

Women in Urban Agriculture: Are the Policies Supportive? The Case of Morogoro Municipality, Tanzania

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Abstract: *This paper is based on a study which examined the practice of urban agriculture in the policy context in Morogoro Municipality. It studied how policies support urban agriculture as well as acknowledging its contribution to the household economy. It involved in-depth survey of women who cultivate vegetables in open spaces. Furthermore, it focuses on women's experiences and attitudes towards practice of urban agriculture. Purposeful sampling was employed to select two wards, while random sampling was used to select respondents among the women vegetables cultivators from the two wards. Findings show a mismatch between the benefits of urban farming and existing policies which affects women's participation. In addition, from the findings, women's participation in urban agriculture contributes to food security, increases household income and reduces poverty. The paper concludes that policies are not supportive to urban farmers and women in particular. Thus women practise vegetable cultivation on a small scale and end up earning little income. It is recommended that urban farmers should be assisted in transforming the practice of traditional vegetable cultivation into modern, sustainable and environmental friendly which will increase productivity.*

Keywords: Urban agriculture, vegetable cultivation, women, policies

INTRODUCTION

In Tanzania, urban agriculture is a very common practice and involves livestock keeping, cultivation of crops and horticulture. It includes a variety of activities which can increase income, improve food security, reduce poverty and improve the well being of the people. Besides, as a part of informal sector, urban agriculture has a number of characteristics such as ease of entry, reliance on indigenous resources, small scale of operations, labour intensity, lack of formal training, etc. (Howorth et al., 2000). However, its activities (small trade, food vendors, hair salon, tailoring, vegetable cultivation), which are outside mainstream economy, have historically been under-reported for both men and women participants. Within the informal sector, although an estimated 35.75 percent of all operators and 34.33 percent of all employees are women (Mlozi., 2004), yet the percentage of women involved in urban agriculture is unknown. Lack of official figure on women involvement in urban agriculture, has affected policy planning and implementation. Though women offer their labour into urban agriculture, their contribution and potentials are not acknowledged and thus, can no longer be ignored and remain untapped.

Policy-wise, the practicability of urban agriculture is directly influenced by authorities such as local government and municipal authorities (Nugent, 2000: 88).

Authorities determine the location of an activity, resources for urban farming (such as land, water), and provision of technical expertise. Therefore, authorities can discourage urban agriculture if they believe it conflicts with other activities. When this happens, authorities react by evicting urban farmers from the open spaces used for cultivation.

In Tanzania, the policy aspect of urban agriculture has received limited attention. Studies on urban agriculture have focused on situational analysis, its contribution in household economy and its environmental problems paying little attention to policy and its effects, while ignoring the participation of women (Jacobi, 1996; Howorth et al., 2000; Mlozi et al., 2004; Mlozi, 2004). This paper therefore assessed the status of urban agriculture and women farmers; and analysed policies relating to urban agriculture. Specifically it discusses women in urban agriculture in Morogoro Municipality providing their experiences and challenges. In doing so, it contributes to a wider understanding of policies relating to urban agriculture, showing how such policies can obstruct the involvement and success of urban women farmers and suggesting ways in which policies can be made more supportive. In this paper, urban agriculture and urban farming are used interchangeably.

MATERIALS AND METHODS

Morogoro Municipality was selected for this study because of its favourable climate and soil fertility, which is ideal for vegetable production. This is a descriptive design which entailed collecting information by interviewing a sample of individual farmers. It focused on women farmers who cultivate vegetables for both cash income and household consumption. Purposeful sampling was used to select two wards (Mazimbu and Kichangani) of the municipality's 24 wards. Popularity in vegetable cultivation was the main criterion for selection. Random sampling was used to select a total of 15 women from each ward (making a total of 30), women who cultivate vegetables at the open spaces.

Primary data was collected through interviews, Focus Group Discussions (FGDs) and observation method. The FGDs consisted of three women farmers randomly chosen from each location making a total of six members. Physical observation gained insight into the urban agricultural activities practised by the women. Furthermore; interviews through check lists, was conducted to key informants (Municipal Agricultural Officer and extension officers). In addition, review of the literature analysed governmental policy documents relating to urban agriculture as well as previous studies on Morogoro District and Tanzania. Data was analysed by using thematic analysis, by recording and summarising key issues emanating from the discussions with the respondents.

RESULTS AND DISCUSSIONS

Respondents' Statuses on Urban Agriculture

Characteristics of Women Farmers

Most of the respondents fall in the age group of 18-45 years, which is suitable for agricultural activities. The marital status of the respondents was mixture of married, separated, widows and divorced. Their average household size was between 4 and 6 members, which corresponds with the national average in Tanzania (URT, 2002). Most of the respondents have attained primary education, while a few have never attended school. This probably constrains them as they fail to compete in the labour market ending up doing informal activities with little knowledge of improved agricultural practices.

Types of Vegetables Cultivated

The choice of the vegetables to be cultivated was based on the availability of markets, the capital requirements, resistance against drought and the amount of agricultural inputs needed. The common types of vegetables cultivated were *Ipomea batatas* spp known as 'Matembele', Chinese and '*Amaranthus* spp known as 'mchicha'. *Amaranthus* spp is cultivated during the dry season though it requires a lot of water and thus, 'matembele,' which requires less water, is the dry season option for most of them.

Size of Land Cultivated and Equipment Needed

Respondents have rented areas for cultivation, ranging from 0.25 to about 0.75 of an acre, almost the same with those found by Jacobi et al. (2000) for urban agriculture in Dar es Salaam, where most of the land rented for urban farming ranged from 0.23 to 0.17 acre. This size of land is affordable to low income households. Access to land is, as argued by Mlozi et al., (2004: 46), of paramount importance to urban agriculture and to those who are engaged in it. The importance of it is derived from the ability to use and cultivate it within a significant period of time and be able to make decisions over its use. On rented lands, such decisions are severely limited.

Financial constraints appeared at a number of levels. In addition to the constraints arising from the rental price itself, respondents indicated that they cannot afford to buy or rent the water pumps needed to irrigate larger plots. One woman said:

'I cannot afford to rent large area for cultivation because I do not have money for it. Irrigation by using buckets is very difficult, so it is difficult to irrigate one acre. Men rent large areas because they have water pumps which make it easy for them to irrigate. Men rents water pumps for Tshs. 4,000 per day as well as Tshs. 3,000 for fuel''.

Thus the respondents are prevented from cultivating larger areas by the cost of renting and purchasing fuel for water pumps. During the FGDs, respondents pointed out that the cost of renting land differed between landlords and by seasons, and that

landlords could be tempted to rent their land to those who pay more. In this case, respondents who depend on rented land for cultivation may lose control over the land. One respondent commented:

‘I do not own land, and thus, during rainy season most of the landlords take back their land for their own use. In that case, we cannot cultivate so we have to wait till dry season when they are renting it again. However, those who own land can cultivate throughout the year’.

Lack of access and ownership of land not only limits their ability to cultivate large areas, but also constrains them in making decisions over land use, since they cannot access and use it during the optimal time of cultivation.

Utilisation of Agricultural Inputs

Respondents indicated to utilising both chemical fertilisers and animal manure. As the FGDs revealed, common types of fertilisers used by the respondents are Calcium Nitrate and Urea, which must be supplemented with animal manure for better results. Both types of fertilisers are applied in the cultivation of Matembele, *Amaranthus* spp and Chinese, although Calcium Nitrate is applied specifically to Chinese during planting. Application of fertilizers also depends on availability of finance, for example, Urea costs between Tshs. 1,000-1,200 per 1 kilogram. In addition, respondents indicated that at least 2 kilograms of urea are required for an area of approximately 0.25 of an acre. Further discussions revealed that, fertilizers are applied selectively based not on need and purchasing power. Surprisingly, it was also revealed that chemical fertilizers are being used by respondents without instructions from extension officers.

Reasons for Cultivating Vegetables

Urban agriculture was chosen by respondents because they share household responsibilities. Respondent’s interviews and FGDs confirm that it provides food and income within the household while it also requires low capital and its costs of production are lower.

Triple Roles of Women and Time Management

As informal and FGD discussions indicated, women are responsible for their traditional, reproductive and productive roles. Therefore, engaging in urban agriculture increases their productive workload, as well as their working day. However, it differs from one season to another; for example, respondents reported spending about 4 hours a day during the rainy season, and 6 to 9 hours during dry season. They spend more time during dry season because of the need for irrigation while they do not have water pumps. Moreover, they also need to perform household chores before going to field. On the contrary men spend little time because they have capital to purchase water pumps and do not have household chores. This requires careful time management, as the following respondent narrates:

‘First, I perform my domestic chores, and then around 8:30 am up to 2:30 pm, I spend in the farm, before going back home to prepare meal for my children. Around 4 pm to 6 or 7pm, I have to go back to the fields. In contrast, men do not need to spend much of their time, because they have irrigation pumps and they don’t need to perform domestic chores. For example, in the morning, by the time I reach my gardens, all men have finished irrigation and have gone to perform other activities. In addition if it is dry season, you might find that men who use water pumps have finished all the irrigation water’.

Availability of irrigation pumps for women might reduce the time needed to spend in their gardens, which probably could be used productively elsewhere. Moreover, this could increase the productivity of the women’s fields. During the study it was observed that productivity in the women’s fields was low compared to men’s, a difference attributable to the use of water pumps as well as the ability to purchase agricultural inputs.

Family Support on Urban Farming

Most of the respondents reported that, they were not supported by their family members. However, only five respondents reported that they received support during cultivation, irrigation and picking times. Some respondents reported that their husbands stopped paying for household expenses after realising that their wives were involved in vegetable cultivation. Surprisingly, some respondents said their husbands do not even know the location of their plots:

‘My husband does not support me in any of the activities; cultivation, picking, buying inputs or even paying rent. For example, last week he gave me only Tsh 10,000 for family expenses (food, school expenses, medical expenses etc) to be used for whole week. If he does not have money for food and other household expenses he tells me ‘go and pick vegetables to cook’, while he does not even know where the plot is’.

Findings from informal interviews, FGDs and observation revealed that at family level, vegetable cultivation is left mostly to women. It is often not even done regularly with the help of the children, who are attending schools and can assist them only during the holidays. Moreover, lack of support, women complained, was a problem within marriage, with husbands seeming to punish them instead of working together to support their families.

Family support is also needed during selling of vegetables. As both formal and informal discussions, selling of vegetable is conducted either when customers come to purchase vegetables in the fields or when farmers pick and carry vegetables to sell, sometimes in the streets or in the local markets. The markets frequently used by the respondents are those of Mawenzi and Mji mpya areas, which are located approximately 3-4 kilometres from their fields. Respondents have complained that

carrying and selling vegetables to local markets increased their workload and reduced the time of taking care of their families.

Revenue from Vegetable Sales and Utilisation

Like most farmers with seasonal income, respondents do not keep records of their revenue and thus it was difficult to calculate profits and losses. However, during the FGDs, respondents estimated average revenue per month to be Tsh. 40,000 for matemele: Tsh. 30,000 for Chinese: and Tshs. 50,000 for Amaranthus spp in an area of less than 0.25 acre. Their estimates varied with the size of the cultivated area, type of agricultural inputs used, water availability as well as productivity. Respondents can potentially grow vegetables twice each month in the same plot. Therefore, if agricultural inputs are used properly and water is available, a farmer cultivating Amaranthus spp, could have a gross revenue of up to Tsh. 25,000 for 2 weeks, which explains the previously noted total of Tsh. 50,000 per month. It should be noted that this is gross revenue and costs of production must be deducted to realise a net profit. They do not apply fertilizer all the time, making it difficult to have exactly figures for the cost of production, though renting land costs them Tsh. 5000-7000 (for 3 months), and at least 2 kilograms of fertilizer is needed (at Tsh. 1,000-1,200 per one kilogram) Therefore, assuming cost of renting a land is Tsh. 5,000 and cost of fertilizer is Tsh. 4,000, total cost of production is Tsh. 9,000, and 50,000 minus Tsh. 9,000 is Tsh. 41,000 net profit per month. Thus, if women are empowered in vegetable cultivation (through access to land, input supply, technical expertise) they are capable of increasing household income and support to their families.

The above findings are nearly the same with the study on the economy of Amaranthus spp grown on open spaces in Dar es Salaam and its role towards alleviation of income poverty by Jacobi (1996). Amaranthus spp takes approximately 14-20 days to mature. Table 1 presents an analysis of income obtained by 9 farmers engaged in Amaranthus spp cultivation in Dar es Salaam.

Table 1: Profit calculations for *Amaranthus spp* cultivated on a 500m² in the three urban districts of Dar es Salaam

Farmer	Input cost (Tsh.)	Labour Costs (Tsh.)	Water Tap (Tsh.)	Total Costs (Tsh.)	Total output (Tsh.)	Profit (Tsh.)
1	14500	0	19140	33640	49923.1	16283.1
2	8350	0	0	8350	71247.8	62897.8
3	13225	0	0	13225	129040	115815
4	12850	0	0	12850	69305	56455
5	12850	0	0	12850	89225	76375
6	12850	0	19140	31990	89225	57235
7	12850	15000	0	27850	89225	61375
8	12850	0	19140	31990	69305	37315
9	12850	15000	0	27850	69305	41455
Min	16283.1	Max	115815	Mean	58356.2	

Source: Jacobi, (1996). Economy of *Amaranthus spp* grown on open spaces in Dar es Salaam

From Table 1, the average net income a farmer received was Tsh. 58,356.2 per month, after deducting costs for fertilizers, seed and sometimes for water pumps. Labour costs and water charges are not incurred, as urban farmers perform the activities themselves or sometimes with their family members, whereas for irrigation, water is normally fetched from the rivers.

Decision on how to Spend Revenue

Participation of women in urban agriculture increases their ability to make decision within the households. Decisions whether to cultivate as well as how to use income from vegetables are made by respondents, as narrated during the interviews and confirmed during the FGDs. Respondents claimed that, revenue obtained is used for domestic expenses such as school expenses, food and health services, which tallies with Jacobi et al. (2000: 272) who noted that, women in agriculture renders more benefits for the household because the produce is either directly consumed in the family or cash income obtained is spent on the basic needs of the family. Therefore, urban agriculture enables women to participate in decision-making of their families which ultimately, improve household welfare.

Challenges Facing Women Farmers

Women are faced with various challenges such as availability of agricultural inputs (chemical fertilisers, water pumps, and seeds), capital for expanding their production, access to land, and labour availability. The above mentioned challenges have affected their ability to cultivate large areas. Consequently, women end up with little income for supporting their families leaving some of the household welfare unattended. Furthermore, limited availability of water has forced women to abandon vegetable cultivation during dry season. Alternatively, they are involved in other activities such as washing clothes for cash income in order to support their families.

In addition, respondents mentioned that sometimes they fail to sell vegetables at a reasonable prices and end up selling at low price since vegetables are perishables. However, as most of the customers come directly to purchase vegetable in the fields, respondents incur loss occasionally.

Results indicated that, most of the respondents do not get support from their families in terms of labour and cash for purchasing inputs. As a result, cultivation is labour intensive and women end up spending long time in the fields, a time which could have been utilised for other activities. One said:

‘When women are involved in vegetable cultivation, men leave most of the household expenses on them, every time he tells children to ask their mothers for their basic needs. This activity has helped me to deal with marital problems, through struggles, our husbands have taught us to work hard and earn our own income which is used for taking care of our children. You do not have to wait for them to bring money; you buy food from the vegetable sales or pick vegetables to cook for your children’.

However, respondents have acknowledged the contribution of vegetable cultivation to their household welfare and admitted that, they cannot do without it. This shows the importance of urban agriculture to women and their families.

Moreover, based on these challenges, women commented that, they would like to be assisted in organising themselves into production groups. They are of the opinion that, by organising themselves into groups, their voices would be heard and be in a better position to influence policies which will give them access to land, credits and extension services. They also need to be trained on modern agricultural practices in order to access credits, which might assist them in purchasing agricultural inputs and increase production and ultimately income.

POLICIES ON URBAN AGRICULTURE

Policies reviewed on urban agriculture include: Agricultural and Livestock Policy 1997, National Land Policy 1997, and Morogoro Municipal By-laws on urban agriculture. The critical analysis indicates that policies are silent especially on how municipal authorities can do to support urban agriculture. The main issue of concern is on how to make urban agriculture sustainable for both the urban environment as well as urban planning. For example, both National Land policy 1997 and Agricultural and Livestock Policy 1997 acknowledge the contribution of urban agriculture to the household economy. However, the policy emphasizes the need for the government to ensure that urban agriculture does not conflict with planned urban development. It is also noted that, there is no any policy statement which emphasises on how urban farmers should be supported to enable sustainable practices as well as to increase income.

During interview with Municipal Agricultural Officer, it was revealed that, there is a 1999 by-law on urban agriculture. Besides, Morogoro Municipal Council has a by-law on livestock keeping which stipulates on practice and support. However, there is no by-law which indicates how vegetable and crop cultivation should be practised and supported. The main focus of the urban agriculture by-law is on livestock keeping because of the assumption that the practice is more detrimental to environment compared to crop and vegetable cultivation. Lack of a by-law on vegetable and crop cultivation has affected urban vegetable and crop farmers in Morogoro Municipal as they are not reached by the extension services as attention is given to the livestock keepers. In addition, there is limited support on land allocation especially for women who demand it for expanding urban farming and also extension services to increase production. Thus, women continue to practice subsistence cultivation while earning very little income to support their families.

The Role of Municipal Authority on Extension Services and Land Allocation

Agricultural extension delivers information and technology to farmers and teaches them how to use it to improve productivity (Mlozi, 1996). The information delivered assist farmers to improve their productivity through application of modern farming. In Tanzania the ministry through its agriculture and livestock extension services agents promote urban agriculture through the policies which urged urban people to grow their own food and increase cash income. The ministry also acknowledges the positive role of urban agriculture to both cash income and food security. However, results indicated that, Morogoro Municipal authority do not assist urban farmers either through extension services or allocation of land for cultivation. This is because in most cases urban agriculture is considered contradictory to other urban planning policies. When this is practiced, municipal authorities tend to forcibly move urban farmers from cultivated areas. For example, during FGDs it was revealed that at one point the Municipal authority directed farmers not to cultivate around 30 metres from rivers. However farmers responded that, cultivation far from the river is very difficult since they cannot afford to buy water pumps. Furthermore, women said that, if assisted to obtain water pumps, they will be able to cultivate 30 metres away from the river. Otherwise, it is very difficult to irrigate vegetables by using buckets. One respondent said;

‘We do not get any support from extension officers, and we have been cultivating basing on our own knowledge. The only time we saw an employee from the Municipal it was when they came to inform us not to cultivate 30 metres away from the river. After disagreement from us, they never came back’.

From the findings, it can be said that women’s knowledge on vegetable cultivation is based on their informal experiences. At this point, it is important to note that women would have been in a good position to cultivate if they could access among other things, extension services.

Interviews with the Municipal Agricultural officer with regards to land allocation for urban farmers, revealed that municipal areas are for construction purposes only and thus, farmers are encouraged to find land on their own, either through renting or cultivating in the outskirts of the Municipal areas. However, as noted before, respondents cultivate within the Municipal in water logged areas, near river banks as well as abandoned areas. None of the respondents cultivate in the outskirts of the Municipal areas. Observations and interviews indicated that respondents failed to cultivate in the outskirts of the municipal areas because of the cost of transport, availability of customers, and distance from their home. Respondents prefer to cultivate in the areas near their homes so that they can be able to move easily between their homes and gardens. This indicates a conflict of interest between farmers and municipal authorities on allocation of land. However, Municipal authority allocates open spaces for farming purposes and enacts clear regulations of what is allowed and what is not for sustainability of urban agriculture.

Accessibility to Microcredit and Agricultural Inputs

High collateral requirements and other legal prerequisites of lending institutions have brought a big challenge to women accessibility to credits (Tundui, 2002). Moreover, most of the women operate small scale business and thus, most of the commercial banks are uncertain about their ability to pay back the loans. Consequently, women are forced to depend on their own sources of funds. The findings indicated that, women depend on their own personal savings and sometimes assistance from friends or relatives partly because of limited information as to sources of loans for vegetable cultivation. It is also noted that, they are also hindered by high interest rates of the loans. This was proved by responses from the FGDs where women discussants expressed their fear to seek for loans:

‘We fear to seek for loans, they have high interest rates. We have seen people whose furniture’s have been taken away when they failed to pay back the loan on time. For example, loans from BRAC require the borrowers to pay back every Tuesday, which is very short time for us because income from vegetable is seasonal, and you have to wait for two weeks to be able to sell your vegetables. So in between where you are going to get the money to pay back the loan while at the same time, you have other family expenses to take care of?’

Informal and formal discussion revealed that policies relating to urban agriculture do not indicate how urban farmers should be supported to access credits. Respondents have indicated that, they have not received any kind of loans which would support their activities. Besides they also have not yet organised themselves in a formal registered group, which would facilitate acquisition of loans. Probably, limited accessibility to loans has hindered women from expanding their agricultural activities. Therefore, policies are not supportive to urban farmers, despite the fact that some policy such as National Agricultural and Livestock Policy of 1997,

National Land Policy 1997 documents emphasize the importance of urban agriculture.

CONCLUSION AND RECOMMENDATIONS

Most of the respondents who are engaged in urban farming do not own land. Lack of capital for renting land, affordability of water pumps and limited family support has been mentioned as obstacles for expanding cultivation. Women practice urban agriculture on a small scale and thus earning little income. Respondents have failed to seek for loan due to fear for loss of assets, limited information on availability of loan and conditions of different sources of loan. Moreover, respondents are not aware of the benefits of organising themselves into groups, which would assist them to access soft loans and easy delivery of extension services. Besides, there is no specific policy for urban agriculture and at the same time, other policies do not indicate how urban farmers and women in particular should be supported and empowered.

It is recommended that government should introduce a section in the National Agriculture and Livestock Policy on urban agriculture which will stipulates clear roles and responsibilities both to the municipal authorities and farmers, especially women. Women farmers should be assisted in transforming the practice of traditional vegetable cultivation into modern, sustainable and environmental friendly which will increase productivity. Extension officers should also collaborate with different stakeholders for sustainability of urban farming.

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