban areas, where households are
classified as poor, the involvement of women in dairy activities is greater than in intra-urban areas.

- **Vegetables**: Most of the land under vegetable cultivation is rented, and the vegetable farmers are usually women, assisted by young boys and girls (Buechler et al., 2003). Most of the urban and peri-urban vegetable farmers are women, because production of leafy vegetables is economically viable when undertaken at a small scale, the plants can be grown in small, manageable plots, and all operations from ploughing to harvesting can be done by women without any help from the male family members (Buechler and Devi, 2008a, 2008b). In addition, agriculture is the only skill that these women have, due to the strong gender bias in favour of boys in the provision of formal education and training (for occupations such as driving, tailoring, technical/industrial training) which would otherwise help them to procure more profitable jobs.

**Social reproduction**

All activities associated with social reproduction (see Table 2.1) such as cooking, house cleaning, washing dishes and clothes, child care, collection of water, and care of the elderly are done by women. Young girls between the ages of 10 and 17 years (or sometimes even younger) help their mothers in all household chores. Young boys also help their mothers in buying groceries and sometimes fetching water by bicycle if the distance to the public tap is great. Men very rarely participate in these activities. Culturally, women are supposed to take care of all activities within the boundaries of the house, and men are responsible for all activities outside the house. However, these prescribed roles and responsibilities are changing with time.

**Community participation**

Most community activities are dominated by men. In the urban study location there are four associations – the Hyderabad Farmers’ Association, Kachi Association, Kachi Women’s Association, and Yadava Sangham. The Hyderabad Farmers’ Association is an informal organization formed by the farmers who own land along the Musi in Hyderabad city. It was mainly formed to fight against the government when the latter wanted to take away their land and convert it into a public area for parks. Since the criterion for membership was land ownership, there are very few women members in this group; the few women who are members do not participate in any of the meetings, since women perceive the association as a men’s organization, and because they face social barriers which discourage them from speaking in public.

The Kachi Association and Yadava Sangham are caste-based associations, and the members are all male. The Kachi Women’s Association is exclusively a women’s association, formed in 2004 to help the women belonging to the
Kachi caste to solve their domestic problems. Asked why the Kachi women had to form a separate association, when the kachis already had an association, the Secretary of this association, Ms Madhumathi Bai, said, ‘Kachi Association is a men’s association and women cannot talk freely about their problems in front of the men. So the chairman of the Kachi association encouraged us to form a separate association where women could freely discuss and solve their problems.’ This clearly indicates the cultural barriers that limit women’s mobility and freedom of speech in public gatherings.

In the peri-urban area, there are three associations: the Fodder Grass Farmers Committee (FGFC), the Uppal Farmers Association (UFA) and the DWACRA women’s Self Help Groups (SHGs) in Parvathapuram. All of the members of FGFC and UFA are male. Formation of the DWACRA women’s SHG has been a successful government initiative, aimed at encouraging savings and credit for the productive and reproductive needs of women and their families in Parvathapuram. Most women in the study area are members of these SHGs and are benefiting from their membership. It was also found that the loans taken by women from households dependent on dairy were spent on buying more cattle, since most of the dairy activities were done and controlled by men. Men have a strong influence on decisions taken about their households’ finances and credit utilization.

Access to and control of resources and benefits

An access and control profile of the male and female farmers in relation to various resources was constructed after the analysis of data from questionnaires and key-informant interviews (see Table 2.2). The access profile helps researchers to understand the extent to which a resource is available for use by a household member, and a control profile tells us who has the power to make decisions about how a resource can be used.

<table>
<thead>
<tr>
<th>Resources</th>
<th>Access</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Productive resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td>xx</td>
<td>xxx</td>
</tr>
<tr>
<td>Credit (mainly through friends or relatives or moneylenders)</td>
<td>xx</td>
<td>xxx</td>
</tr>
<tr>
<td>Labour</td>
<td>xx</td>
<td>xxx</td>
</tr>
<tr>
<td>Information</td>
<td>x</td>
<td>xx</td>
</tr>
<tr>
<td>Benefits of resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income from sale of milk</td>
<td>x</td>
<td>xxx</td>
</tr>
<tr>
<td>Income from sale of leafy vegetables</td>
<td>xxx</td>
<td>xx</td>
</tr>
<tr>
<td>Income from casual labour</td>
<td>xxx</td>
<td>xxx</td>
</tr>
</tbody>
</table>

xxx Indicates complete access / control
xx Indicates partial access / control
x Indicates limited or no access / control
Access to and control of productive resources

The various resources essential for production are land, capital, labour, and information (related to market prices, new technologies of production, etc.).

- **Land**: Land is considered to be a resource for men. Legally, the land inherited by a person should be equally distributed between the son(s) and the daughter(s). But the land title is usually in the name of the man, and after him it is inherited by the male members of the family (sons). Indians still follow the dowry system, whereby a bride's father has to pay the family of the bridegroom before/during the wedding. Parents of the bride present cash and jewellery to the bridegroom and retain land for their son, because he is the one who will support them in their old age. Women usually do not file a case against their father or brothers, even if they do not get their share of the land. The main reason behind it is that a father pays a dowry to the bridegroom for the wedding of his daughter, and that is supposed to compensate for the land that goes to the son. Culturally, women are taught that land is a man’s property. Women get land titles only if the husband dies and the son is too young (less than 18 years old) to work the land. Divorce is not a common phenomenon in the study area, and even in the rare event of a divorce the land remains with the husband. Renting land for agriculture (mainly for leafy vegetables) is done by a male or a female farmer irrespective of sex. Women renters are considered more reliable.

- **Credit**: In both the urban and peri-urban locations, it was found that there are no formal sources of credit. People lend and borrow among themselves. The amount of money that is usually borrowed ranges from Indian Rupee (INR) 500 to INR 5,000 (approx Euro 10 to 100). There are a few moneylenders, who charge very high interest rates of five to ten per cent per month. The high rates are due to the fact that the poor farmers do not have collateral to pledge and have no other source of credit. In extreme cases, women pledge their gold ornaments as collateral for small debts owed to the local moneylenders, who are the traditional informal moneylenders. Female farmers are considered more credit-worthy and reliable than the men. But male farmers have better access because of the higher social capital that they control. Men know greater numbers of people and have a wider network of friends; therefore their reach is greater than that of female farmers. In terms of control, the female farmers have only partial control over the money that they borrow if it is a male-headed household. This is because the male head usually controls all household resources and can divert them for things that he considers to be a priority, rather than for the purpose for which the woman borrowed it. The implication of this is that women farmers have to compromise on the extent of their investments in urban agriculture activities and therefore have to forego the benefits which they otherwise would have reaped with increased investments. However,
the male farmers would not face this problem; they have higher chances of realizing the full potential of their entrepreneurial skills and will have higher risk-taking ability.

- Information: Information gives people the capacity to negotiate and make informed choices. The education level of the farmers, the extent to which they are exposed to information, and their ability to use information influence the extent to which they can access and use information appropriately. Sixty to 70 per cent of the farmers are uneducated, and 30 per cent are educated only to secondary level. Men have greater access to and control of information than women, due to their higher education levels and greater social capital. This suggests that it is more probable that, compared with female farmers, male farmers will make informed choices and benefit from them. The information needs of the men and women farmers are further elaborated in Table 2.3.

- Labour: Differential wages for men and women in the agricultural sector are common in rural India (Labour Bureau of India, 2003), and the same is true for wage labourers in urban agriculture. In the study locations, male casual labourers are paid more for their labour (INR 100–120 for eight hours of work) than female labourers (Rs 60 for eight hours of work). However, in urban areas women labourers find more days of work (30–40 work days per year) than male labourers (10–15 work days), due to the kind of work for which the women are employed (weeding and harvesting of vegetables) and the nature of the crops (mainly leafy vegetables). In peri-urban areas, where Para grass production is great, both male and female casual labourers find employment year-round and are paid on a piece-rate basis (INR 4 per 15 kg bundle of grass harvested). A married couple earns INR 200–250 per day in a Para grass field.

Access to and control of the benefits of the resources

From the interviews, it was seen that women had complete access to the income that they receive directly, but had only partial control over decisions on how to spend it. The income that men collected for the women was controlled more fully by men. For example, women who work as casual labourers and women who sell vegetables in the market receive money directly from their employers or customers. In the case of milk, it is men who collect the money from their customers on a monthly basis, and women have less access to and control over this money. The interviews showed that women can make decisions about spending money if the amount spent is a small sum. For all larger expenses, they have to get the permission of the household head, who is usually a man (Buechler and Devi, 2008a). Control over resources can be better understood by analysing the decision making in a household.
Table 2.3 Decision making in the farm-households in the study areas

<table>
<thead>
<tr>
<th>Decisions</th>
<th>Male</th>
<th>Male/female member jointly</th>
<th>Female</th>
<th>Comments/explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inputs</strong></td>
<td></td>
<td></td>
<td></td>
<td>Combined decision. If there are young children at home, the man spends more time in the field.</td>
</tr>
<tr>
<td>Use of family labour</td>
<td></td>
<td>x</td>
<td></td>
<td>Both men and women. Also, the crop determines what inputs to buy.</td>
</tr>
<tr>
<td>What inputs to buy?</td>
<td></td>
<td>x</td>
<td></td>
<td>Men have more say, but also depend on the availability of crop and household labour and its affordability for the family.</td>
</tr>
<tr>
<td>Hire additional labour</td>
<td></td>
<td>x</td>
<td></td>
<td>Combined decision; also depends on soil conditions, water availability, demand for the crop, and economic capacity of household.</td>
</tr>
<tr>
<td><strong>Production</strong></td>
<td></td>
<td></td>
<td></td>
<td>Decision taken by men and women together, depending on soil conditions, water availability, and demand for the crop.</td>
</tr>
<tr>
<td>Which crop to grow?</td>
<td></td>
<td>x</td>
<td></td>
<td>This decision is not in people’s hands. It depends on when the crop is ready for harvest.</td>
</tr>
<tr>
<td>Where to plant what?</td>
<td></td>
<td>x</td>
<td></td>
<td>Household head decides, depending upon the availability of household labour, skills of household members, and prior knowledge of the crop/animal production; but the women in household also have a say and can influence this decision. Cash needs and market demand for the products also influence this decision.</td>
</tr>
<tr>
<td>When to harvest?</td>
<td></td>
<td>x</td>
<td></td>
<td>Head of the household, who is generally the man, decides the number of cattle to be kept, depending upon the household labour and capital available.</td>
</tr>
<tr>
<td>Choice between crop production or dairy</td>
<td></td>
<td>x</td>
<td></td>
<td>Women decide how much of the produce (vegetables and milk) will be kept for household consumption.</td>
</tr>
<tr>
<td>Number of milk cattle to be bought</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marketing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What part of the harvest is sold and how?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Investments

<table>
<thead>
<tr>
<th>When should a cow/buffalo be sold?</th>
<th>Male member jointly</th>
<th>Male dominates decision</th>
<th>Equal influence</th>
<th>Female dominates decision</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>x</td>
<td></td>
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</tr>
</tbody>
</table>

**Comments/Explanation:** Men generally take any decision that involves a lot of money e.g. selling a cow, but women can influence this decision.

**Men are more aware of tools (what tools required, where to buy, and prices) and equipment and therefore they buy them.**

### Reproduction

<table>
<thead>
<tr>
<th>Whether a child goes to school or not</th>
<th>Male member jointly</th>
<th>Male dominates decision</th>
<th>Equal influence</th>
<th>Female dominates decision</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>x</td>
<td></td>
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</tr>
</tbody>
</table>

**Comments/Explanation:** Both mother and father decide, but the father has the upper hand in the decision. If it comes to prioritizing between the education of a girl and a boy, a girl's education is given a lower priority.

**Men dominate this decision, because consulting a doctor is expensive.**

### Additional Land

<table>
<thead>
<tr>
<th>Buy or rent additional land</th>
<th>Male member jointly</th>
<th>Male dominates decision</th>
<th>Equal influence</th>
<th>Female dominates decision</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>x</td>
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</tbody>
</table>

**Men decide to buy more cattle; but their decision is influenced by women.**

**Depending on labour availability in the house, space to keep animals, and availability of capital, men decide to buy more cattle; but their decision is influenced by women.**
**Decision-making powers and their distribution in a household**

A decision-making matrix illustrates power relations between the men and the women in a household. The matrix in Table 2.3 has been constructed on the basis of field interviews and field observations.

Men make most decisions related to production and all decisions related to investment and reproduction. There are very few decisions in which women have an equal say, and most of these decisions are by default, not by design (as noted in Table 2.3). The women respondents said that most decision making is male-dominated because men are the household heads, and culturally the household head makes all decisions.

**Gender-differentiated problems/constraints/needs and opportunities**

Men and women perceive situations and associated problems differently. Social roles and responsibilities, awareness levels, mobility, and cultural taboos strongly influence their perceptions and preferences.

Scarcity of land for cultivation, lack of credit facilities, and poor quality of irrigation water were mentioned by both men and women as the main constraints limiting agricultural production. Real-estate developments have pushed agricultural land farther and farther away from the city. This increasing distance between the fields and the residential areas was mentioned as one of the important problems for the women farmers, because they need to go back and forth frequently between the fields and their homes to perform their multiple tasks of household work, child care, care for the elderly, and working in the fields (tasks that together constitute a triple day for women). Further, cultural norms (for example: women should be confined to the private domain, or if they go outside of the home they must go with an escort; education is not important for women; women should not talk with strangers, especially men; women’s main role is to serve the husband and take care of children; women should not speak out in public) restrict women’s mobility and affect the business and entrepreneurial capabilities of women farmers. While male farmers expressed the need for knowledge about more profitable crops, new skills, and credit to enable them to move out of agricultural activities to more profitable occupations, women farmers wanted information on non-land-based occupations, how to avoid problems of poor-quality irrigation water, and education and health facilities for their children and family.

As the city population grows, demand for fresh vegetables and milk is on the rise. This provides a good opportunity for men and women farmers, especially women vegetable farmers, to tap new markets and increase their incomes. Various NGOs and financial institutions are promoting micro-credit, working especially with women’s Self Help Groups. Women farmers and vegetable vendors could tap this resource for investments in micro-enterprises and purchase of inputs for their crops. With deteriorating conditions in the rural areas, irrigated urban agriculture will seem even more attractive; a further advantage is that it offers employment throughout the year.
Lessons learned and recommendations

The findings and lessons learned in this study were disseminated at the Multi-stakeholder Policy Design and Action Planning workshops undertaken in the context of the RUAF–Cities Farming for the Future Programme in Hyderabad in order to stimulate gender-sensitive action planning for urban and peri-urban agriculture.

The key lessons learned from the study are as follows.

• The culturally prescribed gender division of labour in urban agriculture does not match completely with what men and women do in practice. For example, women do perform activities that are culturally defined as men’s work, such as irrigation, whenever the need arises. However, women will often not admit to performing work that is culturally defined as a male preserve. This shows that women are capable of doing ‘male’ work but often refrain from performing such tasks simply because it is socially unacceptable.

• Having only one income in the household is not sufficient for a minimum livelihood; therefore even in households where the husband or father has a job in another sector, women’s income from urban agriculture is important for the maintenance of the household and the class position of the household.

• Crops that have higher rates of return (such as fodder grass) tend to be controlled by men, whereas women view urban agriculture more as a way of ensuring food security for their households.

• Location influences the degree and type of involvement of women in agriculture and dairy activities. For example, in the urban area, the sale of dairy products takes place mainly outside of the home and is therefore a male-dominated activity, whereas in the peri-urban areas most of the sales occur from the home and most often are managed by women. This has implications for who (the man or the woman) has access to and control over the income from dairy products.

• Men involved in urban agriculture are better connected with influential persons in the local government and can thus more easily obtain the goods and services that they need, whereas women cannot negotiate with influential persons so easily, because of the limitations placed on their freedom of movement and speech in the public arena.

• Affiliations such as caste, class, and ethnicity affect gender relations and gender roles in urban agriculture (as in other sectors), although these effects are partly determined by educational attainment, exposure to media, changing environmental and policy conditions, availability of opportunities, and other urban influences (Buechler and Devi, 2008b).

The following recommendations were made to the Multi-stakeholder Platform on Urban Agriculture for the development of a gender-positive
Strategic Agenda for the sustainable development of urban and peri-urban agriculture and alleviation of urban poverty.

- **Allocation of land**: allow poor farmers (especially tenant farmers, a large proportion of whom are women) to cultivate land in the green-belt areas around the city and any unused land areas within the city. Authorities could lease out vacant land especially to (groups of) female-headed households on a priority basis to encourage and support them.
- **Credit facilities**: stimulate the organization of female producers without collateral in Self Help Groups and enhance provision of credit to these groups by NGOs (now mainly operating in rural areas) and government organizations.
- **Training**: tailor the training programmes of the Ministry of Agriculture to the needs of women as intra-urban and peri-urban farmers, and encourage agricultural training activities as part of the Support to Training and Employment Projects (STEP) of the Department of Women and Child Development (DWCD). Also as part of the Socio-Economic Programme (SEP), poor female urban producers could be trained in value-added processing and packaging of products in food-processing units (Surinder, 1998).
- **Education and capacity building**: most urban and peri-urban female farmers are illiterate, a fact which impedes their capacity to influence the decisions taken in their households and the capacity to use information effectively. The DWCD scheme of condensed courses of education and vocational training for adult women could reach out more effectively to illiterate women farmers in order to build their capacities through intensive courses.
- **Projects**: all urban agriculture projects should be developed with a gender focus in order to ensure that they contribute to women's welfare across the four dimensions of gender-sensitive poverty alleviation. That is to say that such projects should (World Bank 2001) increase women's opportunities to access resources and gain employment; increase women's capabilities and skills to perform more efficiently and gain from them; strengthen women's security (their risk-bearing capacities); and empower women at the household and community levels.
- **New ways of coping with land and water scarcity**: methods that increase the productivity of crops (more yield per hectare), as well as the efficiency and safety of wastewater irrigation, should be developed together with the female farmers, who generally operate on a small scale and have less access to land and water than male farmers. Special crops such as mushrooms and herbs could be introduced, because they can be grown in closed rooms or in small spaces and at the same time generate high income.

Men and women experience poverty differently. When policymakers and planners realize this, they can make significant contributions to the lives of
the poor men and women. Evidence is growing that gender-sensitive research, development initiatives/projects, and policies contribute to economic growth as well as to equity objectives.

References


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CHAPTER 3

Gender in jasmine flower-garland livelihoods in peri-urban Metro Manila, Philippines

Raul M. Boncodin, Arma R. Bertuso, Jaime A. Gallentes, Dindo M. Campilan, Rehan Abeyratne and Helen F. Dayo

Abstract
This chapter analyses the role of women in jasmine flower-garland livelihoods, with emphasis on division of labour, household decision making, access to and control over resources, health, and other interlocking issues relating to gender and urban agriculture. It draws from results of collaborative research in the Philippines by Urban Harvest and UPWARD, along with the University of the Philippines Los Baños–National Crop Protection Centre and the local and city governments of Laguna and Quezon provinces. In addition to gender issues, the chapter briefly tackles salient problems that affect the jasmine flower-garland livelihoods in peri-urban and urban Metro Manila, Philippines.

Introduction

Background of the case study
This case study is part of a project on sampaguita (Jasmine) production in Metro Manila, implemented by the International Potato Center–Users’ Perspectives With Agricultural Research and Development (CIP–UPWARD), the Consultative Group on International Agriculture Research (CGIAR)–Urban Harvest programme, and the National Crop Protection Center and Department of Horticulture of the University of the Philippines Los Baños (UPLB), in partnership with the local and city governments of Laguna and Lucena City, as well as the sampaguita farmers.

The project’s overall objective is to improve sampaguita-based livelihoods through technological, socio-economic, and institutional innovations that benefit poor urban and peri-urban households in Metro Manila. Since 2001, the project has undergone five key phases, covering socio-economic and technical
assessments, technology development, market assessment, and farmer training and capacity building (Table 3.1).

Gender considerations were incorporated in project design and implementation only after the livelihood assessment, which revealed women's distinct roles. Gender-disaggregated data were targeted in subsequent field assessments of flower/garland production, management, and marketing. In the conduct of farmer field schools (FFSs), gender balance among the participants

<table>
<thead>
<tr>
<th>Table 3.1 Key results of the five project phases</th>
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<tr>
<td><strong>Project phase</strong></td>
</tr>
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</table>
  • The garland-making activity in peri-urban San Pedro serves as the focal point linking rural economies to urban centres.  
  • Sampaguita livelihood is a viable peri-urban enterprise that provides employment, income, and non-monetary benefits to the poor.  
  • Key problems are associated with crop production, post-production, production, and economics, requiring the help of research and academic institutions.  
  • Farmers heavily rely on extensive use of chemical pesticides for pest management. |
| Assessment of pesticide-residue level in the production of sampaguita flowers (2002–2003) | • Pesticide residues were detected in sampaguita flowers from traders, vendors, garland makers, and garland sellers.  
  • There was higher frequency of detection and higher residue concentrations during lean months, compared with the peak season of sampaguita flower production.  
  • Organophosphate, carbamate, and pyrethoid were the primary residues detected. |
| Development of pest-management schemes for peri-urban sampaguita production (2003–2004) | • Seasonal occurrence and abundance patterns of various insect pests associated with sampaguita were determined and compared in relation to flower production and cultural management practices of sampaguita growers.  
  • Participatory on-farm trials identified appropriate practices relating to judicious application of chemicals, while promoting use of biological control agents. |
| Sampaguita garland-selling business in Metro Manila: rapid market assessment (2005) | • Garland selling makes a significant contribution to livelihoods of poor urban and peri-urban households, particularly women and children.  
  • Garland marketing is beset by problems of: health and safety for street children selling garlands, competition among vendors, lack of institutional support, and poor quality of garlands. |
| Training and information support to improve crop-management practices (2006–2008) | • A field manual, synthesizing results of earlier pest-management experiments, was developed to serve as key reference for farmers and extensionists.  
  • Farmer field schools served as an effective training strategy to improve knowledge and practices of jasmine producers. |
was a key consideration, so that, for example, both husbands and wives were invited to participate. Gender analysis was also included in the FFS baseline and preparatory activities.

This chapter is based on three sets of data:

1. The case study of gender roles in sampaguita production implemented in 2004 by interviewing eight key informants.
2. Review of the reports on studies undertaken during 2003–2005, including:
   • the rapid assessment of the livelihoods and marketing system of sampaguita growers (survey among 65 growers plus case studies);
   • a study among 20 farmers of the way they produce knowledge (participant observation, case studies, network analysis);
   • focus-group discussions (applying participatory tools such as activity analysis, seasonal calendar, resource and benefits analysis chart, problem ranking) during farmer field schools in the years 2005–2007.
3. A gender-analysis workshop with 18 participants implemented in 2008, applying similar tools.

Women producers analysing gender aspects of jasmine production during a workshop in Manila
By CIP–UPWARD
**Jasmine production in Metro Manila**

Sampaguita, a local name for the Jasmine plant (*Jasminum sambac* (L.) Ait), bears white, dainty, and fragrant flower buds. Strung together into garlands, they are widely used by Filipinos to venerate religious icons in churches and homes, adorn wedding and funeral ceremonies, welcome visitors, and congratulate new graduates. The small size and simplicity of sampaguita, considered the Philippine national flower, belie its role as an important source of livelihood for poor peri-urban and urban households in Metro Manila.

A livelihood-system analysis conducted by De Guzman (2003) described the extent of this agricultural activity. The analysis identified eight key actors in the system, from the peri-urban farmers producing floral buds to garland sellers in the streets of Metro Manila. Sampaguita flowers are produced in nearby provinces surrounding Metro Manila. The nexus of the entire livelihood system, however, is in San Pedro, Laguna, a suburban town 29 km south of Manila, where most sampaguita flowers and other raw materials for garland making are traded. It is also here where the big garland-making contractors and garland makers are located.

Nearly 3 million flower buds are traded daily in San Pedro, resulting in multifarious livelihood activities that provide financial and socio-economic benefits to various livelihood actors. In terms of financial benefits, farmers and garland-making contractors are the highest earners, while flower pickers and fibre cleaners earn the least money. Livelihood actors face various problems: pests and diseases; poor crop-management practices; low prices of flowers during the peak flowering season; sick and old sampaguita plants; skin allergies for flower pickers, garland makers, and garland vendors; hand injuries for fibre cleaners and garland makers; irregular price fluctuations and competition among suppliers; the need for better methods for storing flowers for suppliers and dealers; and lack of capital to increase business and competition in the sourcing of raw materials for garland makers.

Women play vital roles in this livelihood system, but their impact in the system has not been particularly studied. Previous studies analysed neither the gender differentiation among the actors nor the decision-making processes within households. Thus, this chapter aims to examine gender differentiation in labour, access to and control over resources and benefits, and decision making.

Laguna and Quezon provinces, which are part of peri-urban Metro Manila, are major sites for flower-buds production. Project sites in Laguna include the municipalities/cities of San Pedro, Cabuyao, Calamba City, and Santa Cruz. San Pedro, the nearest town to Metro Manila, is the regional market centre for buds. In Quezon, on the other hand, project sites are located in the outskirts of Lucena City, the province’s business capital. Metro Manila, the capital city of the Philippines with about 11.5 million inhabitants spread out over an area of 636 km² (NSO, 2008), serves as the ‘receiving hub’ of the garlands, the final product of the jasmine flower-garland livelihood system, where the garland-
Gender analysis of the sampaguita livelihood system

In most cases, the members of a single household pursue multiple activities: sampaguita production, picking/harvesting, packaging, transport, and garland making. This study follows the definition of ‘household’ proposed by Rudie (1995 as cited by Niehof, 1998): ‘a co-residential unit, usually family-based in some way, which takes care of resource management and primary needs of its members’. Niehof (1998) further stipulates that household members may share household budgets and resource management without living under one roof.

Four typical households

Below we feature four households, to show the diversity of activities and roles played by the members of a household involved in the sampaguita livelihood system, and to highlight the gender role differences, household resource-allocation, and decision-making processes.

Household 1

Renato and Gina Ernas are a married couple in their mid-30s, both of whom are high-school graduates. Aside from a 2 ha rice farm, the family cultivates a 3,000 m² sampaguita farm in Santa Cruz, Laguna (80 km south of Manila). They are tenants of these lands, and Renato annually negotiates land use with the owners. Farming is their main source of livelihood, providing enough income to raise three school-age children.

Renato and Gina consider sampaguita farming as their primary source of income, while rice farming is secondary. They harvest 60–70 tabos (a one-litre motor-oil can, which can contain approximately 1,000 flowers) per day (during the peak season from February to May), which earns a net profit of US$ 125 per month during the peak season, and $36–54 per month in the lean season.¹ This constitutes about 70 per cent of the family’s income. Renato also earns $57 per month by serving as a village councillor. Renato says that he
barely earns any money from rice farming, only producing enough rice for his household consumption. He has been producing sampaguita for 12 years and plans to continue, because it provides his family with a steady income.

**Household 2**

Mario and Elizabeth Alemania are a married couple in their mid-60s who are both high-school graduates. They own and cultivate a 1,500 m² plot of land in Mamatid, Cabuyao, Laguna (40 km south of Manila). Mario has used the land for sampaguita farming for the last 15 years, but on account of his advancing age he has gradually shifted to growing camia (a fragrant white flower, often used as pendants in sampaguita garlands). Sampaguita is more labour-intensive to maintain than camia. At present, half of the land is planted with sampaguita and the other half with camia. Mario plans to switch entirely to camia production in the next few years, finding it more profitable than sampaguita production. Camia, however, is a seasonal crop, unlike sampaguita, which flowers year-round. Being the main camia producers in Cabuyao, where only a few farmers have planted the crop, Mario and Elizabeth can sell the flowers for higher prices in San Pedro.

Mario and Elizabeth earn daily an average of $9 from the combined production of sampaguita and camia. They have also started raising 200 ducks for egg production. The family is financially secure. Two of their three children have finished college and earned their degrees; they are married and are no longer living with their parents. The youngest is still studying in the university and is staying with Mario and Elizabeth.

**Household 3**

Norlito and Erlinda Ramos are a married couple in their 50s, both of whom completed elementary education. They cultivate a strip of land along an irrigation canal owned by the government in Victoria, Laguna (70 km south of Manila). Norlito does not pay rent, but he does have permission from the National Irrigation Authority to use the land, provided that he keeps local irrigation canals clean.

Within this land, he cultivates a 2,000 m² plot of sampaguita. He produces on average 40–50 tabos per day, which earns the family between $89 and $268 monthly, depending on the season. This represents his net income, factoring in the costs of farm maintenance and workers’ wages that are deducted from the total. This is the family’s main source of income. Erlinda earns additional money from acting as supplier for nearby sampaguita farmers; she transports their daily produce, getting a 10 per cent share of their total sale.

The eldest daughter, Babylin Puno, is married and lives in a nearby house. She is a garland maker, and Norlito provides her with free flowers (1–3 tabos per day) so that she can earn income to support her own family. Her husband is unemployed. She earns about $5–$7 per day.
Norlito used to be a carpenter, but he switched to sampaguita production 10 years ago because it was a more profitable venture. Carpentry is a very seasonal job, and often he found himself unemployed. He observed sampaguita farming while doing a carpentry job in Santa Cruz and asked a local farmer how to plant it. He then experimented and was able to develop his own way of managing the crop. He plans to continue sampaguita farming, because he has enjoyed consistently high profits over the last three years.

Household 4

Nestor and Maria Avenue are a married couple in their 40s, both of whom are high-school graduates. They live on government-owned land next to a railroad track in Banlic, Calamba, Laguna (40 km south of Manila). The Avenue family is what the Philippine government refers to as ‘informal settlers’ (squatters), as they neither own the land nor pay rent to occupy it.

Maria runs a garland-contracting business. She buys sampaguita flowers daily from a neighbouring farmer and then contracts five of her neighbours, all unemployed housewives, to produce garlands. Once the garlands are ready, Maria transports them to downtown Calamba, where she sells them to local sampaguita sellers.

She purchases two tabos per day (about 2,000 flowers), which she supplies to garland makers who make about 1,000 garlands daily. Her neighbours earn as much as $1 each daily from this garland-making activity.3 On the other hand, Maria earns a net income of $7 daily from the garland-contracting venture, which constitutes 60 per cent of her family’s income. The remaining income comes from a small food canteen that Maria runs from her house. Her husband has been ill for the past two years and unable to work, but he helps to run the canteen.

The Avenue family is economically secure, as two of their children have earned their degrees and are already married. The youngest daughter, who still lives with them, is in her final year in college. Maria has been involved in the garland-contracting business for 10 years, and she plans to continue. The family used to grow sampaguita on the land near the railroads, but that land became non-tillable in 1994, due to an increase in gravel deposits caused by railroad repairs. This change prompted Maria to shift to garland-making contracting, because her family could no longer produce sampaguita.

Division of labour in the sampaguita-producing households

In all on-farm activities, there was a consistent division of labour among household members. Male members are responsible for farm maintenance, while women usually transport the daily harvest of flowers to the San Pedro market and pick up the payment from traders. Elizabeth Alemania and Erlinda Ramos act as local suppliers in their vicinities. They transport the sampaguita
harvests of several farmers and receive 10 per cent commission from the total 
sales.

In the case-study households, flower pickers tend to be women and young 
children, as the task requires small and agile hands. Renato Ernas hires 15 
women and children to pick sampaguita flowers on his farm on a daily basis. 
Norlito Ramos employs two of his nephews to help on the farm, although his 
wife and daughter assist in flower picking. On the other hand, Mario Alemania 
hires male pickers, because camia is a tall shrub and picking camia flowers is 
considered too dangerous for women. Nevertheless, he hires five women to 
sort and bundle these flowers. Women working in farming-related activities 
earn modest incomes, but their families are often very poor, and these incomes 
make a significant contribution to their households. For reference, the latest 
oficial Annual Per Capita Poverty Thresholds figure for Metro Manila is set at 
$285, while for the province of Laguna it is $253 (NSCB, 2004).

In the garland-contracting business, the gender roles are not so well defined. 
Garland-making contractors and traders may be men or women, and there is 
no established gender differentiation among these roles. But in the case of 
her household, Maria Avenue is solely responsible for the activities related 
to garland contracting. Garland makers, however, tend to be women, usually 
unemployed housewives. As mentioned, Maria contracts five women to make 
garlands; they work for approximately four hours per day.4

In all cases, the wives receive and handle the money generated from 
sampaguita livelihood activity. It follows that women are responsible for most 
of the household reproductive tasks. In general, the women buy and cook 
the food, clean the house, and take care of the young children. They are also 
responsible for monitoring the children’s education. Children, even adult 
ones, are dependent on their parents, especially their mothers, for as long as 
they live in the same house.

Data gathered from the gender analysis workshop support the above 
findings. Men and women farmers, including their children, contribute to 
sampaguita production, making the activity a household enterprise. Men are 
responsible for tasks requiring heavier physical exertion, as well as for seasonal 
activities such as clearing the land and land cultivation. Men spend more 
time in preparing planting materials, planting, weeding, watering, fertilizer 
application, pesticide spraying, and hilling up. Meanwhile women make 
significant contributions in terms of daily tasks such as flower picking and 
preparing the flower buds for market. In addition, tasks such as leaf stripping 
are primarily women’s work.

Both men and women agreed that clearing and cultivating land are 
men’s domain. Men’s labour contribution to the preparation of planting 
materials was estimated at 70 per cent, compared with 30 per cent for women. 
However, women tended to underestimate their contribution to tasks that are 
mainly their responsibility; for example, for flower picking, women claimed 
their contribution as only 60 per cent, but men estimated it as 80 per cent. 
Meanwhile for men-dominated tasks such as planting and weeding, women’s
estimations of their labour contribution were higher than the estimates made by men. Furthermore, only the men mentioned hired and contract workers as an additional labour source.

**Gender division of access to and control over resources**

In all the case-study households, women have a high level of control over productive resources. While the men in sampaguita-farming households control most of the assets (such as land, livestock, water, equipment), the women control much of the market information and the cash income.

Elizabeth Alemania and Erlinda Ramos deliver the daily harvest of flowers to San Pedro, and they therefore decide what price to pay and they negotiate market prices with the traders. Moreover, they receive the payment from the traders and are responsible for allocating this income as they see fit. Although women are mainly responsible for the finances, major expenditures are a matter for consultation with their husband. Gina Ernas also receives daily payment from San Pedro and, much like the above-mentioned women, she spends the money on supplies and food, allocates some of it to farm maintenance, and pays the children’s tuition fees.

Loans for as much as $179 can be obtained from the traders in San Pedro. Both husband and wife decide when to access loans, which are often used for the educational needs of the children. It is the women, however, who negotiate loan terms with the traders, usually repayment within six months, with traders entitled to a certain percentage of the farmer’s daily sale. These women may not control the land, but they do control the income and how

<table>
<thead>
<tr>
<th>Activity</th>
<th>Men (%)</th>
<th>Women (%)</th>
<th>Male children (%)</th>
<th>Female children (%)</th>
<th>Men (%)</th>
<th>Women (%)</th>
<th>Male children (%)</th>
<th>Female children (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation of planting materials</td>
<td>70</td>
<td>30</td>
<td>70</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planting</td>
<td>70</td>
<td>30</td>
<td>70</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Weeding</td>
<td>50</td>
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<td>*</td>
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<td>Watering</td>
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<td>20</td>
<td>90</td>
<td>10</td>
<td>**</td>
<td>**</td>
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<tr>
<td>Fertilizer application</td>
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<td>40</td>
<td></td>
<td></td>
<td>90</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hilling up</td>
<td>90</td>
<td>10</td>
<td></td>
<td></td>
<td>70</td>
<td>30</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>Flower picking</td>
<td>10</td>
<td>40</td>
<td>10</td>
<td>40</td>
<td>20</td>
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<td>20</td>
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</tr>
<tr>
<td>Leaf stripping</td>
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<td></td>
<td></td>
<td>10</td>
<td>90</td>
<td></td>
<td></td>
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<tr>
<td>Pruning</td>
<td>90</td>
<td>10</td>
<td></td>
<td></td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selling</td>
<td>10</td>
<td>90</td>
<td></td>
<td></td>
<td>30</td>
<td>70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Occasionally, 25% for male and female children
** Occasionally, 20% for male and female children
*** Occasionally, 10% for male children
it is consumed. Thus, the sampaguita livelihood system empowers them with important decision-making capabilities.

Maria Avenue has complete control over all productive resources. She personally buys raw materials for the garlands, hires garland makers, and sells the finished products in Calamba. She alone decides how much to spend on materials and how to allocate the income that she earns. As a garland-making contractor, Maria has critical decision-making capabilities that affect her entire community. The garland makers and their families rely on her for their income and well-being.

The garland makers too have control over their income and situation, albeit on a much smaller scale. They can only produce what Maria (the contractor) provides, and they are paid on a piecemeal basis. However, in times of urgent need, the garland makers can take loans from Maria or be paid in advance. The fact that this money, plus the amount that they earn from flower picking, constitutes the total household income gives these garland-making housewives a high degree of discretion in allocating their household's meagre resources.

During the gender analysis workshops, both male and female farmers mentioned that resources such as land, inputs, and information services (including training) are accessed less by women and controlled more usually by men. Men, however, have less access to the benefits, particularly income, which are more typically controlled by women (Table 3.3). The wife is mainly responsible for budgeting the sales and household expenses. Most of the income is spent on production inputs for the farm, food, and the children's school allowances and expenses. However, both male and female respondents said that 10 per cent of the income is automatically given to the husband, and the use of this money is solely decided by him: the wife has no say about it. They said that this money is mostly spent on cigarettes and drinking with peers. For their part, women occasionally use the income for social gatherings

| Table 3.3 Resource analysis according to male and female farmers |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                  | % Access Accord. to men | % Control Accord. to women |
|                  | Men | Women | Men | Women | Men | Women | Men | Women |
| Resources        |     |       |     |       |     |       |     |       |
| Land             | 70  | 30    | 70  | 30    | 70  | 30    | 70  | 30    |
| Inputs           |     |       |     |       |     |       |     |       |
| – planting materials | 80  | 20    | 70  | 30    | 100 | –     | 100 | –     |
| – fertilizer     |     |       | 70  | 30    |     |       | 100 | –     |
| – pesticide      | 80  | 20    | 70  | 30    | 80  | 20    | 70  | 30    |
| – water (irrigation) | –   | –     | 70  | 30    | –   | –     | 100 | –     |
| Information sources | 100 | –     | 50  | 50    | 100 | –     | 70  | 30    |
| Benefits         |     |       |     |       |     |       |     |       |
| Income from sales| 10  | 90    | 10  | 90    | 10  | 90    | 10  | 90    |
such as birthdays. Both husbands and wives agree that these are essential aspects of socialization in the community.

There are also slight differences in men’s and women’s perceptions of the access to and control over resources. Male farmers estimated husbands’ access to and control over resources more highly than the female farmers did. A similar difference is very clearly highlighted in replies to questions about access to and control of information services: according to men, they have full control, but women said otherwise.

Gender differences in estimations of access to and control of information depend on the role that the husband and wife play in their sampaguita production. In some households, the husband played a greater role, while in some cases women are more actively involved; thus their access to and control over resources and benefits varies.

**Problems encountered by male and female farmers**

The gender-analysis workshop identified three key problems in sampaguita production: (1) lack of financial capital, (2) pests and diseases causing rotting and stunting, and (3) high input costs (see Table 3.4).

**Table 3.4 Gender-disaggregated problem ranking**

<table>
<thead>
<tr>
<th>Problems</th>
<th>Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>1. Occurrence of pest and diseases</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>2. Weather disturbances cause poor quality of flowers</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>3. Lack of or limited finance</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>4. Seasonal flowering</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>5. Price and market</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>6. Yellowing, too much water</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>7. Expensive inputs (pesticide and fertilizers)</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>8. Land security (most are tenants)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>9. Pest identification</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>10. Judicious use of pesticides</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>60</td>
</tr>
</tbody>
</table>

**Gender-related health risks in sampaguita farming**

One of the main concerns of the sampaguita livelihood system is the overuse or misuse of pesticides, because farmers spray as often as four times a week. Farmers are often oblivious to the negative health effects that can result from using very toxic or unsafe pesticides, or from simply using too much pesticide (Navasero et. al., 2004). The women and children, who pick the sampaguita buds, re-enter the farm less than 12 hours after spraying and are therefore
the most exposed to health risks associated with pesticide use, including skin rashes and difficulties in breathing.

Conclusions and recommendations

Lessons learned

- The initial case studies of households provide a deeper understanding of gender differences in sampaguita livelihoods, although the data were not completely gender-disaggregated. Thus, additional gender-analysis tools were used to elicit information from men and women. The use of gender-analysis tools in a participatory manner facilitated interactions in same-sex groups of farmers.
- Gender analysis focused on sampaguita farmers and flower pickers. A similar analysis for traders, garland makers, and vendors would help to complete the picture for the entire livelihood system.
- The mainstreaming of gender concerns in project activities related to sampaguita production is still in its initial stage. Preliminary results indicate its potential value for group learning activities – from design and implementation to documentation and dissemination.

Recommendations

The full extent of the sampaguita garland industry and its total contribution to the economy has yet to be fully recognized by policy makers and the general public. Towards achieving this goal, further research and development efforts on the following are recommended:

- Additional technology components for crop management are needed to improve sampaguita flower production, and for better environment and health protection. There is an on-going project to develop integrated pest-management schemes for sampaguita to rationalize the use of pesticides near urban households. The immediate aims are to reduce the frequency of pesticide applications and to encourage selection of less toxic pesticides. Non-pesticide-based management techniques are also being introduced, such as the use of biological pest controls, better farm-management practices that minimize pest infestations, and replacement of sick and old sampaguita plants. Furthermore, to address gender issues there should be gender-balanced participation so as to inform those who are most significantly affected by improper pesticide use (for example, men when spraying, women and children when picking).
- Follow-up initiatives to influence policy would provide an enabling environment to reduce exposure of sampaguita actors, especially women and children, to harmful pesticides. Less pesticide use will also mean additional income for the household. Health information campaigns are
needed to provide women with better knowledge about the effects of pesticides on their health and environment.

- At the post-production level, there is a need to identify better storage methods. Sampaguita can be stored only for 48 hours with the existing practice of using styrofoam containers with ice. This limits garland makers and contractors to buying only what they can process in one day. Most often, they have to complete the tasks immediately to avoid spoilage, which prevents them from carrying out reproductive tasks. Better storage methods would allow women to manage their time more efficiently.

- The full extent of the sampaguita garland industry is yet to be established and recognized. Thus local government units do not provide any direct support for sampaguita livelihoods. A detailed industry study for sampaguita is needed, which among other benefits will highlight women’s roles and contributions.

- Sampaguita market prices are highly unstable. In San Pedro, prices vary from one place to another within an hour of travel, depending on daily supply and demand. There is need to diversify uses/products of sampaguita besides garlands. One possibility is the use of sampaguita in decorating venues for social events, which are presently dominated by roses and chrysanthemums. This would further boost women’s roles, since they are traditionally tasked with making the bouquets, corsages, and other decorations required in these social events.

**Notes**

1. Renato splits the profits from sampaguita farming with his neighbour, who owns the land. Hence, the total profit from sampaguita farming is US$250 per month in the peak season, and US$71–107 in the lean season.
2. Duck eggs, called *balut*, are eaten just before they hatch and are considered a delicacy in the Philippines.
3. Maria pays the garland makers 10–15 centavos per garland. They also pick sampaguita flowers daily in nearby farms, earning an additional $0.89 to $1.07. These women thus earn as much as $2.14 daily, money which is often the only source of family income.
4. Garland makers work from 10:00 a.m. to 2:00 p.m., so that they can cook and take care of children in the afternoon.
5. Gina Ernas does not personally travel to San Pedro, but pays a young man on a motorbike to deliver the flowers for her. When he returns from San Pedro, it is she who receives the payment, rather than her husband.
6. All case-study households said that they use part of the money earned from sampaguita to pay for their children’s education. Considering that the sampaguita income accounts for 70 per cent of household income, we can safely say that sampaguita pays for half of children’s education.
References


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CHAPTER 4

Gender and urban agriculture: the case of Accra, Ghana

Lesley Hope, Olufunke Cofie, Bernard Keraita and Pay Drechsel

Abstract

Gender analysis in agricultural production is important for creating a level playing field for both men and women farmers. This is especially important in urban agriculture which is commercialized and characterized by competition for resources. This study was conducted in Accra, Ghana, with a focus on open-space urban vegetable production. Gender-disaggregated data were collected from farmers at both household and farm levels on key issues such as access to and control of resources, division of tasks, decision-making process, and challenges faced. Data were collected by using qualitative methods such as semi-structured interviews and focus-group discussions, in which participatory tools were used. Two clear facts emerged from the study of open-space vegetable farming: male dominance in farming and female dominance in marketing. (There are exceptions to both these general findings.) While the general differentiation is attributed to societal norms that prevail in marketing, women farmers feel mostly constrained by existing irrigation practices, which are not women-friendly and consume time that is required equally at household level. Men feel significantly oppressed by their dependency on credit and prices dictated by market women, but increasingly they are making ground in certain commodities and those areas of wholesale trading where overland transport is required. Improved irrigation technology and other practices appear to facilitate a better gender balance on farm. These initiatives should be supported in gender-sensitive policies.

Introduction

The recognition and integration of gender concerns into national and international policies and programmes have increased over the past decade. In the domain of urban agriculture considerable progress has been made in terms of gender mainstreaming. However, it is still necessary to understand and assess the contributions of women and men in urban agriculture development and the impact of this development on both. Gender analysis in urban agriculture
## Table 4.1 Production systems in urban agriculture in Accra

<table>
<thead>
<tr>
<th>Production system</th>
<th>Description</th>
<th>Who is involved</th>
<th>Value chain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open-space vegetable production</td>
<td>Farming is intensive on small plots of land, usually 0.01–0.02 ha per farmer. About 60% of vegetables grown are exotic, such as lettuce, cabbage, and spring onions, for which there is high market demand.</td>
<td>About 800–1000 farmers involved, 80–90% of them men. However, almost all vegetable marketers are women.</td>
<td>Vegetables are sold in the farms to marketers. They are then taken to a central point for sale and distribution. Very lucrative, with annual incomes US$400–800 per farm. Vegetables produced are eaten by about 200,000 Accra residents daily as a supplement to certain street-food dishes.</td>
</tr>
<tr>
<td>Animal rearing</td>
<td>A wide range of animals is reared in Accra. They include livestock such as cattle, sheep, goats, and pigs, poultry, and small ruminants such as grass cutters. Poultry farming and pig farming are most common, mainly for commercial purposes.</td>
<td>Mainly men and migrants from rural areas. Practised mainly in low- to middle-income areas.</td>
<td>Animal products such as meat, milk, and eggs mainly sold in local markets. Farmers producing larger quantities of animal products supply directly to large establishments such as hotels and schools. Manure, especially from poultry, is in great demand for urban vegetable production.</td>
</tr>
<tr>
<td>Backyard farming</td>
<td>Involves both animal and crop farming around households and mainly for subsistence purposes. Land sizes vary but on average are smaller than those used in other production systems.</td>
<td>Practised in two of every three households in middle- to high-income areas and also compound houses. Involves mostly women and children.</td>
<td>Improves household nutrition and saves money which can be used to buy food from markets. Generally perceived ‘safer and healthier’, due to controlled farming conditions. However, seen as a nuisance by non-farmers.</td>
</tr>
<tr>
<td>Ornamental production</td>
<td>Wide range of ornamental plants grown for decoration and ceremonies such as weddings and funerals. Done in small plots along major roads.</td>
<td>Men and women are involved. Not very extensively practised.</td>
<td>Flowers are sold directly to households and commercial establishments. Manure from animal rearing extensively used in production.</td>
</tr>
<tr>
<td>Mushroom production</td>
<td>One of the emerging production systems in Accra. Done in closed environments, usually near households and for commercial purposes.</td>
<td>Involves 250 farmers, of whom about 100 are very active. About 40% of all farmers are women.</td>
<td>Sold directly to households and commercial establishments. Used also for medicinal purposes.</td>
</tr>
</tbody>
</table>

*Source: Cofie et al., 2005*
is essential for policy formulation and programme planning, to ensure equity in resource allocation and a balanced development which benefits both male and female urban dwellers.

The objective of this study in Accra was to gather gender-disaggregated data to complement existing studies within urban and peri-urban households, in order to make recommendations for the formulation of appropriate policies on urban and peri-urban agriculture, such as the municipal by-law revision supported by the Resource Centres on Urban Agriculture and Food Security (RUAF).

Accra, the capital of Ghana, covers an area of about 240 km². Its current population is about 2 million (51 per cent women and 49 per cent men), with an annual growth rate of about 3.4 per cent. Accra has a hot humid climate. Mean temperatures vary from 24°C in August to 28°C in March. The rainfall pattern is bimodal, with the major season occurring between the months of March and June, and a minor rainy season around October. Natural drainage systems in Accra include streams, ponds, and lagoons. Floodwater drains and gutters are used as open grey-water channels, draining into natural streams and the ocean.

A number of studies have identified several urban production systems in Accra, although the clustering of production systems has been based on the objectives of each individual study. These systems include open-space vegetable farming, seasonal crop farming, small-ruminant rearing, livestock farming, poultry production, mushroom farming, the customary land-rights system, floriculture, and backyard farming (Zakaria et al., 1998; Armar-Klemesu and Maxwell, 1998; Danso et al., 2002; Cofie et al., 2005; Table 4.1).

For this study, we focused on the production and marketing of vegetables in inner-urban open spaces, as described in detail by Obuobie et al. (2006).

With seasonal variation, about 50–100 ha are under vegetable production in Accra, distributed over many open spaces, including seven larger sites, some of them in use for more than 50 years (Obuobie et al., 2006). Vegetables commonly grown include lettuce, cabbage, cauliflower, green pepper, spring onions, onions, Ayoyo, Alefi, and Gboma mainly during the dry season, while in the wet season maize and okra are cultivated in addition. Besides these open spaces, there are also about 80,000 tiny backyards in Accra, some of them supporting the cultivation of vegetables.

**Study methodology**

Farm and market surveys reported in this chapter began in 2004 and have been updated since then via various student surveys and focus-group discussions. Three key qualitative data-collection methods i.e. interviews, focus-group discussions, and observations, were used, with special consideration of methodological issues highlighted by Hovorka (1998) and RUAF (2001).
Interviews
In 2004, the first gender study began with semi-structured interviews targeting 60 farming households from three major farming sites in Accra (Marine Drive, Dzorwulu, and La). A farming household was defined as a ‘family whose main provider and decision maker is engaged in urban farming’. Farmers were sampled by means of the stratified purposive technique. Two of the three sites (La and Marine Drive) have since been significantly reduced in size.

While a number of student surveys followed at farm and market levels, in 2008 a rapid assessment of marketing activities at Agbobloshie, the major vegetable wholesale and retail outlet in Accra, ended the investigations with the interview of key informants, such as one of the founding members of the market as well as women representatives at most meetings.

Focus-group discussions (FGDs)
In 2008, two gender-disaggregated FGDs were held at one central farming site (Dzorwulu) in Accra, to complement the interviews. The small number of farming women participating in the discussions limited the value of the feedback received. The FDGs focused on two types of analysis:

a. Gender-task analysis: A trained facilitator made a chart, placing various actors in columns (women, men, joint activities, children, society) and tasks in rows. This was done for both household and farm-based tasks. Farmers identified various tasks. Analysis targeted activities, responsibilities, decision-making process, who defines tasks, etc. First, each farmer had a chance to identify the contribution of each actor to the listed tasks. This was followed by group discussions and refinement. A wrap-up meeting was held in which outcomes from the two FGDs were shared and discussed for further refining.

b. Problem analysis: Challenges facing farmers were identified and listed on a board which every participant could see and read. Discussions followed which generated more challenges, which were then ranked using semi-quantitative ranking methods. Ranking by women farmers was done separately. For each problem, coping strategies that farmers had adopted or could adopt to address the challenges were identified.

Results
Corresponding with previous reports from Ghana and most countries in West Africa, three out of four farm households engaged in urban vegetable production were found to be headed by men (Obuobie et al., 2006; Drechsel et al., 2006). Eighty-three per cent of the respondents were aged 40 years and above, while 17 per cent fell between 20 and 29 years of age. None of the farmers was below the age of 30. Farming was the primary occupation of most (90 per cent) of the farmers, although they all have other sources such as
trading, teaching, etc., from which they derive supplementary income. Only 23 per cent of farmers interviewed lacked formal education; a greater number had primary (33 per cent) or secondary (37 per cent) education, while 6 per cent had tertiary education. This confirms previous findings that people of all educational backgrounds are involved in urban farming in Accra (Obosu-Mensah, 1999; Danso et al., 2002; Keraita, 2002). However, the gender ratio changes when wholesale and retail activities are under consideration. While in the wholesale trade women are facing more competition, the vegetable retail sector remains almost exclusively (over 98 per cent) dominated by women, a fact which is attributed among other things to cultural or societal norms (Obuobie et al., 2006).

**Access to and control of productive resources**

**Access to land**

Agricultural land is an important resource in urban vegetable farming. This is due to increasing competition from other sectors such as housing, as more and more space is needed for up-surging urban populations. In this study, 87 per cent of the respondent farmers indicated that men and women had equal access to land for open-space vegetable production. The findings were attributed to the fact that most farming (about 72 per cent) is done on land belonging to government institutions, and access is not gender-based but rather the result of individual lobbying. This is further illustrated in the case of Dzorwulu, where there is a history behind the involvement of three women in vegetable production. They are former employees of the Ministry of Food and Agriculture who worked at the same site. They were laid off during the government’s structural adjustment programme. As they had gained some experience in vegetable production, they chose to remain at the site to embark on their own production.

In Dzorwulu, open-space vegetable farming is irrigated and not rain-fed, so access to irrigation water is important for production. While women and men farmers were said to have equal access to irrigation water, women farmers said they preferred having farms closer to water sources. This is because watering is strenuous, as it is in most cases done manually using watering cans which are carried as hand-loads (carrying one watering can in each hand) rather than head-loads, with which women are more comfortable. Farm plots farther from water sources are usually smaller, as the workload increases with water-transportation distance. Control of land was said to depend on each individual arrangement. For example, farmers may or may not be given notice to move off the land when the owner decides to develop it. Compensation arrangements are in such cases an exception.
Access to water

Access to irrigation water largely depends on land access and location. In general, farmers make different kinds of informal arrangement with landowners to access land for irrigated urban vegetable farming in Accra. In most cases, access is achieved through direct contact with the owner or caretaker, or through a third party working with the government institutions in the area. In some peri-urban areas of Accra, where share-cropping is used as payment for cultivating land owned by individuals, landowners or traditional leaders (such as chiefs) prefer that men rather than women cultivate larger plots, hence providing them with greater benefit (Obuobie et al., 2004). The landowners seemed to perceive that men are likely to produce higher yields than women, but there might be crop-related differences and an element of bias in their decisions. Farmers are limited in the kinds of crop that they grow, and many landowners do not permit perennial crops on their land. Also no heavy and long-term investments are allowed, as the installation of infrastructure facilitates land claims. From the farmers’ perspective, investments are very risky, owing to the insecure duration of tenure.

Access to credit facilities

Urban vegetable farmers in Accra, as in other parts of the country, do not have access to formal credit schemes. This is mainly due to the fact that farmers cannot meet the collateral demands (usually land) of the financial institutions. Nevertheless, informal credit schemes are common. For example, urban farmers have managed to evolve a win-win situation with the vegetable sellers in terms of access to informal credit. Sellers, who are mostly women, pre-finance farming activities by providing seeds, fertilizer, pesticides, or cash, negotiated through verbal agreement based on trust and confidence. This means that a farmer has to sell to the pre-financing vegetable seller, and prices are negotiated even before cropping is completed. This is a huge problem for most of the farmers (usually male); they are the losers, as vegetable sellers dictate the price. Similar situations have been observed in Lomé, Kumasi, and Benin (Danso and Drechsel, 2003). In Kumasi, male farmers strongly believe that they are ‘cheated’ by female vegetable sellers. They proposed strengthening of farmers’ associations to give them more control over market prices and put them in a better position to obtain state funding and even gain access to formal credit facilities (Boateng et al., 2007). The main means of sourcing credit at the market level is through informal financial institutions normally known as ‘susu collectors’. Accessing credit from this body does not depend on gender but is greatly determined by members’ savings record and factors such as consistency in saving and payback.
Access to extension services, market information, and markets

Extension services for urban vegetable farming have for long been very limited, because this practice was largely considered an informal activity. However this changed with the decentralization of key ministries and the related creation of district directorates also in the urban districts. Accra's Director for Food and Agriculture is in charge of farming, fishing, markets, slaughterhouses, etc., supported by more than 10 extension officers. Some of their services include advice on best farming practices such as water management, pest control, improving soil fertility, and supporting marketing. Usually an extension-service officer organizes meetings with farmers in each farming site. Thus, access to official information is not gender-biased. Indeed, about 80 per cent of the respondents indicated that men and women have equal access to market information concerning the demand for their produce, as well as access to extension services. Information on market prices of vegetables easily circulates among vegetable farmers, some of whose wives are vegetable sellers. However, women farmers and male farmers whose wives are vegetable sellers seemed to have an upper hand in access to market information, because they had more frequent interactions with sellers. Only a few male farmers tried to market their produce directly (Danso and Drechsel, 2003). Successful examples are cabbage wholesalers in Accra; but other leafy vegetables and the retail market remain controlled and clearly dominated by women.

Division of labour and responsibilities

Household activities

Division of labour and responsibilities among farming households in Accra was found to be highly gendered. Household activities such as cooking, washing of clothes, taking care of children, and general household cleaning are done mostly by women, while men are more involved in the provision of household income. However, both parents undertake joint responsibility for disciplining the children (63 per cent) and in providing clothing for them. So it is important to understand and differentiate the static and dynamic roles and responsibilities that the society plays in determining labour divisions and defining tasks in households. It is expected that there will be a significant difference in roles and responsibilities in non-farming households where both men and women are formally employed, which will tend to benefit from more joint contributions.

Farming activities

Unlike peri-urban and rural areas, where farmers live close to their plots and farming is a family affair, in urban areas farmers might live far from their plots, and farming is not done jointly. Another reason for the tendency for husbands and wives not to farm jointly is that the city offers more alternative
options for income generation. However, there are many cases where husbands do farming and wives do marketing. Both men and women farmers involve their children, especially after school and at weekends. In men’s farms, all main activities such as land preparation, irrigation, pesticide spraying, and weeding are done by men. Women (sellers) come in only to harvest and market the produce. Those with larger farms (more than 0.02 ha) hire labour to work the land. Men provide all hired labour. On the other hand, women farmers often hire labour for land preparation and spraying of pesticides. In this study, half of the women interviewees hired labour for land preparation. Women farmers said that land preparation is ‘an energy-draining exercise and not good for women’, while spraying pesticides requires the sprayer to carry heavy backpacks, which ‘men can handle’ better. Women with limited financial resources usually cultivate relatively smaller plots which can more easily be managed.

In general, some farming equipment, such as sprayers, watering cans, and hoes, is not women-friendly, and its use is thus largely restricted to men. Nevertheless, women farmers have adapted to this problem in different ways. For example, while many male farmers use watering cans, where possible women prefer using water hoses, which they connect to pressurized water sources to irrigate their plots. They also plant vegetables that are less water-demanding, such as spring onions and local vegetables. Similar observations were made in Kumasi, where watering as a farm activity was rated the ‘most arduous and time-consuming’ farming activity (Keraita et al., 2003). Obaa Yaa is one of the women vegetable farmers at La in Accra, where more women are farming than on any other site in the city, thanks to the labour-saving possibility of a gravity-supported furrow-irrigation system. She has been farming for the past 11 years; when asked the reason for the relatively small numbers of women farmers, she said:

\[ I \text{ started with five other women but they have all left because of the difficulty of the tasks involved. Talking about land clearing and preparation, forking of beds, spraying of chemicals etc., it takes much determination to continue cultivating. } \]
I mostly use men 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.

Marketing activities

Urban vegetables are sold at farms and harvested by market women, not by the farmers. Farmers hardly engage themselves in direct marketing to consumers, unless the consumers go to farms, which is however very rare. Entry into vegetable trading depends to a great extent on availability and ability to pay for a place in the market. Moreover, society has determined which type of marketing activity each sex can undertake. While females can do any type of marketing, i.e. from retailing to itinerant trading, it is difficult to find men retailing vegetables, because society has labelled this as ‘women’s work’. As exotic vegetable farming is very time-consuming, farmers are often not able to sell their produce themselves, unless they split the responsibilities. That is another reason why it is mostly women who are seen in the markets (Vorberg, 2004).
Rapid assessment of marketing activities at Agbobloshie market, a major centre for trading in vegetables, showed female dominance in both retailing and wholesaling activities. Several reasons have been suggested for this, apart from cultural norms. Vegetable selling was perceived as a quicker way to make money, more profitable and less risky in terms of investments. Women are known to be better at bargaining, hence more likely to obtain better prices than men. Money generated from marketing activities supplements household incomes. Here, women engaged in wholesale trading often have higher profit margins than the male farmers in their family (Drechsel et al., 2006).

However, vegetable cultivation in Accra is limited to certain traditional and exotic leafy species. As a result, other produce (especially cabbage and tomatoes) is imported from other regions, especially the Ashanti and Brong Ahafo regions. This situation has resulted in itinerant trading, which for these commodities is dominated by male wholesalers. The situation is different for lettuce. A large proportion of the lettuce coming from Kumasi and Lomé (Togo) is organized by a small group of between seven and ten female wholesalers who bring their produce on public buses or lorries to Abogloshie market and sell it there to other wholesalers and retailers (Henseler et al., 2005).

**Differences in decision making and levels of knowledge**

**Decision making**

Urban vegetable farming is highly individualized, and each farmer makes his/her own decision on farming activities. Despite strong competition among farmers, they often exchange knowledge, share farming equipment, make bulk purchases of farm inputs, or even have joint savings (Danso and Drechsel, 2003). In addition, in times of crisis, such as water scarcity in the dry season and pest invasions, farmers make collective decisions. Therefore in most farming sites in Accra there are farmers’ associations (informal and formal), and some have elected leaders and written constitutions. There are also efforts to create a city-level farmers’ association (Accra Vegetable Growers Association).

One of the local associations is at Dzorwulu (Accra), where farmers have a formal farmers’ association with clear rules and regulations governing the group. All farmers at the site, currently 26 men and three women, support the association. Its main aim is to protect the interests of the farmers. The members make monthly contributions for the purchase of farm equipment such as knapsack pesticide sprayers and water hoses for irrigation. There is no woman in the leadership. The chairman of the association, Mr Fusseini, said that the leadership positions were open to all, but, due to men’s numerical advantage and the unwillingness of the women farmers to take leadership roles, all current leaders are men. However, women participate in the meetings, and their suggestions are considered in the decision-making process.
Just as in farming, the selling of vegetables is done on an individual basis, and thus decisions regarding the activity are taken by the individuals involved. However, events that require collective action are first discussed at the association level. One would expect that, due to women’s dominance in marketing, most of the executive positions would be held by women, as is the case in urban farming. This is indeed the norm in retail markets, with related ‘queen mothers’ overseeing particular commodities. However, the situation can also be different. In the case of the Agbobloshie market in this study, only two of nine executive positions in the exotic-vegetable wholesalers’ association were held by females.

Knowledge-related differences

Knowledge among farmers is not gender-based, since it largely depends on the individual farmer’s academic level, training and experience in farming, including mutual knowledge exchange, and external support, be it from extension services or research projects. Farmers with higher levels of education, especially those with professional training in agriculture, appear more knowledgeable about current farming practices, farming technologies, managing cropping patterns for better markets, and coping with extreme weather conditions such as droughts. On the other hand, farmers with non-agricultural backgrounds can become professional if they have the right entrepreneurial spirit. One such group, at La in Accra, demonstrates how urban vegetable farmers can use knowledge to their benefit.

The group has seven members and is taking advantage of their experience and knowledge for higher productivity. The farmers’ group is headed by two leaders based on their knowledge: one supervising vegetable production (Production Supervisor) and another one dealing with marketing of vegetables (Marketing Manager). The marketing manager, who has long history of trading non-agricultural products, is responsible for input supplies, marketing of vegetables and gathering information on production technologies and market trends. The group has now developed a cropping pattern that enables the group to sell their produce at peak prices, hence making high profits. (Adapted from Danso and Drechsel, 2003)

This is however an exception. Most farmers complain strongly about their limited access to information on market prices and channels, and their financial dependence on urban market women. Access to knowledge at the market level is significantly more gender-biased than at the farm level.

Challenges for urban vegetable farmers in Accra

A number of challenges and coping strategies were listed by farmers in Accra (Table 4.3) without any significant gender-specific difference. However, women complained more about the time-consuming task of watering, which conflicted with their household tasks. To reduce the labour burden, relatively
more women take advantage of the availability of piped water at this site (the only one in Accra with this option). This however led to complaints about the common unreliability of piped water supplies. Male farmers stressed on the other hand the poor market prices and high cost of inputs. For farmers using polluted water sources, there was notable concern about their public image, due to condemnation of their practice by the media and public officials.

**Conclusion: gender mainstreaming in urban vegetable production in Accra**

This study shows that in urban Ghana both sexes have distinct roles on- and off-farm. Men dominate vegetable farming and women dominate vegetable marketing. In principle, men and women can access either sector, but it does not happen very often. The reasons vary between cultural tradition (which affects marketing) and laborious irrigation practices (which affect farming). However, it appears easier for women to start farming than for men to enter the retail market. Overlap between men and women is observed in wholesale marketing, where men make ground where overland transport is required.
To support women in taking up urban vegetable production requires the provision of easier irrigation methods. On the La site in Accra, where the topography allows furrow irrigation, equal numbers of men and women were observed. Also the increasing trend to lift water by means of small pumps offers opportunities for women – if they have the resources to pay their share when the local farmers’ group rents a pump. Listening to complaints, however, one deduces that men farmers feel significantly more oppressed than women, in terms of their dependency on market women who provide credit and dictate prices without sharing essential market information. These complaints can be substantiated by the observation that wholesalers especially (but also many retailers) can make significantly higher profits than farmers (Vorberg, 2004).

Issues like these have to be considered if a full gender mainstreaming is to be achieved, as emphasized in the RUAF–Cities Farming for the Future (CFF) programme. Gender mainstreaming was correspondingly incorporated in the City Strategic Agenda formulated by the Accra Multi-stakeholder Forum for Urban and Peri-Urban Agriculture, with the specific objective ‘To promote and harness increased gender representation in all aspects of UA’ (IWMI–RUAF Annual Report, 2006). Subsequently, efforts have been made at the city level to make the urban agriculture by-laws (under revision) more gender-sensitive than before. Both male and female farmers and marketers in urban agriculture were involved in the review process (which is nearly completed). For the first time in Accra, and for that matter Ghana, the urban agricultural practitioners were exposed to various by-laws governing their livelihoods and were able to raise their concerns to effect necessary changes, at least on paper.

References


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CHAPTER 5

Gender in urban food production in hazardous areas in Kampala, Uganda

Grace Nabulo, Juliet Kiguli and Lilian N. Kiguli

Abstract

Urbanization is an important development process that is linked to land access, food production, and food security. This chapter focuses on a gender-analysis study of urban agriculture, specifically of farmers growing food crops in hazardous areas in Kampala city, investigating the division of labour, relationships, constraints, and initiatives within urban farming households. Such a study is important to ensure that good policy interventions are put in place. A survey of 202 farmers growing food crops on former rubbish tips and wastewater-irrigated wetlands in Kampala city was carried out, using semi-structured questionnaires administered by personal interview. The questionnaires were developed with the help of International Development Research Centre (IDRC) guidelines on gender-analysis methods. Focus-group discussions and key-informant interviews were held with men and women farmers. The study sought to describe the distribution of activities and resources, and the benefits and risks of urban agriculture, based on gender. The main motivating benefit of urban agriculture in Kampala city was food. However, more men were motivated by economic benefits. Women suffered more than men from lack of ownership and control over land. The study also showed that women were more likely to grow food crops on contaminated land, which made them more vulnerable to health risks. Many urban farmers lacked access to land, especially women, while men owned land in small pieces, less than three acres in area.

Introduction

This study was carried out in Kampala city in 2001 as part of a PhD research project entitled ‘Assessment of Heavy Metal Contamination of Food Crops and Vegetables Grown In and Around Kampala City, Uganda’ and other research on urban farming throughout the city, undertaken by the project ‘Urban Agriculture and Access to Land by the Poor in Kampala’. The principal objective of the study was to establish the roles of men and women in urban agriculture and to understand how resources are distributed between them. The
study focused on farmers growing food crops in hazardous areas in Kampala city. The project received funding from the International Development Research Centre (IDRC) under the Agropolis Graduate Research Awards. Other stakeholders involved in the project were Makerere University, Municipal Development Programme-Harare, and Urban Harvest, a Consultative Group on International Agricultural Research (CGIAR) Strategic Initiative on Urban and Peri-urban Agriculture.

**Urban agriculture in Kampala**

In Kampala, urban agriculture is increasingly significant as a source of livelihood for the urban poor, due to the high rate of urbanization, accompanied by the rapid growth of unemployment resulting from immigration. Kampala is divided into five administrative divisions: Nakawa, Makindye, Rubaga, Kawempe, and Central, covering approximately 189 km² of land. The district has a resident population of over 1.2 million inhabitants, with a population density of 7,378 persons per km² (UBOS, 2003). About 35 per cent of the city population is involved in urban agriculture (Maxwell, 1994).

Urban agriculture in Kampala takes place predominantly on private land, in backyards and on undeveloped public land. However, due to lack of access to agricultural land, people are growing crops on hazardous sites that are unsuitable for development. Such places include road reserves, banks of drainage channels, wetlands, and contaminated sites such as scrap yards and dumping sites for solid and liquid waste. Urban agricultural activities often take place on undeveloped land and are therefore not included in the urban planning and development projects. These sites often lack major public services such as clean water, waste-disposal facilities, and transport.

Urban agriculture has emerged as an unplanned activity in most developing cities (Kaneez, 1998); conversely, urban agriculture in Kampala is recognized as an important livelihood activity by the Kampala City Council and is currently a legal activity after a protracted process involving various stakeholders which reviewed the ordinances regulating this activity. Studies have shown clear gender differences in the practice of urban agriculture in the city.

**Methodology of the study**

The study was developed with the help of IDRC guidelines on Gender Analysis Research Methodology (Hovorka, 1998). It focused on the analysis of the gender division of labour in crop production, processing, transporting, and marketing activities, on the way in which access to and control over resources are distributed between men and women farmers, on the distribution of benefits among men and women farmers, and on the specific constraints, problems, and risks of urban agriculture for men and women.

The multi-disciplinary study team comprised two male and two female research assistants, who received prior training in gender-sensitive survey
The study team received support from a gender-resource consultant, Diana Lee-Smith, who built their capacity in gender-analysis methodology and social statistics. Two men and two women farmers were involved in the project to mobilize their fellow farmers. Also the local council authorities, including the male chairperson, a male security officer, and a female representative, supported meetings in the area aimed at identifying farming households and mobilizing farmers for the project activities. Both husbands and wives were invited to these meetings, and both men and women farmers were involved in identifying fellow respondents. In households where both husband and wife were farmers, both were invited to participate in the project as respondents. In total, 111 women and 99 men were included in the study.

The study sites were selected from former rubbish tips around the city where farmers are actively involved in agriculture: Kinawataka, Wakaliga, and Lugogo, together with Namuwongo wetland, which is subjected to disposal of wastewater, industrial effluents, and untreated sewage from the city catchment areas. The criteria for selection of these sites were based on the history of waste disposal from industry and municipality, irrigation with wastewater, and application of sewage manure on the land.

Data were collected by use of semi-structured questionnaires through personal interviews, with the help of various gender-sensitive tools like the gender-activity and gender-benefit analysis tools. The questionnaires were administered to farming households in two languages: English and the vernacular Luganda. Data were analysed using a Software Program for Social Sciences (SPSS). Qualitative research was carried out by conducting focus-group discussions with female farmers and key informants, both males and females, from Kampala city. This data were analysed using Atlas-ti software and manually interpreted using thematic and content analyses.

**Gender analysis of the local situation**

**Gender relations in urban food production and access to land for urban agriculture**

**Access to and control of resources**

The study showed that a large proportion of the farmers (59 per cent) had limited access to land for expansion of agricultural activities. These comprised 63 per cent of the women and 55 per cent of the men. As squatters, these producers have only usufruct rights on land for food production and can be evicted at any time. Security of tenure is non-existent; and without it the producers are less concerned with sustainable environmental concerns such as land degradation and development of the land. They live in constant fear of their crops being slashed, and their primary concern is the survival of their families from day to day. Most of these women live in the slums, are generally poor, and have access to polluted land such as rubbish tips and wetlands. They reported: ‘Fellow women occupy the wetlands/swampy areas because
land is cheap and readily available ...the poor access marginal lands, people
with small means resort to the informal areas for mainly agriculture, and then
settlements develop in these areas over time’ (married women in Kigobe–
Rubaga division).

The study showed that landowners prefer to lease land to women rather
than to men, because they think that women are less prone to dubious acts
than men, who are expected to build structures so that the landowner may
have difficulty in reclaiming the land and may eventually lose the ownership.
On the other hand, women’s produce is consumed mostly by the household,
while men sell most of their agricultural produce. This enables men to generate
income, as well as to get access to credit, with which they can expand their
agricultural production by renting and borrowing more land, and paying
for extra labour, which is much more difficult for women. The women seek
access to land for urban agriculture through borrowing and searching for free
unused pieces of land in the neighbourhood, garbage areas or undeveloped
land in valleys. Women tend to concentrate their agricultural activities near
to their homes and/or seek areas farther away where they might undertake
farming on plots close to each other. Some women travel long distances to
claim undeveloped land. In Kololo East, women hold land near a primary
school attended by a number of their children; on the way home the children
can assist their mothers in the gardens.

Both men and women farmers had limited control over land: 25 per cent
of the women having control, compared with 32 per cent of the men. Up
to 33 per cent of the land was controlled by landlords and 21 per cent by
institutions such as Kampala City Council. The men accessed land through
purchase, inheritance, renting, borrowing, or squatting. Most of the women
acquired land by squatting or borrowing, or through their husbands, who
rented or inherited it. Women’s access to and control of land was adversely
affected by social cultural practices, as discussed later under the role of external
factors on gender in urban agriculture.

The study revealed that farming is a major source of household income
in Kampala. Sixty-six per cent of the male farmers and 47 per cent of the
women obtained income from other forms of self-employment, but 5 per
cent of the men and 15 per cent of the women obtained all their income
from farming. Only 11 per cent of the men and 8 per cent of the women
acquired their income from a regular salary and supplemented their incomes
through urban agriculture. In this study, the majority of farmers had informal
employment. This led to the development of a class of unskilled labourers
with no formal vocational training, of whom 51 per cent are men and 61 per
cent are women.

The study also showed that women would be affected more than men if
they were prevented from farming on contaminated sites (Table 5.1).

The major benefit that would be lost if urban agriculture were prohibited in
Kampala city was access to food. Statistically, 31 per cent of the men and 37 per
cent of the women would have little or no food if they were prevented from
farming on rubbish tips. On the other hand, 30 per cent of the women would suffer an economic crisis, compared with 12 per cent of the men. Generally, most of the farmers would experience a financial crisis, and the women would be more affected than men. The women depended on urban agriculture to feed and maintain their families, while the men had other sources of income.

**Sourcing inputs**

A much higher proportion of women than men spent income on purchasing seeds for planting. Similarly, 88.2 per cent of the women, compared with 65.5 per cent of the men, obtained seeds from the market, while 12.6 per cent of the men and 2.7 per cent of the women obtained seed from the previous season’s crops. This is due to the fact that men grow sugar cane and cocoyam, which can multiply by vegetative propagation, and seeds for planting are available from the previous crop. Seeds for maize and vegetables, grown mainly by women, on the other hand are not readily available, which means that they must be purchased from the market. The rest of the farmers obtained seeds from friends or from the rural areas, depending on the type of crop grown.

**Processing, transportation, and marketing of urban agricultural products**

Women grow crops that are less demanding in terms of production activities, capital, processing, transporting, and marketing, such as maize, sweet potatoes, and vegetables, which they grow near households and dump sites. These crops are sold in the neighbourhoods either directly to consumers, or to market vendors, or by the roadside. However, crops grown by women fetched less income, because production is on a small scale and products are perishable, hence farmers suffer severe post-harvest losses. Men on the other hand engage in larger-scale farming activities such as growing sugar cane and cocoyam for commercial use. These are bulky and more labour-intensive in terms of harvesting and transport to marketing sites. For example, harvesting cocoyams involves uprooting from wetlands; excess mud and roots are removed from the rhizome before they are packed in sacks and transferred to drier areas,

### Table 5.1 Impact on men and women of ceasing to grow crops on dump sites

<table>
<thead>
<tr>
<th>Effect of stopping farming</th>
<th>Frequency (men)</th>
<th>Proportion of men (%)</th>
<th>Proportion of women (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No effect</td>
<td>13</td>
<td>14</td>
<td>01</td>
</tr>
<tr>
<td>Would suffer financial loss</td>
<td>06</td>
<td>02</td>
<td>04</td>
</tr>
<tr>
<td>No school fees</td>
<td>09</td>
<td>05</td>
<td>05</td>
</tr>
<tr>
<td>No food</td>
<td>66</td>
<td>31</td>
<td>37</td>
</tr>
<tr>
<td>Economic crisis</td>
<td>42</td>
<td>12</td>
<td>30</td>
</tr>
<tr>
<td>Would transfer</td>
<td>13</td>
<td>12</td>
<td>03</td>
</tr>
<tr>
<td>Would become poor</td>
<td>33</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>Not sure</td>
<td>10</td>
<td>10</td>
<td>00</td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
where they are loaded on bicycles. Buyers from various markets around the city collect the produce from the wetlands and transport it to markets, using hired bicycles.

Utilization of farm produce

This study showed that a higher proportion of men than women sold some of the food produced from farming activities (Table 5.2).

A higher proportion of the farmers used the food crops mainly to feed their families, although a small proportion of them grew food purposely for sale. The proportion of farmers who sold all of the food grown on contaminated sites to consumers was higher among women, who consequently used the funds to buy other foodstuffs from the market.

<table>
<thead>
<tr>
<th>Utilization of food</th>
<th>Men (n = 80)</th>
<th>Women (n = 101)</th>
<th>All farmers (n = 181)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consume all</td>
<td>(24) 30%</td>
<td>(34) 34%</td>
<td>(58) 32%</td>
</tr>
<tr>
<td>Sell some</td>
<td>(53) 65%</td>
<td>(53) 52%</td>
<td>(106) 59%</td>
</tr>
<tr>
<td>Sell all</td>
<td>(3) 5%</td>
<td>(14) 14%</td>
<td>(17) 9%</td>
</tr>
</tbody>
</table>

Exposure to health hazards in urban agriculture

Women as a group, however, face particular problems in most of their traditional roles. For instance, a man’s hoe always has a long handle, while a woman’s hoe often has a short handle, which necessitates that a woman bends while digging. Moreover, of the 56 per cent of the farmers who did not use any protective clothing while working on contaminated land, 59 per cent were women and 41 per cent men. Additionally, most of the farmers did not have access to clean and adequate water supplies. This has negative implications for food production, the quality of food, and human health. Overall, women were at increased risk of exposure to occupational and health hazards associated with urban agriculture, compared with men.

Gender roles and bargaining power in decision making in the community

With regard to the control of funds, this study showed that both men and women had control over their own funds. Budget decisions were largely controlled by men and women involved in income generation. Eighty-three per cent of respondents made budget decisions by themselves, of whom 43 per cent were men and 57 per cent women, while 13 per cent made budget decisions jointly between husband and wife and only 4 per cent said that budget decisions were made by the head of household (husband, father, or mother).
Women and men contributed income to their households from urban agriculture on a more or less equal basis (Table 5.3).

Assessment of expenditure showed that the majority of the farmers used their income obtained from urban agriculture to meet domestic needs, with a higher proportion of women doing so than men. In fact, the outcome of this survey found that women contributed to all household expenses, including those that were traditionally male responsibilities such as housing. Equal but small proportions of men and women spent income accruing from farming activities on purchasing food. Farmers spent less of their income on food, because what they reaped from the gardens was not valued in monetary terms as it was considered free food.

### Table 5.3 Men’s and women’s utilization of income obtained from urban agriculture

<table>
<thead>
<tr>
<th>Item</th>
<th>Proportion of men (%)</th>
<th>Proportion of women (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paying school fees</td>
<td>26</td>
<td>12</td>
</tr>
<tr>
<td>Buying seeds for planting</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Spending on domestic needs</td>
<td>38</td>
<td>50</td>
</tr>
<tr>
<td>Buying food</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Medical treatment</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Paying house rent</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Savings</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>Development</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

### Gender division of labour

Men are slightly more involved in wastewater-fed cultivating of sugar cane and cocoyam in the wetlands (55 per cent of the men, compared with 45 per cent of the women), crops that are non-perishable and therefore can be transported for longer distances in search of markets. According to the local division of labour, men open up the wetlands by cutting down the papyrus, while women plant the crops.

Women are more involved (55 per cent of the women and 45 per cent of the men) in growing maize, sweet potatoes, and vegetables on former rubbish tips and road sides, crops which require less time in the field, require less capital investment, and are perishable and hence need to be marketed closer by (within the neighbourhood: by the roadside, in nearby markets, or on stalls in front of their homes).

Urban agriculture is being feminized as men move out of agriculture to other informal sectors like petty trading, while women continue as farmers, with a few migrant men working as hired labourers. The study showed that most (67.4 per cent) of the urban farmers are married, 26.3 per cent single (with a large proportion of men), 5.8 per cent widowed, and 0.5 per cent students. The married farming households included 64 per cent of the men and 70 per cent of the women. The male-headed households had larger numbers
of children (0–16), compared with the women-headed households (0–12); on average each household had three children. Most of the women in the study were mothers and engaged in urban agriculture as a source of food and income for their families. The highest proportion of the women (26 per cent) had two children, while the highest proportion of the men (21 per cent) had none. Older children and students take part in household farming activities, providing free and extra labour. Conversely, most of the men engaged in urban agriculture as an income-generating activity.

The men spent longer hours in the garden, because the crops that they grow are more labour-intensive. Since most of the women (70 per cent) are married and have to perform traditional household roles as well, the women tend to grow crops that are less labour-intensive (Table 5.4).

Although women spent relatively less time in the gardens than men, the study revealed that women had much less leisure time than men (women 4 per cent, men 12 per cent leisure time). This is an indication that women engaged in several unpaid, unrecognized, and undocumented labour tasks that men take for granted. Women and men were involved in different activities in addition to agriculture, some of which were specific to either men or women. In Uganda, house keeping, child care, nursing the sick, cooking food, and
housework are a woman’s responsibilities. Cooking food, for example, is culturally unacceptable for a married man. In addition, some women carried out other income-generating activities such as tailoring, poultry keeping, shop keeping, and serving in saloons and restaurants, as well as selling food products.

Only 9 per cent of the farmers had formal employment and earned a salary. Few women had professional training, and those that did were predominantly nurses and teachers. Men were often carpenters, shopkeepers, builders, drivers, stone breakers, bricklayers, cattle keepers, hawkers, and security guards in addition to being farmers.

**Men’s and women’s interests, constraints, and knowledge of urban farming**

The main motivating benefit of urban agriculture for most of the farmers was food. Asked what motivated them to practise urban farming, 41 per cent of the respondents said they benefited from getting food, 21 per cent from easy access to markets, and 9 per cent from economic benefits. As discussed earlier, 35 per cent of the farmers would have no food if prevented from growing food, including 37 per cent of the women and 31 per cent of the men. Moreover, 22 per cent of the farmers (30 per cent of the women and 12 per cent of the men) would suffer an economic crisis if they had to stop urban agriculture.

As indicated before, men and women are generally interested in – and have better knowledge of – different crops: for men it is mainly sugar cane and cocoyam, and for women maize, sweet potatoes, and vegetables.

**The role of external factors in urban agriculture**

In many countries, religious and cultural traditions restrict women from owning land. In Kampala city, for example, only 7 per cent of the women own land (Kiguli, 2004). According to customary law in Uganda, a woman is not entitled to land ownership. She cannot inherit family land, because she is expected to get married and leave her birth home for her husband’s

<table>
<thead>
<tr>
<th>Number of working hours spent in the garden</th>
<th>Proportion of male farmers (%)</th>
<th>Proportion of female farmers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td>3</td>
<td>21</td>
<td>18</td>
</tr>
<tr>
<td>4</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Whole day</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
home. Even in her marital home, a woman is only allocated land where she can dig and produce food to feed the family, but the man remains the legal landowner. This puts the woman in an insecure and tenuous position that is inferior to that of her husband.

A minor proportion of the urban farmers in the study (36 per cent of the men and 30 per cent of the women) have access to local organizations that teach them ways to expand their production and improve the quality of their products. Some of these organizations offer credit facilities, but a higher proportion of men than women obtained credit facilities, since most of the women’s produce is consumed by the household, while men sell most of their agricultural produce. This enables men to expand their agricultural production by renting and borrowing more land and paying for extra labour, while this is much more difficult for the women.

In addition, the traditional and reproductive roles of women hinder them from obtaining land far away from their homes. Most of the women use land that is available to them near their homes or readily available in sites that are not suitable for farming, such as the rubbish dumps and roadsides. Women’s productive capacities were therefore constrained by several negative factors, including limited access to expansion of land available for farming.

Potential risks and disadvantages of urban agriculture

Rubbish dumps are used for cultivation by most farmers because the land is public land, and easily accessible. These areas are considered ‘no man’s land’, which farmers may obtain by squatting or by renting it from other farmers. The waste-dumping sites are perceived by many urban farmers to be fertile because they contain high levels of nutrients; they therefore attract farmers, as they are considered more productive. Also wetlands that receive wastewater from municipal and industrial sources are utilized by urban farmers because of the availability of water for irrigation throughout the year.

Under such conditions and without proper management, urban agriculture may lead to contamination of food crops, a reason why municipalities often judge urban agriculture negatively. Farmers on waste sites are exposed to a variety of health hazards, including chemical and biological contaminants in the soil, physical injury from sharp objects, and psychosocial discrimination. Biological agents may include bacteria, helianthus, viruses, protozoa, and micro-fauna. Contamination of fruits and vegetables by pollutants in the soil and in untreated wastewater poses a major health risk, especially when consumers eat raw vegetables.

The division of labour in urban farming households exposes men and women to health risks in different degrees (Flynn, 1999). Women are more vulnerable to health hazards, although they work less time in the gardens. They perform various roles that expose them to health hazards, including contact with contaminated soil and water in the garden (no protective gloves or boots), contact with contaminated foods during food preparation and
marketing, and inhaling motor-vehicle emissions during the long hours when they are selling food at busy roadsides.

A high proportion of the farmers in Kampala are aware of the health risks of growing food on these contaminated sites. Asked whether they agree with growing food on waste sites, above 80 per cent disagreed, stating that it was not healthy. Some of the farmers admitted that they sell most of the food grown on contaminated sites and do not use it for household consumption. The producers, however, said that they had no alternative, since agriculture was their main source of livelihood, food security, and household income. The farmers weigh the health risks against the benefits. One said: ‘We have been eating food from these waste dump sites for several years, but we have never fallen ill. We have even educated our children up to University level using money from the sale of cocoyams grown in these areas.’

The farmers perceive these sites as unhealthy but also as fertile, free land available for farming and one of the few opportunities open to them to gain a minimum livelihood. They continue farming despite their awareness of the health risks. They are more aware of risks that have some visibility, such as cuts from sharp objects, sewage disposal with bad smells, and skin infections. However, they are less aware of the possible long-term health risks associated with farming on waste-disposal sites without adequate precautions.

Conclusions

Lessons learned and recommendations

Both men and women engage in urban farming in Kampala city, but a higher proportion of women grow food crops on rubbish tips than men. Women cultivate former rubbish dumps because these are cheap, accessible, and readily available to them. On the other hand, a higher proportion of the men cultivate in wastewater-fed wetlands, compared with the women.

A majority of the urban farmers sell some of their produce, and a higher proportion of these are men. While women constitute a larger proportion of those who consume all the food obtained from urban agriculture, they also sell to urban consumers within their neighbourhoods, hence improving the nutritional status of the urban poor and thereby playing a major role in feeding the (poor part of) the urban population in Kampala.

Women involved in urban agriculture are disadvantaged in many aspects, including access to resources, distribution of labour and benefits, and protection against health hazards.

Urban agriculture projects should target women farmers to improve their opportunities to access resources and their capacity to perform more efficiently with minimal exposure to health risks, and to empower them beyond reproductive roles. There is also a need to enhance their marketing facilities and efficiency for the sale of perishable vegetables and to minimize post-harvest losses.
Policies should aim to enable access to productive land for women farmers, for example by creating quotas for women in land allocation. Urban farmers in Kampala, especially women, are constrained by lack of formal access to land and security of tenure. Urban activities are neither planned, nor monitored, nor guided, and hence they put consumers and urban farmers, especially women, at risk of exposure to health hazards from biological and chemical contamination.

The study contributed knowledge and advanced understanding of chemical contamination in urban agriculture, complementing earlier studies on food security and nutrition. It increased public awareness regarding chemical contamination in urban agriculture, and changed the perceptions of urban communities and city authorities of the practice of growing food crops on rubbish tips and wetlands around the city. The study played a vital role in informing decision making regarding urban agriculture by facilitating the community-based review of urban agriculture ordinances in Kampala city. The research findings were used in the development of policy guidelines for Kampala City Council.

Urban agriculture is currently recognized as a legal activity in Kampala. There is a need for immediate implementation of the newly formulated guidelines and urban agriculture ordinances to address urban waste management and administration of land for farming, especially for women, in order to improve productivity and enhance food safety. Dissemination of knowledge of adequate crop selection and improvement, and of appropriate techniques such as composting and low-cost wastewater-treatment technologies would go a long way to improve the productivity, quality, and marketing of urban agriculture products.

Women should be encouraged to establish groups through which they could form partnerships with NGOs, development agencies, and action-oriented researchers. Since women comprise the majority of farmers who engage in urban agriculture, empowerment of this group is essential. Knowledge of public-health issues, high-yielding crops, farming safety, and nutrition, for example, would improve not only the quality and quantity of food produced but also the health of the farmers, their families, and consumers.

On a broader scale, the government of Uganda should incorporate urban agriculture into the Plan for Modernisation of Agriculture (PMA), to ensure more sustainable and improved food production, processing, and marketing at local and national levels. The government should also empower women through protected rights to ownership of land, which is an integral part of urban agricultural issues.

Urban agriculture projects should apply gender-sensitive methodologies and take into consideration the social-cultural values that favour men and often render women inferior within the household and the larger community; the projects should therefore specifically address the needs of women. This requires a good knowledge of the actual differences in contributions and
problems of men and women in urban agriculture and the external influences such as culture, legislation, and policies or bylaws.

**Differences in gender mainstreaming between urban and rural agriculture**

Gender-mainstreaming initiatives in urban agriculture differ from those in rural agriculture, because the social values, structures, and institutions that create specific gender dynamics in rural agriculture are different from those in urban agriculture. In rural Uganda, ownership, control, and distribution of resources, and decision making regarding household budget are often a man’s responsibility as head of household. The woman automatically takes on the reproductive roles defined by the society. The rural woman is also dependent on her husband for resources such as land, because land legally belongs to the man. The man often engages in incoming-generating activities such as marketing cash crops or livestock that empower him economically. The woman has no control over resources and the family budget, which renders her inferior in status and dependent on her husband.

In urban agriculture there is a diversity of cultural values, involving as it does people from different tribes, regions, and even countries, most of whom have no access to or right of ownership of resources such as land or irrigation water. Therefore, the traditional definition of gender roles within each group makes room for a new one in which the husband and wife contribute more equally to the livelihood of the household, either directly through digging, growing food, cooking, or selling produce or indirectly through paying for rent, tuition for children, or domestic needs. The women now contribute to the family budget, which demystifies the superiority of male over female.

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CHAPTER 6

Gender dynamics in the Musikavanhu urban agriculture movement, Harare, Zimbabwe

Percy Toriro

Abstract

This case study presents the gender dynamics of urban agriculture in the Musikavanhu Project in Harare. The project sought to understand the different roles and positions of men and women in urban agriculture in the Budiriro area, and the way in which these are changing over time. The majority of the producers in the area are women, males only assisting incidentally when they are not formally employed. While women play prominent roles in decision making regarding production and processing, men tend to take over when it comes to making decisions about the use of the income raised. The results of the study were used to facilitate gender sensitivity in the Musikavanhu project, in order to ensure that gender issues are taken into account when planning and implementing new activities, and to enhance gender equity in the areas where it is active. The positive impacts of these interventions are becoming visible as they influence local planning authorities’ considerations of policy initiatives and actions related to urban agriculture in and around Harare.

Introduction

This case study presents the gender dynamics of urban agriculture in the Musikavanhu Project in Harare. The study was undertaken in the context of the RUAF-Cities Farming for the Future Project. Fieldwork took place in the Budiriro suburb of Harare in January–February 2008 as a continuation and update of a participatory field study done in 2004 (Mushamba and Mubvami, 2004).

Although commonly referred to as Musikavanhu Project, it is not a project in a proper sense but a loose assembly of a large number of community groups in the urban and peri-urban area. Each has 30–50 small plot-holders who have realized the advantages of working together in a group: advantages such as access to land, the economies of scale in securing inputs and marketing their products, and even protecting their crops from thieves. Musikavanhu currently has some 50,000 registered members (6,250 households, with every member of the household being a de facto member of the project) in Greater
Harare, and this is attracting attention from government institutions, NGOs, and FAO. The chairperson of Musikavanhu, Mr Zunde, estimates that there are 500 such small groups across Harare.

Background to the project

The Musikavanhu Project was founded in 1998 in the low-income suburb of Budiriro, located about 10 km west of the centre of Harare, on vacant municipal land which was used by sand miners to dig for pit sand sold for the construction of houses in neighbouring new settlements. Seeing their success in fighting the illegal sand miners, the municipality granted the members an annually renewable permit to use the reclaimed and adjacent lands for agriculture, attaching a number of conditions to protect the environment. However, the land remains reserved for future development.

Soon many other households joined, spurred on by the increasing unemployment initially caused by the economic structural adjustment programmes of the 1990s and later by the deep political and economic crisis in the country, which made farming a last resort for many poor urban families. These urban poor became involved in farming in order to maintain their food security, save money on food expenditures, and generate complementary income from regular sales. The households involved in the Musikavanhu Project consider their agricultural plots an important part of their livelihood support.

The Musikavanhu Project quickly spread to other low-income suburbs of Harare. By 2004 it was reported to have 20,000 members, and in 2008 the total reached 50,000. It is argued that the membership grew exponentially between 2002 and 2006 because prospective members thought they would use the project as a vehicle to be resettled on peri-urban land during the land-reform programme. All member households utilized vacant spaces left behind during the process of urban development, illegally or temporarily.

Musikavanhu Project’s major contribution is in promoting the organization of the urban poor, who hitherto had farmed randomly and irregularly on any vacant land they could find in the city, and helping them to organize their farming activities. The platform offered by the Musikavanhu Project also ensures that members can effectively interact with other institutions in an informed way.

Musikavanhu has benefited from seed and fertilizer donations from commercial companies (who see this as a good marketing strategy); incidental training is provided by some extension workers of AREX (a government scheme), an agro-ecological NGO, and the staff of the commercial companies in relation to the hybrid seed and fertilizers provided. One organization also provided loans to buy farm implements. Although Musikavanhu has received donations from various organizations, its financial base is still weak, because it does not tax its members, apart from charging annual subscriptions.

Joining Musikavanhu Project has brought political and economic advantages to members, as well as providing much-needed unity of purpose
when approaching the municipality to argue for preserving their land or adding more. Members of the project were conveniently allied to ZANU (PF), so that they could easily approach ZANU (PF) politicians for protection or get access to some offices, which might otherwise have been inaccessible. The platform offered by the Musikavanhu Project enabled members to collectively approach the input-support institutions such as SEEDCO and Zimbabwe Fertilizer Company to persuade them to set aside inputs specifically for them at a time when it was difficult for individuals to get inputs at an affordable price and on time.

Although 90 per cent of the farmers in the Musikavanhu Project are women, the project has no deliberate gender policy or mainstreaming strategy.

Farming in the Musikavanhu Project

Farming in the Musikavanhu Project is largely a seasonal activity, although some members grow throughout the year. Most of the members practise rain-fed cultivation during summer, when there is plenty of rain. Additionally in some places individual farmers have dug wells on their plots, while others practise wetland cultivation or cultivate areas very close to stream banks where irrigation is possible.

In most cases the farming activities are taking place on municipal land and largely have an informal (illegal) character. The field plots have an average size of about one acre (although, of the thousand members in the Chapter, 500 have been allocated 12.5 hectares of land, a measure that has been freely sanctioned by the local authority). The hoe is the standard tool. (In Zimbabwean culture, a hoe was part of dowry paid by the men for their women, indicating the place of women in the society: the hoe is predominantly used in tilling, weeding, and harvesting and seen as a symbol of womanhood.) Mixed cropping is practised on almost every piece of land. Maize is inter-grown with beans, pumpkins, and sweet potatoes, and sunflowers are grown to maximize production per unit of land. Produce is both for own consumption and for sale at markets and to neighbours.

Some of the members also have home gardens where they grow fruit trees, vegetables, herbs, and beans, mainly for home consumption with incidental sale of surpluses. During dry spells these home-based crops are irrigated using water from the Zimbabwe National Water Authority (ZINWA). However, the farmers say that supply is not reliable. Many households also rear poultry on their home plots, most keeping up to 20 birds at a time, largely for sale.

Members have also taken up other activities like mushroom production on the home plot (following some training carried out by FAO) and a fisheries project in Mufakose District. But such activities require investments that few can afford under current economic circumstances. The Project is even undertaking community projects like supplementary feeding schemes and recently established a school for training in urban agriculture in the nearby town of Marondera.
This study found that most of the farmers in the Budiriro Chapter earn very little from farming, most of the foodstuffs grown being consumed at household level. Over three quarters (76.7 per cent) of the farmers earn below US$200 annually from farming and cannot afford to invest in the agricultural system because the land is not theirs and is not protected well. Households supplement their incomes with remittances, rents that they charge to lodgers who use part of their houses, and income from working relatives (see Table 6.1).

While the respondents could easily account for the sources of their income and the relative contribution of agriculture to their livelihoods, they had difficulty estimating the cash value of the vegetables produced, because of the absence of production and sales records.

### Methodology of the gender study

The study was designed to enhance understanding of the main gender differences in urban agriculture in the Budiriro chapter (the study area). The study was not designed to explore detailed gender relations within the households, but to shed light on men’s and women’s positions and roles within urban agriculture activities, and to understand how the dynamics within this economic sector influence such position and roles. The study has taken into account methodologies that were used in similar studies (Hovorka, 1998 and 2006).

Primary data collection consisted of interviews with the owners of urban agriculture enterprises in Budiriro chapter of the Musikavanhu Project. This study site was large enough to generate an adequate sample size. Of the thousand members in the Budiriro Chapter, 500 have been allocated 12.5 hectares of land, freely sanctioned by the local authority, while the others farm on an informal basis on vacant public land. The 500 farmers on officially sanctioned land formed the sample population for this study. The study sample consisted of a total of 70 plot holders (or leasers, as the land belongs to the Municipality) of whom 31 were men (44.3 per cent) and 39 women (55.7 per cent). In the interest of equal gender representation, we purposely selected nearly equal numbers of men and women plot holders, even though women constitute 95 per cent of the project membership. Fieldwork took

### Table 6.1 Household incomes of 70 farming households in Budiriro area

<table>
<thead>
<tr>
<th>Type of income</th>
<th>Sex of the earner</th>
<th>Annual income in Z$</th>
<th>% of total income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban agriculture</td>
<td>Predominantly female</td>
<td>5 billion</td>
<td>23.8%</td>
</tr>
<tr>
<td>Formal work</td>
<td>Predominantly male</td>
<td>264 billion</td>
<td>74%</td>
</tr>
<tr>
<td>Other (renting out rooms, vending)</td>
<td>Female /Male</td>
<td>7.8 billion</td>
<td>2.2%</td>
</tr>
<tr>
<td>Total income for 70 households interviewed</td>
<td></td>
<td>356.8 billion</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: 2008 study
place in the Budiriro suburb of Harare from January 2008 to February 2008 as a continuation and update of a participatory field study done in 2004. The study involved the following phases:

a. Secondary data collection; interviews with key informants, as well as review of academic papers and other documents.

b. Structured interviews (15 minutes each); a combination of short-answer and open-ended questions relating to:

- net outcomes (type of agriculture production, gross earnings, and amount of foodstuffs produced, etc.);
- socio-economic variables (gender, age, ethnicity, citizenship, income, access to capital, labour, natural resources, inputs, information, services, social networks, etc.);
- locational variables (plot location, tenure system, cost of land, size, on/off plot production, process of acquisition, etc.);
- environmental variables (water sources, soil type/quality, pests/disease, climate, etc.).

These structured interviews generated a relatively rich data set, adequate for both quantitative and qualitative analysis.

**Socio-economic characteristics of the farmers interviewed**

The gender breakdown of farmers is different from that of plot-holders, indicating that it is predominantly women who engage in farming work, even in male-headed households. Most of the farmers interviewed were women (73.4 per cent), of whom 52.8 per cent were aged 50 years and above. Forty per cent of the farmers interviewed were widows and/or female heads of households. Persons under the age of 40 years are very few (16.6 per cent). Most of the farmers are literate, although very few have formal education (56.1 per cent have had no formal education). Of those who have Ordinary Level education, 52.8 per cent are females.

Most of the farmers (93.3 per cent) are of the Shona tribe. All of them are Christians.

Table 6.2  Summary of socio-economic characteristics of the farmers interviewed

<table>
<thead>
<tr>
<th>Socio-economic characteristics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age average</td>
<td>48 years</td>
</tr>
<tr>
<td>%married</td>
<td>43%</td>
</tr>
<tr>
<td>%widowed</td>
<td>30%</td>
</tr>
<tr>
<td>Mean household size</td>
<td>6 members</td>
</tr>
<tr>
<td>Main type of farm enterprise</td>
<td>Family</td>
</tr>
<tr>
<td>Size of the land per family</td>
<td>1 acre</td>
</tr>
<tr>
<td>Annual average income from crops</td>
<td>US$ 215</td>
</tr>
<tr>
<td>Annual average amount of crops produced</td>
<td>1.5 tonnes</td>
</tr>
</tbody>
</table>

Source: 2008 study
Gender analysis of the Musikavanhu Project

Role in decision making

Decision making at the household level is a reflection of the distribution of power at that level (Feldstein Sims and Poats., 1989). Due to the fact that the men have not been very involved in agricultural activities, the women take most of the decisions on crop choice, cultivation practices, and marketing. However, decisions on financial investments in the household are dominated by men, who do not see agriculture as a priority. Since many married women are unaware of how much their husbands earn, it is difficult for them to obtain money for agricultural inputs or tools.

The participation of children in decision making is very low. The role of children is seen as taking instructions from adults and performing tasks set for them (to till, weed, harvest, and process farm produce).

Table 6.3 Decision making in farming households in Budiriro area

<table>
<thead>
<tr>
<th>Decisions</th>
<th>Male</th>
<th>Male/female member jointly</th>
<th>Female</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs</td>
<td>X</td>
<td></td>
<td></td>
<td>Normally after consulting the male</td>
</tr>
<tr>
<td>Production</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investments</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reproduction</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Division of tasks

Women do the overwhelming majority of the farm work. The men may assist in the agricultural activities during the weekend or when they are not engaged in a formal job.

Typically, in the early morning, women first do daily household chores, such as cooking for the children, making sure that they are ready for school, and cleaning the house, before they go off to the fields for cultivation. After working in the field, women normally get back to their household chores of looking after the children, laundry, preparing food for the family, washing dishes, etc.

The history of the organization shows that men have always been sceptical about urban agricultural activities, and most of the women did not receive support from their husbands when they started. Men joined only after the results, in terms of harvest and income from selling produce, were demonstrated. But still, participation in cultivation has been largely left to women. Despite this obvious gender division of labour, respondents stated that there is no specific gender division of work, since tilling, planting,
weeding, harvesting, and processing are done by both women and (the few) men at work.

However, when it comes to reproductive tasks in the household, the situation is quite different. None of the men in the sample could accept doing work in the household, which they think of as ‘women’s duties’, like cleaning dishes, cooking, scrubbing floors, cleaning children, doing the laundry, making fire, etc. Only under difficult circumstances and in exceptional situations (if the wife is away or sick) will men feel free to do ‘women’s duties’. However, male members do repair damaged property and electrical wiring and other ‘hard’ jobs. So of every ten tasks in the household, the male member attended to only three, and women shouldered the rest. However, none of those interviewed was able to explain how these different duties came about, although some pointed out that the Bible endorses such things.

Work in the fields takes place twice a day – in the morning and afternoon – which means that women are doing it on top of their daily household duties in the early morning, at lunchtime, and in the late afternoon and evening.

All interviewees concurred that gender roles are culturally prescribed and that it will take a long time to change them. The absence of a clear gender policy in the Project and the lack of emphasis on gender issues in the training workshops that are organized for farmers by supporting agencies worsen the situation.
Access to and control over resources

Access to land

Provided that cash is available for renting and the farmer has the right kinds of social relationship (for example, a long-standing relationship and good will, involving produce from farming), access to land is not a major constraint for either men or women in the peri-urban areas. However, since men dominate cash resources in the household and do not give high priority to agriculture, it might well be that some women willing to engage in agriculture in practice are not able to do so.

Within the Musikavanhu Project, all members have equal access to plots, which are annually allocated. However, due to growth in membership there is now a shortage of land and individual plots are getting smaller, while the Project is continually searching for new locations. There has been increased pressure on land because of the increased demand for agricultural plots, resulting in conflicts caused by new members – mainly male – seeking to farm on land belonging to women (adapted from Mushamba and Mubvami, 2004). The main problem for all members is land tenure, since the land is municipal property reserved for other uses.

Access to inputs

Agricultural inputs such as planting materials and agro-chemicals are normally purchased by male and female farmers from the market, although the lower financial status of female farmers, compared with their male counterparts, may be a problem. Married female farmers’ control over buying inputs is restricted by the fact that they have to consult their husbands. As mentioned before, many men do not see agriculture as a priority and since they decide how much money will be allocated to agriculture and when it will be released, it is difficult for many married women to buy the required agricultural inputs or tools in a timely way.

The 6.6 per cent of respondents who said that they had no problems in securing and controlling their inputs were women with sound financial backgrounds, that is to say husbands with a regular income and who are supportive of the agricultural activities of their wives.

Access to credit and investments

Lack of access to credit is a major constraint for most farmers in Musikavanhu, and women tend to have more difficulties in accessing credit than men. Recently, the government has started a micro-credit scheme for women as a poverty-alleviation strategy.

Investment in fixed assets for urban agriculture among the interviewed farmers was much higher for the 31 men than for the 39 women interviewed, while in general the men’s average overall investment in their agricultural enterprise was higher than the women’s.
Access to family labour

As explained above, farming activities are mainly performed by the women, with men generally reluctant to participate. This means that many female farmers have to hire labour for heavier tasks such as tilling, clearing, ploughing, seedbed preparation, terracing, and the repair of terraces. Also, male-led farms employ more family labour, whereas female-led enterprises receive less labour from the household.

Access to information and services

Most of the members (87 per cent) indicated that their access to information and services was limited because of poorly developed extension services. The access of females to relevant information and services is further limited by problems of illiteracy and cultural factors. A large proportion (56.7 per cent) of the members has no education at all, or only a few years of primary education. This fact is not taken into account by most extension workers, who provide information in English (with a lot of jargon), rather than in the native language. Many husbands will not allow their wives to attend a training programme or meetings that would take them away from home for a whole day or more.

The above factors have prevented women from acquiring relevant skills and have inhibited their potential to take on leadership roles in the organization. As a consequence, while the level of enthusiasm regarding agricultural activities is high among women, their levels of knowledge and skills are relatively low (technical skills, organization and management, market information, relevant legal and policy issues). However, whenever such skills and information are imparted, uptake is very quick (as in the mushroom project, for example).

Impact of external factors on gender in urban agriculture

Generally agricultural yields in Musikavanhu are very low, despite the high percentage of the population that is engaged in agriculture. The basic constraints for the farmers are the limited access to land, capital, information, and support services. Lack of access to urban farmland and insecurity of tenure undermine the Musikavanhu Project members’ capacity to make urban agriculture more profitable.

In Musikavanhu the farmers are fully aware that the land is not theirs and that the Council can take it away as and when it is needed. Most of the off-plot land is earmarked for future construction of schools and other urban development uses. Lack of secure tenure over the land negatively affects the capacity of the farmers to secure support for their farming enterprises.

Another constraint is the lack of attention to the specific needs of female farmers (training, input supply, research, etc).
Gender perspectives and strategies of the Musikavanhu Project

The Musikavanhu Project has no deliberate strategy of addressing gender issues. The Project leadership believes that because most of its members are women, gender concerns are automatically taken care of; and these leaders believe that they have done much to cater for women’s needs. For most of the members, ‘gender’ means women’s involvement in any form of activity. However, a deliberate gender strategy is required in order to ensure gender equity in the accessibility to and control over productive resources (land, credit, information and training, inputs) and in the distribution of benefits, as well as in redistribution of household chores, prevention of a ‘double burden’ for women, and a modernization of the farming enterprises led by women.

The following strategies are suggested to be applied by the Musikavanhu Project:

- **Be aware of disparities of knowledge and preference among its members and take these into account when planning training and development actions.**

- **Provide gender-sensitivity training activities for its members, both husbands and wives, in order to make them aware of actual gender inequalities regarding division of labour, control of income and assets, participation in decision making at household and community levels, etc., to enhance their knowledge of existing legal rights of men and women, and to promote more equal participation of men and women in farming and household activities.**

- **Organize a centralized administration for easier co-ordination of training programmes, keeping records of who got what training, and controlling the costs/benefits of the services supplied by the Musikavanhu Project.**

- **Point out and correct gender imbalances in the services provided by organizations supporting the Project (inputs supply, extension services, distribution of land titles, provision of credit, etc.).**

Municipal government can support the Musikavanhu Project in gender mainstreaming urban agriculture in the following ways:

- **Creating a conducive legal framework.** The creation of a facilitating legal framework for urban agriculture that includes gender issues and removes the structural hurdles to the development of sustainable small-scale farming enterprises. These hurdles include the conditions applied by the municipality to temporary use of municipal land by the Musikavanhu members, for example not allowing them to establish boreholes or any other agricultural infrastructure, obliging them to obtain a licence and pay taxes as soon as part of the harvest is sold, forbidding livestock keeping, etc. During Operation Murambatsvina in 2005, all on-plot activities that were not in accordance with the sanctioned plan (including simple irrigation facilities, poultry and mushroom sheds, etc.) were demolished by the government. There is
a need for national and local government to recognize the role played by the urban farmers in mitigating urban food insecurity and the effects of the HIV/AIDS pandemic, and their contribution to local economic development. The support given by the government to the New Farmers through land reforms and AgriBank loans for mechanization needs to be extended to female urban farmers, in view of their crucial role in feeding so many people and their potential for local economic development. Government and public media should stop stigmatizing the urban women farmers and openly support them with political recognition and material support.

- **Raising awareness of gender and urban agriculture.** Local government, in co-operation with the Ministry of Gender, should organize gender-sensitivity courses for the members of the Musikavanhu Project and their husbands/wives. The municipality could also promote public recognition of the important role that the urban farmers play in enhancing local food security and income raising; this could be done, for example, by means of television and radio programmes. Also the common myths about urban agriculture (that the plots are breeding places for malaria mosquitoes and hiding places for thieves) could be tackled in this way.

- **Improving land tenure.** The government needs to review the existing land-tenure system and designate zones for permanent urban agriculture. Special attention should be given to giving women farmers not only access to land but also the ownership or leasehold of the farm land (rather than granting it to their husbands, as is the current practice).

- **Stimulating adequate support services.** The municipality should lobby national government and private organizations (NGOs, enterprises, research organizations) to enhance their assistance to female urban farmers. The government could stimulate such assistance by co-funding NGO programmes that provide training and technical assistance to female urban farmers, providing tax incentives for private enterprises that provide inputs and equipment on a cost-sharing basis to women farmers, making a risk-sharing arrangement with organizations that provide cheap credit to female urban farmers, and stimulating the provision of irrigation water.

- **Providing protection.** Theft of agricultural produce is a major problem for poor female urban producers, who cannot protect their fields at night themselves and cannot afford to pay watchmen. The local government could provide more protection until the Musikavanhu farmer groups are able to organize effective security services themselves.

- **Giving access to free medical support.** Most of the members of the Musikavanhu Project are providing home-based care for people affected by HIV/AIDS, and/or they look after orphans in addition to their farming activities. They need access to free medical treatment under the Primary Health Care Programme.
Conclusion

Women play an important role in feeding more than 50,000 people in poor neighbourhoods of Harare, including HIV/AIDS patients and orphans, and raising some additional income to sustain their livelihoods. However, they receive little support from their husbands in these activities, because working on the land to provide food for the family is traditionally considered to be the task of women.

Also government and media do not recognize the important role of women urban farmers, who are granted only temporary access to some municipal land, under such strict conditions that only traditional rain-fed crop production for self-consumption is possible, and the development of more productive and income-generating agriculture is blocked.

In view of these structural constraints, modernization of urban agriculture around Harare (for example, by facilitating irrigated year-round vegetable production, poultry rearing, mushroom and herbs cultivation) is not taking off. To succeed, institutional transformation at all levels, from farmers up to government, needs to take place. The self-esteem and leadership capacities of the female producers need to be enhanced, and the social movement of which they are members needs to be strengthened. The political and public valuation of the productive role of the female producers has to change – a process which will require a change in attitudes to urban agriculture and to gender relations at household and community levels.

References


About the author

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CHAPTER 7

Key gender issues in urban livestock keeping and food security in Kisumu, Kenya

Zarina Ishani

Abstract

This case study was developed from a scoping study on interactions between gender relations and livestock keeping in Kisumu city. The focus of the scoping study was the improvement of gender-based division of labour, inequality between males and females in terms of power and resources, and gender biases in rights and entitlements to increased productivity, remuneration, and development of women livestock keepers. The study considered the following gender aspects: control and access to resources; roles in decision making; division of labour; knowledge; role of external factors; and the benefits and risks of livestock keeping in urban and peri-urban areas of Kisumu. The study showed that patriarchal norms are changing, especially in the face of HIV/AIDS. However, women's autonomy has not increased much in relation to decision making and the freedom to make choices.

Emanating from the study, a multi-stakeholder city forum on food security, livestock, and agriculture in Kisumu was established, and farmers' networks from the slum areas were formally set up in Nairobi and Kisumu. They continue to function as a major influence in enabling and regulating urban and peri-urban agriculture. Training activities for livestock keeping were undertaken to enhance the knowledge and skills of urban livestock keepers, which succeeded in increasing their capabilities and changing attitudes to gender relations.

Introduction

Background

The case study entitled ‘Scoping Study on Interactions Between Gender Relations and Livestock Keeping in Kisumu’ was first developed in 2004, based on a research project carried out in 2002. The study was implemented by Zarina Ishani and Kuria Gathuru of Mazingira Institute, funded by Natural Resources International Ltd. under the UK government’s Department for International Development (DFID) Livestock Production Programme.
The study was presented at the Women Feeding Cities Workshop organized by ETC–RUAF, Urban Harvest, and International Water Management Institute (IWMI), held in Accra, Ghana, in September 2004. It was then revised and updated in January/February 2008 for inclusion as a chapter in this volume.

**Study area**

The study focused on livestock keeping in six poor areas of the city of Kisumu, Kenya. The city is located on the shores of Lake Victoria, which is the second-largest fresh-water lake in the world. The population of Kisumu is estimated to be 535,664 (Republic of Kenya, Ministry of Finance and Planning, 2002a), with population densities ranging from 5,771 to 14,484 persons per km².

According to the Kenya Population Census (1999), life expectancy at the time was 47.2 years for males and 50.7 for females in Kisumu (country average: 45 years). Total numbers of households were 123,341; of these, 43,169 (41.2 per cent) were female-headed. The Analytical Report on Gender Dimensions shows that 60.9 per cent of females in Nyanza Province had never attended school, compared with 39.1 per cent of men.

Levels of absolute poverty (rural and urban) stood at 53 per cent (Republic of Kenya, Ministry of Finance and Planning, 2002b). Contributions to household income in 2002 were recorded as follows: agriculture, 75 per cent; wage employment, 10 per cent; urban self-employment, 4 per cent; rural self-employment, 3 per cent. The remainder was classified as ‘Others’. Seventy-one per cent of the female-headed households were living in owner-occupied houses in 1999 in Kisumu, compared with 48 per cent of male-headed households (Republic of Kenya, Ministry of Finance and Planning, 2002c).

**Urban livestock practised in the study area**

The majority of the 55 households interviewed kept, on average, chickens (11 per household), goats (six), pigs (five), ducks (four), and cattle (two). Other types of livestock kept in small numbers were sheep, turkeys, geese, pigeons, guinea fowl, and rabbits.

The most common livestock kept were goats, in both female-headed and male-headed households. Goats were numerous because they do not need a lot of care and do not present major health problems. The main reason given for keeping chickens was that they are affordable and can be slaughtered when visitors arrive. Local cattle were kept because they were four times cheaper than grade cattle. Sheep and ducks were not common, because the respondents did not like sheep or duck meat. Pigs, where found, were many, as they were kept for commercial purposes by a limited number of people. Turkeys and geese were kept for sale and as ‘guard dogs’.

Female-headed households kept goats, chickens, ducks, cattle, and sheep (in that order). They did not choose to keep pigs, because the women found the workload to be heavy and considered pigs to be dirty animals. Other
livestock not kept by female-headed households were turkeys, geese, guinea fowl, and pigeons. These were not traditionally preferred livestock; the male-headed households that kept them were doing so on an experimental basis.

**Methodology of the study**

The objective of the study was to acquire relevant information on the interactions between gender relations and livestock keeping in the city of Kisumu. Since this study was predominantly a gender study, the focus was not on women’s issues but rather on the interactions between men and women. To understand and assess the contributions of women and men in development, and the impact of development on both, the information gathered examined who does what, the levels of resources available for both sexes, and benefits and deprivations imposed by society on both men and women.

The study was carried out in six informal settlements in Kisumu city: Manyatta, Bandani, Nyawita, Kibos, Nyalenda, and Migosi. Migosi is a low- to middle-income community, whereas all the others are low-income areas. The purpose of selecting Bandani was that it was the only Muslim settlement and it was necessary to obtain the views of women, especially on inheritance and access to and control of resources, which would perhaps give a different slant on the issue.
A questionnaire was used to gather information from 55 (39 male-headed, 16 female-headed) households keeping livestock in the urban and peri-urban areas of the city of Kisumu. A deliberate selection of female-headed and male-headed livestock-keeping households was made, which were identified with the help of the area Chief. From the list, a random selection of the households was done. The data were collected by interviewing male-headed and female-headed households. In the former, the section of the questionnaire with questions on women’s access to, control over, and ownership of land and property (including livestock) was separately administered to the wife.

Focus-group discussions were carried out with 12 Nyalenda men and 12 Bandani women separately. A male and a female researcher both moderated each of the two discussions. In addition 16 key informants, representing various sectors, were interviewed.

The survey was conducted mostly in Kiswahili, as it was found that most of the respondents were more comfortable with speaking this language. The data collected were of both a quantitative and qualitative nature, with some open-ended questions also included in the questionnaire. The point of reference for the Kisumu survey was the household. For the purposes of this chapter, a household unit is defined as consisting of ‘a house and the group of people who live in it, providing a central place for them to be fed and sheltered’. The Kisumu study considered a household as a dynamic institution, with different typologies, integrating multiple relationships and partnerships.

In this study, if there was a polygamous household the husband was assumed to be the household head – the reason being that in the Luo culture it is customary for the husband to be the decision maker in the family. There was one case in which the husband was bedridden. The wife said that she was the household head, as she was the main bread earner and also was the main decision maker. Where a household had a single woman with or without children as minors, it was considered to be a female-headed household. Where there were widows with adult married sons and their families living together, the researchers asked the family members whom they considered to be the household head. In all cases they were informed that the widow was the household head. Thus in such cases it was not presumed that the eldest male was the household head.

Limitations of the methodology

The main limitation was inadequate time to carry out an in-depth study. This meant that only simple techniques could be used. For instance, it was difficult to find out the exact number of hours spent by each household member on each activity. It was not possible to interview all the female members in an extended family, because most of the time they were not at home, and if they were in, there was not adequate time to go through a full interview with them. The focus-group discussions were fruitful. However, it was felt that it would
have been better to interview men and women in one group from the same area in order to find out the similarities and contrasts in their perceptions.

**Gender analysis of the local situation**

The case study concentrated on six aspects of gender relations and interactions in urban and peri-urban livestock keeping: access to and control over resources; decision making; division of tasks; differences in knowledge and preferences; the impact of external factors on gender in urban agriculture; and the potentials and risks of urban agriculture.

In terms of age, sex, and marital status of the livestock keepers, more than half were over 45 years of age. Close to two thirds of the livestock keepers were married, about a fifth were widows, and more than a tenth were single women. Twenty-nine per cent of the respondents were female heads of households.

**Access to and control over resources**

The most important factor affecting women’s equal right to own, control, and access resources (including property) in Kenya is culture. The dominant ethnic group in Kisumu is the Luo, and their customary laws are patrilineal. The last-born son inherits the property. Women do not own land or property. Upon divorce, or death of the husband, the woman loses all rights to her property. Traditionally, a widow is ‘inherited’ by one of her brothers-in-law, so that family property is not fragmented and the children are looked after. However, these days, this is a thinly veiled excuse for taking over the land and property of the woman, which should rightfully be hers.

Prior to the Kenyan Law of Succession (LSA) Act of 1981, each ethnic group had its customs related to inheritance. The goal of the LSA was to unify all inheritance laws. But it contains exemptions on inheritance of livestock and agricultural lands outside the municipality. These are governed by customary law. Fathers are under no obligation to provide for their daughters. Property rights are terminated for widows upon remarriage. Thus the statutory law can be circumvented, using the Succession Act.

It is useful to distinguish gender relations in the household with regard to different types of property: financial property, consumption property, and production property. Men in male-headed households own and control financial property. Concerning consumption property, of which livestock is an instance, men exercise authority on matters to do with large livestock, and women have authority on matters concerned with small livestock, such as chickens. Men also have a stronger say in practices concerning production property. In the case of livestock, which can also be classified as production property, the preferences of men prevail on the choice of type of livestock, questions of animal health, and the disposal of livestock (whether for consumption or for income).
It was found that inequality prevails in gender relations, irrespective of the type of property in question. Property, in essence, is a social construct. Social relations regulate property, and gender relations make up a part of social relations. Ownership can be defined as right of possession, that is, who owns the livestock, house, land or any other property. ‘Control’ here means the power to direct or determine the use of a resource – in this case, livestock. In Kisumu, the survey found that control over property was largely determined by whoever was the household head. Female heads held absolute control over the household property. This was especially true for widows who controlled land, houses, and other property, including livestock.

In female-headed households the women were free of the restraints imposed on their counterparts in male-headed households. They exercised their free will regarding financial property, consumption property, and production property (even when there were adult sons and their families living in the same compound). Sometimes the sons were consulted, but not the daughters.

The survey showed that although husbands predominantly own the livestock in male-headed households, in more than 10 per cent there was some joint ownership with the wives; and also about a tenth of the wives owned the livestock. The joint or sole ownership of livestock by wives in male-headed households does not mean that women exercise control over this asset, or that they have the authority to make decisions, such as disposing of the livestock, or any income accruing from livestock keeping.

Women in male-headed households had ownership and control over small livestock only. Even where the woman had bought the livestock, she neither owned nor controlled it: in such cases there was joint ownership and control.

Gender relations differed in terms of control. Livestock control was mostly in the hands of the male in male-headed households where the livestock was kept for production and financial reasons. Where the livestock was for consumption only, the male had control if there was large livestock involved, but their spouses had control in the case of small livestock.

Likewise in male-headed households, ownership and control over property (houses, land) were in the hands of the man. If the woman contributed more towards the household income, control was jointly shared. However, income earned and contribution to the total household income by the wife and children in male-headed households were not the main determining factors for ownership and control. Culture played a dominant role. One finding was that traditions are changing, with market liberalization and urbanization. If the Luo culture were to be completely adhered to, no cases of women owning property would have been found. Even in the case of widows, the sons would have had ownership and control over property.

In the case of other properties, again gender relations differ, mainly according to the prevailing culture. Land and houses are in the man’s name, stemming from the cultural traditions of the Luo community. The Kisumu study found some deviations from the perceived norms dictated by Luo
tradition. In male-headed households, access to and control of financial, production, and consumption property was usually the prerogative of males, but not in all cases. Where there was tangible contribution by the wife, say when the wife had bought the livestock, there was joint ownership and joint decision making on marketing and husbandry practices.

According to Luo tradition, inheritance of a widow and her property by a brother-in-law is part of their culture. The study showed that this was not so in all cases. The main reason is the prevalence of HIV/AIDS. The widow did in fact have some control over her property. Another result, contrary to other findings, was that the widowed daughter-in-law was usually found to be living in the same compound as the mother-in-law, instead of being thrown out, in accordance with tradition. The cases that we studied showed that the mother-in-law gave access to some of her livestock to the daughter-in-law, especially if there were grandchildren involved. However, further research in this area is required.

In the focus-group discussion with women in Bandani (predominantly Muslim), there were indications that norms are changing from patriarchal inheritance to the prescriptions of Islamic law. Islamic laws do not discriminate against women, and the recent trend is for parents to bequeath land and other property to their daughters. However, this could not be established conclusively, due to the terms of reference of the scoping study.

In female-headed households where adult male children live in the same compound, according to literature, ownership, access, and control are retained by the male children. In our study, it was found that this was not the case. Mothers had sole control of and access to the livestock. When it came to decision making on any aspect of livestock keeping, the sons were sometimes consulted, which shows that trends are changing and female household heads are not subservient, as presumed.

As for inheritance of property by male heirs (sons), the study was not able to ascertain categorically that male heirs inherit the property after the death of the father. Our cases showed that the widow inherited the property, including land, houses, and livestock.

Decision making

There was more collective decision making on husbandry practices in the male-headed households than in female-headed households. In the former, husband and wife jointly made decisions regarding production and marketing of livestock. The wife made all the decisions in the case of small livestock.

In female-headed households, the woman made all the decisions, even if there were adult sons and daughters living with her. Sometimes the sons were consulted, but not the daughters.
Table 7.1 Decision making on livestock-husbandry practices in male-headed households

<table>
<thead>
<tr>
<th></th>
<th>Manyatta</th>
<th>Bandani</th>
<th>Nyawita</th>
<th>Kibos</th>
<th>Nyalenda</th>
<th>Migosi</th>
<th>Total</th>
<th>Total%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>4</td>
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<td>4</td>
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<td>0</td>
<td>2</td>
<td>0</td>
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<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Joint</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>6</td>
<td>3</td>
<td>13</td>
<td>33</td>
</tr>
<tr>
<td>Son</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Daughter</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
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<tr>
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<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total number of households</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>7</td>
<td>11</td>
<td>8</td>
<td>39</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 7.2 Decision making on livestock-husbandry practices in female-headed households

<table>
<thead>
<tr>
<th></th>
<th>Manyatta</th>
<th>Bandani</th>
<th>Nyawita</th>
<th>Kibos</th>
<th>Nyalenda</th>
<th>Migosi</th>
<th>Total</th>
<th>Total%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>15</td>
<td>94</td>
</tr>
<tr>
<td>Son</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Daughter</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Collective decision</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Total number of households</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>16</td>
<td>100</td>
</tr>
</tbody>
</table>

Gender division of labour in the households

In all households, livestock keeping did not require much work. Local animals were kept and required little care, and either roamed freely or were taken out by hired labourers, who were usually men. The labourers also carried out most of the work of tending the animals. In male-headed households, men claimed that they shared the work of livestock keeping with their wives, but, when interviewed separately, the wives indicated that they themselves did most of the work.

The work that men were involved in was mainly to do with animal health. The routine work of animal care was left to the spouses. Children were not directly involved in livestock keeping, except for helping with waste disposal and egg collection. Girls were rarely involved.

In female-headed households both the mother and son(s) took care of animal health; in their absence, the other females in the household were involved. In

Table 7.3 Gender division of labour in the households

<table>
<thead>
<tr>
<th></th>
<th>Husband</th>
<th>Son</th>
<th>Wife</th>
<th>Daughter</th>
<th>Labourer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
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<td>Grazing</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>12</td>
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<tr>
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<td>3</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Purchasing feed</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Cleaning</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Milking</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Treatment</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Total number of cases</td>
<td>18</td>
<td>8</td>
<td>7</td>
<td>1</td>
<td>66</td>
<td>100</td>
</tr>
</tbody>
</table>
the female-headed households the women were the ones who were involved in marketing of the livestock. The children were not involved, even when they were married and living in the compound. In the male-headed households, both husband and wife were involved in the marketing of the livestock, but the wife could not sell without the authority of the husband.

Products were not sold in large quantities. Fewer than a dozen eggs were sold (to neighbours in most cases). Where the production was commercial, the eggs were sold in the nearby market places. Milk was sold to neighbours, and the volumes sold were small.

**Differences in knowledge and preferences**

Knowledge and access to information were not specific to any one sex. Both men and women seemed to lack the appropriate information or knowledge about livestock husbandry practices. They were also not keeping any records pertaining to income and expenditure. Women felt that they should be getting training in livestock keeping, as they were around the house more than the men were. They were particularly interested in learning about basic treatments pertaining to animal health. One key finding was the need for training of the livestock keepers in basic husbandry practices, record keeping, environmental care, health – of both animals and humans – and sourcing properly formulated inputs for feed, among other matters.

**Differences in benefits and disadvantages of urban agriculture for men and women**

**Main source of income**

The scoping study revealed that the number of male-headed households who kept livestock purely for commercial purposes (33 per cent) was greater than for female-headed households. Another 33 per cent of the male-headed households kept livestock to supplement the family income in case of need, while 20 per cent held livestock for both subsistence and sale. The rest kept the livestock for consumption purposes during festive occasions or funerals.

Comparing the main source of income for male- and female-headed households, it was noticed that one third of the male-headed households depended on livestock, compared with only one eighth of the female-headed households. Almost half of the latter depended on rental income, compared with one tenth of the former. The reasons could be that the female heads of household were mostly elderly and, having been left the property by their husbands, could rent the houses out. Their adult children did not seem to take much interest in livestock, probably due to the fact that they did not have control over it. The male-headed households were comparatively young and kept livestock for commercial purposes, as the women in the household were responsible for taking care of the livestock.
Human health and environmental pollution

Livestock keeping has certain risks attached to it, due to poor husbandry practices, overcrowding in the slum areas, and lack of information and knowledge. Limited knowledge and information about environmental pollution and especially waste management was a general issue. Waste disposal was a major problem. However, the impact of mounds of waste piling up near the living quarters and wells could not be assessed. We surmised that this environment would have a more negative impact upon women than on men, as the women are mostly at home and the land area is small. Further research is required.

Impact of external factors on gender in urban agriculture

Unequal access to opportunities, assets, and the freedom to make decisions are the most important determinants of the level of poverty experienced by women. The main external factors influencing gender relations in urban agriculture are the following: traditional patriarchal norms related to land, property, and inheritance; the effect of HIV/AIDS; and legal, administrative, and regulatory barriers. These not only prevent women from contributing fully to the Kenyan economy, but also create an imbalance in the recognition of women’s contribution to the agricultural sector, which forms an important element of the economy.

Gender and property

According to Luo custom, male heirs inherit property; but inheritance by male heirs was not clear in the urban setting. In the case of Muslim marriages, the wife was entitled to one eighth of the property. Considering livestock as property, in general 64 per cent of the female-headed households had bought the livestock, and 25 per cent had inherited it; 7 per cent was acquired as dowry, and 4 per cent was obtained as gifts.

Inheritance and purchase of livestock played equal roles in the access to livestock of female-headed households. This was surprising, because according to Luo tradition wives or daughters do not inherit – and yet the females had inherited the livestock, mostly from their husbands. There was also one case of a single woman who had inherited the livestock from her parents. This shows that the norms are changing and that widows do inherit. The daughter-in-law also had control of the property (the house) if she was widowed and living in the same compound as her mother-in-law. No cases of a widowed daughter-in-law owning livestock were found. One possible reason could be the HIV/AIDS scourge.

In male-headed households, 74 per cent had bought the livestock, and only 18 per cent had inherited it. These figures also contradict what has been commonly assumed about inheritance by male heirs.
HIV/AIDS

According to a World Bank report (2007),

HIV/AIDS has caused changes in land use, household labour, and financial standing because of loss of financial assets, higher cost of living, increased burden, particularly to grandparents, and disintegration of family ties. HIV/AIDS creates a ‘missing’ generation, distorting inheritance and transmission patterns to grandchildren; widows and their children can be vulnerable in terms of potential loss of land rights on the death of the male household head, with young widows being more vulnerable than old ones; and distress sales of land resulting from HIV/AIDS were rare as the value of family land as a safety net is recognised.

For instance, possibly one third of all deaths in Kisumu are AIDS-related, mostly those of married sons. Widows were not ‘inherited’, as per traditional custom, by brothers-in-law, for fear of spreading the HIV infection. Where there was no wife inheritance, there was no property inheritance either. This conclusion, however, cannot be generalized, and further research is required. In female-headed households, the mother-in-law looked after the daughter-in-law and any grandchildren. This is contrary to Luo tradition. A widow who refuses to be inherited is usually thrown out of the household. But in the cases of our interviewees, this did not appear to be the trend. The reason given was: ‘If I throw out my daughter-in-law, how will my grandchildren survive?’ A bigger sample size would make it easier to draw out firm conclusions.

Kenyan land and by-laws

Kenya has 75 laws governing land, many of which are obsolete, while others conflict each other, supporting different land regimes within the same area. Thus, legal, administrative, and regulatory barriers specifically relating to insecure land rights limit women from making necessary investments in their land.

At the local authority level, the by-laws of Kisumu do not bar any person from keeping livestock in urban and peri-urban areas. However, most of the regulations are outdated because they were enacted between 1925 and 1951. Livestock keepers are expected to obtain permits for any livestock kept. None of the livestock keepers knew of this by-law. By-laws pertaining to the selling of milk (Milk and Dairies by-laws of 1951) stipulate that no one shall sell or process fresh milk in the municipality of Kisumu, unless such a person obtains a licence from the Dairy Board of Kenya (Cap 336, revised 1984). None of the farmers adheres to this by-law, with the result that milk is handled in an unhygienic manner.
Credit mechanisms

Women’s limited land ownership restricts their access to formal financing mechanisms. Only two respondents had taken credit. The others had not, for several reasons: fear of defaulting, lack of information about credit organizations, high interest rates, and misuse of loans by family members.

Lending institutions specifically aiming to support livestock livelihoods were non-existent. However, most of the female respondents were members of informal groups that provide local rotating savings and credit systems (‘merry-go-rounds’), and some men were members of welfare associations. The study found that when women contributed to household income, the balance of power shifted, as women now had more voice in (joint) decision making. Thus if women had the opportunity to increase their incomes by obtaining credit, then they would have more access, control, and ownership of livestock.

Strategies and tools used to incorporate gender in the project cycle

Strategies and tools used to incorporate gender in the diagnosis

From its inception, the study incorporated a gender perspective, with a focus on gender division of labour, gender differences in power relations and resources, and gender biases in rights and entitlements, with specific reference to livestock keepers. The household was considered as the starting point for the research, with deliberate selection of female-headed households and male-headed households. The questionnaire contained a section on women’s issues which was administered to women only.

Focus-group discussions were constructed to ensure that there were women-only groups and men-only groups, and discussions were moderated by the researchers, using open-ended questions. This was deliberate, because it was assumed that women might not talk freely in front of their spouses, neighbours, or male relatives. The men-only group also was assumed to give more candid answers rather than the politically correct replies that they might have given in a mixed group. The women-only group was selected from a Muslim community, in order to find out whether they had different views on property and land compared with non-Muslim women.

Key-informant interviews were carried out to seek opinions of influential people in the communities, or those with whom the livestock keepers were in constant contact, to discover their gender biases and the extent of their knowledge.

Strategies and tools used to incorporate gender in policy influencing

Regional policy-oriented workshop

The scoping studies were followed by a workshop on ‘Urban Livestock for Improved Livelihoods in sub-Saharan Africa’ in March 2003. Cities represented
were Nairobi, Kisumu, Addis Ababa, Kampala, and Dar es Salaam. Municipal and national government representatives, farmers and livestock keepers, civic and community organizations, international bodies, and donors participated in the workshop. The findings of the scoping studies, not only the Kisumu study but also others from the Eastern African region, were discussed. The studies show that while the urban poor rely considerably on urban agriculture and livestock, there is a dearth of access to knowledge and information related to urban agriculture and livestock. The workshop led to the establishment of City Focal Points in each of the participating cities. For each city, a Focal Point was formed. Mazingira Institute was selected as the Focal Point for Nairobi to develop the City Forum.

Establishment of a City Forum on Urban Food Security, Agriculture and Livestock

The ‘Nairobi and Environs Food Security, Agriculture and Livestock Forum’ (NEFSALF) was established in 2004 by Mazingira Institute. In Kisumu, the same multi-sectoral model was applied. Its strategy focuses on the desirable, acceptable, and feasible interactions among the community, government, and market sectors. This interaction is to enable and regulate agriculture and livestock-keeping practices employed by the urban poor to improve their well-being and earn a living. The Forum envisions creating a better way to enhance food security and sustainability of the many, rather than the few, in Nairobi and its environs, through urban crop production and livestock keeping.

Three meetings of the Forum are held annually. In the meetings policy issues identified in the scoping study have been discussed regularly, as a means to facilitate discussion of the main problems encountered in urban and peri-urban agriculture and livestock keeping, and to stimulate reflection and dialogue among the various stakeholders on possible measures to improve the actual situation.

NEFSALF organized a series of training activities, where 198 farmers, 92 of them women, have been trained in record keeping and gross-margin analysis; crop husbandry; livestock husbandry; group dynamics; and the production of organic fertilizer from waste. The criteria for selecting trainees include gender, type of urban farming activity being practised, location of activity, age, and languages spoken. Gender balance is a key concern in the training courses, as is maintaining a diverse range of participants, determined by age, type of farming, and location. Pre-training visits were made to the trainees’ sites to ascertain what activities are going on, and post-training visits are made for assessment purposes. The courses were conducted in the form of lectures, site visits, and on-site demonstrations.

The courses have not only helped to improve the capabilities of the trainees in urban livestock keeping and agriculture but have also enhanced their understanding of gender roles and the importance of involving women in decision making. The committee of one group adapted rules to reflect gender
equity and now has representatives of youth, women, and men. Other groups made considerable changes in the group composition, governance, and group activities. Some groups formed sub-sections to address the emerging need to keep dairy goats.

In terms of decision making and sharing of responsibilities, changes took place. For example, men now consult their spouses, and the women are given more control over livestock and access to bigger livestock, which previously was the domain of men. Men are now taking on responsibilities which traditionally they never used to undertake, such as marketing of livestock and livestock products.

The participants achieved a measure of self-esteem and confidence which did not exist before. They are now willing to approach research institutions, seek assistance from the government for veterinary services, and have a voice; and they are branching out into other urban agriculture-related activities such as production of yoghurt and compost making. The incomes of the farmers have increased, and they are reaching out to others to disseminate the information and knowledge gained through the Forum.

The courses have made the women more knowledgeable, not only about the opportunities that exist but also about the advantages of knowing their rights. Through the resulting networking they have been able to form groups to share their experiences and be proactive. The consequence of all this is that women have been given more choices; they are not as dependent on their spouses as before and have more freedom to do what they want with the income that they earn. Some women have bought land and/or livestock to increase their incomes.

Conclusions and recommendations

The scoping study showed that in some respects there is gender disparity, but it also demonstrated that norms are changing, particularly in relation to property rights and inheritance in the face of challenges posed by the HIV/AIDS pandemic. Knowledge and information are crucial for people living in informal settlements if they are to increase their well-being and gain a sense of dignity. The scoping study gave rise to a number of ideas which are being implemented by the Institute in collaboration with local stakeholders.

To enable and regulate urban and peri-urban livestock keeping, it is important to use a multi-stakeholder approach. Working with multi-stakeholders, however, is not an easy task. Links have to be made, and patience and persistence are required. The regime change in Kenya in 2002 opened new avenues for interaction with the government. However, the resources at the government's disposal are not adequate to enable it to reach out to all the communities. Both central and local government officials are willing to help, provided that adequate facilitation exists.

The Kisumu Forum has functioned well so far, but some challenges remain if sustainability is to be assured; a shortage of resources is one of them.
response from the market sector and the local authorities has not been as expected, although those who have been attending the Forums have found the interactions with the farmers very useful. Both women and men have become very creative after attending the forums, and they are more concerned about animal and human health than before. Women in particular have become the ‘push’ factors for change, and they now take the lead in the household to ensure that these changes do take place.

**Suggested strategies to be applied in local policies and development projects on urban livestock and agriculture**

- Mainstreaming of gender equity in the goal(s), objectives, activities, and outputs that a project aims to achieve is essential, in order to ensure that costs and benefits of an urban agriculture or livestock project, both economic and social, are distributed equitably among men and women.
- Gender equity, however, cannot be achieved at the project level if there is disparity in policies benefiting one sex and not the other. All policies, at the local level and at the central government level, have to be formulated in a gender-sensitive manner. Issues such as inheritance and succession, especially for women, should be of paramount importance in order for the whole household to benefit.

**To ensure equitable division of labour and responsibilities in urban livestock**

- Through better knowledge of husbandry practices, women’s burden would diminish, leading to a higher standard of living and better mental and physical health. Mindsets of both women and men need to change, and this can be achieved through education, training, and networking not only on practices in livestock keeping but also on human rights.
- There is a need to establish the cost-and-benefit differentials existing between men and women; and the cost of women’s reproductive and productive labour vis-à-vis that of men has to be taken into account at the household level and then at the national level. Currently, the contribution of urban agriculture to the overall Kenyan economy (GNP) has not been incorporated in the ‘Strategy for Revitalisation of Agriculture (2004–2014)’. Urban and peri-urban agriculture needs to be recognized as a sector in the economy. All data accumulated for this purpose should be disaggregated by gender, so as to assist in the formulation and implementation of gender-responsive policies in urban agriculture.
To ensure equitable access to and control over productive resources

- All policies pertaining to customs, practices, and conflicting laws on inheritance and succession need to be revised. There should be specific laws allowing acquisition, access, and ownership of land and property (including livestock) by HIV/AIDS widows/widowers and orphans. Appropriate legal measures should be put in place to ensure co-ownership of land by spouses, so that men and women have equal rights, before, during, and after marriage. Matrimonial property should comprise all properties acquired, developed, and invested, including livestock.
- Access to justice should be made affordable, less time-consuming, and geographically accessible. Para-legal training and family courts could cut down on time and costs. When larger disputes pertaining to land and property are resolved amicably, urban agriculture will automatically benefit.
- Training for judges, magistrates, chiefs, and police in women’s rights, including property rights, should be provided on a regular basis to ensure equity in decisions relating to land and property.

Improving women’s access to finance for enhanced decision-making in households

- Women’s access to finance for micro, small, and medium enterprises is negligible. According to a World Bank report (2007), women receive less than 10 per cent of the available credit. In terms of urban agriculture, including livestock keeping, no specific finance companies (public or private) exist. The government should encourage the provision of financing for women through local financial institutions, specifically for urban agriculture, and this may consequently improve women’s decision-making power in households.

To enable both men and women to acquire relevant knowledge

- All stakeholders should work together to bring about a change in livestock-husbandry practices so that farmers acquire relevant knowledge to mitigate any potential health hazards, thus reducing conflict between the authorities and farmers.
- Knowledge of one’s rights, particularly relating to land and property, should form part of the education and training offered to farmers.

To ensure equality in power relations

- Change in power relations can come about only if the first three objectives are successfully achieved. Attitudinal changes which render
harmful and discriminatory cultural practices obsolete are slow to take root.

- Involving all members of the family in decision making and record keeping, particularly adult children, would ensure women’s active participation in decision making.
- No strategy employed in isolation can be successful: all dimensions of gender inequality must be addressed. The government should include all affected stakeholders in its policy-making processes, to ensure that the policy products are favourable to both men and women.

References


About the author

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CHAPTER 8

Urban agriculture, poverty alleviation, and gender in Villa María del Triunfo, Peru

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Abstract

This chapter describes gender mainstreaming in the multi-stakeholder action-planning process (MPAP) in the district of Villa María del Triunfo, which began in 2005. It reflects the inclusion of a gender perspective in every stage of the process developed, and the project's contribution to promoting gender equity in urban agriculture.

The multi-stakeholder action-planning process was conceived in the city as a dynamic process of local development, planning, and implementation of public policies and strategic actions in urban agriculture, strengthening the capacities of local stakeholders. This process developed participatory methodologies and inclusive strategies which contribute to reducing inequalities and inequities affecting women. Urban agriculture represents an opportunity for productive activities for women and a decisive contribution to food security for their families.

As part of the process, an Urban Agriculture Forum was created in the city, providing a space for dialogue with local stakeholders concerning the planning and implementation of public policies and strategic actions related to urban agriculture. The Forum has formulated a Strategic Agenda 2007–2011 for urban agriculture. As a result, 570 urban farmers are organized and registered in the Urban Producers Network, and 86.5 per cent of this group are women.

The main references used in preparation of this chapter were the case study ‘Urban Agriculture and Gender in Villa María del Triunfo’, conducted in 2004, and an update conducted in 2008. In both cases we used participatory methodologies which make visible the division of labour in urban agriculture, as well as access to and control over resources and decision making.

Introduction

The information presented in this case study is based on the results of a participatory analysis of urban agriculture and gender undertaken in 2005 in co-operation between the Municipality of María del Triunfo and the RUAF–
Cities Farming for the Future (regionally co-ordinated by IPES – Promocion para el Desarrollo). In 2007 this diagnosis was upgraded by a special study of gender and urban agriculture in Villa María del Triunfo.

**Villa María: the local context**

Villa María del Triunfo is one of the 43 municipalities that make up the city of Lima. It forms part of the poverty belt that surrounds the city, which is located in the desert area of the central Peruvian coast where it hardly ever rains (but the air is humid, which regularly creates fog and a monthly precipitation ranging between 5 and 30 mm). A major feature of the city is its rugged geography, with hills ranging from 200 to 1,000 m above sea level and slopes ranging between 7 and 43 degrees, creating harsh living conditions for much of the population.

Villa María has over 350,000 inhabitants, of whom 75 per cent are under 39 years of age. Of its population, 57.3 per cent live in poverty, and 22.2 per cent in extreme poverty. Chronic malnutrition affects 23 per cent of children under the age of eight, and 25 of every 1,000 inhabitants suffer from tuberculosis. The official unemployment rate is about 8 per cent (but it should be noted that the official statistics consider persons engaged in street vending as employed, although this is a precarious and unstable activity). Of the employed population, 77 per cent are involved in commerce (formal and informal), 5 per cent in industrial activities, and 18 per cent in services (DESCO et al., 2005).

Villa María is divided into seven consolidated zones which include in total 292 neighbourhoods and settlements, 60 of which are informal and without any basic sanitary facilities. One of the main characteristics of Villa María is that it is a city under constant construction. At present it has over 73,500 houses, most of which are made of durable materials (bricks and cement) and 24 per cent of other materials (cardboard, wood, stone).

The response of the municipal government to the poverty and precarious livelihoods in the city is limited by its scarce resources: municipal revenue totals US$6.6 million ($27 per capita), of which the largest part must be spent in accordance with national government policy.

**Urban agriculture in Villa María del Triunfo**

In Villa María del Triunfo, urban agriculture is understood as the agricultural activities (crops and livestock production, production of inputs, and processing and marketing of products) in the intra- and peri-urban areas of the municipality which make use of local resources (labour, land, water, solid and liquid wastes, etc.) in order to generate food products for household consumption as well as for sale in the market.

In Villa María many resource-poor urban households are involved in some kind of urban agriculture. The total number of such households is unknown,
but 570 have joined the recently established Urban Producers Network. Agricultural activities are conducted in family gardens, gardens belonging to community kitchens, community gardens, and school gardens. These gardens may be located on any of the following types of land:

- **Private land:** backyards and vacant private plots (often partially developed and abandoned).
- **Communal areas:** areas that have been recognized or earmarked by the municipality as communal land for use as green or sports areas.
- **Public land:** land owned by the municipality that is made available for the development of community gardens and soup-kitchen gardens. This includes land where construction is restricted, such as land lying beneath high-voltage power lines and along main roads.
- **Institutional land:** land owned by institutions that may be used by the institutions for their own gardens to generate income or food for their staff, or for educational purposes (school gardens) or land that is made available to the community for gardening (community gardens).

A mapping exercise identified the availability in Villa María del Triunfo of about 175.4 acres of vacant land with some potential for urban agriculture. The activities of the urban producers in Villa María include the following:

- **Local production of inputs for urban agriculture.** Animal wastes (manure from chickens, guinea pigs, and other small animals) along with vegetable wastes are composted locally and reused in the gardens. No chemical inputs are used. The municipality has a greenhouse for the production of seed and seedlings, but its production is not sufficient to meet the local demand.
- **Agricultural production.** About 83 per cent of the urban farmers produce vegetables, 45 per cent fruits, 31 per cent aromatic plants, 18 per cent ornamental plants, and 3 per cent fodder. About 52 per cent of the urban farmers raise animals, especially smaller animals (chickens, hens, ducks, quails, turkeys, etc.).
- **Processing and marketing the produce.** About 20 per cent of the farmers occasionally process their products, for the most part producing jellies, juices, cakes, and other items.
- **Commercialization of the produce.** About 20 per cent of the farmers sell some of their production, for the most part locally, either fresh or processed.

**Characteristics of the urban producers in Villa María del Triunfo**

The Urban Producers Network of Villa María del Triunfo has registered 570 families as members. Of the 2,850 persons involved, 86 per cent are women. Only 17 per cent of the families engaged in urban agriculture have a household income above the minimum wage ($152 per month), meaning
that 83 per cent of the families engaged in urban farming in Villa María have an income per person equal to or less than $1 per day. The female-headed families have lower incomes than the families led by men. For these poor and female-headed households, urban agriculture is an opportunity to enhance the family’s food security, to save on food expenditures, and, for a minority, to generate an additional income. Most of the women in Villa María used to dedicate their time mainly to domestic activities and participation in the comedores populares (government-subsidized community kitchens). They were involved only sporadically in income-raising activities such as selling handmade dresses and ornaments.

Of the farming households, 49 per cent do not have access to water and drainage services, while 23 per cent do not have electricity.

The case-study update in 2008 showed that most of the members of the Urban Producers Network (and especially the women) are also members of other programmes; for example, 72 per cent of the members participate in the ‘Vaso de Leche’ programme2 (a government-sponsored feeding programme for children under 13 years and elderly people); and 44 per cent participate in the ‘Comedores Populares’ programme and, to a lesser degree, in the Association of parents in schools.

The above indicates both the great need of these households, and the culturally determined distribution of tasks within them. Women’s membership of the programmes mentioned can be understood as an extension of the reproductive tasks that are mainly seen as a woman’s duty, whereas men participate more than the women in neighbourhood organizations that address issues of housing, services, and infrastructure.

Eleven per cent of the members, all of them women, have never received any kind of formal education, and 31 per cent of the female producers have

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**Figure 8.1** Crop cultivation by male and female producers
only elementary education, compared with 15 per cent of men; women are also under-represented among those who have been educated beyond the elementary stage. This clearly indicates unequal access to education for men and women.

Most of the female urban farmers are between 30 and 50 years old, while most of the men are more than 40 years old, with a notable proportion who are more than 60 years old. This is probably due to the fact that younger men tend to dedicate themselves to other work outside the home.

Most of the urban farmers are married or cohabiting (77 per cent of the men and 76 per cent of the women). While most single men do not have children, most of the single women are head of a household (over 13 per cent).

Only 18 per cent of the urban producers in Villa María were born in Lima; the rest were born in other provinces of the country, mainly in the highlands (85 per cent of the men and 64 per cent of the women), indicating the strong migration wave that reached Villa María and the city of Lima three decades ago in response to the marginalization and exclusion that affected the country’s provinces at that time. In addition, Peru suffered from nearly 20 years of terrorist violence that had its focus in the country’s interior, leaving 69,000 people dead, mostly Quechua-speakers in the mountains and forests in the centre and south.

**The development of Villa María’s policy on urban agriculture**

The local government of Villa María began to support the development of urban agriculture in 2001. Before that date, urban agriculture was largely invisible; no data on such activities were available, and no regulatory framework or public policies regarding urban agriculture were in place. In 2002 the local government created the ‘Municipal Programme on Urban Agriculture’, and in 2004 the programme became a sub-unit of the Economic Development Unit.

Due to the lack of information on urban agricultural producers, the initial supporting activities organized by the municipality were not conceived of in a strategic way, and they responded insufficiently to the priority issues of the different categories of urban producer; as a result, the activities had limited impacts. Moreover, severe restrictions in financial and human resources limited efforts to meet the needs of the urban farmers. Several local organizations had initiated projects in Villa María’s neighbourhoods, but without co-ordination among themselves or with the municipality. Some of these initiatives were unsustainable and/or had low impacts.

In 2005 the local authorities of Villa María, supported by the RUAF–Cities Farming for the Future Programme (RUAF–CFF), initiated a process to enhance the effectiveness and sustainability of the efforts to promote urban agriculture, and to optimize the use of the scarce human and financial resources of the municipality and of other local actors involved. The objective of this process was the participatory formulation and implementation of a strategic action plan for urban agriculture.
A multi-stakeholder platform on urban agriculture was established (City Forum on Urban Agriculture), including 21 organizations and institutions (the municipality, NGOs, community-based organizations, universities, representatives of the urban producers, etc.). The main objective of the Forum is to promote urban agriculture at the city level and to co-ordinate the related development activities undertaken by its members. The Forum, with the help of RUAF-CFF, elaborated a ‘Strategic Action Plan’ for the development of urban agriculture in Villa María. The plan contains the city’s vision for urban agriculture and its expected contributions to the realization of the City Development Plan, the principles and strategic objectives for the promotion and consolidation of urban agriculture in the city, and the main actions / projects to realize these objectives. This plan concretizes the City Policy on Urban Agriculture and forms the main instrument for its implementation.

In August 2007, the plan was approved by the municipality, together with Ordinance No. 021-2007/MVMT, which recognizes urban agriculture as an ongoing and legitimate activity in the city and defines the principles and strategic objectives of its promotion (social inclusion and participation, the promotion of equity, justice, and solidarity, and conservation of natural resources). When the City Development Plan of Villa María was updated in 2007, urban agriculture was included as one of the four priorities for action in the field of economic development.

Also a Network of Urban Producers was established which integrates 570 households involved in urban agriculture. The Urban Producers Network is now representing the urban producers’ interests in the City Forum.

After the elections in January 2007, the new municipal authorities endorsed their commitment to the realization of the Strategic Agenda on Urban Agriculture and maintained the Urban Agriculture Sub-Unit in the municipality, indicating the importance that the urban agriculture movement has gained in Villa María in the past few years.

The integration of gender in the multi-stakeholder action-planning process

The multi-stakeholder action-planning process was developed in the city of Villa María del Triunfo from August 2005 to December 2007. The main objective of the process was the formulation and implementation of an inclusive and equitable public policy and a strategic action plan to strengthen urban agriculture in the city, with the active participation of all stakeholders. The following actions were taken to ensure that the policy and action plan would be inclusive and equitable.

In the preparatory phase

During selection of the members of the Local Co-ordination Team (LCT), which would facilitate the planning process, the gender sensitivity of the
candidates was taken into account as well as the representation of women. The LCT includes four representatives of local government departments and two professional staff of IPES, together forming a gender-balanced team of three women and three men. Two women assumed responsibility for the day-to-day co-ordination of the LCT (one from the municipality and one from IPES). In this way, attention to gender issues throughout the process and the active participation of women in decision making were ensured.

The gender sensitivity of the staff who would play a role in the diagnostic phase was enhanced by giving proper attention to gender issues in urban agriculture during the training course on urban agriculture and multi-stakeholder planning that was organized by IPES/RUAF–CFF. During the training the conceptual framework for the multi-stakeholder action planning (with a clear ‘gender and development’ focus) and the integration of gender in each phase of the planning process were discussed and adopted by all involved. Also during this training, the capacity of the staff to work with gender-sensitive diagnostic methodologies and tools was enhanced.

In the diagnostic stage

The participatory diagnosis of the existing situation of urban agriculture in Villa María del Triunfo was undertaken with a clear gender perspective and the application of participatory and gender-sensitive methodologies and tools.

During the stakeholder analysis, an inventory was taken of the main stakeholders in urban agriculture and their actual and potential roles in promoting urban agriculture. Attention was given to the gender sensitivity of these organizations and the extent to which they represent the interests of women – and how they do so. It became clear that there are important differences in the organizational linkages maintained by men and women and in the services offered by these organizations to women and men respectively. This was taken into account when selecting organizations to be invited to participate in the action-planning process.

In the analysis of the actual urban production systems, participatory tools were applied, to ensure that (a) men and women could independently voice their specific problems and interests; (b) the data collected were gender-disaggregated; and (c) insight was developed into the local gender division of labour, access to resources, roles of men and women in decision making at household and community levels, etc. This also enabled men and women to recognize the existing inequities in the distribution of benefits and access to decision making, as well as the differences in the daily workload of men and women in urban agriculture. It made them aware of the low value accorded to domestic work.

The gender-specific analysis of problems encountered and their perspectives on the development of urban agriculture in homogeneous groups of men and women resulted in the identification of gender-specific problems, interests,
and priorities, next to others that were common for both groups. Such gender-specific differences referred to aspects of production as well as to processing and marketing.

During the mapping of available open spaces (the participatory identification of areas in the city that are vacant and have potential for urban agriculture) attention was given to the gender dimension. This allowed recognition of differences in men’s and women’s knowledge about their surroundings, with women displaying less knowledge than men.

The review of actual policies, norms, and regulations related to urban agriculture included gender as one of the six elements of the analysis, trying to identify differential impacts of the actual legal framework for men and women.

**In the planning stage**

This phase of the multi-stakeholder process had two stages:

a. The establishment and strengthening of the Villa María Multi-stakeholder Platform on Urban Agriculture, constituting an independent forum in
which the problems and proposed solutions to various issues related to urban agriculture in Villa María are discussed between the various stakeholders, and developed actions are co-ordinated.

b. The formulation of a Policy and Strategic Action Plan on Urban Agriculture.

When establishing the multi-stakeholder platform, gender was taken into account in the following ways.

- Including in the Forum organizations that are more gender-sensitive and involve women.
- Including in the constitution of the Forum the statement that it is ‘inclusive and equitable, because it seeks to involve all stakeholders, without exclusion or discrimination of any kind, with a focus on equity and gender perspective’.
- Ensuring a gender balance in the committee that co-ordinates the Forum and in the working committees that were formed to elaborate various components of the Action Plan.
- Enhancing the gender sensitivity of the members of these committees by giving training in participatory and gender-sensitive action planning, social inclusion, and gender equity.
- Assisting the urban producers (a large proportion of whom are women) to organize themselves to be better able to present their interests in the Forum and its working committees. During the diagnosis phase the urban producers were contacted and workshops were conducted to support them in electing their leaders (five women and two men) and in defining the objectives and operating principles of the Network, including ‘to develop urban agriculture with equal opportunities for men and women’ and ‘to promote equitable relationships between men and women’. During these workshops the farmers’ representatives for the Forum were selected, and these subsequently received training in gender-equity issues and citizen participation, among other topics.

When formulating the Strategic Agenda, the integration of gender was facilitated as follows.

- Building a collective vision of the desired development of urban agriculture in Villa María del Triunfo, including a clear gender perspective as one of the five principles of the Strategic Agenda on Urban Agriculture. This principle has to be taken into account when planning specific projects and actions, and each project plan should clarify how it will benefit men and women.
- Selecting appropriate meeting places and times, providing child-care facilities, devising working methods that encourage women to speak in public, and adopting gender-inclusive language which does not reaffirm conventional stereotypes.
• Presenting the main results of the diagnosis in a gender-specific way to the working committees to encourage them to develop policies and actions that take into account women’s specific needs and interests and contribute to achieving inclusion and equity in the local society.

The formulation of the plan was worked out by the members of the Forum on Urban Agriculture in about three months, resulting in a Strategic Agenda, with six strategic objectives, each with a number of priority actions and projects and a set of success indicators, including the differential impacts of the implementation of the Strategic Agenda on men and women.

The effects of the MPAP process on gender and urban agriculture in Villa María del Triunfo

In 2008 a study was undertaken to improve understanding of the changes brought about by the participatory and gender-sensitive planning process in Villa María del Triunfo described above: to what extent have changes occurred in the gender-differentiated division of labour, in access to and control over resources, and in participation in decision-making? And have the views of male and female urban agriculture producers changed since 2004?

The study team consisted of one representative of the Municipal Agricultural Unit, three representatives of IPES, seven representatives of the Urban Agriculture Network (five women and two men; one from each of the seven zones of Villa María), and three support staff (students from the area).

Techniques and tools were selected in direct relation to the main issues indicated in the objective of the study: the gender differentiation in the division of labour, access and decision making, mobility, views, knowledge, interests, preferences, and needs, as well as the influence of external factors (age, education level, place of origin, family composition, economic level, community participation). Some of these techniques were applied during individual semi-structured interviews (for example, gender differentiation in division of labour, access to resources, and decision making), while others were applied during a workshop (for example, gender-differentiated views on key problems and opportunities in urban agriculture).

As in 2004, 20 per cent of the members of the Urban Producers Network were included in the survey. The following criteria were taken into account when selecting the respondents:

• distribution of the network members over the seven formal zones of the municipality and the various neighbourhoods and settlements within these zones;
• distribution by sex;
• distribution by type of garden (family gardens, community gardens, and institutional gardens).
This resulted in a sample of 114 persons, of whom 86 per cent were women and 14 per cent men. Fifty per cent of the respondents are home gardeners, 44 per cent are involved in community gardens, and 6 per cent are participating in institutional gardens.

The interviews were performed by the students, who were trained beforehand. One member of the Urban Producers Network accompanied the students during the interviews in each zone. The interviews were performed in a simple and easy language.

The workshop was organized in co-ordination with the Urban Producers Network and convened by their zonal co-ordinators. The workshop was attended by 22 people, of whom 17 were women and five men. The president of the Urban Producers Network gave the introduction, and one of the facilitators presented the objectives and the agenda of the workshop. In order to achieve information disaggregated by gender, the discussions were held in homogeneous groups (two composed of women and one of men).

**Division of work in the farming households**

The overall picture in 2008 is that male and female producers in general perform similar activities/roles, with men tending to engage more in raising animals and processing the products, and especially the commercialization of the products. However, women also show an increasing interest in these activities, are already strongly involved in the selection and packaging of crops to be sold (since they know the criteria of the mainly female buyers better), and ask for more training in these fields.

In comparison with the situation before the start of MPAP process, one can observe that the following shifts have taken place in the division of labour in urban agriculture. In 2004, 83 per cent of the female farmers performed activities on their own, and only 10 per cent of them were supported by their husbands and 7 per cent by their sons or daughters. Now the situation has considerably changed. Currently, only 29 per cent receive no support in their urban agriculture activities; 40 per cent are assisted by their husbands and 31 per cent by their sons and daughters, which indicates an increase in family commitment to urban agriculture.

**Agricultural production**

In general, in crop-production activities men and women perform the same tasks, with a slightly stronger tendency for the women to predominate in the harvesting of the vegetables. Both male and female producers tend to produce a diversity of crops, with the main emphasis on vegetables. However, we notice that male producers are more active in the production of aromatic plants than the female producers. On average the male producers spend 10 hours per week on urban agriculture activities, compared with the female producers’ average of eight hours. This difference is explained by the extra
demands of women's reproductive role in the family. It is interesting to note that male producers receive ample support from their sons in crop-production activities, and to a lesser extent from their daughters, while female producers are mainly supported by their daughters.

Livestock keeping

The raising of animals is mostly done at home, and most animal-husbandry activities are done by both men and women, with women slightly more involved in providing water to the animals, most probably since the women are more often at home. Male producers are slightly more likely to undertake the rearing of animals (77 compared with 64 per cent). Both men and women prioritize raising poultry (54 per cent of males and 52 per cent of females), while guinea pigs are kept more by men (54 per cent of the men) than by women (21 per cent of the women). Ducks are raised by 23 per cent of the men and 16 per cent of the women, and rabbits are raised by 15 per cent of the men and 4 per cent of the women. In addition, 8 per cent of the men raise pigs, and 4 per cent of the women raise quails.

Processing

Processing of agricultural products is undertaken by 31 per cent of the male producers and only 13 per cent of the women. However, we also find that the majority of men who are processing agricultural products are supported by women at home (wife and daughters). The men and women involved in processing activities in general both perform nearly all the tasks, but women are more involved than men in the selection of the products that will be processed (90 per cent compared with 50 per cent) and in the packaging of the processed products (30 per cent compared with 0 per cent). Males involved in processing activities on average spend some six hours per week in these activities, while the women involved indicate that they spend on average some four hours per week on similar tasks.

Marketing

In 2004, the focus was mainly on production for home consumption, and only some women showed interest in selling part of their produce. Nowadays men spend more time than the female producers each week in the commercialization of the products, in order to earn extra income. In most households commercialization of urban agriculture products is mainly undertaken by men (62 per cent) and much less so by women (33 per cent). Most of the products are sold to neighbours and relatives and in local markets, fairs, and soup kitchens. Male producers spend on average eight hours per week on marketing activities, while women spend only some four hours
per week on similar activities. This reflects the fact that the male producers tend to be more market-oriented than the female producers, who tend to emphasize the home consumption of the products. However, women also show an increasing interest in these activities, are already strongly involved in the selection and packaging of crops to be sold, and ask for more training in these fields.

The support received by male and female producers from sons or daughters in the marketing activities is more or less equal, with men receiving more support from their sons (63 per cent of men and 48 per cent of women) and women more from their daughters (28 per cent of women and 13 per cent of men).

Access to resources and decision making by gender

The person who manages the garden, either male or female, is usually the one who provides the resources that are needed for production (seeds, fertilizers, etc.). However, various male respondents mention that they also have access to the resources of their wives, a fact that is hardly mentioned by the female producers.

The gender-differentiated decision making in respect of various agricultural activities (see Table 8.1) shows the same pattern (taking into account that 86 per cent of the gardens are run by women): the person who is in charge of the garden makes most of the decisions, and the figures indicate a growth in female leadership since 2005. The women estimate their role in decision making substantially higher than the men rate it, which seems to indicate that not all men yet have accepted that women take their own decisions regarding their gardening activities.

Table 8.1 Gender differentiation in decision making on agricultural activities in Villa María

<table>
<thead>
<tr>
<th>Who decides about:</th>
<th>Answers by the female producers (%)</th>
<th>Answers by the male producers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>What crops to grow</td>
<td>11</td>
<td>71</td>
</tr>
<tr>
<td>Which crops to process</td>
<td>20</td>
<td>60</td>
</tr>
<tr>
<td>What products to sell</td>
<td>16</td>
<td>76</td>
</tr>
<tr>
<td>Which products / animals to consume</td>
<td>6</td>
<td>81</td>
</tr>
<tr>
<td>Which products / animals to sell</td>
<td>5</td>
<td>81</td>
</tr>
<tr>
<td>How to use income raised from agriculture</td>
<td>9</td>
<td>80</td>
</tr>
</tbody>
</table>
Mobility of male and female urban producers

Table 8.2 shows the degrees to which male and female producers travel away from their homes to engage in agricultural production. The table indicates that most of the movements of both men and women are within their own zone. Women leave their zone more often for production activities, while men do so more often for the acquisition or production of inputs.

Table 8.3 shows to what extent men or women have freedom of movement to undertake agricultural activities, indicating that men and women in general either inform each other or just take off, and only to a minor extent have to negotiate or ask permission to leave the home to farm. Some women hide from their husband when they are going to sell some products.

In 2004 we noticed that women’s mobility was limited to a small local area. In 2007 we found that women move within a much wider area within the district and play a co-ordinating role at a communal organizational level.

Table 8.2 Agriculture-related mobility of male and female producers

<table>
<thead>
<tr>
<th></th>
<th>Production</th>
<th>Processing</th>
<th>Marketing</th>
<th>Acquiring / producing inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>Inside the zone</td>
<td>100</td>
<td>61</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Outside the zone</td>
<td>0</td>
<td>39</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 8.3 Freedom of movement of male and female producers

<table>
<thead>
<tr>
<th></th>
<th>For production</th>
<th>For marketing</th>
<th>For processing</th>
<th>For input acquisition &amp; production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>Ask permission</td>
<td>15</td>
<td>8</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Negotiate to leave</td>
<td>38</td>
<td>8</td>
<td>23</td>
<td>11</td>
</tr>
<tr>
<td>Announce that they are leaving</td>
<td>0</td>
<td>32</td>
<td>26</td>
<td>36</td>
</tr>
<tr>
<td>Leave secretly</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td>Just leave</td>
<td>57</td>
<td>52</td>
<td>51</td>
<td>30</td>
</tr>
<tr>
<td>Total (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Views of male and female producers on the strengths and weaknesses of urban agriculture

In separate groups, male and female members of the Urban Producers Network identified and prioritized strengths and weaknesses in the urban agriculture situation. Table 8.4 shows that male and female producers agree on various strengths that they have gained since 2005 (organization, technical
Table 8.4 Views of male and female producers on strengths and weaknesses of urban agriculture in Villa María

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Both</strong></td>
<td><strong>Specific</strong></td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td><strong>Men</strong></td>
</tr>
<tr>
<td>‘We are organized now’</td>
<td>‘There is unity and commitment’</td>
</tr>
<tr>
<td>‘We know how to produce’</td>
<td>‘We produce healthy products without chemicals’</td>
</tr>
<tr>
<td>‘There are now institutions that support us’ (the UA Forum members; the City Strategic Agenda on urban agriculture)</td>
<td></td>
</tr>
</tbody>
</table>

knowledge, recognition by and support received from institutions) as well as the weaknesses that remain (lack of irrigation water, poor land quality, need for more training and technical assistance). However, there are also some specific differences between men and women. The women stressed organic ‘healthy’ production and the need for more assistance regarding pest management, processing, and marketing. The men stressed access to land (which remains predominantly a ‘male’ issue), the need to improve production planning, and links with the market.

Conclusions of the case study

Over the past three years, urban agriculture in the district of Villa María has been developed in two respects:

- **Qualitatively**, since before the multi-stakeholder planning process urban agriculture was a poorly recognized activity, and now it is a line of public policy and support; before, the urban farmers were poorly organized, and now they have their own organization; before, the support organizations hardly knew each other, and now they participate in the Forum and co-ordinate their activities; before, women’s role in urban agriculture was undervalued and their participation in decision making was restricted, and now their leadership is widely recognized.
• *Quantitatively*, because the number of urban farmers has increased, as has the size of the urban area in use by agricultural producers.

The Network of Urban Producers is an active member of the Multi-stakeholder Forum on Urban Agriculture in Villa María del Triunfo and is actively promoting the strategic interests of women producers in this Forum. One result is that the City Strategic Action Plan on Urban Agriculture includes gender equity as one of its key values and includes among its main strategies high-priority attention to women producers, providing them with technical and social training, and promoting women to leadership positions in the community gardens.

Drawing on the analysis of the information presented in this chapter, we can conclude that the gender-sensitive action-planning process for urban agriculture in Villa María del Triunfo has contributed to the empowerment of women; has improved their self-esteem, leadership, and capacity building; and has increased the independence and freedom of mobility of the women involved. In the past two years, women’s participation in urban agriculture has increased; currently 86 per cent of all farmers are women, running home gardens as well as community or institutional gardens. It is important to note that for these women urban agriculture is not resulting in an overload of activities but rather constitutes a means by which to build their personal development and their capacity for social interaction and organization, and to overcome conditions of devaluation, subordination, and exclusion.

However, some inequities in urban agriculture still remain, like the fact that agricultural activities performed by men – which tend to be market-oriented and result in cash income – are still more highly valued in the local social context than those performed by women, which are more oriented to home consumption and barter and are often seen by the community as an extension of the household duties of women. However, female producers at present are engaging more in market-oriented gardening and income generation, and further changes in gender relations may be expected.

Although the participation of women in community roles has grown in recent years, women are still better represented in community organizations that relate to reproductive activities, while men are better represented in community organizations associated with the management of the territory, infrastructure development, and the political sphere.

**Notes**

1. The data in this paragraph are taken from the survey implemented by the authors in 2008 in the updated case study of Villa María del Triunfo
2. The ‘Vaso de Leche’ (Glass of Milk) programme was initiated by the left-wing city government of Lima in 1984 and later extended to the whole country, with state funding. The programme benefits some 4.3 million people, of whom 1.8 million live in Lima, including children between 0 and 13 years, pregnant and lactating mothers, older people, and TB
patients. The comedores populares (community kitchens) were created in the late 1970s as a survival strategy of the poor in the slums of the larger cities of Peru. Women provide the required labour without payment. Actually there are some 15,000 comedores populares in the country, many supported by churches and NGOs and (about 20 per cent) by the state. Many others are run by the women without any external financial support. In both programmes the women were the ones who took the initiative to organize themselves. The groups attend to problems of nutrition and food security, as well as social and gender problems such as domestic violence. In Villa María del Triunfo, various comedores populares have taken up urban agriculture. At the moment, some 40 comedores populares belong to the Urban Producers Network. Part of their production is used in the community kitchens and part is used by the participating women to feed their families.

3. For this study, we use ‘cohabiting’ to refer to couples whose relationship is not legalized.

References


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CHAPTER 9

Gender perspectives in organic waste recycling for urban agriculture in Nairobi, Kenya

Kuria Gathuru, Mary Njenga, Nancy Karanja and Patrick Munyao

Abstract

This case study presents strategies to identify and address gender issues in the project cycle of community-based compost production and briquette-making initiatives in Nairobi, Kenya. Community-based waste management and composting activities were studied in Nairobi, using a semi-structured questionnaire in a research project on organic waste management for urban and peri-urban agriculture, implemented by Urban Harvest and partners in 2003–2004. Gender issues within waste management and composting groups were documented through gender-focused group discussions, guided by a checklist, and also through interviews with key informants. As a follow-up to the organic waste-management research project, Soweto Youth in Action initiated a briquette-making action-research project in partnership with Urban Harvest and Kenya Green Towns Partnership Association in February 2007. Two baseline surveys (one on potential sources of raw materials and another on market opportunities) were carried out, using semi-structured questionnaires. Gender-responsive training courses in group development and governance (including issues of leadership, conflict resolutions, networking and advocacy, and project management) and fuel-briquette production and marketing were conducted, and a business plan and marketing brand for the fuel-briquette initiative were developed.

Introduction

The study area

Nairobi is located in southern Kenya, 500 km from the coast at an elevation of 1,670 m above sea level. The city covers an area of 700 km². Mean annual temperature is 17°C, while the mean daily maximum and minimum are 23°C and 12°C respectively. Mean annual rainfall ranges from about 800 mm to about 1,050 mm, depending on altitude (Situma, 1992). Most of it falls in two
distinct seasons: the long rains from mid-March to June, and the short rains from mid-October to early December (Hide et al., 2001).

The current population of Nairobi is estimated at 3 million people, with an annual growth of 4.5 per cent (Ministry of Planning and National Development, 2003). Sixty per cent of Nairobi’s population live in very low-income informal settlements; this group of urban poor is projected to increase to 65 per cent by 2015 if the trend continues. Unemployment rates are estimated at 14.5 per cent for males and 25 per cent for females (Ministry of Planning and National Development, 2003). It is estimated that over 1,740 tonnes of solid waste are generated daily, of which 60 to 70 per cent is organic (JICA, 1997).

Kahawa Soweto, the centre of the briquette project which is examined in this chapter, is located 21 km north-east of Nairobi city centre in Kahawa location, Kasarani division, Nairobi North district. It is classified as an informal settlement by the local authorities. According to the 1999 National Population census, there were 1,000 households within the village, occupying 700 dwelling units and constituting a population of about 8,000 people. A majority of the residents were former workers on a sisal farm, but they settled in the area after the business closed down, and the population now includes the second and third generations of the original workforce. The village has high unemployment levels, coupled with a 15 per cent HIV/AIDS prevalence. Kahawa Soweto has a village committee that oversees the running of the village, a slum-upgrading committee linked to work by UN-Habitat, and a community policing group (six women and 24 men) that is paid a fee for guarding slum-upgrading structures such as the public toilets and social hall. All the three organs of village governance are recognized by the government of Kenya.

Despite the legal restrictions on urban agriculture, Nairobi has always hosted many urban farmers, from Maasai pastoralists in the 1800s to zero-grazing units (with dairy cattle confined to a stall and fed by a cut-and-carry fodder system) and kitchen gardens and distance gardens that now dot the landscape, occupying road and railway reserves. In the mid-1980s, 20 per cent of Nairobi households were growing crops within the city limits, and 17 per cent of the households kept livestock in the urban areas (Lee-Smith et al., 1987). In the 1990s, the number of households involved in urban agriculture in Nairobi rose to 30 per cent (Foeken and Mwangi, 2000). In 1998, there were about 24,000 dairy cattle in Nairobi, worth roughly US$13 million, producing annually about 42 million litres of milk worth about $11 million (priced at $0.3/litre) (Ayaga et al., 2005). Estimates indicate that 50,000 bags of maize and 15,000 bags of beans are produced in Nairobi annually (Ministry of Agriculture, 2002).

Methodology of the study

This case study is based on two research projects. The first is entitled ‘Management of Organic Waste and Livestock Manure for Enhancing
Agricultural Productivity in Urban and Peri-urban Nairobi’. It was carried out in 2003–2004 by Urban Harvest in partnership with International Livestock Research Institute (ILRI), World Agroforestry Centre (ICRAF), Kenya Agricultural Research Institute (KARI), and Kenya Green Towns Partnership Association (KGTPA). Fourteen community-based compost-production initiatives were identified and studied. Gendered focus-group discussions and interviews with key informants were held and guided by a gender-responsive checklist and a semi-structured questionnaire, involving 155 male and 87 female respondents. Composting techniques were documented, nutrient movements were mapped, links between compost producers and urban agriculture producers were studied, and challenges in compost production and marketing were identified. Also gender issues within waste management and composting groups were documented through gender-focused group discussions guided by a checklist and also through interviewing key informants.

In 2005, a stakeholder feedback workshop was conducted, in which Urban Harvest and partners presented the outcomes of the waste-management project to a variety of stakeholders.

As a follow-up to the organic waste-management research project, an action-research project entitled ‘Enhancing Livelihoods of the Urban Youth through Recycling of Organic Waste for Energy Briquette Making’ was implemented in 2007–2008 at Kahawa Soweto informal settlement by Soweto Youth in Action (SOYIA), in partnership with Urban Harvest and Kenya Green Towns Partnership Association, the University of Nairobi, and Terra Nuova. The overall objective of this project was to enhance income generation, food security, and urban environmental management through community-based energy-briquette production. The briquette-making project involved seven young women and 13 young men, members of SOYIA group. Eight thousand people living in Kahawa Soweto village and about 200,000 from other neighbourhoods gained a cheap and convenient source of high-quality fuel. The initiative would also be beneficial to the charcoal dealers and waste-paper collectors through the sale of waste paper and charcoal dust.

Two baseline surveys were carried out, using semi-structured questionnaires: one on potential sources of raw materials and another on market opportunities, including customers’ willingness to pay and perceptions of fuel briquettes among households, institutions, eating places, and charcoal sellers in low-, medium-, and high-income areas. The resources study involved 160 households (22 male and 137 female respondents) and 100 persons from institutions and enterprises (61 male and 39 female). Six members of SOYIA, four males and two females, were trained in research skills and participated in the survey as enumerators. In the market a survey was carried out to establish the perception of customers, including willingness to pay, and to identify potential traders among individuals and supermarkets. This survey involved 26 male and 24 female respondents.

Two training courses were organized for five female and 12 male members of the SOYIA youth group, who were trained (1) in community organization
and group development and governance (including issues of leadership, conflict resolutions, networking, advocacy, and project management) and (2) in fuel-briquette production and marketing, including environmental management aspects. The training courses applied a gender-responsive and participatory learning approach (see Njenga et al., 2008). Also a business plan and marketing brand for the fuel-briquette initiative were developed with the SOYIA members through participatory planning and budgeting activities. Over 300 members of the village, including men, women, youth, and school children, were introduced to the idea of briquettes as an alternative source of fuel, through meetings, demonstrations, and household visits.

Some members of the composting groups and the briquette-making group also received training on urban crop production, livestock keeping, and waste management and re-use, organized by the Nairobi and Environs Food Security Agriculture and Livestock Forum (NEFSALF), involving resource persons from the Ministry of Agriculture, Ministry of Livestock and Fisheries Development, and Kenya Green Towns Partnership Association and Urban Harvest.

In addition, partnerships were developed with organizations and individuals with ample experience in fuel-briquette making, including Terra Nuova, an Italian NGO, two private individuals also working in briquette technology, and the University of Nairobi. These partners assisted in the development of training materials, sourcing of appropriate briquette-making machines, and improving the quality of the briquettes.

Analysis of gender relations in compost production, fuel-briquette making, and marketing by urban community-based organizations (CBOs)

Access to and control of resources in compost and fuel-briquette making

Results from the diagnostic survey of potential sources of organic waste for use as raw materials in briquette making showed that women (69 per cent) and youth (20 per cent) play a significant role in the re-use of household wastes. Organic kitchen waste was re-used for feeding livestock and compost making, while waste paper was sold to recyclers. The survey also revealed that in the majority of households, especially in middle-income settlements, men contributed more money for purchasing fuel than women, while in informal settlements in half of the households women contributed money.

Lack of composting space was the main drawback to compost making by community groups, because the existing activities were taking place on rented or temporarily leased public land. There was one group that had been officially allocated a plot by the Nairobi City Council. Supplies of water, which is a major ingredient in both briquette and compost making, were a major constraint at most of the places where recycling activities are taking place. When SOYIA youth groups started their waste-recovery activities in early 2002, the Kenya Railways Corporation had allowed them to use some space
near the railway line for waste sorting and compost making, but they were not allowed to construct on the site. This constrained the group, because they had to shift the tools and the compost to their living quarters, which had very limited free space. Compost production was also frustrated by lack of markets, and so the group lost interest. Recently, the group has started an initiative involving energy-briquette making at a new site that was allocated to them by the Kahawa Soweto Slum upgrading committee. Here they have constructed an office, briquette production shed, and a store. SOYIA group also had discussions with the community policing group, who offered to provide security for the briquette-making enterprise at a subsidized fee. The project team played a key role during these negotiations between the youth group and the slum-upgrading committee and the community policing group. SOYIA youth group now has a good working relationship with these other local development groups, with whom in the past their relationships were full of mistrust and conflict.

SOYIA youth group preparing briquettes
By Mary Njenga
As for the sourcing of organic materials for making compost, most of the groups obtain the waste materials for free, but they do incur transport costs. In briquette production, the SOYIA group use sawdust, which they purchase, while charcoal dust and paper are collected at no cost from the Kahawa Soweto village and environs by all group members, irrespective of sex (members are obliged to deliver a certain volume of organic materials). Urban Harvest, jointly with International Livestock Research Institute (ILRI), is exploring ways for the SOYIA group to access the large amounts of waste paper that are generated by the institutions based on the ILRI campus. Income realized from sales of compost and fuel briquettes were shared among the group members, following guidelines set by the group.

SOYIA members’ involvement in the two research projects enhanced their skills in research and development work, and many of its members are now being hired by other development organizations such as World Vision, Rainbow (a faith-based organization), and Farmers Choice (a factory that processes pig products). However, female SOYIA members cannot participate, because they do not have the required educational qualifications, while most of their male counterparts did receive basic education.

**Gender composition and decision making in compost and fuel-briquette making**

Of the 14 community-based organizations studied in the first research project, 11 were making compost and three were practising waste management, as well as crop production or livestock keeping. An analysis of group composition and decision making showed that gender and age were major determinants of what took place in the groups. Six of the studied groups had more males than females, three had more females than males, one had equal numbers of males and females, two had females alone, and two had males alone. Eight groups had a mixture of both youth and elderly people, with their ages ranging from 25 to 71, with the exception of one group which had 32 children below 15 years of age. There were six youth groups, four of which had both male and female members, and two of which had male members only (Njenga et al., 2004).

Internal conflicts were reported in six out of the 14 CBOs mainly originating from gender and age differences and relating to duty allocation and management of finances. Most conflicts occurred in groups with members of both sexes, while age difference as a cause of conflict was noted only in groups with male members. Three types of group which had low degrees of internal conflict are (a) youth groups, whether mixed or of one sex only; (b) groups with females of different ages (elderly and young); and (c) mixed groups where women remain silent and assume all the work, while the men only share in the benefits.

SOYIA youth group, involved in fuel-briquette making, had an umbrella committee that consisted of a male chairperson and a female vice-chairperson;
both the treasurer and the secretary were men. During the community organizational development and institutional strengthening (CODIS) training course, the youth group developed a governance structure for the management of the briquette-making project as part of the practical session. They also established various sub-committees for resource mobilization, production, and sales and marketing. The selection of the members was based on the skills and capabilities of each member for effective and efficient project management. The three sub-committees were co-ordinated by two directors, all under the executive committee of SOYIA youth group, as illustrated in Figure 9.1. The duties and decisions of each committee are based on agreed set rules and regulations (Njenga et al., 2008).

SOYIA members belong to development networks such as Pamoja Trust and Nairobi and Environs Food Security Agriculture and Livestock Forum (NEFSALF) and Muungano wa Wanavijiji (a human-rights advocacy group). Through their participation in these activities they are able to contribute to the local and national agricultural and environmental policy-development processes. The youth group is also working closely with the village committees at Soweto and directly giving ideas on security, waste management, and slum upgrading.

Division of tasks/labour

Composting involves a number of activities, including collection and sorting of waste, preparation of waste heaps through systematic layering of different waste materials, periodic turning of waste heaps for aeration, sourcing water, and application to compost stacks. Once ready, the compost is sieved, packed, stored, and sold.

Allocation of duties among the composting members was done on an ad hoc basis, determined by the availability of individual members on their activity
days. However, sharing of manual labour and leadership roles was observed in the youth groups: five out of the six had planned schedules and duty rosters. An example was the Tuff Gong Garbage Recycling youth group, which had a clear duty roster; the women had been allocated the tasks that were considered ‘less dirty’, such as fetching water from a tap, while the men were involved in sorting, turning, and sieving the compost. Most of the women did not wear protective clothing, unlike their men counterparts, who had overalls and gumboots.

Illustrations of the gender division of tasks/labour in compost and fuel-briquette making initiatives are presented in Boxes 9.1 and 9.2.

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**Box 9.1 Division of labour in compost production, packaging and marketing by City Park Environmental Group**

City Park Environmental Group is located at the City Park Asian Market in Parklands, about 5 km south of Nairobi. The composting group was started in 1993 with a membership of four men and eight women and the objectives of generating income, supporting destitute children, and cleaning the market. The challenges of uncollected market waste led to the formation of the composting group, which was supported by UN-Habitat Nairobi office, whose staff trained the group. Asian Foundation constructed the shaded area where waste sorting and composting takes place and also assists the group in advertising for the compost. The group is guided by a constitution which governs its management and sharing of roles/tasks, decision making, and income.

At the beginning of the compost-making initiative, females were allocated the role of sorting the waste and transferring it to the shade, where males heaped it. The men also turned and watered the heaps on a weekly basis until maturity. Sieving and packing, including storage, were done by the whole group. One male member whose stall in the market was closest to the store was allocated the duties of selling the compost and keeping the store keys. The cash obtained from the sales was handed to a female cashier for banking. At the start, income accrued from the sale of compost was shared equally among the members at the end of the year, irrespective of their participation. However, during the study there was a lack of male participation in the manual work of heaping the materials, turning, and watering them. The male members preferred to do record keeping, which prompted conflicts among the group members. There were complaints that the men were reported to attend meetings whenever visitors with potential funding appeared. In 2002 four males and the chairperson, a woman, took some compost to the Kenya Agricultural Show, where they made some sales but failed to remit the cash for banking according to the agreed procedures. This brought further conflict among group members, and the group went into a decline as a result.

Only eight women, almost half of whom are over the age of 65, remained active. This affected the productivity of the composting activity, since they are unable to perform the heavy duties that are crucial to production of good-quality compost: for instance collecting different types of organic material, watering and turning it regularly, and packaging it. The women no longer follow composting techniques that they had learned but have reverted to their local know-how. They argue that the techniques are labour-intensive and time-consuming. The store keys are kept by one of the elderly women, who opens the store twice a week and sells the compost; the money is shared among the women without being banked. The group had not kept records of quantities of compost produced or the income generated in the last three years.
Differences in knowledge and preferences

The SOYIA group's inadequate skills of governance and group cohesion had been identified as threats to its sustainability, so members were offered a training course in community organizational development. Women were more active and consistent in attending to group activities than the men, because the women have a better understanding of the importance of the collective approach to sharing ideas and overcoming burdens. The SOYIA members defined 'gender' as the roles played by men and women, the rights of young and old, inequalities in opportunities, involvement of men and women, the issue of employed and unemployed males and females, and discrimination against and exploitation of males and females.

During the formation of sub-committees to manage the briquette-making project, members voluntarily joined specific committees, depending on their individual skills and preferences. For instance, those who liked being involved in business preferred to be on the sales and marketing committee, while those who liked being involved in making products chose to be in the processing committee. When leadership in each of the sub-committee was analysed, it was found that members elected people who had been involved in other development works in the village, such as projects involving non-government organizations. These women commanded respect and trust from the local/village leaders, and through frequent participation in the village advocacy meetings they had acquired skills and were being elected to leadership positions within the villages, as well as on the SOYIA group management committee.

In case of the compost-making groups, the low level of education and communication skills of women and elderly people limited their involvement
Composting groups were made up of young and elderly persons. The young men, due to the common belief that they are flexible and agile and the fact that they are more educated, represented the groups in meetings and workshops, which resulted in unequal empowerment within the composting groups. An example is the City Park Environmental Group, whose male members were young and educated and thus better placed to get involved in marketing and public relations activities, while women, most of whom were illiterate and elderly, were left to do all the difficult compost-processing activities. The group, though located in an ideal compost-making facility, collapsed because the roles and responsibilities were not allocated in a participatory manner, which created mistrust due to lack of transparency (see Box 9.1).

The training courses organized by Nairobi and Environs Food Security, Agriculture and Livestock Forum (NEFSALF) have enabled the organic waste recycling groups to overcome such problems and to involve women in the representation to NGOs, government departments, and research institutions. In the case of SOYIA, the women are more articulate in their management and decision making, and this is because of their better advocacy skills acquired over time through training and participation in other groups’ neighbourhood meetings and in leadership roles of their groups.

Traditional compost making produces bad smells, which result in negative attitudes among neighbours; complaints are presented to city enforcement officers, who are frequently in conflict with community-based organizations like the SOYIA group. Handling of solid waste without proper protective clothing such as gumboots and gloves may result in physical injuries. This is made worse if organic waste or naturally decomposed compost is sourced from rubbish tips where waste products from industries, hospitals, and markets are dumped together. This results in contamination of compost with heavy metals, which may degrade the health of the soil.

The gender strategies of the project

The following strategies were applied in order to encourage gender awareness in the two projects.

*Inclusion of gender-equity concerns in the project objectives*

The objectives of the organic waste management and the briquette-making projects were formulated with gender equity in mind, and efforts were made to obtain a clear understanding of how men and women were involved in the composting and briquette-making activities, and to ensure that gender was taken into account in all stages of the project.
**Inclusion of gender in the diagnosis**

Gender-sensitive checklists were applied in order to obtain gender-disaggregated data and to develop understanding of key gender issues such as access to land, participation in decision making, and the division of labour.

**Inclusion of gender in the design of the interventions**

The SOYIA youth group, which was one of the 14 CBOs involved in the organic waste-management research project, was selected to represent all other groups in a pilot project on making fuel-briquettes from urban organic wastes, based on their previous involvement in waste recovery, the cohesiveness of the group, and their location in an informal poor suburb. Male and female members were invited to participate in the prioritization of possible initiatives. The options presented were crop production, compost making, and fuel-briquette making. The briquette making ranked highest, based on its potential to contribute to a clean neighbourhood, income generation, and self-employment for young people. Leaders of the SOYIA youth group directly participated in the action planning undertaken by Urban Harvest and Kenya Green Towns Partnership Association. In this process, gender-responsive activities and desired outputs were defined, in addition to related monitoring indicators (see below).

**Attention to gender in the implementation stage**

During the implementation, male and female members of the various sub-committees participated in the day-to-day planning and budgeting of project activities. As indicated above, initially men tended to dominate the internal and external roles in the groups. During planning meetings, women from the SOYIA group expressed fears that the male members would frustrate their efforts. These concerns were addressed in the community development and leadership training provided by the project team, during which resource mobilization, production, and marketing sub-committees were formed according to skills and capabilities, irrespective of sex. Guidelines were also set to govern income sharing, whereby a member will get 25 per cent if involved in production and another 25 per cent if involved in selling, and 50 per cent of the price of each briquette is retained in the group's account. To enhance community support through purchase of the fuel briquettes, a community sensitization and project launch meeting was held in the second month of the project at the Kahawa Soweto village (Njenga et al., 2008). During this meeting, men and women in the village were requested to support the initiative, particularly by purchasing the fuel briquettes. Terra Nuova participated in identification of gender-friendly briquette pressers and locally assembled paper shredders. Participatory testing of the cooking qualities of the energy briquettes was conducted at the village in January 2008, when men, women, youth, and children were involved in preparing a traditional mixture of maize and beans.
called Githeri. One male participant commented: 'When my wife asks for money to buy the briquettes, at least it will be something that I know and have seen cook so well without smoke and very fast'. Due to this open forum, the village committees have developed interest in the activity and have been creating awareness of the briquettes, as well as referring interested visitors to the project site.

**Defining gender-sensitive project indicators**

Gender-sensitive indicators were selected, including the numbers of men and women participating in meetings and training sessions; the numbers of issues raised by men and women during such meetings; the numbers of men and women occupying leadership roles in the groups; the involvement of men and women in the production and selling activities; and the production and sales realized by them. Also changes in the behaviour of men and women were observed qualitatively, for example, men’s views on women’s involvement in leadership.

Monitoring and evaluation activities in the fuel briquette-making project helped the group and project team to track performance of the project in order to remain focused on the set objectives, including the gender focus. Resource mobilization, production, and sale and marketing sub-committees kept records of their activities. The three sub-committees hold regular meetings to evaluate progress against set milestones, and to plan and budget for activities, guided by the minutes taken during group meetings. Some of the research-team members also participate in these meetings, and they also provided technical support during site visits two or three times per month.

**Inclusion of women in networking and policy influencing activities**

Most of the waste-composting groups and the SOYIA youth group are affiliated to the Nairobi and Environs Food Security, Agriculture and Livestock Forum (NEFSALF). The forum has a large and diverse membership which includes government ministries and departments, NGOs, development partners, and research organizations. The forum presents an environment for the composting groups and the urban producers to discuss policy issues informally with policy makers in face-to-face dialogue. As a result of this, a national policy platform on urban agriculture has been formed which will review the national urban agriculture policies. The forum is also used by researchers to disseminate research findings and technology dissemination. As indicated above, the project partners systematically promoted the inclusion of more women in the Forum and in other external contacts with support organizations and government departments, among other means by training members in networking and advocacy skills.
Main conclusions and recommendations

Principal lessons learned

- Gender and age differences in composting groups are likely to lead to internal conflicts about labour division and financial matters.
- Young people were willing to share responsibilities and benefits equally between male and female members.
- Access to and control of publicly owned resources requires community-based approaches and advocacy, while roles and regulation need to be set within the groups to ensure equal sharing of benefits, tasks, and decision making between male and female members.
- Well-structured participatory training sessions based on needs assessment can play a significant role in identifying and addressing gender issues in research and development.
- Community training in advocacy and networking in urban agriculture interventions may enhance women’s participation in policy-development processes.
- Involvement of men and women beneficiaries in project development and implementation builds beneficiaries’ skills in both technology and project management, and hence improves the sustainability of the project results.
- Consideration of gender issues in all phases of research and development projects is important for enhanced gender-responsive impact. Gender inequalities in sharing benefits and decision making, if not addressed, may adversely affect the success of the project and/or result in gender inequalities.
- The study of the 14 compost-making groups identified gender inequalities in participation and benefit sharing. This knowledge was used in developing the briquette-making project with the SOIYA youth group. However, little was done to address these issues among the other 13 studied groups. Research projects should create room for follow-up studies with actions to address gender inequalities identified in the study; otherwise the status quo remains unchanged, despite the gender analysis being carried out.

Differences between gender mainstreaming in urban agriculture and rural agriculture

Mireri (2007) argues that although men ‘officially appear’ as the owners of the farms, women are responsible for the success of urban agriculture. African culture bestows ownership of land and land resources on men, even though men’s contribution to farm production is limited. Women undertake day-to-day management of the farms and invest financial capital in them. According to Smit (1996), urban farming provides jobs disproportionately for women, youth, and the elderly. It requires co-operation and partnership and so creates
communities and reconnects urban people with nature. Urban agriculture produces three to 15 times as much per hectare as common rural methods. It is more organic and sustainable, because urban wastes – which are 70 per cent organic – are more abundant than rural waste, while the urban farmer’s labour-intensive methods use less land and water per unit of production than industrial agriculture (Lee-Smith et al. 1987; Karanja et al. forthcoming).

Mainstreaming of gender issues in urban agriculture appears to be easier due to the ‘softening’ of cultural attitudes, especially towards women farmers whose cultivation of certain crops and keeping of certain livestock would have been restricted in rural settings. However, vulnerability to new forms of urban violence is common, and there are frequent conflicts among women and youth working on old garbage dumps, for example over wastewater supplies and space to display their agricultural products. Social and economic exclusion of urban farmers, mainly women, children, and youth, make it difficult for them to participate in making decisions and influencing policy. The rural farmer is ‘protected’ by social ties, while urban farmers have to fight for both physical and institutional space.

References


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CHAPTER 10

Urban agriculture as a strategy to promote equality of opportunities and rights for men and women in Rosario, Argentina

Mariana Ponce and Lucrecia Donoso

Abstract

The Urban Agriculture Programme of the Municipality of Rosario was developed in response to high levels of unemployment, especially among poor women, due to economic and social unrest dating back to the 1980s. This case study reflects on the results of the programme (2001–2004), which aimed to enhance the incomes, quality of life, and equal opportunities of men and women, through urban agriculture production, processing, and marketing activities. Strategies applied in the programme included the installation of community gardens on vacant municipal land, the establishment of a network of producers, the establishment of agro-industries, and the enhancing of links between producers and consumers. The chapter elaborates on the background of the programme and the process of integrating gender in these activities; it concludes with the eventual effects of the programme and the lessons learned in terms of gender.

Introduction

This chapter presents the results of an analysis of the lessons learned from the Urban Agriculture Programme (UAP) of the Municipality of Rosario concerning urban agriculture as a strategy to achieve equal opportunities and rights for women and men. This analysis was conducted in 2007, involving representatives of the UAP and the Women’s Services (both belonging to the Department of Social Advancement of the Municipality of Rosario) and the Urban Agriculture Producers Network of Rosario (Red de Huerteros y Huerteras). We would like to thank the following authors for their contributions: Vanesa Calvin, Andrea Mazzucca, Graciela Veliz, and Analía Santa Cruz, technicians from the Urban Agriculture Programme, and Sandra Tolsa from Women’s Services.
Background of Rosario’s Urban Agriculture Programme

Rosario is the third most populated city in Argentina. Since the 1980s, the systematic application of neo-liberal policies has caused a downsizing of the major local industries and the disappearance of many small and medium-sized businesses which had stimulated the local economy and were crucial providers of employment. On top of this, migration from rural areas to the city increased, owing to the implementation of an agricultural policy that stimulated a ‘modernization’ of agriculture, introducing technological packages that enhanced mechanization, created high dependency on external supplies, promoted mono-cropping, and expelled manual labour. This led to large groups of urban people outside the formal labour market establishing homes in informal settlements surrounding the urban centres, including Rosario. The sharp social and economic crisis that hit Argentina in 2001 further worsened the situation, increasing poverty by more than 60 per cent.

It was during this profound crisis that the urban poor, and especially women, engaged extensively in urban agriculture as a strategy to overcome the emergency. The women began to occupy vacant public and private land in order to cultivate food to meet their families’ needs. Some of these women had a mainly domestic role before they got involved in urban agriculture, whereas others had worked in various (often precarious) jobs away from the home, mainly in the informal sector without social security or medical coverage (working, for example, as housekeepers, hospital aids, and street food vendors).

In response to this situation, the Municipality of Rosario (Department of Social Advancement) developed the Urban Agriculture Programme, with the goal of responding to the needs of the unemployed in a productive manner. In 2001, the Women’s Services Department initiated the Plan of Equal Opportunities for Men and Women (2001–2004), and within the framework of this plan the Urban Agriculture Programme was launched. The Department of Social Advancement signed an agreement with the Centre of Studies of Agro-Ecological Production (CEPAR, an NGO with vast experience in developing urban irrigated land) and the National Programme Pro-Huerta (garden) Food Security Programme, led by the National Institute of Agricultural Technologies (INTA), which constituted the Urban Agriculture Programme as an alliance between civil society and local and national government.

Objectives of the Urban Agriculture Programme of Rosario

The goals of the Urban Agriculture Programme (UAP) are to promote the social integration of poor and vulnerable urban families, to enhance their incomes, and to improve their quality of life through group and individual agricultural production, processing, and marketing. The programme also seeks to promote equal opportunities for men and women, applying a gender-sensitive approach.
The following priorities were established between the Municipality and the responsible organizations of the UAP:

- To make municipal vacant land available to poor or vulnerable urban households (women, youth, and the elderly) and assist them to put these lands into production.
- To introduce production methods that will be easy for poor urban dwellers to adopt and will provide good results without creating dependency on external resources.
- To produce nutritious food in order to improve the diet of indigent families.
- To establish a system of direct marketing from producers to consumers at strategic locations in the city, with attractive presentation of the products.
- To promote the sustainability of the UAP by institutionalizing urban agriculture as a public policy.
- To promote equal opportunities for men and women.

**Strategies and methodology of the Urban Agriculture Programme**

The UAP applied the following strategies.

- Installing community gardens on vacant municipal land (often after cleaning up informal waste dumps) and training households in the production of vegetables and medicinal and aromatic plants.
• Establishing an independent network of producers (*Red de Huerteros y Huerteras*).

• Organizing groups that produce the tools, fence poles, bio-fertilizers, and compost required by the producers.

• Subsidizing these groups’ purchases of seeds and seedlings, wires and posts for fences, tanks and hoses for irrigation, and tools.

• Establishing two Social Agro-industries (SUAs) to add value to the products obtained from urban agricultural activities.

• Assisting producers and groups in the commercialization of their products, including training to prepare the products for sale and marketing; the creation of weekly markets for organic vegetables and processed food products (sweets, baked goods, jams, wine, medicinal and aromatic plants, and natural cosmetics); and transport of their products to the market.

• Promoting producer–consumer linkages through the public media and the organization of practical demonstrations and meetings with consumers. These actions also result in further strengthening of the confidence and self-esteem of the producers.

• Enhancing co-ordination of activities among municipal departments and with other public institutions, universities, NGOs, and neighbourhood organizations, favouring the optimization of resources and achieving a more integrated development approach.

• Incorporating agriculture into the city’s territorial planning.

The approach applied by the Urban Agriculture Programme is characterized by working methods that favour participatory learning, derived from community education, such as interactive workshops, exchange meetings, and discussion groups, which allow for exchange, dialogue, and collective construction of knowledge among the participants. Capacity building to develop group organization and leadership skills was continuous. Equal participation of men and women in all project activities was promoted, in addition to applying a gender-sensitive approach to daily practices (such as encouraging male and female producers to accompany each other in all tasks), enabling the development of trust and new relationships. The short- and medium-term plans were flexible and took into account the specific social context of each district where the activities were taking place. This participative and horizontal form of project organization was quite innovative in government circles.

**The results of the Urban Agriculture Programme**

Urban agriculture proved to be a valid strategy for the reduction of poverty and for social integration, bringing together and involving different city sectors. The following impacts were achieved.
• Access to land for the urban poor has been improved, mainly by the creation of five ‘garden-parks’ in various city zones (new multi-functional spaces which incorporate the production of food in the use of public spaces) and by cleaning up informal waste dumps on vacant municipal land (which also improves local living conditions).
• Vulnerable families (especially women) feel more valued and recognized and better included in the local society and economy.
• A network of some 500 groups has been created, involving more than 2,500 producers of organic vegetables, of whom 1,000 are women, producing vegetables for approximately 12,500 people.
• Each productive group generates a monthly revenue equivalent to between US$100 and $500 per member, a substantial sum compared with an average monthly income of $90 for the urban poor.
• In addition, families have made important savings on food expenditures.
• Six marketplaces have been established, as well as a home delivery scheme for bagged vegetables.
• Two social urban agro-industries have been established: one for processing vegetables and one for producing natural cosmetics, aromatics, and medicines; 300 small bakeries have been installed; and the development of community and school cafeterias has been stimulated.
• The local government has formulated a public policy on urban agriculture which includes new norms and regulations pertaining to urban agriculture.
• The gender approach adopted in the UAP helped to strengthen the integration of gender in the public policies of the local government (concerning urban agriculture and other sectors).

The gender perspective in the Urban Agriculture Programme

The gender-mainstreaming process

A technical interdisciplinary team was formed, including staff of the Women’s Services, the Urban Agriculture Programme, and the Services of Employment and Social Entrepreneurship, to design an action plan to make the urban producers more gender-conscious and to help them to contribute positively to the modification of asymmetrical gender relations. The plan included the following activities.

Surveys of the roles and functions of male and female producers

In early 2003 an extensive study was made in 13 gardens, investigating the roles that women (and men) fulfil as producers (productive role), in the domestic field (reproductive role), and in their organizations and in community services (community role). In later years such surveys will be repeated to document
the changes in roles and functions that men and women fulfil in production, processing, and marketing activities.

Photographic report

Based on the results of this survey, a photographic report was produced on the Female Producers of Rosario, their role in urban agriculture, and their rights regarding the possession of productive land.

Training in new forms of female leadership

Participatory workshops were held district by district, to enhance women’s potential to act as group co-ordinators and to improve their technical skills. Three hundred women were trained.

‘First Encounter of Female Producers’

The Urban Agriculture Programme and the Women’s Services of the Department of Social Advancement of the city of Rosario jointly organized in August 2003 the ‘First Encounter of Female Producers’ with the motto ‘Constructing new forms of leadership; towards secure possession of fertile land’. The purpose of this meeting was to acknowledge the important role of female producers in Rosario and give them institutional recognition. During the encounter, workshops were organized to enhance the self-esteem and confidence of the women so that they would be encouraged to participate actively in the organization of the gardens. Group dynamics were applied to reflect on ‘How I am’ in personal matters, as well as in the role of producer and with regard to the ownership of land. Also the capacity of the women gardeners to act as co-ordinators of training workshops was developed. The workshop enhanced female leadership and capacity to effectively exercise their political, social, and economic rights, to democratize the garden groups, and to secure their co-ownership of the land that they work. The encounter also identified the demand of the female producers for training in marketing of the products and equal distribution of the profits.

‘Second Encounter of Female Producers’

The second encounter was organized to consolidate the democratization of the garden groups and the new forms of female leadership, as well as to provide training in marketing and distribution of benefits.
CASE STUDY: ROSARIO, ARGENTINA

Gender mainstreaming in the Network

Gender was integrated in the construction and consolidation of the Urban Agriculture Producers Network of Rosario. The above-mentioned activities enabled the female producers to achieve the following:

- Reflect on actual conditions and significance of domestic, productive, and community roles.
- Analyse the roles and functions of male and female members of the garden groups.
- Analyse difficulties encountered in achieving access to and possession of fertile land, and in the marketing of products and distribution of benefits.
- Initiate a process of gaining equality between men and women by modification of some aspects of their daily life: personal, family, and work.
- Strengthen their role in the community by creating opportunities to assume leadership in the various programme activities in the public arena (group leadership, training workshops, marketing activities, group exchanges).

The strengths and weaknesses of gender mainstreaming in the Urban Agriculture Programme

The achievements

It has been clearly established that women’s role in the management and operation of the community gardens has gradually grown, and that they at present make a major contribution to ensuring the continuity of the garden activity:

- 70 per cent of the group leaders are women.
- 100 per cent of the women participate in marketing activities and consider it a positive experience.
- 49 per cent of women producers manage the income derived from the gardens.
- 44 per cent of them have received training and considered it a very good experience.
- 93 per cent consider work in the garden as a job.
- 92 per cent feel that the garden work has improved their family’s nutrition.

Through their roles as leaders in training, marketing, and community activities, starting with their work in the garden and participation in group meetings, the women have discovered and strengthened their capacities and knowledge, have enhanced their self-esteem, and have increased their presence in the public arena (in social and cultural terms).
The producers organize the work of the groups, taking gender into account. The groups reflect on the asymmetric relationships of power and the unequal allocation of roles that are socially established between men and women, and they search for ways to address such inequalities. As a result, the tasks are distributed and performed equally by men and women. The producers share activities of training, production, marketing, consumption, and processing of the products and jointly agree on the tasks in order to develop and share the same workspace with equal responsibility and ability.

The productive role of the female producers in the generation of income and in the making of decisions concerning the use of income generated has been strengthened. Earning their own income has generated, in some cases, greater levels of independence. Greater participation in income generation and in the management of the garden groups has contributed to women's growth and has strengthened their roles in personal, family, and social spheres. It has enabled them to acquire a fundamental role in the construction and consolidation of the Producers’ Network, thus further enhancing their social status.

**The limitations**

The Urban Agriculture Programme, although it promotes equality of opportunities for men and women, is problematic in that for some female producers who are heads of their household their active participation in production, marketing, and organizational activities overloads them with work, and they have little chance of sharing the burden of labour and responsibilities with others. The expansion of the spaces for action and participation by the female producers requires new forms of organization in the domestic and public arenas in order to avoid the imposition of extra work and responsibilities.

On the other hand, female producers sometimes find themselves in a situation where their work in the garden identifies them even more strongly with their reproductive role, in that women are socially ascribed the task of feeding the family. In such cases, more emphasis needs to be given to the income-generation and cost-saving aspects of women's gardening activities, rather than the nutritional and food-security value of those activities. Although the Programme incorporates a gender-sensitive approach, it needs to identify more affirmative actions, in order to consolidate egalitarian practices between men and women, as much within the gardening groups as in the wider community. It will also need to assist women to widen their areas of action.

This year, the Urban Agriculture Programme will review its lines of action regarding gender equity and will set up a new series of training workshops.

Although the local government has made some progress towards mainstreaming gender issues when designing public policies and programmes, there is still scope for further efforts to address the strategic and practical needs of women. During the implementation phase it was noted that the political and institutional process takes a long time, which may lead to demoralization
and a loss of trust on the part of the poor and vulnerable participating producers. Harmonizing the political process and the needs of the producers requires close attention from the start.

Enabling secure access to vacant land in the city is another crucial factor in the success of urban agriculture. Vacant municipal land that is not suitable for construction (for example, land under power lines, on flood plains, and in earthquake zones) and derelict open spaces (illegal or formal rubbish dumps, former industrial areas, etc.) had been identified as the most appropriate for urban agriculture in Rosario. The creation of community gardens in public parks, developed in Rosario as another valuable option for the development of urban agriculture with the urban poor, constitutes an example to be followed.

Although urban agriculture is in a process of consolidation as local-government public policy, it is not included in policy or planning at provincial or national level. Since 2007 this process has been undergoing revision, as the provincial authorities are showing themselves to be in favour of the change.

Lessons learned

The integration of gender-sensitive approaches in the Urban Agriculture Programme (UAP) has contributed to an enriched vision of development at both local and policy levels. The search for better living conditions for poor and vulnerable people requires development planning that is rooted at the micro level and takes the specific needs and interests of women into account, applying their knowledge and experience to the realization and management of the development activities.

The UAP has demonstrated that urban agriculture can form an important strategy for poverty alleviation and a significant opportunity both to promote a process of equitable local development, including men and women on an equal basis in production, processing, marketing, and organization-management activities, and also to ensure equal access to resources and income for men and women. Urban agriculture is an activity appropriate for women, given that it allows them to organize themselves in a manner that fits in with the demands of the multiple functions that they fulfill in the household. However, to make a positive impact on gender relations, various affirmative actions have to be undertaken: the actual roles and contributions of women in agriculture, in the household, and in the community have to be acknowledged, men’s and women’s awareness of gender issues has to be raised, women have to be trained in leadership skills, and opportunities have to be created for them to assume leadership roles in training, group management, production, and marketing.

The opportunity to generate an income through urban agricultural production or related processing or input-producing activities allows the women to gain recognition and independence within the family and community spheres. Assuming roles as producers and generators of income also allows women to call into question the actual division of roles in the domestic
sphere and re-negotiate the organization of domestic chores between men, women, and children in the household. It is important to foster encounters between female producers (workshops, exchange visits, etc.), and to facilitate exchange and reflection on crucial themes (such as leadership, ownership of land, distribution of benefits, and redistribution of household chores). Gardening is related to women’s strategic interests, such that the construction of their identity as women and producers is supported. Strengthening the role of female producers in the garden groups also contributes to strengthening their role and recognition in the community as persons capable of acting and making decisions in their own right.

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CHAPTER 11

The role of women-led micro-farming activities in combating HIV/AIDS in Nakuru, Kenya

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Abstract

The case study is based on an action-research project entitled ‘Combating HIV/AIDS in Urban Communities through Food and Nutrition Security: The Role of Women-led Micro-livestock Enterprises and Horticultural Production’, which is being implemented in Nakuru, Kenya. Nakuru is the fourth largest town in Kenya, with a multi-ethnic composition of about 320,000 residents. Crops are cultivated in people’s compounds, along roads and railways, and under power lines; livestock are kept in compounds or on vacant land, while others are free-range. The main objective of the project was to improve the food and nutrition security of households in HIV/AIDS-affected communities in Nakuru Township, in order to contribute to mitigation of the impact of HIV/AIDS on the livelihoods of households. The case study describes how gender was incorporated in diagnosis, design, planning, implementation, monitoring and evaluation, and policy-influencing phases of the project.

A baseline survey was conducted in 11 out of 15 wards of Nakuru municipality, where 85 male-headed and 70 female-headed households were interviewed. Results of the diagnostic study were used to design two interventions: a vegetable intervention currently involving six male and 44 female representatives of households, of whom 40 are also participating in a dairy-goat project. Households that actively participated in the vegetable project were selected to receive the dairy goats. Produce from both interventions are for domestic consumption, and any surplus is sold. Beneficiaries received basic training in vegetable production and dairy-goat husbandry techniques including feeding, housing, and detection of basic diseases; and they were assisted with initial inputs such as seeds, pesticides, land preparation, and irrigation networks.
Introduction

**Nakuru**

Nakuru Municipality is a mid-sized town, the fourth largest town in Kenya. It has a multi-ethnic composition due to its location at the crossroads of many of Kenya’s ethnic groups. It is located in the heart of the Great Rift Valley between latitude 0°10’ and 0°20’ South and Longitude 36° and 36°10’ East, at a distance of 160 km north-west of the capital city Nairobi (Foeken and Owour, 2000). According to the latest population census, the population of Nakuru stood at 239,000 people in 1999, with a growth rate of 4 per cent. The main economic activities in Nakuru are commerce, industry, tourism, agriculture, and tertiary services (MCN, 1999).

It is estimated that the poverty level in Nakuru is 65 per cent of the population, with the poverty line defined as a per capita income of less than one US dollar a day (MPND Kenya, 2003). Sub-Saharan Africa continues to bear the brunt of the HIV/AIDS pandemic; the region is home to almost two thirds (63 per cent) of the global HIV-positive population (UNAIDS, 2006). Almost two thirds of people living with HIV/AIDS are women, who also have to live with the related social stigma. In many countries moral judgements are passed upon HIV-positive women, much more than on HIV-positive men, regardless of how they contracted the disease (ILO, 2003). HIV/AIDS continues to be a significant problem for Nakuru, where it is estimated that one in four adults is infected with the virus (FHI, 2000 in Anderson, 2007).

The action-research project described in this case study was carried out in 11 out of 15 wards in Nakuru Municipality: namely Kaptiemo, Shabab, Rhonda, Shauri Yako, Langa Langa, Lakeview, Bondeni, Kivumbini, Menengai, and Nakuru East.

**Urban agriculture in Nakuru**

Foeken and Owour (2000) established that 35 per cent of Nakuru households were engaged in urban farming, 27 per cent of whom were growing crops, while 20 per cent kept livestock. In 1998, it was estimated that about 5,200 acres of land were cultivated within the built-up urban area. The most common crops grown were maize, kale (*sukuma wiki*), beans, onions, spinach, tomatoes, Irish potatoes, cowpeas, bananas, and a local vegetable commonly referred to as *sgeti* (Foeken and Owou, 2000). In the built-up areas, crops were being cultivated not only in people’s compounds but also along roads and railways, under power lines, and on every piece of vacant land (Ibid. 2000). There were about 160,000 head of poultry, 25,000 head of cattle, 3,000 goats, 3,500 sheep, and 1,500 pigs within the municipality (Ibid. 2000). Livestock are kept in residential compounds, and free-range grazing is also a common sight as animals roam around in open spaces and streets.
The action-research project

The main objective of the project is to improve the food and nutrition security of HIV/AIDS-affected households in Nakuru Township, in order to mitigate the impact of the pandemic on people’s livelihoods. The project commenced in May 2006 and is expected to end in April 2009.

The project includes a diagnostic study and two urban agriculture interventions. The projects are implemented through Badili Mawazo Self Help Group (BMSHG), an HIV/AIDS psycho-social and welfare development group for People Living with HIV/AIDS (PLWHA). Badili Mawazo has 200 clients, who came together as a group to fight stigma, isolation, and loss of livelihoods caused by their HIV status. The Presbyterian Church of East Africa (PCEA)–Nakuru West Parish offered land at no cost for the production of vegetables and fodder, and hosted one cluster of 15 beneficiaries for the dairy-goat project. The church also offered spiritual support and space at the church compound for people to hold their Friday support-group meetings. The project received technical support from the Urban Harvest programme of the International Potato Center (CIP) and several other organizations (universities, national government, Catholic dioceses of Nakuru, and others). In addition to contributing technical support, the Ministry of Agriculture offered land at no cost for the production of vegetables and fodder.

The diagnostic study: livelihood and nutrition survey

A cross-sectional study design, involving both qualitative and quantitative measurement, was used. A total of 85 male-headed and 70 female-headed households were interviewed. These households were drawn from all the HIV/AIDS-affected households with a child aged between two to five years known to three main HIV/AIDS support organizations working in Nakuru, namely Catholic Diocese of Nakuru (Love and Hope Centre), International Community for the Relief of Suffering and Starvation (ICROSS), and Family Health International (FHI). Livelihoods status was determined by administration of a gender-responsive questionnaire based on the Sustainable Livelihoods Approach framework (Chambers and Conway, 1991), as well as outcome measures of age-specific mortality and child illness. Nutrition status was determined by anthropometric measures (weight, height, mid-upper arm circumference, and triceps skin-fold measures) and an interactive 24-hour dietary recall; food-insecurity status was determined by the household dietary-diversity scale and household food-insecurity access status tools. A potential health-risks assessment was done for the vegetables and dairy-goat interventions, which included identification of potential impacts on human health (hazards and benefits), opportunities for health promotion and disease prevention through policy and practice implementation, and opportunities for monitoring and evaluation. The survey was used to advise the project on potentially good urban agriculture interventions.
The majority of households in the study live below the Kenyan urban poverty level of US$31 per month, and female-headed households had less income than male-headed households (Andersen, 2007). Seventy-three per cent of the households were found to be severely food-insecure (Mbugua and Andersen, 2007). The female heads on average were older (41.69 yrs) than male heads (38.89 yrs). Elderly female heads of households may experience greater-than-average labour problems on their plots, and the resulting food shortages may be made worse if they have to take care of children, most of whom are grandsons and granddaughters.

The baseline survey also revealed that only 35 per cent of the HIV/AIDS-affected households had access to land. Female-headed households had less access to land (23 per cent) than male-headed households (45 per cent) (Andersen, 2007). These findings are in accordance with the results of the study of crop–livestock–waste interaction by the Urban Harvest Programme which also found that land ownership was higher for men than for women-headed households (Karanja et al., forthcoming). This could be explained by Kenyan traditions which dictate that women do not inherit land, a fact which increases their vulnerability to poverty.

**The vegetable-production scheme**

Eighty households were identified for participation in the vegetable project and then divided into two categories: those with their own farming space and those without. Those without space were clustered into four groups, based on their geographical location, and allocated communally managed plots that were rented or donated by the project partners. Inputs in the form of seed, fertilizer, manure, and tools, together with labour for initial land preparation, were supplied to the four group farms and to the individual farmers working their own plots. Before introduction of the vegetables, the beneficiaries were trained in vegetable production, utilization, and marketing.

In the vegetable-production groups, the work is divided among the members according to a duty roster. Land preparation is done using tractors and hired casual labourers. The group members carry out planting and application of manure, and casual labourers are occasionally hired to assist in weeding, due to periodic illnesses of the members. Use of short-handed hoes may cause backache and members are advised to use long-handed hoes. Pest and disease control is carried out using both traditional methods and pesticides. Pesticides are used only when absolutely necessary; otherwise, Integrated Pest Management practices are emphasized. The Manyani plot, formerly used as a rubbish tip, was strewn with pieces of broken glasses and batteries, which the members are encouraged to collect. The Friday support-group meetings are used as a place for discussing any issues or observations pertaining to potential health risks, and remedial measures are then taken.

Vegetables are harvested by the members, who also decide what should be used for household consumption and what for sale. All the Badili Mawazo
members have access to the vegetables being produced on the four farms, but at variable prices which are based on members’ involvement in production activities: active members working daily on the farm were allowed to take home 0.25 kg free; all other members paid 3 KSH per bunch, while non-members paid 5 KSH). Female members particularly are buying vegetables from the group for resale in kiosks to their neighbours. The groups also sell vegetables to NGOs for preparing lunch when they are conducting training and workshops on HIV/AIDS advocacy, treatment, and prevention. A small part of the income generated from vegetables is put towards the group’s savings account for the maintenance of the irrigation equipment.

At the beginning of the vegetable project, some people were reluctant to get involved in farm activities because they had become used to the dependency syndrome created by the handouts that many HIV/AIDS projects give to affected people. HIV/AIDS-affected people also have a tendency to favour initiatives that have immediate benefits, on account of their uncertainty and desperation. The other factor that was observed to affect participation in the farm activities was social and cultural diversity among beneficiaries. These challenges were addressed as described below (see under ‘Strategies and tools used to incorporate gender in the project implementation’). However, the number of active members now stands at six men and 44 women.
The dairy scheme

For the dairy-goats rearing scheme four men and 36 women household representatives were selected, based on their degree of commitment shown in the vegetable-production scheme during the first six months. The 40 households were clustered according to their geographical location into two groups of 15 members and two groups of five members. A goat house was constructed in each of the four clusters, and each participating household received one Kenyan-Toggenburg goat, which they would repay in kind by donating the first female kid to another project member. Sweet potato vines (*Ipomea batata*) and napier grass (*Pennisetum cladjistenum*) were established as fodder banks in three farms.

All men and women beneficiaries are involved in all husbandry activities, which include feeding, milking, and weighing. Health care, such as immunizations and attendance at births, is provided by a veterinary doctor, whose services are paid for. Feed is transported on bicycles to farms without adequate fodder banks by male members, who are compensated for this service.

Results of the two interventions

The two interventions have increased self-esteem and hope among the participating households through their involvement in social-economic activities. For instance, during one meeting a woman member said: ‘I now have something to do on a daily basis and going to the farms, in addition to getting food, has also given me an opportunity to meet and chat with my fellow HIV/AIDS affected people’. Another one commented: ‘I am now not hopeless, worthless and rejected but energetic. I am now able to effectively participate in other social groups, feeling good like any other human being.’

Sub-committees, elected by the farm members and including men and women, manage the activities in each of the farms of the four vegetable and dairy-goat groups. Also the involvement of Badili Mawazo members in the workshops with various institutions has contributed to their self-esteem and has given them a chance to contribute to policy development in urban agriculture.

The participation of men and women in the project has helped them to share their knowledge and skills in vegetable production and dairy-goat rearing. Women have a lot of experience in tending to vegetables, including production of traditional African vegetable seeds, while men know more about milking and the reproductive health of the dairy goats. The knowledge and skills of both men and women in the vegetable production and dairy-goat rearing have been complemented through training provided by the project. With the skills they have learned, the farmers are now able to implement environmentally sound practices such as reuse of goat manure as organic fertilizer in the vegetable and seed-production plots. The participating households have also
learned the nutritional value of vegetables and dairy-goat milk. Both men and women who are directly involved in the interventions are now able to keep records for monitoring and evaluating the performance of the projects.

The increased supply of vegetables for the household meals and the increased use of goat milk as a substitute by HIV-positive breastfeeding women and have helped to enhance the nutrition and health of the members of HIV/AIDS-affected households.

**Strategies applied to incorporate gender into the project**

The following strategies were applied to ensure attention to gender issues in the project.

**In the diagnosis**

The review of available secondary data and discussions with affected community-based organizations and NGOs working with people living with HIV/AIDS showed that women are most vulnerable to the effects of the HIV/AIDS pandemic and most likely to be infected and affected. It also showed that most organizations involved in HIV/AIDS programmes focus on advocacy and care giving, but pay little attention to enhancing access to food and nutrition, although this is critical for mitigating the effects of the HIV/AIDS pandemic. Accordingly, this project sought to empower women in HIV/AIDS-affected households through vegetable production and livestock rearing activities, with the hypothesis that the benefits would trickle down to the whole household.

All data gathered during the diagnostic survey were gender-specified (derived from both male and female heads of households). Also a gender-responsive semi-structured questionnaire was applied which paid special attention to crucial issues like access to land, income, and food security among the male- and female-headed households, which formed the basis for the design of the interventions component of the project.

Male and female enumerators were trained to conduct the interviews in Kiswahili, which is the national language which many communities understand.

**In the project design**

At the inception of the project in 2006, a stakeholder workshop was held in Nakuru, bringing together 25 women and 16 men from self-help groups, various government ministries, academic partners, NGOs, and Urban Harvest. The workshop defined priority interventions for enhancing income and food and nutrition security among HIV/AIDS-affected households and it established that support for safe infant feeding to prevent mother-to-child transmission had to be strengthened. The workshop also identified gender-responsive strategies for implementing the same objectives.
After the diagnostic study, vegetable and dairy-goat interventions were chosen as the most appropriate interventions focusing on HIV/AIDS-affected households with at least one child aged 2–5 years.

Male and female direct beneficiaries of the vegetable intervention were selected after discussions between the project team and Badili Mawazo community leaders regarding the ways to promote equal benefit sharing and participation by men and women. For instance, members (mainly female heads of household) without land for vegetable production or goat rearing were grouped together and given access to land rented or borrowed on their behalf by the project.

Other concerns addressed during the project-planning stage to ensure gender equity included the following:

- Interventions were identified that would not require intensive labour.
- The combination of a dairy-goat project and a vegetable-production project (with largely the same households) was chosen in order to meet the needs of both men and women.
- A training-needs assessment was carried out among men and women beneficiaries for the two projects, and the results informed the preparation of the training sessions.
- All farming activities were planned to be managed by sub-committees in each group farm, applying gender-responsive rules and regulations.
- Technical support and co-ordination roles in the project were shared among the male and female members of the project team.

**During project implementation**

To ensure participation of women in the project implementation, all households were given equal access to starter inputs, while a continued supply of vegetable seed was ensured by training the members in seed production.

All activities were carried out by male and female participants, following a flexible duty roster on each farm, constructed to ensure an equitable division of labour between men and women, and managed through a participatory elected sub-committee, including both men and women.

Equitable benefit-sharing strategies based on member participation were developed by the direct beneficiaries, as discussed above. The 36 women and four men raising dairy goats have all been empowered with skills to manage the goats. Although livestock rearing is believed to be a male domain, the women have been keen to own the goats and have managed them with minimal supervision.

The social-cultural diversity among the beneficiaries in both vegetable and dairy-goat interventions affected participation, particularly in provision of labour. For instance, those with an agricultural background took good care of the vegetables, while those from a fishing background were reluctant to do weeding and harvesting. To address these challenges, a Community
Organisational Development and Institutional Strengthening (CODIS) course (Gathuru et al., 2007) was conducted by Urban Harvest in conjunction with Kenya Green Towns Partnership Association. During the course, beneficiaries were taught the importance of working as a group and the need for everybody’s participation for the good of the whole group, in addition to individual benefit sharing. The CODIS training course addressed topics such as group formation and development, personality, leadership, conflict resolution, division of labour, networking and advocacy, and project management.

The active participation of men and women was noted to be affected by their dairy calendars and health status. Duty rosters and meeting schedules were developed in a participatory manner and were reviewed from time to time. To cope with the fact that women could not transport animal feed from one farm to another, the project purchased bicycles to be used by the men, who received compensation in recognition of the fact that they had to put aside their own daily chores in order to perform this service for the group.

The diverse communities’ differing preferences for traditional or exotic vegetables were addressed in training sessions which emphasized the higher nutritional value of traditional African vegetables.

Handout-dependence syndrome was common among the beneficiaries, and it affected their participation in activities that require a lot of attention, such as goat rearing. Awareness raising and counselling sessions were held, particularly during the Friday meetings and training sessions, to improve beneficiaries’ attitudes towards vegetable production and goat keeping as sustainable means of improving the social, natural, and financial capital of men and women, especially people affected by HIV/AIDS.

Whenever necessary, members were allowed to use vernacular language in meetings and training sessions in order to prevent members with low literacy levels being intimidated by other people who were fluent in Kiswahili and/or English.

**In monitoring and evaluation**

All the monitoring information is disaggregated by gender: for instance, the numbers of men and women trained, the number of beneficiaries by gender per household for both projects, members’ involvement in farm activities by gender, time, and date. Records are maintained on the performance of dairy goats belonging to men and women (on feeding, weight gain/loss, and health). The yields of vegetables, milk, and income produced per (male- or female-led) household are recorded.

**In scaling up and influencing policy**

In August 2007 a workshop was held in Nakuru during which the results of the baseline livelihood and nutrition survey were discussed with policy makers from the Ministry of Agriculture and the Municipal Council. Urban
agriculture was presented as a productive sector that needs to be planned for and supported with extension services. In September 2007 a second workshop was held, involving Badili Mawazo members and stakeholders from NGOs, government departments, researchers, trainers, policy makers, and representatives of the private sector to discuss the potential benefits of the two projects and provide an opportunity for Badili Mawazo to share their agricultural policy-related concerns. In this way the project has influenced other support groups to consider urban agriculture as a viable initiative for people living with HIV/AIDS and to give special attention to female-headed households. As a result, among others, UNGA (Ltd.) Kenya Company has provided the Badili Mawazo members with layer chicks.

Through testimonies by male and female project members regarding their HIV/AIDS status, more people in the Presbyterian Church of East Africa have declared their HIV/AIDS status and consequently can be assisted by the church and the project.

Conclusions

Lessons learned about gender mainstreaming in urban agriculture

- Acceptability, viability, and impacts of agricultural interventions among men and women depend on the beneficiary’s involvement in their identification and prioritization.
- The social and cultural background of the potential beneficiaries of urban agricultural projects should be well understood, because it affects their participation.
- Gender needs to be addressed in agricultural projects throughout the project cycle.
- Gender issues arising during project implementation need to be addressed even if not planned for, otherwise the intended outcomes and impact will not be realized. Some research organizations may shy away from addressing gender issues, viewing it as a task for NGOs than for research organizations. However, it is more efficient for these issues to be addressed directly by the research organization, rather than seeking to involve an NGO partner to do so.
- Various gender issues emerging during implementation can be addressed through capacity building: for instance, through courses in community organizational development and institutional strengthening (CODIS).
- Access to land, although crucial to the success of any urban agriculture intervention and especially for poor female-headed households, is a big challenge in urban areas. There is a need for timely identification of project partners / institutions who could play a role in securing access to land; and a need to allocate money and time for the identification of available vacant land.
• Agricultural interventions with disadvantaged groups such as people living with HIV/AIDS require broad partnerships with agencies including faith-based organizations that can offer them spiritual support.

• Equal benefit sharing, division of labour, and participation in decision making in urban farming groups is best addressed through rules and regulations set by the beneficiaries themselves, taking into consideration their challenges and opportunities.

• Previous studies, for instance in Kisumu by Ishani (2002) and by Urban Harvest in Nakuru (Gathuru et al., 2005; Karanja et al., forthcoming) have indicated that decisions about livestock are normally made by men. Hence there is a need to ensure that women’s right to own dairy goats is ensured, particularly in households where the direct beneficiary is female. Agreements and/or contracts could be developed between the Badili Mawazo group and the beneficiaries in order to protect the right of women to own the dairy goats, as well as protecting the household members from losing the animals in case of death of the direct beneficiaries. The agreements and/or contracts will also ensure appropriate use of the dairy goats and avoid the chances of their being used for unintended purposes such as slaughtering for meat and as security for loans.

• Research and development organizations targeting disadvantaged groups such as those affected by HIV/AIDS should adopt sustainable approaches, such as household empowerment through skills and training and provision of opportunities other than food donations which create a dependency syndrome while promoting a feeling of helplessness. Agricultural projects provide HIV/AIDS-infected people with an opportunity to grow their own food and generate an income, and also give them a chance to fulfil their strategic needs of socializing and supporting each other.

Gender mainstreaming in urban vs rural agriculture

• There is more social and cultural diversity among urban farmers than rural farmers, which increases the challenge of introducing gender equity into project management. However, the social and cultural beliefs are weaker in urban areas than in rural areas, and discussions of gender issues such as access to income and land are more open in urban areas.

• Urban producers have more opportunities for interaction and networking and thus better changes of gender mainstreaming, due to the availability of better infrastructure, especially communication facilities, and a greater presence of institutions.

• As in rural agriculture, women face greater challenges than men when aspiring to access and own land and livestock. In rural areas the traditional land tenure and inheritance system gives women no chance to inherit land, while in urban areas the competition for open spaces is fierce, and
women are disadvantaged in this ‘survival of the fittest’ scenario in which masculinity prevails. The insecurity of the roadsides and riverbeds where urban agriculture is taking place is another disadvantage for women.

- Urban agriculture is more commercialized and hence provides better opportunities for the empowerment of women.

References


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CHAPTER 12

Gender dynamics of fruit and vegetable production and processing in peri-urban Magdalena, Sonora, Mexico

Stephanie Buechler

Abstract

The gender dynamics of fruit and vegetable production and processing in San Ignacio, a peri-urban area of Magdalena, Mexico, are the focus of this applied research project. The cities of Magdalena and Nogales, in close proximity to the community studied, influenced the volume of water available for agriculture. Water scarcity and climate change are negatively affecting fruit production. The reduction in fruit production is in turn affecting the small fruit-processing businesses run by women and men. Some of these women and men have their own fruit orchards and vegetable plots, some purchase the fruit and vegetables they process, and some both produce and purchase the fruit and vegetables. The involvement of women and men in processing is influenced by gender. Women are more involved than men in canning fruit, making sauces, and pickling vegetables. They sell these items to larger processing businesses within their community and/or to vendors in cities located nearby, or to the state capital. Women also use these products to maintain important social networks. Men dominate quince-jelly production and sale. The major production constraint reported by women was the rising costs of inputs such as sugar and glass jars, whereas men tended to emphasize the high cost of labour and lack of capital to produce sufficient quantities of the jelly. Both women and men expressed their concern about increasing water scarcity and rising temperatures. Women were especially interested in learning new ways of processing the fruits and vegetables in order to be able to offer more unique products. Recommendations are made to improve the natural-resource base in this community and the production and processing of these fruits and vegetables, particularly for those activities performed by women. Women are more vulnerable than men to water scarcity and climate-change effects on these agricultural processing businesses, owing to gender inequities that include prevailing lower wages for women in alternative employment.
Introduction

This case study of the gendered production and processing of fruit and vegetables in San Ignacio, a peri-urban community of the city of Magdalena in Mexico, is based on a research project which examines the effect of water scarcity and climate change on gendered agriculture-based livelihood strategies. Fruits and vegetables are preserved by several different methods in San Ignacio, and men and women are involved in different phases of the processing. With some products, women direct and dominate production; with other products, men dominate production. Women and men also use the products for different purposes. The research was conducted by Dr Stephanie Buechler of the Bureau of Applied Research in Anthropology at the University of Arizona. The study was funded by the Resource Centre on Urban Agriculture and Food Security (RUAF) Foundation and a Magellan Circle Fellowship Award from the University of Arizona. The project was carried out between October 2007 and April 2008.

San Ignacio – the study area

The peri-urban community of San Ignacio, with a population of 720 people (INEGI, 2006b), is located about six kilometres from the city of Magdalena (which had a population of approximately 30,000 people in 2005) and 30 km from the city of Santa Ana (with a population of 14,538 in 2005).

The study area is located in the northern state of Sonora, approximately 75 km to the south of the 350-mile border that this state shares with the state of Arizona in the United States. The entire stretch of the US–Mexico border area is gaining population, and some have projected that this area will become the largest urbanized area in North America or even in the world (Weaver, 2001: 110).

The close proximity to the border has affected agriculture-based livelihoods in this area in a variety of ways. Most agriculture-dependent households in the study site have at least one immediate or extended family member residing in the US. In 2007, Mexicans working in the US sent back an estimated US$24 billion to their families (Malkin, 2008). In the first quarter of 2008, however, remittances from Mexican migrants in the US to Mexico dropped 2.9 per cent from the first quarter of 2007, representing the first major decline since the Mexican Central Bank began tracking the transfers in 1995. This decline is mainly attributed to fear of job loss on the part of legal and illegal migrants, to fewer jobs for migrants, and to lower real incomes as a result of inflation (Preston, 2008). Due to stricter border controls, it is now less common than it was a year ago to have family members work in the US during the week and return to their community at the weekend. Instead, family members must engage in permanent migration to the US or seek employment in other Mexican cities. In addition to obtaining remittance income from migrant relatives, direct economic benefits from the proximity of the US are derived
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from the sale of crops to truckers, who take the produce directly to the US. The fruit and vegetable preserves are occasionally sold to vendors on the border, who sell them in the US; most of these vendors sell the goods in Nogales, Arizona.

The community of San Ignacio is situated approximately 780 m above sea level (INEGI, 2006a) in the Sonora (semi-) desert, which has an average rainfall of approximately 330 mm per year. Temperatures in recent years have been above normal and erratic, with unpredictable, heavy rainfall which makes the area vulnerable to erosion (Vásquez-León and Bracamonte, 2005).

Increasing competition for water from urban centres, industry, and agriculture is putting pressure on water resources in the area (Magaña and Conde, 2000). Water from the Los Alisos basin/River Magdalena is piped to supply the nearby (75 km) twin cities of Nogales (on both sides of the Mexican–US border) with a combined population of 300,000 (INEGI, 2006a and US Census Bureau, 2007). The domestic water supply of these cities reduces the availability of groundwater and surface water for agriculture. The cropped area in the state diminished by 40 per cent from 1996 to 2004 (Bracamonte et al., 2007: 54). Water for irrigation in the peri-urban community in this case study comes from springs channelled into irrigation canals, from wells, and from municipal domestic supply (groundwater).

Dynamic agricultural production in San Ignacio

Agricultural production has experienced vast change in the area. Until approximately 55 years ago cotton was produced, but cotton blight caused farmers to switch to producing mainly wheat. A widespread pest attack approximately 40 years ago caused the closure of the surrounding wheat-grinding mills and another shift to vegetable production. Gradually, fruit trees were planted in response to fluctuating vegetable prices. Orchards are now common in many of the towns surrounding the city of Magdalena. However, the cropped area is becoming smaller as a result of internal and international migration, water scarcity, climate change, and off-farm employment in Magdalena and other surrounding cities. Today, fruits, olives, vegetables, flowers (for cut flowers), alfalfa, and grains are cultivated. Flowers and trees are also grown in small nurseries and sold in pots. Ranching is another agricultural livelihood activity in this community. The varieties of fruit that are grown are changing. At present, mainly quince, peaches, persimmons, pears, and citrus fruits such as oranges, pomelo, grapefruit, lemons, and various types of orange are produced. Plum and apricot production once predominated; however, these fruits have almost completely disappeared. Fig and olive trees have also become much rarer in the area. The producers in the area attributed this change in cropping pattern to water scarcity, particularly evident in the last seven years, to warmer average temperatures, and to nematode infections of the tree roots. Olive trees were infected with a white fly. Community members with tree nurseries noted that an increased number of small trees are
dying because of higher temperatures. Other factors involved in the change in cropping patterns include the abandoning of farming for other occupations in urban areas in Mexico or in the US. This has a negative impact on labour availability for farming.

Fruits are canned and also made into jams or preserves. Quince jelly, a kind of sweet that is sliced before being consumed, is also produced. A wide variety of vegetables are preserved by pickling and canning methods. Chiles, *nopales* (edible cactus), green and red onions, radishes, cilantro, cabbage, lettuce, spinach, and *quelite blanco*, a vegetable with small waxy leaves and stems, are the principal vegetables produced. Chiles, nopales, and onions are the main vegetables that are pickled and canned.

Fruits and vegetables as well as canned fruit, jams, and jelly are sold to a wide variety of buyers. The main marketing channels for vegetables include buyers who come with their trucks to the fields; municipal markets in Hermosillo, the capital city of Sonora state, with a population in 2005 of 707,838 people (INEGI, 2006a), located about 200 km from the community; and the municipal market in the city of Nogales on the border with the US. For fruits and fruit products, the main marketing outlets are local vendors with stands next to the highway in and near Magdalena and Santa Ana (30 km away), who often come to the homes of canned-goods producers; individuals who come to the producers’ homes or fields (such as religious pilgrims walking to area mission churches in the month of October); community members; urban grocery chain stores; smaller urban grocery stores; and urban municipal markets in
Hermosillo and Nogales. Bakeries in Hermosillo also purchase the quince jam for a particular type of pastry named *coyotes*. In the case of some contracts, for example between smaller grocery stores and quince-jelly producers, sugar is exchanged for quince jelly, so the producers do not need to have large sums of cash for this important ingredient.

**Study methodologies**

The methodologies used in this study included field observations, participant observation, semi-structured, in-depth qualitative interviews, and informal conversations with female and male adults living in the peri-urban community studied. Observations were also made in the nearby cities where the produce and processed products were sold. For example, visits were made to supermarkets, smaller grocery stores, and highway fruit stands in Magdalena, to learn about the effect of the city on the marketing of fruit and vegetable preserves. A snowball sampling method was used to select most interviewees for the study. The author also selected interviewees via field observations of women and men working in orchards. Sixteen women and ten men were interviewed in depth, and follow-up interviews took place with many of them. Each interviewee sold fruits and/or vegetables and fruit and vegetable preserves; most grew part or all of the produce that they preserved. Statistics on the state’s agriculture sector and water resources were also collected.

Semi-structured interviews were framed as conversations: the interviewer included common points of reference, including experiences of producing canned fruit, pickled vegetables, jam, and olives, and experiences of mothering and the juggling of family and work. Women were interviewed alone, without the presence of men. This helped to foster an atmosphere in which women felt freer to speak without being interrupted or overshadowed by male household members. In the interviews with women, questions were asked to probe the way in which women’s work (including agricultural work) interacts with the work of other household members. Women and men were asked separately about gender divisions of labour and any flexibility in these divisions.

The interviews and follow-up interviews were multi-seasonal and multi-local, in order to gain a better sense of the changes in agriculture-based livelihoods according to the month of the year. Interviews were also conducted at different times of day. Women’s ‘triple day’ became very apparent as a result. In the evening women were still cooking dinner, washing dishes, taking care of children, and preparing for the next day. Interviews took place at a range of locations, such as the home and the fields. This gave a much better indication of the normally wide gamut of agricultural and other activities such as food processing in which the interviewee engages. It also provided insight into the activities of other household members and an opportunity for future interviews with those family members. Transect walks along waterways and participatory mapping of water sources were other methodologies used for the study.
Gender analysis of the local urban agriculture situation

Access to labour

Women and men are employed in both agricultural and non-agricultural activities. Due to the lack of public transportation to the surrounding areas, women’s ability to obtain employment in the city is limited. This is particularly the case if they have small children, which means that they cannot come and go with ease. The landless and women and men with small landholdings work in a variety of on- and off-farm employment in the fruit orchards, vegetable fields, and cattle ranches, and in the production of canned goods, quince jelly, and cheese. They also work as managers and workers in nearby foreign-owned greenhouses which produce tomatoes and cucumbers. Men’s non-farm employment includes work in copper mines and other types of mine, usually entailing a two-hour commute each way every day in a company van to a mining area within Sonora. Women and men find work also in construction jobs and in grocery stores, auto-repair shops, and other local businesses in Magdalena. Some young women work in maquiladoras (assembly plants) in Magdalena which provide transportation to and from the plants, but one was rumoured to be closing soon. Others make the long daily commute to Nogales; however, they must have access to private transport to Magdalena in order to catch a public bus from Magdalena to Nogales. Many who go to Nogales are women who work as housekeepers and nannies. Many households have members who are living and working in the US, but remittance levels are being threatened by a poor economy over the border and stricter immigration enforcement. Women in Mexico in general earn less than men for comparable work and they advance much less quickly, thus contributing to Mexico’s low ranking (109 out of 128 countries surveyed) with respect to gender equality in economic participation and opportunity (Hausmann et al., 2007: 4; 9). This helps to explain why, even if women or their daughters in San Ignacio are employed in the formal sector, additional sources of income and food are usually necessary to sustain their households.

Access to land and control over resources

Agricultural land in the community is mostly in the hands of men. This is mainly due to a patriarchal and patrilineal system of land ownership whereby land is passed down between generations from father to sons. The plots of land that are farmed (many are left unfarmed due to absentee landowners) average 3 ha in size; fruit orchards vary greatly in size, ranging from 200 m² to 8 ha. Some of the fruit orchards are located in the back patio or solar near the house. Others are located at a distance from the house in areas with agricultural fields. Vegetable plots are frequently rented in a share-cropping arrangement in which the landowner invests in the groundwater-pumping costs and the plants, while the share-cropper pays for a tractor and driver to prepare the land, and for the labour to plant the crops. The share-cropper and landowner
invest equal sums in the costs of pesticide, fertilizer, and harvesting (by field labourers). After expenses are deducted, half of the profits go to the landowner and half goes to the renter. Tree and flower nurseries are frequently located in the back patio.

Canned-fruit producers, as well as jelly producers who do not grow sufficient quantities or who do not have any orchards, purchase the fruit from growers in San Ignacio or from neighbouring communities. Arrangements vary; either the fruit is purchased, or the canned-fruit or jelly producer goes to the orchard with his/her own labourers and picks the fruit. In the latter case, the fruit is then purchased at a discounted rate from the owner of the orchard. Men and women producers of canned fruit and jelly often put their own as well as family labour into picking the fruit. If family members are hired as labourers, they are often paid by the bucket or bag of fruit. Men and women are paid the same rate for each bucket or bag. One woman proudly claimed that she was able to pick more than most men; she said that she picked rapidly because she had ‘six hungry children to feed’ with the income that she earned from canning and jelly production.

**Gender division of tasks in processing and marketing of fruits and vegetables**

**Quince jelly and jam production**

Men dominate the production of quince jelly (*cajeta de membrillo*) and quince jam (*jalea de membrillo*), and women tend to control canned-goods production (see Table 12.1). Although women and men initially reported a strict division of labour in the production of canned fruit and vegetable and quince jelly, in practice there is substantial sharing of tasks. In fact, one woman explained that the main reason why she engaged in canned-fruit production and jelly production with her husband and children was so that they could all work together. Even when sons and daughters graduated and then continued their studies in another city, or lived and worked in another city, or commuted from the community to the city to work, they often helped their parents and other family members in the production of these goods during peak times in the year. It was very evident that this type of production fostered a sense of family unity.

In quince jelly and jam production, women and men wash the quince and cut it. Children and elderly family members also often share the tasks of washing and cutting the quince. The tasks most consistently divided by gender in quince jelly production are the stirring of the hot quince jelly in the huge open copper pots over the wood-burning fire or stove, which is considered to be heavy work, and the cutting of the cooled jelly into blocks that are later individually wrapped. Men mainly perform those tasks. However, workers are hired for a daily rate to help with the heavy work of stirring. Most of the workers hired for this particular part of the production process are men. Women and men wrap the blocks of quince jelly in plastic and place them
in boxes for sale. Mainly female workers are hired to do the wrapping and packing. In the case of one quince jelly producer family, the son-in-law pours the jelly into moulds to create quince jelly shaped into designs for sale to customers who buy this product for special occasions.

The quince jam is produced by boiling the quince seeds that remain after the fruit is used for the quince jelly. These seeds are ground, then boiled with sugar. Men and women share in most of these tasks except for the grinding, which the men tend to do. Hired labourers help at different stages of the production process, again following gendered divisions of labour, so that only men, for example, are hired to do the grinding. Whenever possible, relatives such as nephews or nieces are hired. Household members are not paid, however, for their work, and it is frequently daughters-in-law who help in quince jelly and jam production.

**Canned-goods production**

Women control the production of canned goods (see Table 12.1). They boil and stir the fruit and vegetables for the canned fruit and pickled vegetables. Women and their sons and daughters and/or their daughters-in-law wash and generally prepare the fruit. Unlike the case of male-dominated quince jelly and jam production, very little or no labour is hired. Women mainly perform the tasks related to the boiling process, which include adding the sugar and stirring it with the fruit, as well as continuously skimming the froth off the top and discarding it. They cook the chillis that go into the pickled vegetables, wash and cut the vegetables, and add the vinegar. They perform these tasks in their kitchens on the same stove that they use for cooking their family’s food. They are also the primary vendors of these products.

**Marketing**

Women display greater knowledge of customer preferences in canned goods. For example, women rotate the peaches and quince in the jar so that the part where the stem originates faces inward. They undertake this labour-intensive activity because customers have told them that this makes the fruit look more appealing in the jar. They also painstakingly skim the froth and impurities from the top as they boil the fruit, for visual appeal.

The locus of women’s marketing is more circumscribed than men’s; women mainly use their community and family networks to sell their products, whereas men tend to have more far-flung networks, garnered from their participation in employment in Magdalena as well as larger cities in Sonora. It is also easier for men than for women to leave their homes to travel to cities that are farther away, and they are thus more able to take their produce and processed products to markets and businesses in these more distant areas. Women are responsible for performing a far greater number of household tasks than men, including child care, cooking, cleaning, and washing clothes, which
Table 12.1 Gender division of labour in the peri-urban study area

<table>
<thead>
<tr>
<th>Socio-economic activity</th>
<th>Females (♀)</th>
<th>Male (♂)</th>
<th>Locus</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Child</td>
<td>Adult</td>
<td>Elder</td>
</tr>
<tr>
<td>1. Production of goods and services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Fruit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation</td>
<td>+</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Harvesting</td>
<td>+</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>Transport</td>
<td>+</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>Sale in the market (vendors different from farmers/producers)</td>
<td>+</td>
<td>+++</td>
<td>Municipal market; roadside stand; to businesses</td>
</tr>
<tr>
<td>Sale from home</td>
<td>+++</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>b) Vegetables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation</td>
<td></td>
<td></td>
<td>+++</td>
</tr>
<tr>
<td>Harvesting</td>
<td>++</td>
<td>+++</td>
<td>Within the field</td>
</tr>
<tr>
<td>Transport</td>
<td>++</td>
<td>+++</td>
<td>Field to transport vehicle</td>
</tr>
<tr>
<td>Sale from the field</td>
<td>+</td>
<td>+++</td>
<td>Within the field</td>
</tr>
<tr>
<td>Sale in the market</td>
<td>+</td>
<td>+++</td>
<td>Municipal market; roadside stand; to businesses</td>
</tr>
<tr>
<td>c) Canned fruit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruit preparation</td>
<td>+</td>
<td>+++</td>
<td>++</td>
</tr>
<tr>
<td>Boiling of fruit with sugar</td>
<td>+++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Skimming off impurities</td>
<td>+++</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sterilizing jars</td>
<td>+++</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Placing fruit and syrup in jars</td>
<td>+++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sale in market</td>
<td>+</td>
<td>+++</td>
<td>Municipal market; roadside stand; to businesses</td>
</tr>
<tr>
<td>Sale from home</td>
<td>++</td>
<td>+++</td>
<td>++</td>
</tr>
<tr>
<td>d) Jam</td>
<td>++</td>
<td>+++</td>
<td></td>
</tr>
<tr>
<td>Fruit preparation (and grinding seeds in case of quince jam)</td>
<td>+</td>
<td>+++</td>
<td>++</td>
</tr>
<tr>
<td>Boiling of fruit or seeds</td>
<td>+</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Boiling of fruit or seeds with sugar</td>
<td>+++</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Sterilizing jars</td>
<td>+++</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Placing jam in jars</td>
<td>+++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Marketing of jam</td>
<td>+</td>
<td>+++</td>
<td>In municipal markets; bakeries; roadside stands; to businesses</td>
</tr>
<tr>
<td>Sale from home</td>
<td>++</td>
<td>+++</td>
<td>++</td>
</tr>
<tr>
<td>e) Quince Jelly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruit preparation</td>
<td>++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Stirring of thick fruit and sugar</td>
<td>+</td>
<td>+++</td>
<td></td>
</tr>
<tr>
<td>Pouring of jelly into pans</td>
<td></td>
<td></td>
<td>+++</td>
</tr>
<tr>
<td>Cutting jelly into rectangular bars</td>
<td>+</td>
<td>+++</td>
<td>In home kitchen</td>
</tr>
<tr>
<td>Wrapping jelly in plastic</td>
<td>+++</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Marketing of jelly (producers sell to vendors; they don’t sell itthemselves)</td>
<td>+</td>
<td>+++</td>
<td>In municipal markets; roadside stands; to businesses</td>
</tr>
<tr>
<td>Marketing of jelly</td>
<td>+++</td>
<td>+</td>
<td>From home</td>
</tr>
</tbody>
</table>
WOMEN FEEDING CITIES

<table>
<thead>
<tr>
<th>Socio-economic activity</th>
<th>Females (♀)</th>
<th>Male (♂)</th>
<th>Locus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Pickled vegetables or saucers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetable preparation</td>
<td>+++ ++</td>
<td>++</td>
<td>In home kitchen</td>
</tr>
<tr>
<td>Cooking vegetables</td>
<td>++ ++</td>
<td>++</td>
<td>In home kitchen</td>
</tr>
<tr>
<td>Sterilizing jars</td>
<td>++ ++</td>
<td>++</td>
<td>In home kitchen</td>
</tr>
<tr>
<td>Placing vegetables in vinegar</td>
<td>+++ ++</td>
<td>++</td>
<td>In home kitchen</td>
</tr>
<tr>
<td>Marketing of pickled vegetables</td>
<td>++ ++</td>
<td>++</td>
<td>In municipal market; roadside stand; to businesses</td>
</tr>
<tr>
<td>Marketing of pickled vegetables</td>
<td>+++ ++</td>
<td></td>
<td>From home</td>
</tr>
</tbody>
</table>

2. Social reproduction and maintenance of human resources

<table>
<thead>
<tr>
<th></th>
<th>Child</th>
<th>Adult</th>
<th>Elder</th>
<th>Child</th>
<th>Adult</th>
<th>Elder</th>
<th>Locus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child care</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td>Within home</td>
</tr>
<tr>
<td>Care of sick children</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td>Taking children to hospital</td>
</tr>
<tr>
<td>Care of the elderly</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td>Taking the elderly to clinic</td>
</tr>
<tr>
<td>Household management</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td>Within home</td>
</tr>
<tr>
<td>(cooking, cleaning, washing)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collecting water during dry summer months</td>
<td>+++</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td>To springs and other well</td>
</tr>
</tbody>
</table>

3. Community management

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ejido meetings *</td>
<td>+</td>
<td>++</td>
<td>+++</td>
<td>++</td>
<td></td>
<td></td>
<td>In community hall</td>
</tr>
<tr>
<td>Community meetings of comuneros (those who do not have ejido rights)</td>
<td>+</td>
<td>++</td>
<td>+++</td>
<td>++</td>
<td></td>
<td></td>
<td>In community hall</td>
</tr>
<tr>
<td>Women’s church group</td>
<td>+</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
<td></td>
<td></td>
<td>In community hall or church</td>
</tr>
</tbody>
</table>

* The ejido system is a process whereby the government promotes the use of communal land shared by the people of the community. A child is a girl or boy below the age of 16 years. An elderly person is a person 60 years old and above.

+++ indicates that frequency is high
++ indicates that frequency is medium
+ indicates that frequency is low

constrains their ability to take the time to travel to distant markets. However, men take products produced by women to market, which aids women who have older sons, husbands, or other adult male household members.

Social dimension of canned-fruit production

Canned-fruit production supports household food security, gift exchanges, and income generation. Women in particular are responsible for household food
security. Fruit is retained for snacks and desserts, and fruit juices are made from the fruit for family consumption. Canned fruits are retained for special family occasions and holidays. They are also given as gifts to maintain reciprocal relationships, particularly in kin and fictive kin networks, or are presented to important social figures such as the community priest. For example, one woman explained: ‘I cannot give birthday gifts because of the cost, so I bring along a can of my peaches when I attend a birthday party’. Another woman, who makes canned fruit with the help of several extended-family members and whose husband produces quince jelly, explained her methodical approach to gift giving and to retaining food for home consumption:

*I keep two boxes of canned peach jars and four boxes of quince jelly bars to give as gifts. I also keep one box of canned peaches and a few pieces of quince jelly, but these are for the house [her household members]. I keep some fruit to make fruit juice for my family and also to eat as snacks* (Field interviews, November–April 2008, author’s translation).

These exchanges are important to women, because they depend on mutual aid arrangements in the form of reciprocal gifts and labour inputs in agriculture and small-scale enterprises. Women and men invest in their fruit and vegetable processing businesses and also use the income from these products for household expenses. The woman whose words are quoted above produced a total of 70 boxes or 840 jars of canned fruit in 2007 (20 boxes were produced with fruit from her own orchard, and the remaining 50 boxes were produced with fruit that she purchased). She and her husband produced about 450 boxes of quince jelly, or about 23,400 bars of the jelly in 2007. Women interviewees consistently maintained that one of the principal ways in which they invested their money was to pay for their children’s education. As one woman explained: ‘Men work in the orchards, but women kill themselves doing these things [canning fruits and vegetables and helping with quince jelly production] so that their children can get an education’ (field interviews by author, November–April 2008, author’s translation).

**Constraints on production**

Fruit producers mentioned numerous constraints on production. These problems include the length of time that elapses between tree planting and fruit production. Trees must also be replanted after a certain number of years. Quince trees, for example, take three years to begin to bear fruit and must be replanted every 15–20 years. There are also fewer orchards, a fact which producers attribute to owners taking land out of orchard production due to water scarcity and higher temperatures, the sale of orchards for ranching activities, or the abandonment of the land by migrant families.

Another major problem is increasing water scarcity. This causes many related problems, such as greater susceptibility of plants and trees to pests, lower production, decreased life-span of the trees, and, frequently, the need
to reduce the cropped area. The response of one woman when asked why she did not replant the old peach and quince trees that had to be cut down in her orchard was: ‘ya no hay agua’, ‘There is no water any more’. The canal that helped to irrigate the community for more than one hundred years no longer has water, and the well owned by her neighbour, on which she and her family depend, has less and less water. Women depend to a much greater degree than men on fruit produced in their home gardens. Women irrigate and generally care for these orchards. The orchards near their homes enable them to combine farming, child care, and household tasks more easily. These are the orchards where water scarcity is currently most severe; most are not located within easy access of the springs used to irrigate the fields farther from the homes. Instead, these home orchards depend primarily on municipal water (obtained from a community well), which is insufficient even for household use in the dry season. As the locus of production moves farther from the home, it is likely that women will have less control over access to produce for their canned goods and for household consumption. Costs of production are also likely to increase, as more of the produce for the preserves is purchased.

Women and men who canned fruits and vegetables mentioned the obstacles that they faced in their efforts to achieve a decent and steady income from the sale of their products. A major problem cited by the women is the lack of affordable jars in Mexico. A woman in the community sells jars purchased by her son, who lives in the US. These are considered to be expensive. Therefore, when possible the female producers often travel to the US to purchase the jars in large quantities in chain stores such as Walmart. However, border customs regulations restrict the number of boxes of jars that can be taken across the border into Mexico without duties. Women reported that they also made use of social networks to obtain glass jars (either used or new jars), usually from relatives in the US. Men producers tended to emphasize the problem of the high cost of labour and the significant amounts of capital necessary to produce quince jelly in large enough quantities to earn sufficient profit. These men noted that it was not normally possible to borrow money, due to the lack of available sources of credit in the community. A bank in Magdalena extends credit, but male fruit producers and processors complained that ‘one pays double because of the high interest payments’. Some of the male farmers with fields and orchards irrigated by the springs operated a rotating credit fund in order to obtain more capital to purchase inputs, but this fund was temporarily suspended in 2008 by the government when a few of the farmers (reportedly the better-off farmers) did not repay their loans. Women operated with less capital than men and did not attempt to obtain credit. Both men and women stated that there was a need for a municipal market in Magdalena where they could sell their fruits, vegetables, and derivative products. Producers must instead go to Hermosillo, approximately three hours’ journey away, to sell their crops to vendors in the municipal market. As mentioned, men are more able than women to make this trip, for reasons related to women’s greater burden
of household responsibilities as well as to greater restrictions on women's movements away from the watchful eyes of their community members.

Both women and men also mentioned other barriers. These included costs of production, competition with other producers, and difficulties in obtaining legal permits required for labels. These barriers included the rising costs of sugar, gas, and wood for cooking, and rising labour costs. Labour costs are significantly higher on the border than elsewhere in Mexico. Female and male producers mentioned that there was a lot of competition for their products from other producers in the community. Another limitation is the lack of knowledge, the cost, and the bureaucracy involved in obtaining a government permit from the local office of the Ministry of Finance in order to be able to label their products and sell them directly to supermarkets. Most must sell their products therefore to intermediaries who are able to sell the products with a label to large supermarkets. One larger quince jelly producer in the community grows his own quince and purchases some quince fruit to make jelly. He also purchases additional quince jelly, which he markets under his label. However, there were no women who had this label. As one woman stated, even though her daughter works in Magdalena in Hacienda (the Ministry of Finance, which administers labels) she does not know what obtaining a label for her canned products and her quince jelly would entail in terms of bureaucratic procedures, paperwork, and cost.

Another constraint for producers of both jelly and canned goods is the limited demand for these products. This is caused by the generally low purchasing power of most customers – a state of affairs that is becoming worse with the recession in the US, which affects the level of migrant remittances sent from the US to Mexico. In a recession, non-essential food items such as the ones produced are either eliminated from the list of goods purchased by households or are bought for special occasions only. Restrictions on border crossings and long queues at border crossings have also limited the number of customers. Relatives, friends, and tourists used to come more frequently to the community and buy the products. In addition, canned products and quince jelly used to be sold to buyers who would come to the border and purchase the goods to sell them in Nogales and other cities in Arizona.

**Recommendations based on study findings**

The position of female producers in San Ignacio could be strengthened by means of a variety of programmes and projects. The general and increasingly common problem of water scarcity could be addressed through a project similar to a current initiative in Mexico. A project in eight villages in the Mixteca region of Oaxaca, with a farmer organization called the Centre for Integral Small Farmer Development in the Mixteca (CEDICAM), provides a guide to what could be accomplished in the study area in Sonora. Farmers are planting native, drought-tolerant trees (raised in local nurseries) to help to prevent erosion, improve water filtration into the ground, provide carbon
capture and green areas, add organic material to enrich the soil, and provide more sustainable, cleaner-burning wood for wood-burning stoves. CEDICAM is also working with farmers to construct contour ditches, retention walls, and terraces to capture rainfall to recharge groundwater and help to revive springs as well as to contribute to erosion control on the surrounding hillsides. Local production and use of organic fertilizers is also being undertaken; crop rotation is encouraged, as is the local selection of seeds. Women are taking part in the construction of these structures and may start reaping some of the benefits (Reider, 2006: 56). In San Ignacio, such measures would help to retain water from rainfall to recharge aquifers and might also increase flow in the springs. Such measures may also help to control erosion, which has been documented in other areas in Sonora due to heavy rainfall (Vásquez-León and Bracamonte, 2005) and is also a problem in San Ignacio. Planting trees on hillsides would also produce wood for cleaner fuel for the wood-burning stoves that are used to produce the quince jelly. This would make production cheaper in terms of labour time in collecting and/or purchasing wood. The use of organic fertilizers instead of chemical fertilizers, the production of less water-intensive crops, and a move away from monoculture (particularly evident in vegetable production in San Ignacio) would also help to reduce the negative impacts that chemical- and water-intensive agriculture have on climate (Shiva, 2005).

The scarcity of credit in general and the fact that women own little of the community’s land which would serve as collateral creates a disadvantageous situation for women who wish to expand/improve their business. Credit programmes would help female producers to gain access to additional capital in order to produce more varied goods, helping to generate steady incomes to reduce vulnerability to environmental, economic, social, and demographic change. An initiative to aid female producers could include the formation of rotating savings and credit associations among groups of women and/or other forms of credit programmes such as government-subsidized credit programmes (Rogaly et al., 2004). Mainly male members of the association of spring-water irrigation users are members of a government-sponsored village banking association (cajas solidarias). Female canned-fruit and vegetable producers could become members of the cajas solidarias. Training designed for women would include courses in marketing and product design for new products and innovations in existing products. Research projects could be developed, using participatory research methods including research by the women themselves into existing marketing outlets and products on the market competing with their products; the project could also include the training of women by women in the community (Girón Hernández et al., 2004). Training courses could be varied and geared towards the needs of small groups of female producers, in order to reduce competition between producers and expand their customer base.

The establishment of a municipal market in Magdalena would attract customers from Magdalena and surrounding cities, towns, and villages. The fruit, vegetables, and processed products could be sold in the municipal market.
CASE STUDY: MAGDALENA, MEXICO

No additional product labelling would be necessary for the sale of these items in the market. The producers could also act as vendors of their products, or have a family member or employee sell the products from a stand in the market. This would minimize middle-man costs, as well as transaction costs such as transportation from San Ignacio to the market, because Magdalena is much closer to San Ignacio than the cities of Hermosillo or Nogales, where products are currently sold (mainly in their municipal markets). The existence of a municipal market would be likely to boost the local economy by providing greater inflows of people into the city of Magdalena. This would help to stimulate local businesses and services that would extend beyond the municipal market.

Conclusions

This study focused on gender differences in the benefits of agriculture-based activities in terms of labour supply, income, social ties, and food security. Labour is garnered from family members within and outside the community. Daughters-in-law constitute the most frequently unpaid family labourers, whereas male relatives tend to be remunerated for their work in quince jelly and jam production. Labour is also obtained by hiring labourers. For those tasks normally considered to be ‘male’, male labourers are hired; and for those culturally defined as female, women labourers are hired. The study also examined the gendered effects of water scarcity and climate change on these agricultural activities, which are an understudied area of inquiry and action. These have been studied mainly by male researchers, focusing on male actors, leaving out key information about the effects on women and their responses to these impacts. Water scarcity and climate change are threatening the sustainability of these agriculture-based activities. Higher temperatures are already affecting fruit trees and reducing supplies of water for irrigation, leading in turn to increased pest attacks. Orchards near homes have been more severely affected to date than those farther from residential areas, due to competition from domestic water use. Fruit trees are now frequently not replaced when they become too old to produce or are damaged by unfavourable conditions. Vegetable fields are increasingly left barren. Reduced local production limits the production of preserves.

Social networks that are currently fortified by means of extended family members working together to produce these goods, and by means of women’s exchange or gifting of the products within social circles in the community, will be weakened. Women’s vulnerability in particular is likely to increase in the absence of strong social networks. Women depend more than men on these social networks for a wide variety of needs, such as being able to fulfil their responsibilities towards their children, other household members, and family members living outside the community and even outside Mexico. In return, women gain the multi-dimensional support of these family members, which includes important inputs into the production process such as labour.
and containers. In an individualized system, women, and to a lesser extent men, would be responsible for earning an income and supporting themselves and household members with that income. However, the interviewees in this study reported that such income, derived from stable, well-remunerated employment, is impossible to obtain in this Mexico–US border area.

Women will also become more vulnerable without fruits and vegetables that they can retain for household food consumption. Canned products can currently be retained for times of the year when there is no harvest, thus increasing household food security as well as income flows. Women in the community of San Ignacio, like women worldwide, play a critical role in food provision and processing for their families, often achieving household food security despite low household income. It has also been well documented globally that women spend a far greater share of their income on the sustenance of their household members than men do (Elson, 1995; Dwyer and Bruce, 1988; Benería and Roldán, 1987; Eswaran and Kotwal, 2004). Thus, if women earn less from canned fruit and vegetable production and sale because these crops become less readily available in the area, their household members may be adversely affected because women will have less to spend on critical household needs.

In gender analysis of urban agriculture, it is important to ask how the urban and peri-urban context affects employment of different family members, their educational opportunities, social networks, marketing, processing, and product demand (Buechler and Devi, forthcoming, 2008). For this type of analysis, many different family members (of different ages, sexes, and places of residence) were interviewed in multiple locations (urban and peri-urban; home, back yard, and fields) at different times of day and season. This context has a strong influence on opportunities and constraints for women and men in peri-urban agricultural production. In this case study it was clear that the small city nearby had some marketing outlets. However, the volume of demand was limited by the size of the city and the services that it provided, such as markets, necessitating dependence on surrounding small and larger cities. The education of younger generations of women and men and the availability of alternative employment opportunities in the surrounding urban areas is causing a reduction in the numbers of people engaged in farming and in produce processing. However, these family members still depend on mainly female relatives engaged in the processing of fruits and vegetables for food, for additional income to supplement their low and often unstable urban wages, and for social support. The sustainability of this production, however, is at risk from water scarcity and climate change, as well as changes in labour markets and demand. Women and men will be affected differently by these physical, demographic, and social changes.
References


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CHAPTER 13

Urban agriculture and gender in Carapongo, Lima, Peru

Blanca Arce, Gordon Prain and Luis Maldonado

Abstract

The emergence in recent decades in Latin America of urban agriculture as an important strategy for both food security and income generation for poor urban households raises a number of questions about the roles of men and women in this phenomenon. This chapter explores these questions through a case study of Carapongo, a neighbourhood in the eastern shantytowns of Lima, Peru. The study used an integrated methodology, involving quantitative and qualitative characterizations of the agricultural production system and producer households through a baseline survey of 125 Carapongo producers from April to October 2004 and through use of participatory workshops and other tools, which were adapted to the urban gender characteristics of the producers of the study area. To facilitate equitable development of urban agriculture in Carapongo, co-operation is recommended between municipal policy makers, civil-society organizations, and the producers. Although a basic function of municipal leaders is to recognize and address the needs of different constituencies in their district, the needs of agricultural producers of either sex have only rarely been addressed in urban municipalities. It is essential that data generated through gender analyses are fed back into municipal decision making to improve the numbers and design of projects that address this sector.

Introduction

The emergence in recent decades in Latin America of urban agriculture as a strategy for both food security and income generation for poor urban households raises a number of questions about the roles of men and women in this phenomenon. Who has been most instrumental in gaining access to land for household food production? Who has invested more labour time in cultivation and animal production? Who determines crop and animal production choices, the sale or consumption of the produce, and the use of income earned? Most importantly, how do different gender roles in agriculture affect the livelihoods of the household as a whole, and the relation of agriculture to other livelihoods strategies? This chapter seeks to answer these
questions through a case study of Carapongo, a neighbourhood in the eastern shantytowns of Lima, Peru.

Urban Harvest implemented the research project in collaboration with government and non-government research and development organizations and local municipal institutions, with financial support from the Spanish government, the City of Madrid, and the Province of Madrid through CESAL, a Spanish NGO.

The study area

Lima Metropolitan area has more than 7.5 million inhabitants, one third of Peru’s total population. Among developing regions, Latin America has experienced the highest levels of urbanization over recent decades. The origins of this large urban growth are connected to import-substitution policies widely adopted after the Second World War, which led to rapid industrialization in urban centres (Lipman, 1977). A corresponding lack of investment in agriculture in rural areas resulted in high levels of rural–urban migration, as people sought access to the new industrial employment opportunities. This trend combined with relatively high overall population growth to create the large urban populations that we see today.

Not only has there been a major shift of total population from village to city over recent years, there has also been a migration of poverty, as cities have proved unable to provide full employment for newly arrived migrants and the natural growth of the urban population. Recent figures show that, whereas between 2001 and 2004 the level of poverty in Peru went down from 54.3 per cent to 51.6 per cent, in Lima it increased from 31.8 to 36.6 per cent over the same period (INEI, 2005). This may even underestimate the levels of poverty in the capital, since it is notoriously difficult to capture adequately the higher costs of the ‘basic family basket’ in metropolitan centres (Amis, 2002).

Carapongo, the neighbourhood involved in this case study, is located at about 200 m above sea level in the lower zone of the Rimac watershed. It covers approximately 464 ha, of which 46 per cent is cultivated land mainly under vegetable production, with limited areas devoted to large-scale livestock rearing or forestry (Table 13.1).

Table 13.1 Characteristics of the study area (2006)

<table>
<thead>
<tr>
<th>Land type</th>
<th>Carapongo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total area (hectares)</td>
<td>463.8</td>
</tr>
<tr>
<td>Population (000)</td>
<td>3,200</td>
</tr>
<tr>
<td>Land use (%):</td>
<td></td>
</tr>
<tr>
<td>• Residential/roads</td>
<td>42</td>
</tr>
<tr>
<td>• Cultivated land</td>
<td>46</td>
</tr>
<tr>
<td>• Livestock</td>
<td>4</td>
</tr>
<tr>
<td>• Agro-forestry</td>
<td>2</td>
</tr>
<tr>
<td>• Uncultivated land</td>
<td>1</td>
</tr>
<tr>
<td>• Commercial/industrial, recreational</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: Castro, 2007
Most of Carapongo’s population is literate (95.6 per cent). Just over half of the population are migrants from the Andean region. The average Carapongo family has five members, and three quarters of the population are aged over 35 (76 per cent). Almost half of the male population is married, compared with 18 per cent of women. For both men and women, legal marriage is more common than co-residence (convivientes) (men 11 per cent, women 6 per cent).

**Agriculture in Carapongo**

Lima is located in the coastal desert of Peru, with one of the lowest rainfall regimes on earth. Carapongo receives water for agriculture mainly from the Rimac River, through a system of irrigation canals which permit farmers to produce three to four crops per year. Agriculture constitutes an important part of the urban population’s income, in addition to other jobs, some in the public sector but most in the informal private sector.

Of the total population of Carapongo, 60 per cent of the population is involved in agriculture, mainly in the same neighbourhood. In these farming families, men were reported to be ‘mainly responsible’ for the farm in 70 per cent of cases, and women in 30 per cent. Just over half of the men and women involved in agriculture in Carapongo are immigrants from the rural areas of...
the Andean region and were previously involved in agriculture. It is therefore probable that they continue to be strongly influenced by gender divisions of labour that prevail in rural areas. However, in Carapongo family labour is rarely supplemented by casual labour, which increases the responsibilities of the women in the household.

Forty-two per cent of the men and 34 per cent of the women indicate that farming is one of the few sources of regular employment available to them in the city. Almost 40 per cent identify a major benefit of farming as the ability to pay for education of their children, while 31 per cent regard it as their main source of food security.

Absentee landlords who rent to local farmers for agriculture hold a significant proportion of the land. Although 30 per cent of the agricultural land in Carapongo has been lost to urban sprawl over the past two years, farming persists, is still very important, and is mainly characterized by mixed cropping of vegetables. Farm plots are similar in size and planted with vegetables such as beet, lettuce, turnip, radish, basil, and other herbs (*huacatay*), mainly for commercial sale, while livestock is raised for family consumption and for sale. Poultry, guinea pig or *cuy*, and pigs are the most popular animals kept.

Carapongo people are likely to be part-time farmers (48 per cent), combining farming with other employment. Part of the reason for this is the limited access to land, with mean ownership of 1.9 plots or 0.81 ha per family. Many families cannot find sufficient farm employment in the locality. Among the working population, 45 per cent of men commute outside the Carapongo area to look for other work, mostly casual labour and especially in the informal and labour-intensive transport sector.

In Carapongo, agricultural production for subsistence/food security and production for income and employment generation are by no means mutually exclusive. They co-exist in a range of different combinations. In rearing animals, the women tend to emphasize the importance of production for subsistence, while men (husbands) emphasize it as a source of additional income. In crop production both emphasize the importance of the market, although they also consume a small part of the harvest. Three functional groups can be identified by their production systems: crop–livestock production systems (65 per cent); crop production systems (33 per cent); and livestock production systems (2 per cent).

**Methodology**

The study of the agricultural production system used an integrated methodology. At the farm level, data related to land-use practices, crop and livestock management practices, and gender division of labour (in agricultural work, non-farm work, and reproductive responsibilities) were collected. The data were then used to identify the main types of production system prevailing within the study area, and the gender division of labour in Carapongo households.
A baseline survey was conducted, involving 125 Carapongo producers. Of the households surveyed, the person mainly responsible for the farming activities was interviewed. In 70 per cent of households a man was identified as the main person responsible for the farm.

The random survey, implemented from April to October 2004, covered the following issues: (1) family composition and household characteristics, (2) migration, (3) production systems, (4) food security and health, (5) environmental attitudes and behaviour, (6) family planning and reproductive decisions, and (7) gender division of labour.

Also a wide range of qualitative participatory tools, adapted to the urban gender characteristics of the producers of the study area, was used both to facilitate and to complement quantitative data-collection methods (Table 13.2). These tools were used to identify the role played by gender in the division of labour, the access to and control over resources, and the decision-making processes in Carapongo households, and to identify gender-specific problems, constraints, and opportunities.

Work with key informants proved particularly important. We selected key informants from different categories of the farming population by differentiating the length of time that families had lived in the area, whether they had come directly from rural settings or had moved from other parts of the city, whether they were primarily crop producers or livestock keepers, etc.

Women proved to be the best informants in most situations, and methods were adjusted to adapt to their availability. Information or data from women were more specific and clearer than those obtained from men. This may be because women are more conscious of their different roles in the organization of the family, and their desire to improve the economic situation of themselves and of their families. In order to benefit from their contributions, given their limited availability, in some cases it was necessary to conduct interviews with groups of informants in workshops. However, this is also often a challenge in

<table>
<thead>
<tr>
<th>Specific tools</th>
<th>Main gender-related issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seasonal calendar</td>
<td>Division of (urban-agriculture related) labour,</td>
</tr>
<tr>
<td>Survey</td>
<td>tasks, and responsibilities</td>
</tr>
<tr>
<td>Daily activity clock</td>
<td></td>
</tr>
<tr>
<td>Gender consultation</td>
<td>Decision-making power</td>
</tr>
<tr>
<td>Survey</td>
<td>Access to and control over resources</td>
</tr>
<tr>
<td>Transect walk</td>
<td></td>
</tr>
<tr>
<td>Household resource-flow diagram</td>
<td></td>
</tr>
<tr>
<td>Organizational linkages diagram (Venn diagram)</td>
<td>External factors</td>
</tr>
<tr>
<td>Problem drawing</td>
<td>Constraints, problems, and opportunities</td>
</tr>
</tbody>
</table>
the urban setting, where the time constraint seems much more severe than in rural contexts. Because of the difficulties described above, sensitization and motivation were important strategies preceding interviews with individual key informants or informant workshops. Also, intervention by staff of the municipality (local government) has been very important.

An important factor which influenced the study was the rapidly changing urban market. Frequently a decline in the value of agricultural commodities leads to one or other adult, mostly the man, leaving agricultural activities and seeking work in or near the city. Although in most cases the woman continues to farm, it may be in a different form.

Gender analysis of the local situation

Gender division of labour

In agricultural work

The division of tasks between men and women differs according to their agricultural production system, the cultural group to which they belong, the socio-economic status of the household, and the location of the household in the city. (The same factors are found to influence the decision-making power of women and men too.)

The division of labour in agricultural tasks between men and women is summarized in Table 13.3.

In only two types of task – land preparation and pest control – is there a clear assignment of responsibility to men. Only in special circumstances

<table>
<thead>
<tr>
<th>Activities</th>
<th>Men (%)</th>
<th>Women (%)</th>
<th>Shared (%)</th>
<th>No agricultural activity (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crops Land preparation</td>
<td>78</td>
<td>3</td>
<td>16</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Planting</td>
<td>36</td>
<td>6</td>
<td>55</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Fertilization, weeding, hilling, irrigation</td>
<td>30</td>
<td>6</td>
<td>62</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>Pest control</td>
<td>87</td>
<td>3</td>
<td>6</td>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>Harvesting</td>
<td>14</td>
<td>5</td>
<td>75</td>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>Livestock Raising small animals</td>
<td>6</td>
<td>23</td>
<td>28</td>
<td>43</td>
<td>100</td>
</tr>
<tr>
<td>Raising larger livestock</td>
<td>7</td>
<td>12</td>
<td>25</td>
<td>56</td>
<td>100</td>
</tr>
<tr>
<td>Purchase of inputs</td>
<td>46</td>
<td>22</td>
<td>30</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>Marketing products</td>
<td>23</td>
<td>41</td>
<td>36</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Household</td>
<td>4</td>
<td>76</td>
<td>15</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>Day labourer (jornalero)</td>
<td>14</td>
<td>3</td>
<td>11</td>
<td>72</td>
<td>100</td>
</tr>
<tr>
<td>Off-farm activities</td>
<td>19</td>
<td>11</td>
<td>8</td>
<td>62</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Baseline survey project “Agricultores en la Ciudad”, Carapongo, Lima-Peru (2004); n=125.
are women responsible for these tasks or share responsibility for them: these women are either widows or are unmarried. Where land preparation is shared, women help to prepare vegetable beds, which cannot be done by ploughing alone. Many other tasks are more frequently shared than assigned specifically to men or women. Moreover, men and women do not always have the same perception of the division of tasks. For example, only a small proportion of the men recognize that women play an important role in the purchase of inputs and in the marketing of the products. Most men see this as a prime task of the men, while women on the other hand clearly see themselves as having the major responsibility.

Nevertheless, the data do suggest a general pattern in which men take on more of the crop-production activities (60 per cent, compared with 40 per cent) and women participate more in livestock activities (70 per cent, compared with 30 per cent). Men also play an important role in ensuring the availability of factors of production, purchasing inputs (46 per cent), and obtaining rental land for farming. In vegetable cultivation (beet, lettuce, turnip, for example), men take responsibility more frequently for land preparation, irrigation, and fertilizer application. Men are responsible for (a few) cash crops (beets 26 per cent and lettuces 15 per cent) to generate cash income for the family. In livestock management, women are actively involved in feeding, health care, and marketing. For some types of livestock such as poultry, women are principally responsible in almost two thirds of cases. On the other hand, men are more commonly involved with larger livestock like cows and goats.

Women's management of animals is often related to securing household food and nutrition. Poultry and guinea pigs in particular are household food assets, supplementing nutritional intake. Guinea pigs, sheep, and goats are also often considered as a ‘savings bank’: a ready source of cash for emergencies. These animals, as well as pigs and poultry, are also regular sources of monetary income, although, as will be discussed below, controls of that income varies according to circumstances. The production of pigs, as well as poultry, can also constitute a source of short-term food. Livestock provides both a means of risk aversion and a source of cash income through occasional sales. Also, animals provide manure, especially in the case of poultry, where the waste matter is an input for vegetable production.

The stronger role of men in vegetable production does not carry through to post-harvest and marketing activities, where women clearly play a bigger part (41 per cent of producers considered marketing the main responsibility of women, compared with 23 per cent who regarded this as the realm of men). In Lima, women are considered to be the better and tougher negotiators, although the survey results also show that a high percentage (36 per cent) consider marketing to be the responsibility of both sexes. Vegetable marketing generates economic earnings and employment, and its complex character helps to explain the importance of tough negotiation by women as well as the mixed responsibilities.
In marketing activities

Women are more commonly involved in the marketing of the vegetables and livestock than men, although men and women perceive the extent of women’s control over this activity very differently. About one third of men interviewed thought that this is mainly a women’s responsibility, 28 per cent said that men do the marketing, and 42 per cent that it was a joint task. Two thirds of women responded that they are the ones that do the marketing.

Beetroot, lettuce, turnip, basil, and animal products were identified as the most important local commodities. The major destination for the crop products is the Lima wholesale vegetable market (Mercado Mayorista) in the central district of the city, about 15 km away. However, the vegetables grown in Carapongo reach the wholesale market complex through a diverse array of producer marketing strategies. The small-scale producers themselves identify an important difference between ‘conventional’ practice, in which there is no stable business relationship between seller and buyer, and ‘novel’ practice, where the producer manages to sell directly to consumers who are often known to him or her, or else the producer sells to the same intermediary on a regular basis. Although this marketing strategy appears to demand more frequent harvesting, and hence greater crop planning and organization, it can result in a more steady income flow for producers and access to a more regular supply for buyers. In terms of gender implications, conventional practice places a high value on tough negotiation, since there is little trust involved in these ad hoc trading links, which results in the important role played by women, whereas the novel marketing strategy relies on building stable trading links, which may be done either by women or by men (Tesdell, 2007).

The prevalence of conventional, ad hoc marketing is an indication of a lack of social capital among producers in vegetable marketing. On the other hand, marketing of animal products, mostly by women, exhibited a remarkable aptitude for securing stable and local buyers for the meat. A wide range of services is provided by local traders, such as harvesting and washing of certain vegetables, collection and bulking up of produce, and transportation to different markets. Some services are especially offered to overcome post-harvest handling difficulties associated with particular vegetables. For example, the turnip is considered by producers to be a difficult and time-consuming crop to process for market. Turnip traders therefore specialize in buying the crop in the ground at a near-mature stage and then contract male and female labourers to harvest and wash the product in the early morning hours, before transporting it to the wholesale market by moto-tricycle (Tesdell, 2007).

In non-farm jobs

Over 60 per cent of the farming population engages in off-farm activities (work outside the farms) that provide a source of income with a guarantee of a
minimum annual income. Of these, 80 per cent are men (working as drivers) and 20 per cent are women (working as market sellers and pedlars).

In reproductive tasks

In terms of reproductive activities associated with the household, women clearly play the key role. Women are caretakers of the family (100 per cent) and are responsible for ensuring that the household is able to reproduce itself over time. The daily activity profiles (see Figure 13.1) indicate that women have to combine a large number of activities during the day when they are at home, before and after going to the field. Women spend seven hours each day in agriculture activities and eight hours in household activities. Men spend nine hours working exclusively in agricultural activities. Women undertake the majority of environment-management tasks in urban households, including the purification of drinking water. In addition, most of the women have identified the need to learn how to better manage and recycle organic wastes to produce nutrient-rich fertilizer, including the treatment of black water from household sewage systems for use in vegetable production.

Thus, women carry out household care and maintenance regardless of the time that they devote to food production or other livelihood activities. This is particularly difficult for female heads of households, who bear the sole responsibility for both reproductive and productive tasks.

![Figure 13.1 Daily timetable of a female producer in Carapongo](image)

Source: Urban Harvest
Gender-based division of access to and control over resources and benefits

When considering access to and control over resources, three types of resource can be identified (see Table 13.4):

- productive resources used by the household, such as land, water, inputs, credit, technical and market information, training (capacity building);
- productive resources of organizations;
- benefits of production, such as cash income, food, and other products (for home consumption, sales or exchange).

Access to and control over land

In Carapongo, the key natural resources of significance to the urban producers are land and water. Land tenancy in the area is complicated by the history of land occupation and the current fluidity of land access. The old system of hacienda ownership was largely transformed into co-operative ownership during the agrarian reform process, starting in the early 1970s, although some households gained access to individual plots earlier than this. Subsequently the co-operatives were divided up as ‘parcels’ among individual households. Now there is a wide range of mechanisms to access land, based on ownership through direct purchase or inheritance, ‘pre-inheritance’ (anticipo), ‘guardianship’ (guardianía), and share-cropping (al partir). Some families also access land through informal squatting (posecionarios) of land located on the bank of the Rimac River. Although used for agriculture, these lands are in fact protected by law and are inalienable. Many producers also combine different types of land tenure, most commonly ownership and renting, resulting in higher average land holdings.

Table 13.4 Access to and control over resources in Carapongo, Lima-Peru

<table>
<thead>
<tr>
<th>Access Control</th>
<th>Men</th>
<th>Women</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Productive resources</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household land</td>
<td>xxx</td>
<td>xx</td>
<td>xxx</td>
<td>x</td>
</tr>
<tr>
<td>Household access to water</td>
<td>xxx</td>
<td>xx</td>
<td>xxx</td>
<td>xx</td>
</tr>
<tr>
<td>Household agricultural inputs</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
<td>xxx</td>
</tr>
<tr>
<td>Participation in organizations/access to credit</td>
<td>xxx</td>
<td>xx</td>
<td>xxx</td>
<td>xx</td>
</tr>
<tr>
<td>Capacity building, information sources</td>
<td>xx</td>
<td>x</td>
<td>xx</td>
<td>x</td>
</tr>
<tr>
<td><strong>Benefits of production</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income from sale of vegetables</td>
<td>xxx</td>
<td>x</td>
<td>xxx</td>
<td>x</td>
</tr>
<tr>
<td>Income from sale of animals</td>
<td>xx</td>
<td>xxx</td>
<td>x</td>
<td>xxx</td>
</tr>
<tr>
<td>Income from labour (from off-farm activities)</td>
<td>x</td>
<td>xxx</td>
<td>x</td>
<td>xxx</td>
</tr>
</tbody>
</table>

xxx Indicates complete access/control; xx Indicates partial access/control; x Indicates limited or no access/control

Inherited resources are, theoretically, divided equally among children, both male and female, and owned land is the most important form of tenure for both men and women. Women can and do buy and rent land. The person accessing the land in one of these various ways is often the person who also administers it. As one man commented in a workshop on this issue: ‘La herencia se respeta, sea hombre o mujer’ (‘One respects inheritance, whether it is to a man or a woman’). On the other hand, there are cases in which one or other spouse is better capable of taking care of farming in the household.

Among the households where a man is seen as the main person responsible for the farming activities, 38 per cent live on their own land, but fewer than half of these have a formal title to it. Among the 30 per cent of households where women are mainly responsible for farming, the pattern is the same. Although 36 per cent have their own land, only 49 per cent of these have a formal title. For a little under half of male and female farmers in the two quarters of Campo Sol and Huancayo, the Landowners Association holds the title to the land, with members having usufruct rights. About 23 per cent of the members of these associations are women, but the leadership is primarily male. This appears to put women who are mainly responsible for farming in these neighbourhoods at a double disadvantage.

Responsibility for the farm is strongly influenced by whether the household is male- or female-headed. Of the 30 per cent of households in which women are mainly responsible for farming, 14 per cent are headed by women. In these households the woman holds absolute control over the household property. This is especially so for widows, who control land, house, and livestock. However, in this case they generally have a smaller average land area (0.31 ± 0.22 ha), and their plots tend to be of poorer quality and are consequently less productive. An important added challenge for households where women are mainly responsible for the farm is the constraint on their labour availability for farm activities, due to their heavy commitments to domestic chores.

With the city expanding rapidly, some agricultural lands are being converted into small residential plots, while in other places individual farm plots are

Table 13.5 Land tenure by men and women

<table>
<thead>
<tr>
<th>Tenancy</th>
<th>Men</th>
<th>Women</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area (ha)</td>
<td>%</td>
<td>Area (ha)</td>
</tr>
<tr>
<td>Ownership</td>
<td>0.72 (± 0.42)</td>
<td>38</td>
<td>0.72 (± 0.67)</td>
</tr>
<tr>
<td>Rental</td>
<td>0.68 (± 0.39)</td>
<td>16</td>
<td>0.52 (± 0.40)</td>
</tr>
<tr>
<td>Posecionarios</td>
<td>0.82 (± 0.98)</td>
<td>9</td>
<td>0.84 (± 0.67)</td>
</tr>
<tr>
<td>Ownership + rental</td>
<td>1.0 (± 0.46)</td>
<td>17</td>
<td>0.34 (± 0.22)</td>
</tr>
<tr>
<td>Ownership + posecionarios</td>
<td>1.52 (± 0.80)</td>
<td>4</td>
<td>1.54 (± 1.37)</td>
</tr>
<tr>
<td>Others*</td>
<td>0.85 (± 0.10)</td>
<td>16</td>
<td>1.06 (± 0.62)</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

* guardianship, share-cropping, and combinations

Source: Baseline survey project, ‘Agricultores en la Ciudad’, Carapongo, Lima-Peru (2004); n=125.
being used wholly or partially for extraction of earth for brick-making or as construction material. So far there is no evidence that men are more or less willing to convert land in this way than women.

**Access to and control over water**

Access to water is a key component for productivity and success in urban agriculture. In Carapongo, the availability of water during the dry season in the mountains is declining. This results in low water levels in the River Rimac, from which irrigation water is drawn. However, only a quarter of male farmers and a fifth of female farmers identified water scarcity as a problem. But they did emphasize water quality. Increasing urban pollution and environmental contamination result in irrigation channels filled with garbage and pollutants.

Access to water at Carapongo is by household, and so tends to be a source of potential conflict between households, rather than between a couple within the household. Men mostly handle management of the irrigation systems, both at the watershed level and at the ‘sub-sector’ level of Carapongo. Only 8 per cent of women are members of the sub-sectoral irrigation commission of Carapongo.

**Access to and control over inputs**

Access to and control over the inputs for crop–livestock production depends on the purpose of the production. Both men and women invest significant inputs for commercial production (cash crops, animals for regular sale), whereas mostly women incur minimal expenditure for subsistence production (small-scale planting of root and tuber crops, beans, green maize, and herbs and rearing of small animals such as poultry and guinea pigs). Pesticides, organic and inorganic fertilizer, and hired labour are the major expenditures for cash crops, and commercial feed is purchased for some animals. Control over these inputs is a consequence of technical specialization or specific responsibilities assigned to men and women. The purchase and use of pesticides is largely a male responsibility, partly because of the physical exertion involved, but also because of the risk of contaminating children and food if the women handle pesticides.

**Access to credit**

In the study area, there are almost no formal sources of credit or loans, and 65 per cent and 73 per cent of households respectively claim not to have any access to either. Those that do access credit do so informally through small kiosks (bodegas) or, for agricultural inputs, through the agricultural supply shops and the manure traders. Families are the main source of loans, which are almost exclusively obtained for farming activities. In the few cases
where loans are obtained from moneylenders, they attract very high rates of interest because the farmers do not have collateral to pledge. Male farmers have better access than women to agricultural credit because of their more frequent interactions with suppliers. In almost 90 per cent of cases, men are responsible for crop protection, both purchasing and applying chemicals.

**Gender-differentiated participation in social networks**

Participation in community organization and social networks that provide access to credit and loans or access to knowledge is variable between men and women. In Carapongo, women participate very little as representatives with decision-making power in public or community organizations. For example, although women use and manage water in farming (crop–livestock activities) and in the home more than men do, they hardly (only 10 per cent) participate in the irrigation commissions and committees. It is a tradition for men to hold the administrative positions on these committees, but women manage water for domestic use in Carapongo, where most households have access to a well.

There are seven associations of landlords, in which men participate more than women, since land ownership is the criterion for membership, which is male-dominated. However, women play an important part in local community organizations that relate to food security. These are community kitchens and the ‘Glass of Milk’ programme which are co-ordinated by the municipality through community-based committees of women.

A common perception among both men and women is that the local population is organizationally strong when making claims on official authorities, whether in relation to water management, land use, or social programmes, but social organization for those seeking improvements in agricultural production or marketing systems is weak.

**Access to technical information and training**

Regarding the gender aspects of human-capital formation, both men and women indicate a lack of access to training or information about crops and livestock-husbandry practices, although women are at a much greater disadvantage. Only 22 per cent of the farming population has received agricultural training, but of these 86 per cent are men and 14 per cent are women. Women are particularly interested in learning more about basic treatments pertaining to animal health, whereas men are more interested in information about sources of credit and government-sponsored training programmes.

**Control over the benefits and risks of production**

The predominance of women in the marketing of vegetables was confirmed in a mixed-sex workshop discussion which also highlighted the variability in decisions to sell and control of the proceeds of sales. Where a woman has
control over land, through whatever means, she most often has the right to decide on the sale of the produce. On the other hand, since men are more commonly in control of land, they have more frequent authority in the decision to sell.

Women producers who are not land owners (almost 60 per cent) demand their share of revenue derived from production, because they are the ones who are responsible for the care of the family, principally children. However, when they are not successful in convincing their husbands to share the earnings, women retain part of the money from their sales of small animals and vegetable produce without the knowledge or consent of their husbands.

Given women’s greater responsibility for small livestock, they tend to have more say and involvement in these sales. Even where a man has taken the initiative to become involved commercially in animal production, he may have a limited say. As one wife commented ironically: ‘El decide, intelectualmente, a vender. Pero yo soy la que hago todo para la venta.’ (‘He decides, in theory, to sell. But I am the one that does everything to do with the selling.’) However, in the workshop discussion, women commented that they have to account to their husbands for money obtained from selling animals. Women make decisions on expenditure if the amount is a small sum. For all larger expenses, both men and women make the decision.

In the study area, 39 per cent of the men indicate that the principal constraint that limits their vegetable production is insect pests. Evidence from two thesis studies in Carapongo (Milla and Palomino, 2002; Maldonado 2006) indicates that there is wide use of toxic and highly toxic pesticides in this agricultural area, leading to health risks and negative environmental impact. Since men are mainly responsible for applying pesticides, the related health hazards are mainly affecting the male producers, although through handling and maintenance of pesticide-application equipment other household members can be affected (Yanggen et al., 2003). It appears that producers are constrained by a lack of knowledge of sustainable (integrated) pest-management practices, due to limited access to training courses offered by institutions or non-government organizations, or their limited exposure to sustainable commercial agricultural practices.

**Bargaining power in decision making in Carapongo households**

The way in which decisions are made within the family depends on how tasks are assigned within the farming system. The position of individuals within the household and the division of labour affect an individual’s knowledge of the crop-livestock system which influences decision making. Commercial farmers make more decisions alone, and few in consultation with family members, while home-consumption farmers or non-land-owning households with only animals make fewer decisions alone and more in consultation with family members.
Table 13.6 Decision-making matrix in Carapongo households

<table>
<thead>
<tr>
<th></th>
<th>Men decide alone</th>
<th>Men and women decide jointly</th>
<th>Women decide alone</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men dominate decision</td>
<td>Equal influence</td>
<td>Women dominate decision</td>
<td></td>
</tr>
<tr>
<td><strong>Inputs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who decides how the family labour will be used?</td>
<td>•</td>
<td></td>
<td></td>
<td>When men work off-farm, women spend more time in the field or hire labour for the farm.</td>
</tr>
<tr>
<td>What inputs to buy?</td>
<td></td>
<td>•</td>
<td></td>
<td>Who decides depends on the type of crop, type of animal, and type use (food or cash)</td>
</tr>
<tr>
<td>To hire additional labour?</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Production</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who decides which crops to grow?</td>
<td>•</td>
<td></td>
<td></td>
<td>A female land owner/renter may decide on crops.</td>
</tr>
<tr>
<td>When to harvest?</td>
<td></td>
<td>•</td>
<td></td>
<td>There is always some flexibility.</td>
</tr>
<tr>
<td>Number of animals to buy?</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marketing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who decides what proportion of the vegetables is sold?</td>
<td></td>
<td>•</td>
<td></td>
<td>In case of commercial production like pigs, men can influence the decision.</td>
</tr>
<tr>
<td>When/which animals are to be sold?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Investments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who decides to buy equipment and tools?</td>
<td>•</td>
<td></td>
<td></td>
<td>Depends on the purpose of the loan.</td>
</tr>
<tr>
<td>To take a loan?</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To buy or rent additional land?</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To buy more animals?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reproduction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who decides whether a child goes to school?</td>
<td></td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To consult a doctor?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Role of external factors on gender in urban agriculture

The policy environment has differential impacts on men and women involved in agricultural production. Although a detailed analysis is yet to be completed, there does seem to be a more positive environment in relation to women’s situation compared with that of men; in the latter case there is quite a strong antagonism towards local authorities. The main contact between male producers and local government is through the irrigation committees, which tend to oppose certain policies adopted by the municipality. These primarily relate to the local taxation system and the desire of the Council to convert low ‘rural’ rates into much higher ‘urban’ rates. The higher urban rates are justified on the basis of the upkeep of urban amenities provided: parks, piped potable water, sewer systems, sanitation, refuse collection, etc. The Rimac Irrigation Committee is a focus of resistance to the conversion of agricultural land to urban status, for two reasons: the lack of such services in the agricultural areas, and the crippling financial burden that the urban rates would impose on families with only half a hectare.

The main points of contact between the Council and women are through the programmes dealing with Community Kitchens, the Glass of Milk programme, and the Mothers’ Clubs. The Council also has a special programme addressing violence against women.

Recommended strategies to facilitate equitable development of urban agriculture in Carapongo

Municipal policy makers

A major function of municipal leaders is to recognize and address the needs of different population groups in their District, and there are often specific structures and functions addressing particular issues that affect women, youths, and children. However, it is still rare for the needs of agricultural producers of either sex to be addressed in urban municipalities. Thus a first and fundamental strategy is to recognize the existence and contribution of the agricultural sector to the local economy and society, and to develop policies that support safe and sustainable production, post-production, and marketing of crop and livestock products. With the growing city population, due to migration from rural areas and natural growth, the demand for employment is increasing; the demand for fresh products is also on the rise, especially for fresh vegetables and animal products. This provides a good opportunity for men and women farmers to increase their income. A positive effect of urban agriculture for women is that their important role in family food security and nutrition receives greater recognition. In addition, it helps them to become more independent, by generating some additional income from sales of surpluses (of guinea pig, for example, which is a novel opportunity market in Carapongo) and by saving cash on food expenditures which can be used for
other purposes. However, gender-related characteristics of urban farming in Carapongo are an unequal division of labour, an absence of equitable access to and control over productive resources, unequal access to knowledge by both men and women, and inequality in power relations.

Recognizing the important role of urban agricultural production, and the existing gender inequalities, the municipality of Lurigancho-Chosica, of which Carapongo is part, could take the following measures to facilitate sustainable and equitable development of urban agriculture:

- Allocation of a budget for the recently established Sub-division of Urban Agriculture.
- Redesign of municipal land-use policies, encouraging co-operation between the Housing and Agricultural Associations, individual landowners and cultivators of the plots, and participation of male and female stakeholders in urban land-use planning, in order to increase security of land tenure for both male and female producers.
- Support for sustainable provision of irrigation water, through improved co-ordination and dialogue with the Irrigation Committees and SEDAPAL, the parastatal company responsible for water management.
- Support for social capacity building, through provision of training and development of producer networks and organizations, with emphasis on gender-sensitive approaches.
- Co-operation with the Ministry for Women and Social Development to replicate their gender-specific strategies which support the empowerment of women through a range of policies and institutional actions, especially its programme on poverty reduction (FONCODES), which addresses some aspects of gender in agriculture and has recently initiated some preliminary work in urban areas of Lima.
- Broadening the existing programmes of the Municipal Ombudsman for Women, Children and Adolescents (Defensoría Municipal de la Mujer, Niño y Adolescente) and the various Divisions and Sub-Divisions of the Council, such as Education and Culture, where empowerment of women is targeted, to include attention to women involved in agricultural production in the Municipality.
- Such gender-equity promotion programmes in urban agriculture should include active measures which could help women to gain greater access to credit services, training opportunities, and technical support. As part of collaborative R&D activities involving Urban Harvest, the Lurigancho-Chosica District Government, and the local irrigation users’ committee, a micro-credit scheme has been launched which combines capacity building, development of micro-investment proposals, and the awarding of small, low-interest loans to local producers. There are currently 46 loan recipients, of whom 17 are women, 27 are men, and two are mixed-sex groups. Loans range from 800 to a maximum of 2,000 soles (approximately $280–$700).
• To improve the contribution of agricultural production to household food security and especially to improved nutrition of young children, some key policy issues would be:
  – enhancement of maternal skills in infant and child nutrition
  – inclusion of weaning foods in municipal food programmes
  – improvement of linkages between agricultural production and municipal food programmes
  – support for and recognition of small-scale animal raising by landed and landless households
  – targeted training, especially in animal production for women.

• To improve the economic efficiency of commercially oriented urban agriculture, some key policy issues are:
  – access to markets and market information
  – support for the productive use of recycled organic wastes and wastewater
  – zoning and permits for commercial pig raising.

**Civil-society organizations**

The inequities between men and women identified in the study in Carapongo cannot be dealt with at the policy level alone. Civil-society organizations can play an important role in the following ways:

• Mobilizing all parties involved in the development process, including academic institutions, non-government organizations, and women's groups, to improve the effectiveness of anti-poverty programmes directed towards the poorest and most disadvantaged groups, especially women—and, in the present context, urban women, female heads of household, young women and older women, and women with disabilities, recognizing that social development is primarily the responsibility of governments.

• Engaging in lobbying and establishing monitoring mechanisms, as appropriate, and other relevant activities to ensure gender mainstreaming and implementation of the recommendations on sustainable and equitable urban agriculture development as a strategy to eradicate poverty.

• Ensuring that data generated through gender analyses are fed back into decision making on the design of the projects to be undertaken. For example, findings from studies of urban agriculture and gender undertaken by Urban Harvest and local NGO and government partners, on which this case study drew, indicated the key role of women who engage in livestock raising mainly for subsistence or as security. The subsequent livestock interventions of the project have worked largely with women (74 per cent of those implementing livestock modules) to enhance the productivity of livestock, thus contributing to household
food and nutrition security and enhancing the income available to women. It also noted that a limited role for women in decision making about crop-production interventions in horticultural production began with a process of capacity building, using farmer field school methods, which tended to reflect the dominant role of men in this field (23 of 27 initial participants, or 85 per cent, were men). However, with the development of organic farming and the emphasis on alternative marketing strategies, increased efforts have been made to strengthen the participation of women. Female membership in the organic producers’ groups has risen from 15 to 34 per cent.

- Developing gender-responsive working methodologies for use in research and the design of policies that recognize and value the full contribution of women to the economy, through their unremunerated and remunerated work, both on urban farms and off-farm.

References


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CHAPTER 14

Gender and urban agriculture in Pikine, Senegal

Gora Gaye and Mamadou Ndong Touré

Abstract

This case study is based on a review of exploratory research on urban agriculture in Pikine, conducted by IAGU in 2004, and additional data gathered in 2008 in the context of the small project ‘Establishing a Proper Input and Equipment Supply System for Urban Agricultural Producers in Pikine-North’, implemented by PROVANIA, a farmers’ organization in Pikine, with the support of IAGU. A review of this pilot project shows that although gender aspects were taken into account during the design, planning, and implementation phases, the project nevertheless focused mainly on production aspects (dominated by the men) and pays little attention to the transport, processing, and marketing aspects (dominated by women). Priority constraints and interests that are specific to women and mainly related to processing and marketing were ignored.

Introduction

Background

This case study is based on the experiences gained in a pilot project entitled ‘Supporting the Establishment of a Proper Input and Equipment Supply System for Urban Agricultural Producers in Pikine-North’, which was formulated and implemented in 2007 and 2008 by the local farmers’ organization PROVANIA, with co-funding from the international Resource Centres on Urban Agriculture and Food Security – Cities Farming for the Future programme (RUAF–CFF), regionally co-ordinated by the African Institute for Urban Management (IAGU) in Senegal.

This pilot project is a follow-up to a Multi-stakeholder Policy formulation and Action Planning (MPAP) process, involving several local institutions and urban agricultural producers’ organizations in Pikine, supported by RUAF–CFF. This process started in 2005 by undertaking a (gender-sensitive) exploratory study of urban agriculture in the Pikine area, identifying the limited access of urban producers to agricultural inputs and equipment as one of the factors that limit the development and sustainability of urban agriculture in
Pikine, alongside land insecurity, poor access to credit, and other factors. The diagnostic phase was followed by joint development of a City Strategic Agenda on Urban Agriculture. This Strategic Agenda is being implemented now, coordinated by the participating organizations and institutions, including this pilot project by PROVANIA.

The area of Pikine

Pikine is located within a system of continental dunes, broken by depressions and valleys, named the Niayes Valley. The physical characteristics of the Niayes are fairly favourable for agricultural production. The annual rainfalls vary considerably, between 200 and 900 mm per year. The climate is tropical, characterized by alternation between a dry season – eight months, from early November to mid-July – and a rainy season from mid-July to the end of October. The natural vegetation of the Niayes is abundant (MUAT, 2004). These plots of land are sought after by building companies, although the groundwater is close to the surface, because buildings nowadays are constructed on good-quality embankments. However, the construction of infrastructure, such as water and electrical-supply facilities, is hampered by the physical characteristics of the area.

Pikine had around 800,000 inhabitants in 2002, 63.5 per cent of whom were aged under 25 (ANSD, 2004). Pikine was a dormitory town for a long time, but its economy has started growing in the past few years. However, apart from the free industrial zone, most of the economic activities still take place in the informal sector and, to a lesser extent, in horticulture and fish breeding in the Niayes (MUAT, 2003).

Urban agriculture in Pikine-Niayes

Urban agricultural activities in Pikine-Niayes include production, processing, and marketing activities. The main production systems are market-oriented horticulture (vegetables and fruits), small-scale (home) gardening, traditional fishing and fish breeding, tree nurseries and forestry, local cereal processing, and poultry farming.

Among the producers (over 1,500) in the Department of Pikine, horticulture is the main activity, due to the presence of water near the surface (céanes). In 2001, 501 horticulture farms were present in Pikine. The size of the plots varies between 100 m² and 5.9 ha. Women represent 21 per cent of the producers and are mainly involved in the marketing of products, although some of them also work on the farms. The main products are aubergine, lettuce, onion, chilli, parsley, leek, and strawberry.

The area of Pikine, especially the Niayes Valley, is state property, and therefore the producers in that area can be ejected at any time if the state decides to assert its rights. This land insecurity deters the producers from making investments.
Land is obtained through inheritance, by purchasing it (although it is strictly prohibited to sell plots of land in the area, some people sell/buy land, knowing that it has no legal value), by renting a plot, or by entering into a share-cropping arrangement (*métayage*).

Small-scale urban agriculture in Pikine area successfully contributes to better food security and nutritional status as well as generating income for the producing families. Nearly 95 per cent of the producers in the area claim that they are able to cover their family's daily cash needs with the income generated by urban agriculture (Dieng, 2004).

The main actors involved in urban agriculture in the Pikine are depicted in Figure 14.1. They include the following:

1. Direct stakeholders: the 1,500 producers and their organizations: PROVANIA and UPROVAN (larger associations of several local farmer groups), Mbou Gayif, Laaw Tann, Ndeck, Daan Doleé, and Feul Yeggo (smaller specific-purpose organizations), as well as the small merchants, larger land holders, agricultural workers, input suppliers, transporters, middle men, retailers, etc.
2. Institutional actors: ministries, local government, and decentralized state services (Ministry of Agriculture, City Of Pikine, Commune of Pikine Nord).
4. NGOs and other non-government supporting organizations (IAGU, Enda RUP, ENDA GRAF, ANCAR, ACDEV, CEREX Locustox, etc.) and CAT (the IAGU–PROVANIA co-ordination team for the pilot project)

![Figure 14.1 Actors involved in urban agriculture in Pikine](image-url)
Figure 14.1 shows the various institutions that interact (to a certain extent) with the (second-level) farmer associations PROVANIA and UPROVAN, and the low level of interaction between these institutions, which sometimes creates duplication (as well as important gaps) in the implemented activities. The Multi-stakeholder Forum on Urban Agriculture that was established as a result of the MPAP process provides a platform for the farmer organizations to interact directly with these institutions and provides better institutional co-ordination.

**The study area**

The formulation and implementation of the pilot project took place in North Pikine on 60 ha mainly dedicated to vegetable gardening (and some floriculture). Some of the actors are engaged in fruit and vegetable processing. The majority of plot supervisors are men (72.2 per cent), while 21.8 per cent of them are women. Their age range is from 25 to 68 years. As regards land occupation, 35.8 per cent are tenants and 52.8 per cent are owners, but only 3.4 per cent have a title deed (Niang et al., 2005). The main farmers’ organization in this area is PROVANIA, which developed the pilot project ‘Establishment of a Proper Input and Equipment Supply System for Urban Agricultural Producers in Pikine-North’ in co-ordination with IAGU and with the political support of the Pikine Municipality.
Analysis of gender in urban agriculture in the area of North Pikine

Methodology applied

This case study is based on the following components.

1. A review of available qualitative and quantitative data relating to agriculture in the Pikine area, especially:
   - An early case study of gender aspects of urban agriculture in Pikine (IAGU, 2004).
   - A report on the Exploratory Study on Urban Agriculture (IAGU, 2006) carried out in the framework of the RUAF–Cities Farming for the Future Programme, presenting a diagnosis of the main urban farming systems and the actors involved, and the main constraints and opportunities for development of urban agriculture in Pikine area, as well as reviews of the actual legal and regulatory framework for urban agriculture in Pikine. The study includes a special chapter dealing with the gender aspects of urban agriculture.
   - A study on Access to Credit and Finance for male and female urban agricultural producers in the Niayes area (IAGU, 2007). Lack of means to finance their agricultural and marketing activities is one of the producers’ major constraints, especially for the women.

2. Focus-group meetings with male and female beneficiaries of the above-mentioned pilot project, implemented by PROVANIA with the support of IAGU–RUAF. The aim of these meetings was to check the outcomes of the gender analysis contained in the available literature and to discuss to what degree women’s (and men’s) specific constraints and interests were taken into account in the design and implementation of the pilot project. Separate meetings were first held with six female producers and ten male producers, followed by a mixed forum (involving 24 women and nine men). The mixed meeting allowed men and women to compare their views on certain issues. During the focus-group meetings a number of participatory rapid appraisal tools regarding key issues in gender and urban agriculture were applied, including the following
   - A Venn diagram which highlights the way in which communities perceive (the importance of the services provided by) local associations and external institutions and helps to analyse the existing relationships between local organizations and the external institutions.
   - A pyramid of constraints, which is a tool for ranking the main constraints identified by the women involved in market-gardening activities.
   - A daily calendar of activities which shows the gender-differentiated distribution of tasks in the farm household.
   - A profile of the access to and control over resources, which allows researchers to analyse the productive resources to which men and women have access, and their degree of control over those resources.
• A decision-making matrix which makes it possible to understand better how men and women take part in the decision making, and in what aspects of urban agriculture men and women respectively are the main decision makers.

• A priority-setting diagram, used to identify the priorities of male and female producers respectively, and/or their views on the adequacy of identified solutions.

In the three focus-group meetings we first sought to establish a climate of trust in order to make the participants feel comfortable about the use of the collected data. Furthermore we applied a tactful approach when dealing with socially or culturally sensitive issues (for example, decision making in the household), in which we first raised a more general discussion on the issue and then slipped in the questions included in the tools one by one. During the meetings we had to deal with a lot of chattering and repeated digressions from the main subject under discussion, hence the need to be patient and refocus the debates on the main issues.

Results of the gender analysis

Distribution of labour

Men dominate production activities, and they normally manage most activities throughout the season. Women become especially involved when it comes to harvesting, transporting, processing, and especially marketing. Female heads of households (widows, unmarried, or divorced women) hire labourers (sourgas) for the production activities.

Men almost never go to the market to sell their produce. They often sell the produce on-farm to women who collect it directly from the field by hiring carriers to take the vegetable racks from the field to the main road, and horse carts to bring the production to the markets or processing centre. Transportation costs are relatively high, which affects the production costs and therefore limits profits. The women deplore the absence of access roads and insist on the need to have their own means of transportation, given the fact that horse-cart owners are often uncooperative.

Processing of the produce is also mainly done by women’s groups, such as Dan Doolé (a Wolof term meaning ‘Working to Earn One’s Living’), which is processing cereals, vegetables, and fruits. There are several such groups in the area of Pikine which have organized themselves into a network of local organizations involved in the processing of agricultural products.

Another of the women’s important roles is financing the purchase of inputs needed for the next production season, often using their own money earned in the marketing – which is also a way to ensure that the men are selling the harvest to them, rather than to outsiders.

Household duties are entirely performed by women, sometimes with the assistance of young girls. Some parents compel their daughters to interrupt
or end their schooling in order to assist their mothers in the domestic chores. Community activities are essentially divided between family ceremonies (christening, funerals, marriages, circumcision, etc.) and socio-cultural and political activities (associative structures, political activities, community activities). The entire family attends family ceremonies; or, if this is not possible, one of the spouses represents the other in equal proportions. In all the ceremonies, however, there are so-called ‘female’ components (for example, the festivities) and others that are more ‘masculine’ (for example, the religious activities).

Women are more inclined to participate in social and political activities than the men. However, they are rarely appointed as community representatives, and men dominate all the community authorities.

### Table 14.1 Gender division of labour in farm-households in North Pikine

<table>
<thead>
<tr>
<th>Activity</th>
<th>Women/Girls</th>
<th>Men/Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtaining a piece of land</td>
<td>x (consults men)</td>
<td>x</td>
</tr>
<tr>
<td>Guarding the piece of land</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Preparing field (hoeing)</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Obtaining/purchasing seeds</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Preparing seeds</td>
<td>x (provides the funds)</td>
<td>x</td>
</tr>
<tr>
<td>Sowing</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Transferring plants</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Weeding</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Localizing water source</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Irrigation</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Fertilization</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Pest control</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Harvesting</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Threshing</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Cleaning</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Transporting products to the market</td>
<td>x (hires transport)</td>
<td>x</td>
</tr>
<tr>
<td>Selling products at market</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Maintenance (e.g. irrigation system, warehouse)</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Interacting with extension workers/local authorities</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Exchanging information with other producers</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Livestock feeding</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Household chores</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Social/religious ceremonies</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Community-political meetings/roles</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Access to and control over resources

Men control most of the resources; only a minority of women have their own farms, by virtue of an inheritance. However, lately an increasing number of women have access to land resources, by purchasing or renting plots of land.
Table 14.2 shows the predominance of men in the distribution of decision-making power. Single female landowners generally make decisions about access to and control over resources in farm-households in North Pikine.

<table>
<thead>
<tr>
<th>Access</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td><strong>Productive resources</strong></td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td>75</td>
</tr>
<tr>
<td>Labour</td>
<td>75</td>
</tr>
<tr>
<td>Credit</td>
<td>25</td>
</tr>
<tr>
<td>Inputs</td>
<td>75</td>
</tr>
<tr>
<td>Equipment</td>
<td>75</td>
</tr>
<tr>
<td>Training</td>
<td>25</td>
</tr>
<tr>
<td><strong>Benefits</strong></td>
<td></td>
</tr>
<tr>
<td>Profits</td>
<td>25</td>
</tr>
<tr>
<td>Ownership of goods (e.g. house)</td>
<td>75</td>
</tr>
<tr>
<td>Community decision making</td>
<td>100</td>
</tr>
</tbody>
</table>
in consultation with the hired farm labourers, which clearly indicates the dominant position of men in the agricultural production.

Women's role in decision making

The decision-making power at the household level is strongly related to the control over means of production (land, capital, etc.), which are mainly in the hands of men, as has been shown above. The women have a much more important role in decision making when it comes to marketing activities, transport, and processing.

When women have the exclusive responsibility for a family (female-headed households), social norms allow them more decision-making power. Since the number of female-headed households is increasing, nowadays more women have gained decision-making power.

At the community level, women are active participants in social and political activities. However, the main decision-making authorities are male.

A female producer: I have been a widow for 15 years and I have been working on urban agriculture for all that period. I am managing a household of 20 people. I manage to feed them and deal with all the needs of my kids and the rest of the family, which is made up of young women, married or single. To summarize, I can say that I manage to deal with all my needs thanks to the income I get from urban agriculture. Most of the female members of the association are in charge of families. I have a plot of land that I inherited from my father, who had a lease on it. This allows me to exploit the land.

It is important to note that women often are not sufficiently informed on important legal aspects related to agricultural activities, which weakens their position in a largely conservative society. The example of the woman quoted

Table 14.3 Decision-making matrix among farm-households in North Pikine (for households with husband and wife present)

<table>
<thead>
<tr>
<th>Activities</th>
<th>Men decide alone</th>
<th>Discussions but the men's opinions prevail</th>
<th>Equal influence</th>
<th>Discussions but the women's opinions prevail</th>
<th>Women decide alone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decisions on buying inputs or equipment</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decisions on what crops to grow</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decisions on taking a loan</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decision about which part of the harvest will be consumed or sold</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decisions on training activities</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decisions on domestic activities</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family-planning decisions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Decisions on socio-political activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decisions on children’s schooling</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>
above perfectly illustrates the case, as she was not aware of the fact that when her father passed away his death automatically cancelled the lease, and that she had to go through some formalities in order to get it renewed.

**Main constraints encountered by male and female producers in North Pikine**

During the exploratory survey in 2006 (IAGU–RUAF, 2006) two pyramids of constraints were elaborated, one by the women and another by the men, in order to identify the main constraints encountered by women and men respectively in urban agriculture in North Pikine. The most important constraints appear at the base of the pyramid, and the less pressing ones at the top.

We observe that a number of problems are seen as priority constraints by male and female producers alike, notably insecurity of tenure, shortage of irrigation water, and limited access to credit. These are serious obstacles to sustainable urban agriculture in North Pikine. According to the agricultural producers, agriculture might disappear altogether, under pressure from rapid and uncontrolled urbanization and the subsequent building of housings and collective facilities.

We also see some important differences between the main concerns of men and women, with the women being more preoccupied with marketing-related issues (poor access roads, limited market places, problematic consumer relations, etc.) or issues related to their situation as female heads of households (paying hired labour); whereas the male producers are more preoccupied by production-related issues (lack of good seeds, crop diseases, crop and soil

Figure 14.2 Pyramid of constraints encountered by female producers in North Pikine
Women also raise issues related to the employment of paid labour. Problems often occur during the production period, when they are faced with difficulties in selling their products.

Priorities of female producers

The female producers from North Pikine involved in the focus-group meetings (and the pilot project) suggested a number of measures that could improve their activities:

- Organize the women involved in marketing in more formal groupings, in order to put pressure on the public authorities to create more local vegetable markets and to lease these out to them formally.
- Set up a savings and credit system (*mutuelles*), shared by the women's groups, to provide loans to the producers.
- Provide more capacity-building programmes, to enable women to improve the management of their activities, at organizational, financial, and technical levels.
- Enhance the security of the agricultural lands.
- Provide motor-pumps to facilitate access to water resources and increase the value of non-cultivated plots of land.
- Assist the female landowners to shift to a share-cropping system so that they can avoid the problems related to the use of paid labour.
- Improve the transport of the products from the fields by creating/improving access tracks and re-organizing the plots in such a way that all plots can be reached.
Review of the pilot project in the light of the gender analysis

Drawing on the results of the exploratory survey implemented in 2006 (IAGU–RUAF, 2006) the pilot project was focused on the main obstacles to the development of urban agriculture mentioned by both men and women. Accordingly the following objectives were chosen.

1. Enhancing security of land use by developing a plan for the regularization of agricultural lands, especially in depression zones and areas with high ecological value. These should be designated as permanent agricultural zones (where construction is prohibited) in the city development and land-use plans. The plan will be discussed in the Pikine Multi-stakeholder Platform on Urban Agriculture and subsequently presented to the Pikine City Council.

2. Enhancing access to irrigation water by providing the farmers’ organization PROVANIA with a pump and irrigation equipment and establishing a savings scheme to pay for its maintenance and replacement. (A planned scheme for safe reuse of wastewater had to be postponed, due to some problems with a key institution involved in its implementation.)

3. Enhancing access to good-quality inputs by setting up a system managed by PROVANIA for collective purchase of seeds and tools/equipment and their provision to the producers on credit (inputs) or on hire (tools/equipment).

So, with the results of the gender analysis now in hand, what can be said about the gender responsiveness of this pilot project? During the preparation of the project, an attempt was clearly made to understand the roles and contributions of men and women in urban agricultural production, processing, and marketing, before designing the project. The project also involved male and female producers in making decisions about the objectives of the project, resulting in a focus on issues that were identified by male as well as female producers as key constraints limiting the development of urban agriculture. During implementation, equal access of male and female producers to inputs and equipment supplied by the project through PROVANIA was ensured. By doing so, the role of women in the production activities, their access to resources, and their participation in PROVANIA have improved.

But we also observe that the pilot project will benefit mainly women who control some land themselves (since they are more involved in production, can become members of PROVANIA, and have a share in the distribution of inputs and equipment). But there are only a few women in this category (mainly single women who have inherited some land). An important constraint indicated by these women, their problems with hiring/paying male farm labour, has not received attention. Another problem is that the project design neglects the fact that the women’s main roles in urban agriculture are in the organization of transport, processing, and marketing of the products, and only to a minor extent – and in a secondary role – in the production. The
The project focuses more on production aspects (dominated by the men) and gives little attention to the transport, processing, and marketing aspects (which are of equal importance to the men, since they sell their produce through the women and receive from them the financial means required to buy the required inputs). Priority constraints and interests that are specific to women and mainly related to processing and marketing (better access roads, more market places, better organization of trading women and their access to sources of financing, more capacity building related to marketing and processing, etc.) were left unaddressed.

The way forward

PROVANIA is now taking up the above-mentioned issues in the context of the Multi-stakeholder Platform on Urban Agriculture, identifying the institutional actors who can contribute to solving these issues. For example:

- Efforts are made by the Pikine municipality to provide specific places in the city markets for women to sell products from urban agriculture. The municipality also provides better facilities (especially credit) for female vegetable traders through a municipal funding project.
- The credit institution PAMECAS is experimenting with a new financial tool for urban agriculture, specifically women involved in the processing and marketing of vegetables and other products.
- The Strategic Action Plan on Urban Agriculture developed by the Multi-stakeholder Forum gives explicit attention to gender issues; and several institutions, when planning actions, are now taking into consideration the specific constraints, opportunities, and benefits for men and women involved in urban agriculture.

In the design of a follow-up project by PROVANIA, the specific interests of women involved in processing and marketing of agricultural produce will be given more attention. A gender expert working with National Agency for Agricultural Development and Rural is providing advice to PROVANIA.

Main lessons learned

The main lessons from the process of integrating gender in this urban agriculture project are as follows:

- It is essential to demonstrate to all parties the crucial value of women's contribution to the agricultural production and marketing process and the income that it generates. The participatory diagnosis clearly showed the important role that women play in pre-financing the new season, in the production process during peak labour periods, and especially in the (organization of) transport, processing, and marketing of the products.
• It is important to resist the tendency to focus diagnosis and project formulation on production-related aspects. Processing and marketing aspects should be given equal attention.

• It is important that, during the formulation of a local project, male and female producers can independently formulate their priority interests and preferred actions, and that they jointly conclude which actions will be included in the project. Although initially the men still may dominate the final prioritization (as was the case in the PROVANIA project), such procedure establishes the mechanism that women’s specific interests are explicitly taken into account and that men accept and support the implementation of related actions.

• A gender-sensitive situation analysis does not automatically ensure that a project will be designed to serve the main interests of women. Gender-responsive planning and monitoring requires more attention. Gender mainstreaming is to be understood as a repetitive process which results in small steps forward during each phase of the process.

• To tackle priority issues regarding gender in urban agriculture requires complementary actions by various institutions. The Multi-stakeholder Platforms on urban agriculture and food security can play an important intermediary and co-ordinating role.

• Tools used in the diagnosis stage (like the access to/control of resources tool, the decision-making matrix, and the distribution of benefits map) can be effectively used in the implementation stage to monitor gender-differentiated distribution of participation in decision making and distribution of benefits of a project.

References


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