



Research Article – Urban Agriculture

Factors influencing the growth of floriculture. A case study of Kinondoni Municipality, Dar es Salaam city in Tanzania

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Abstract

A study to evaluate the factors influencing the growth of floriculture and its contribution to the community livelihoods was conducted in Dar es Salaam city, using Kinondoni Municipality as a case study. Specifically, the study intended to (i) explore the influential factors for the growth of floriculture in the case study (ii) examine the socio-economic contribution of floriculture to the local community livelihoods (iii) identify the challenges facing the floriculture and (iv) suggest remedies towards the challenges. Simple random and purposive sampling techniques were used to get a total of 60 respondents. The study employed both qualitative and quantitative approaches to collect data. Data were collected through observations, questionnaires and semi-structured interviews. The results of the study show that income generation, availability of open spaces (road reserves), shortage of other employment opportunities, high demand, environmental conservation are the main factors for growth of the floriculture. Low markets, shortage of the water supply services, informality, the eruption of pests and diseases and a shortage of working tools were revealed as significant challenges facing the floricultural business. To improve this business, it suggested that the government must recognize floriculture as a business. It should provide more support in terms of the improvements of the water supply services, provision subsidy, aids and loans of the low conditionality to the smallholder farmers.

Key words: Floriculture, open spaces, flower, insecure tenure, smallholder floriculture farmers.

Introduction

Floriculture or flower grown in Tanzania is among the activities practised in the open spaces in towns and cities such as Tanga, Mwanza, Moshi, Morogoro and Arusha of course with varying intensity and in the municipalities of Kinondoni, Temeke and Ilala in Dar es Salaam city (Jacobi, Amend and Kiango, 2000; Onyango, 2008). In Dar es Salaam, the rise of ornamental trees (Floriculture) has been practised for many years since 1990's (Maxwell and Zziwa, 1992). About 52,000 hectares of land in Kinondoni is

potential for the agricultural practices including floriculture though the figures may differ due to a rapid expansion of urban-related activities (Sawio, 2008). Also observable as far as urban agriculture is concerned is the excellent tree nurseries and flowers on the road reserves. The trees are for greening the city region and Dar es Salaam is now greener than it was 15 years ago.

Increasingly, open spaces around residences in the built-up areas of Dar es Salaam and other towns are becoming under cultivation of ornamental plants including flowers. Floriculture (the cultivation and production of flowers and urban ornamental trees and small plants) (Mwase, 2015) has been an informal economic activity for the smallholder farmers in Dar es Salaam (Sawio, 2008). *Chrysanthemums*, *Roses*, and *Lisianthus*

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are amongst the varieties of ornamental plants cultivated in Tanzania. However, also the commercial floriculture for the export has been started to be more practiced in northern highland zones, principally in Arusha and Kilimanjaro areas where the weather is appropriate and sympathetic. The commercial floriculture sector in Tanzania is established, with the number of international investors from Holland and other parts of Europe (Onyango, 2008).

The growth of the flower industry into a global contemporary economic sector can be traced back to the 1970's. Before that, flower production was almost solely for use in the areas where it was produced. Flower production was also intense in the industrialized countries, and flowers were almost exclusively produced in the USA, Japan and Netherlands which amounted to nearly 75% of the production globally (Mason and Opondo, 2008). The flowers produced are consumed either in the local markets or international markets (Janko and Alemu, 2014). Globally the Netherlands is still a largest ornamental plants producer, consumer, and exporter (Neltnou-Nkoana, 2010; Rikken, 2011; Usman, 2015).

Floriculture is also the part of urban agriculture which expands considerably adaptive as a response by urban households to improve their situation and to expand their income options under circumstances of constant economic uncertainty and threats such as unemployment. Urban agriculture including gardening has been a socio-economic living plan for urban needy states. Urban agriculture has been a socio-economic survival strategy for the impoverished urban populace which enhances them to the household food and nutritional security, the creation of informal jobs, income diversification and environmental conservation (Masashua, Dimoso and Hawassi, 2008; Mshindano *et al.*, 2013).

Although quite a lot of research works on urban agriculture have been done, including (Maxwell and Zziwa, 1993; Sawio, 1998; Onyango, 2008; Usman, 2015) hardly of the cited studies attempted to provide empirical evidence related to the factors for growth of floriculture in Dar es Salaam city. This study, therefore, intended

to fill this gap, by evaluating the factors for the growth of floriculture and its associated contribution to development in Kinondoni Municipality, Dar es Salaam city. Furthermore, it identifies the problems or challenges facing the growth of floriculture and how to solve them. The following questions were designed to collect the data: - What are the factors that have led to the growth of floriculture? What are the impacts of floriculture on local community livelihoods? What are the challenges or problems facing the growth of floriculture? Moreover, what should be done to solve the problems and challenges on floriculture?

Research Methodology

Material and methods

The present study was conducted in Kinondoni Municipality, Dar es Salaam city in Tanzania during the year 2016. Simple random and purposive sampling techniques were used to get a total of 60 respondents. This study employed explanatory and descriptive study design to boost understanding and provide a detailed account. Primary data was obtained using observations, structured questionnaires, and interviews. Secondary data were obtained from the available data in the relevant documentary reviews. Questionnaires were administered through purposive sampling to 60 smallholder floriculture farmers of whom 48 were males, and 12 were females. Males are more involving in floriculture farming than females. Most of them aged 31 to 48 years with 48%, 18 to 30 years with 32% and 48 years and above with 20%. Also, 61% have primary level education, 12% have below primary level education, and 22% have regular level education and above. Face to face interview was applied to some of the smallholder floriculture farmers, Ward Executive Officers and Environmental and Urban Planning Experts and Officers.

Results and Discussion

Factors for the growth of floriculture

Income generation

Almost all respondents are more involved in horticulture for the need of earning income for their personal and families' daily basic needs

Table I: Education level of the respondents

| Education level | Sex of respondents | | Count | Percent |
|------------------|--------------------|--------|-------|---------|
| | Male | Female | | |
| Below standard 7 | 5 | 2 | 7 | 12 |
| Primary | 29 | 8 | 37 | 61 |
| Ordinary | 8 | 1 | 9 | 15 |
| Advanced | 3 | 0 | 3 | 5 |
| Diploma/Degree | 2 | 1 | 3 | 5 |
| Others | 1 | 0 | 1 | 2 |
| Total | 48 | 12 | 60 | 100 |

Source: Survey Data, 2016

Table II: Level of education versus environmental conservation idea

| Responses | Count | Percent | Total respondents |
|---|-------|---------|-------------------|
| Below standard 7, primary levels and others | 25 | 55 | 45 |
| Ordinary, advanced and diploma/degree | 15 | 100 | 15 |
| Total | 40 | | 60 |

Source: Survey Data, 2016

Table III: Factors for the growth of floriculture and their corresponding respondents

| No. | Factors | Sex of respondents | | Count | Percent |
|-----|--|--------------------|--------|-------|---------|
| | | Male | Female | | |
| 1. | Income generation | 48 | 12 | 60 | 100 |
| 2. | Availability of open spaces (road reserves) | 45 | 11 | 56 | 93 |
| 3. | Shortage of other employment opportunities | 46 | 9 | 55 | 92 |
| 4. | High demand | 39 | 11 | 50 | 83 |
| 5. | Environmental conservation idea and hobby | 33 | 7 | 40 | 67 |
| 6. | Experience and knowledge gained from the previous work | 10 | 0 | 10 | 17 |
| 7. | Heritage from parents | 7 | 0 | 7 | 12 |
| 8. | Influence from the friends | 5 | 0 | 5 | 8 |

Source: Survey Data, 2016

Table IV: Major income earning activities

| Activity | Sex of respondents | | Count | Percent |
|-------------------------|--------------------|--------|-------|---------|
| | Male | Female | | |
| Floriculture | 27 | 8 | 35 | 58 |
| Floriculture and others | 21 | 4 | 25 | 42 |
| Total | 48 | 12 | 60 | 100 |

Source: Survey Data, 2016

(Table III). It is fascinating that they get money which helps them to handle their livelihood for their socio-economic development. For example one among the respondents in Msasani ward said: *“It is through this business my life has been improved, I can send my children to good schools, take any member of my family who falls sick in the good dispensary or hospital.”* Most of the smallholder floricultural farmers may receive 500,000TShs to 2,500,000TShs per month. Those who are employed by the owners of the farms are paid 70,000TShs to 300, 000TShs per month. One person among of the employed workers in Msasani ward said: *“I can afford to get my basic needs such as food, house renting wages and*

clothes through payments from this activity. However, the salary is not much enough to get more assets for my long-term run of my life.”

Availability of open spaces (road reserves)

Road reserves refer to areas on both sides of a road which are reserved for further road construction activities (open right-of-way space) (Dongus, 2001). Road reserves are profoundly found along the roads of Morogoro, Old Bagamoyo, New Bagamoyo, Shekilango, Dar es Salaam University, Mandela, and Ali Hassan Mwinyi. All of these road reserves have been used to grow flowers and ornamental plants but also other urban agriculture such as vegetable

cultivation. 93% of the respondents pointed out this factor as influential to the growth of floriculture (Table III). These areas are subject to the improvement of the roads; when there is an improvement or expansion of the roads the floriculture businesses are shifted to other areas and if no other areas the businesses are likely to cease.

Shortage of other employment opportunities

The study found that 92% of the respondents engaged in floriculture as an alternative activity after the shortage of other employment opportunities (Table III). Also, the growth of this business is accompanied by the idea of having low education. For example, most of the respondents with below standard 7 and primary level of education (73 percent) responded that their education is deficient (Table I) and hence challenging to be employed in the government and non-government offices. This business draws them away from involvement in the social crimes such as pick-pocketing, robbery, and drug abuse.

High demand

The study found that 83% of the respondents engaged in this business due to a high demand of ornamental trees which is increasing among the households who need trees to plant around their houses and in different parties such as the wedding, graduations, and meetings, the need for flowers is inevitable (Table III). One of the respondents in Mbezi ward said: *“There has been an increase in demand for flowers and ornamental trees among the people especially women who need ornamental trees for planting around their houses but also every weekend some women come to buy flowers for the wedding.”*

Environmental conservation idea and hobby

The idea of conserving the environment was in mind of the 67% of the respondents (Table III). All respondents (15 out of 40 respondents) with ordinary, advanced and diploma/degree said that it is due to increase of wastes from industries and homesteads, which enhanced most of them to involve in floriculture to discourage the dumping of these wastes along the roads. This study found that the respondents with ordinary, advanced or diploma/degree have an environmental

conservation education than the other groups (Table II). It is terrible for most of the people to dump their wastes along and (or) in the road reserves where flowers and ornamental trees are grown because the smallholder floricultural farmers secure them from being polluted. They also clean them in case they are dirty. Also, floriculture business is considered as an activity which is done regularly for pleasure to many of the respondents.

Experience and knowledge gained from the previous work

17% of the respondents grow flowers and ornamental plants due to experience and knowledge gained from the previous works (Table III). For example one of the respondents in Kimara ward involved in this business after gaining experience from Bagamoyo district where he was employed in a garden. Also one respondent in Msasani ward involved in floriculture after gaining experience while working with the whites in 1990's in gardening activities. This respondent said: *“I decided to run from the whites' gardens and establish my garden after getting enough experience in June 1995 and now I have more experience in the growing of flowers and ornamental trees”.*

Heritage from parents

The study found that 12% of the respondents involves in floriculture growing as the business inherited from their parents and relatives such as uncles (Table III). For example one of the respondents in Msasani ward inherited this business from his father. This respondent said: *“My father had a relatively big site of flowers and ornamental trees where he earned much income, when he died I inherited it and now I have expanded and improved it to the extent that I usually get more outputs than the outputs obtained by the father.”*

Influence of the friends

The study found that 8% of the respondents involves in floriculture business due the influence of their friends (Table III). *“It is after looking my friend earning enough income to manage his life, I admired and started this business, and I enjoy it since I like it due its importance in my livelihood,”*

said one of the smallholder floricultural farmers in Mbezi ward.

Major income earning activities

It was essential to investigate which activities are given the priorities by the smallholder floricultural farmers. These activities were arranged in order of their importance. Floriculture with other small businesses such as cooking at the funerals, parties, weddings places, charcoal, water, and fruits selling. Others such as carrying up breaks into the cars, banana and groundnuts selling, chicken, cattle and pig keeping, chips selling, vegetable cultivation, artisans (pots selling), landscaping, and designing.

The study in Table IV revealed that 58% of the respondents depend only on floriculture as their main earning income activity and 42% depends on both gardening and other activities such as driving, electricity installation vegetable cultivation, and these other activities are their main income earning activities rather than gardening.

Challenges facing floriculture business

The study observed the following as challenges facing the growth of floriculture business as shown in Figure 1 as follows: - Shortage of water and unsafe water which happens

when there is a dry season; and unsafe water is taken from sewerage systems all affect the growth of ornamental trees. Respondents face the problem of having low capital and hence unable to buy the essential inputs such as organic and industrial fertilizers, insecticides, and seeds. A few number of customers (low market) happen mostly during dry seasons where there is a high shortage of water where many of the farmers and households do not need flowers and ornamental trees. Insecure tenure state of the spaces (road reserves), when it happens that there are other development activities such expansion of roads to take place, farmers must shift to other places, or others stop this activity forever. It makes this business an informal activity.

The informality of the floriculture business leads to the poor performance because most of the respondents are not registered, and it faces the problem of insecure tenure of the open spaces. All of these hinder the government and NGOs or individuals to invest in this business. Also, almost all respondents said that they do not pay any tax for their businesses however it may happen to contribute some money to social activities such as building schools and dispensaries, this makes floriculture business being purely the informal sector.

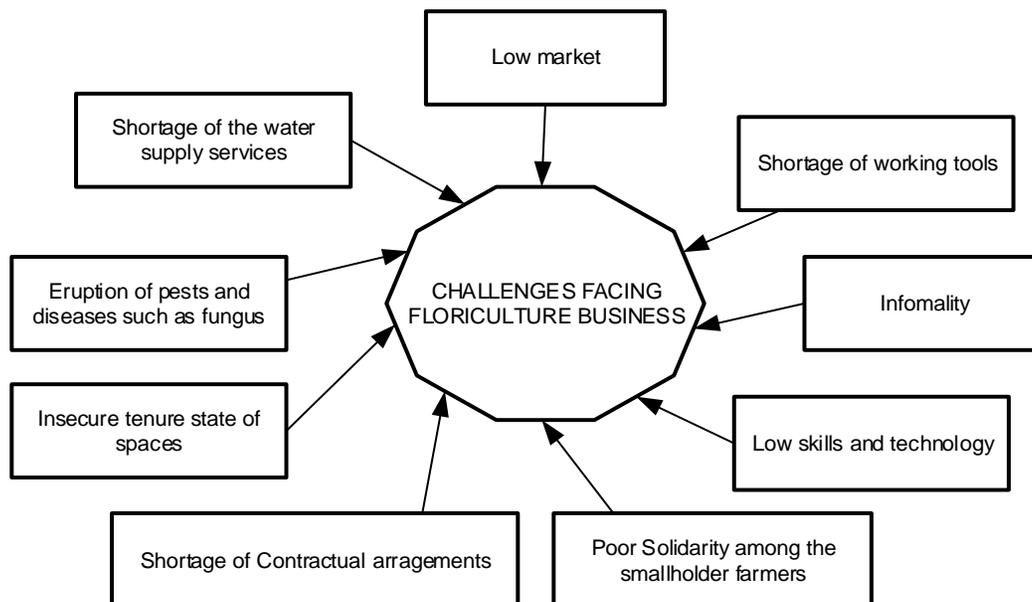


Figure 1: Challenges facing Floriculture business (Source: Survey Data, 2016)

The Municipality does not recognize floriculture as it is to other urban agricultural sectors such as livestock keeping and crop cultivation because there are no recognized and real records of floriculture business prepared by the Municipality. It has led to an unfortunate emphasis on its development.

Furthermore, there is an eruption of pests and diseases such as fungus which affect the growth the ornamental trees. The absence of direct tenders to the flowers affect general selling and buying process. Ornamental trees growers on the ornamental trees which are planted in the governmental buildings such as institutions provided by the government enhance low prices to the farmers especially when the tenders are given to one individual who wants to maximize profit through providing low prices compared to the prices given by the government.

Not only those factors above but also the others such as low skills and technology applied in floriculture; shortage of working tools such as spades, cans for water irrigation, boots, and spraying pumps; shortage of contractual arrangements with the customers; and poor solidarity among the respondents themselves.

Suggested remedies towards challenges facing the floriculture business

Also understanding the remedies towards the challenges facing the floriculture business was among the specific objectives of this study (Figure 2). Most of the respondents (Smallholder Floricultural Farmers) and key informants (Ward Executive Officers and Urban Planning Experts) identified the following remedies as some strategies to solve the challenges facing floriculture business:-

- Recognition by the government which should be accompanied by the improvement of the water supply services; provision of subsidy, aids, and loans of the low conditionality.
- The allocation of the specific areas with availability, accessibility, and affordability of the customers for the floriculture business.
- Provision of training, seminars, and workshops related to the floriculture growing.

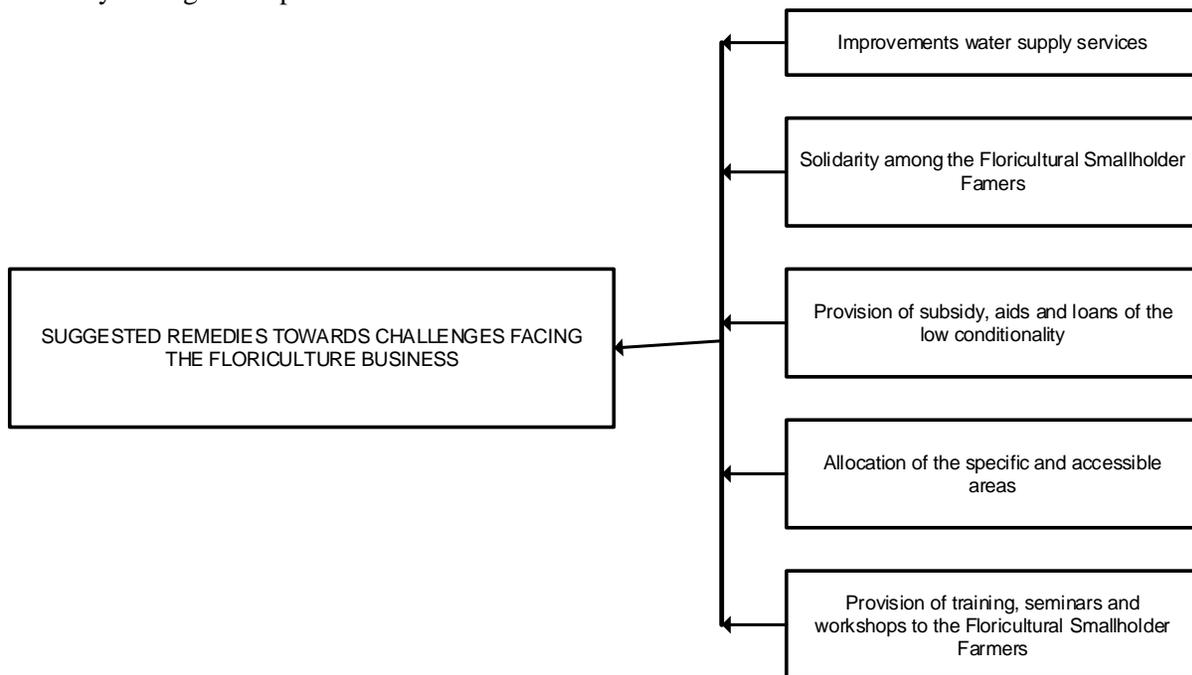


Figure 2: Suggested remedies towards challenges facing the floricultural business (Source: Survey Data, 2016)

- Tenders should be directed to the smallholder floricultural farmers and not through the agents to reduce the agents' biases especially when the farmers are provided with less price by the agents; and
- The smallholder floricultural farmers should have solidarity.

Conclusion and Recommendations

Floriculture in Dar es Salaam city is grown in the open spaces such as road reserves and involves more males than females and mostly with primary level education. It is practiced mostly during wet seasons to get more water for supply to the growth of flowers. Its growth is associated with the need for income generation, environmental conservation, as an alternative for employment opportunities and some smallholder floricultural farmers in heritage this activity from either their parents and or relatives.

Furthermore, it's growth is challenged by some issues especially the inadequate recognition by the government where the government has not yet put more efforts to help smallholder floricultural farmers in terms of ensuring availability of water supply services in all the growing time. However, also the floriculture business is subject to the other development activities especially the expansion of roads. There are no specific areas where these farmers are objected to conducting their businesses. It is an informal activity which has been not emphasized the governmental policies. So for more growth and development of floricultural sector, the following are recommended:-

It has been revealed that water is significant input for the growth of horticulture. Therefore, there is the need for the government and other stakeholders such as NGO's to take a more positive attitude to assist in terms of improvement of the existing water supply systems and expansion of the new water supply systems. There is the need of the Government and other stakeholders such as Banks to provide a subsidy, aids, and loan with low conditionality to the smallholder floricultural farmers to enhance them to be able to buy the inputs such as fertilizers, seeds, and insecticides.

It has also been revealed that floriculture faces the problem of insecure tenure. The government is advised to ensure allocation of specific places with

availability, accessibility, and affordability of the customers (markets). It is also likely to help them from being affected by the expansion of roads and other development activities such as the construction of new buildings. Respondents are advised to join into groups and register their groups to help the government to know them and their locations and hence, easy to help them in terms of subsidy, loans, and aid provisions to get more outputs. It was revealed that most of the smallholder floricultural farmers have less training on floriculture.

Therefore, the government and non-governmental organizations (NGO's) are advised to provide more training, seminars, and workshops related to the growth of floriculture to improve smallholder floricultural farmers' skills on floriculture development. The growth of floriculture should not only be based on and focused on the internal markets but also the external markets. Therefore all stakeholders are advised to look for opportunities of exporting the floricultural products and services to the other countries to get the foreign currency.

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