

## Developing a Production and Socio-Economic Environment to Promote Urban Agriculture Within Kurunegala Municipal Council Limits

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### ABSTRACT

The outcome of a series of analyses that comprised of: (1) a Need Assessment; (2) a SWOT (strengths, weaknesses, opportunities and threats) analysis, and (3) an Impact Assessment, which were carried out with 14 Urban Agricultural Producers (UAPs) within the Kurunegala Municipal Council limits, with the idea of promoting urban agricultural practices in this area were reported. A series of personal interviews supported by structured questionnaires prepared for each assessment and field observations as well as capacity development workshops were carried out from January to April 2013 to gather required information. The need assessment suggests that the majority of UAPs wish to gain a better knowledge on new technologies, compost and animal feed production. The major strengths of UAPs to engage in urban agricultural activities include the personal health benefits and household food security while their knowledge on marketing and banking were cited as major weaknesses. It found that urban agricultural activities exposed UAPs into many new areas of agricultural production and marketing, which have an impact on their lifestyle and family environment.

**KEYWORDS:** Impact monitoring, Need assessment, SWOT Analysis, Urban agriculture

### INTRODUCTION

The number of people around the world who live in and around cities is increasing steadily due to the natural growth of urban population and due to migration from rural areas to the cities. Since 2008 more than half of the world's inhabitants are living in cities. This is expected to rise up to 70% or 6.4 billion people in 2050 (Altvorst *et al.*, 2011).

The increase in urban poverty is accompanying the urbanization process and poverty is concentrating in urban areas. Growing urban poverty goes hand in hand with growing food insecurity and malnutrition (Mougeot, 2005).

In addition to increasing urbanization, society is also making new demands for agricultural products. Agriculturists will need to respond more effectively to the changing nature of demand, with more sustainable systems of agriculture (Altvorst *et al.*, 2011). Developing an urban agriculture system would be one of the best strategies to overcome urban food insecurity and malnutrition.

Urban agriculture (UA) can be defined as growing of plants and raising of animals for food and other uses within and around cities and towns, and related activities such as production and delivery of inputs, and processing and marketing of products. Urban agriculture is located within or on the fringe of

a city and comprises of a variety of production and processing at household level to fully commercialized agriculture (Veehuizen, 2006).

Sri Lanka has a transforming economy. As a developing country Sri Lanka faces the problems of rapid urbanization and upsurge in urban poverty (Weerasooriya *et al.*, 2011). These issues of rapid urbanization including environmental problems such as exploitation of natural resources beyond the assimilative capacity of the environment are common in many cities in Sri Lanka (Karunadasa, 1998). It can be seen frequently within major cities like Colombo, Gampaha, Kurunegala and Kandy.

According to a preliminary study conducted by Weerasooriya *et al.* (2011), present situation and potential to promote urban agriculture within Kurunegala Municipal Council (KMC) limits were revealed.

This study was conducted within KMC area, with the objectives of strengthening and developing the capacity of potential producers in the agricultural production market system, identifying the current skill levels of Urban Agriculture Producers (UAPs) in KMC and their strengths, weaknesses, opportunities and threats and to detect the indirect impact on UAPs by integrating with urban agricultural practices.

## METHODOLOGY

### Study Area

The study was conducted within the Kurunegala Municipal area during the period from January to April, 2013. Kurunegala is the capital of North Western Province and rapid urbanization can be seen. Kurunegala district is comprised of 30 Divisional Secretariats (DS) and 47 Grama Niladhari Divisions (GNDs) which 12 are within the municipal area. The total population of the district was 1.5 million and 34,691 population was recorded within the Kurunegala city (Anon, 2011).

### Data Collection and Analysis

Based on the study conducted by Weerasooriya *et al.* (2011) 14 UAPs were identified for the present study. Identified UAPs were distributed within the city about 1km distance (Figure 1). The study was characterized by 4 phases including: (1) Need analysis, (2) SWOT analysis, (3) Supporting the production process and (4) Impact assessment.



**Figure 1. Distribution of Urban Agriculture Producers within the Kurunegala Municipal Council limits (1-14)**

### Need Analysis

Need analysis is one of the ways of investigating the organizational and personal needs of UAPs. Generally, the needs that are rated most important are the ones that get addressed. Hence a questionnaire was constructed on the basis of needs of UAPs. Their needs were given in Figure 2 by concerning five different factors as production, marketing, finance, health and other factors. Current skill levels of UAPs were measured and the skill level was further categorized into three levels as low, moderate and high. The data were collected during the first visit of the study.

### SWOT Analysis

Strengths, weaknesses, opportunities and threats (SWOT) analysis indicate a framework for helping the researchers or planners to identify and prioritize the project goals, and further to identify the strategies of achieving them. SWOT analysis was conducted to identify the strengths, weaknesses, opportunities and threats of UAPs to achieve the goals and strategies of UA while emphasizing the sustainable agriculture within KMC.

This was supported by a questionnaire which was designed mainly based on the five factors of UA. They were production, marketing, finance, health and other factors. SWOT analysis was carried out after the Need analysis.

### Supporting the Production Process

A promotional campaign was conducted to develop production capacity and build a network among stakeholders to maintain a viable and sustainable UA system, which was held in February, 2013. Fourteen different UAPs were given a series of lectures with the objective of developing their capacities. UAPs were grouped into small groups headed by the lecturers of Wayamba University of Sri Lanka and discussions were made with them. As a result, their present production systems were clearly identified, and their future activities, problems and opportunities were discussed. Their agricultural practices were monitored and necessary advices were provided during the research period by the University lecturers experienced in specific area. They were observed once in 10 days for 7 times. Finally, an impact assessment was carried out to identify the effects of UA on UAPs.

### Impact Monitoring and Evaluation

Impact assessment is the process of identifying the future consequences of a current or proposed action. It is used to ensure that projects, programs and policies are economically viable, socially equitable and environmentally sustainable. Impact evaluation assesses the changes that can be attributed to a particular intervention, such as a project, program or policy, both the intended ones, as well as ideally the unintended ones. Non-experimental Impact Evaluation method was used to compare intervention group of UAPs before and after implementation of UA activities.

A series of *face-to-face* interviews supported by structured questionnaires were carried out with 14 UAPs, for monitoring and evaluation mainly on two factors, namely (1) Impact on household life and (2) Effect on technical innovations. Their responses were indicated using five point likert scale (ranging from 1 = very low effect to 5 = very high effect) and nine point likert scale (ranging from -4 to +4 while -4 indicate the lowest effect, 0 indicate no effect and +4 indicate the highest effect) respectively. Data were analyzed using descriptive statistics and results were ranked in ascending order.

## RESULTS AND DISCUSSION

### *Descriptive Statistics of the Sample*

Most of the respondents produced vegetables and their surpluses were supplied to retail market. Among the UAPs some were engaged with UA only for self consumption while others involved in for both self consumption and market oriented production (Table 1).

### *Outcome of Need Analysis*

The result obtained from the need analysis is illustrated in Figure 2. The highest percentage of UAPs had low or moderate skill level about marketing of harvest, supplying raw materials, new technologies, compost production, animal feed production, value addition technologies, increasing productivity etc. while, high skill levels rated for communicating with domestic partners, maintaining environmental health, food security etc.

### *Outcome of SWOT Analysis*

The majority of UAPs were highly satisfied about food security. As a consequence of UA, UAPs were able to consume fresh fruits and vegetables with lesser usage of synthetic agrochemicals. Further, maintaining sanitation of home garden and physical fitness was strengthening factors of their life cycle (70%). Some UAPs were faced difficulties regarding getting loan schemes, subsidies and donations. Most of the respondents (26%) were unable to get good income due to lack of proper marketing systems among the UAPs. However, UA was a good opportunity (40%) for them, because of reducing a part of their expenditure for food in their day to day life. UA production system was highly threatened due to varying climatic conditions (57%). The attitude towards UA among young generation was poor, because they considered it as a non profitable occupation (Figure 3).

### *Impact Monitoring and Evaluation - on Household life*

Positive impact on all other factors could be seen except alcoholism and smoking habit of UAPs. However, UA had assisted them to develop their skills on agricultural, agribusiness management and marketing. It was obvious that UA benefitted them to be self sufficient from food items and further it benefitted them to develop high mental satisfaction, skills on commercial agricultural activities, confidence in terms of planning and management of life etc. (Figure 5). Further, it was revealed that UA helped to improve the decision making ability and income status of women through involving with agricultural activities.

**Table 1. Summary statistics of Urban Agriculture Producers**

| UAPs | Category Name             |           |                                      |                                  |                          |
|------|---------------------------|-----------|--------------------------------------|----------------------------------|--------------------------|
|      | Type of product           | Land area | Location in respect to residence (m) | Time spend per week <sup>b</sup> | Orientation <sup>c</sup> |
| 1    | Vegetables/Fruits         | 1         | Around                               | 1                                | SC                       |
| 2    | Vegetables/Fruits/Flowers | 2         | Front/back yards                     | 3                                | SC+MO                    |
| 3    | Vegetables                | 1         | Upstairs                             | 2                                | SC                       |
| 4    | Vegetables/Fruits         | 3         | Away (50)                            | 2                                | SC                       |
| 5    | Vegetables                | 2         | Away (300)                           | 2                                | SC+MO                    |
| 6    | Vegetables/Fruits         | 3         | Around                               | 2                                | SC+MO                    |
| 7    | Vegetables                | 1         | Backyard                             | 1                                | SC                       |
| 8    | Vegetables/Fruits         | 3         | Side                                 | 3                                | SC                       |
| 9    | Vegetables                | 2         | Away (200)                           | 2                                | SC+MO                    |
| 10   | Vegetables/Fruits         | 3         | Away (100)                           | 1                                | SC+MO                    |
| 11   | Ornamental fish           | 1         | Side                                 | 3                                | MO                       |
| 12   | Eggs (Poultry)            | 3         | Backyard                             | 1                                | SC+MO                    |
| 13   | Vegetables                | 2         | Front yard                           | 2                                | MO                       |
| 14   | Vegetables/Fruits         | 2         | Backyard                             | 2                                | SC+MO                    |

Note:<sup>a</sup> : 1 = Less than 5 perches, 2 = 5 - 10 perches, 3 = More than 10 perches; <sup>b</sup> : 1 = Less than 14 hours, 2 = 14 - 28 hours, 3 = More than 28 hours; <sup>c</sup> : SC = Self consumption, MO = Market Oriented, SC + MO = Self consumption / Market Oriented

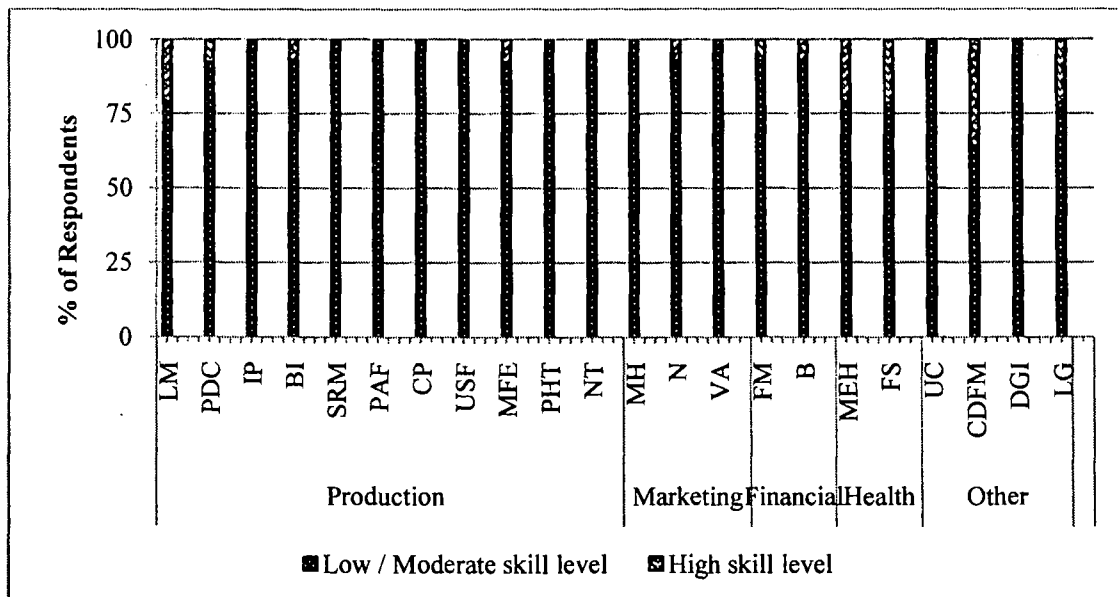


Figure 2. Outcome of Need Analysis

Note: LM - Labor management; PDC - Pest and disease control; IP - Increasing productivity/fertility, BI - Building infrastructure; SRM - Supplying raw materials; PAF - Production of animal foods; CP - Compost production; USF - Using synthetic fertilizer; MFE - Maintaining farmer equipments; PHT - Post harvest technology; NT - New technologies; MH - Marketing of harvest; N - Networking; VA - Value addition; FM - Finance management; B-Banking; MEH - Maintaining environmental health; FS - Food security; UC - Using computers; CFM - Communicating with family members; DGI - Dealing with government institutes; LG - Landscape gardening

**Impact Monitoring and Evaluation - on Technical Innovations**

The data revealed that, UAPs had developed their skills and knowledge gradually with inputs, infrastructure, new technologies and marketing strategies etc. However, the progression of the UAPs could be seen except

to water management and fertilizer application. Both water management and fertilizer application showed a limited effect compared to other factors such as knowledge on new technologies, crop production and supplying planting materials (Figure 4).

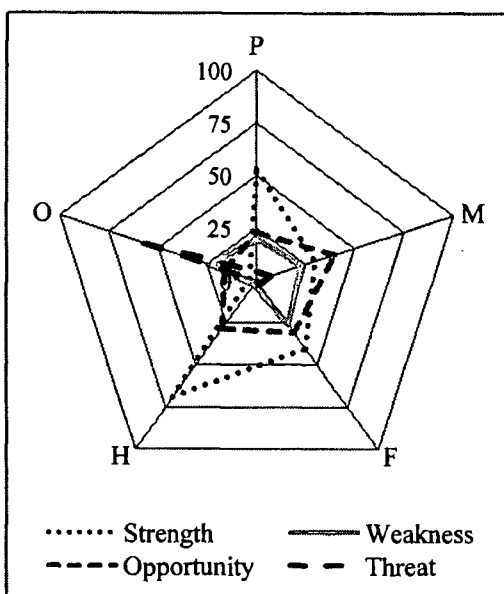


Figure 3. Outcome of SWOT Analysis

Note: P - Production; M - Marketing; F - Finance; H - Health; O - Other

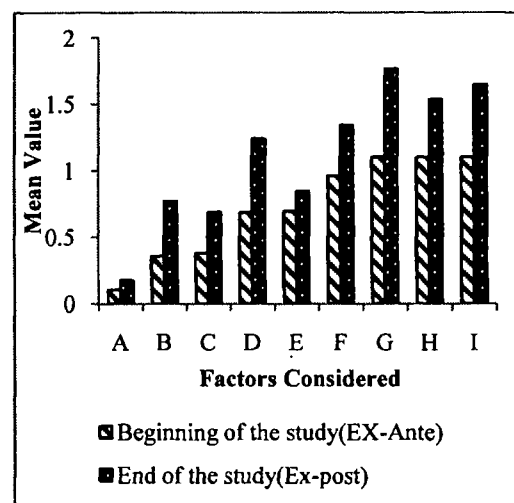


Figure 4. Effect of Urban Agriculture on technical innovations

Note: A - Water utilization; B - Using structures and equipment; C - Marketing strategy on harvest; D - Crop production; E - Fertilizer application; F - Application of knowledge on pest and diseases; G - Knowledge on new agricultural technologies; H - Application of new agricultural technologies; I - Planting materials

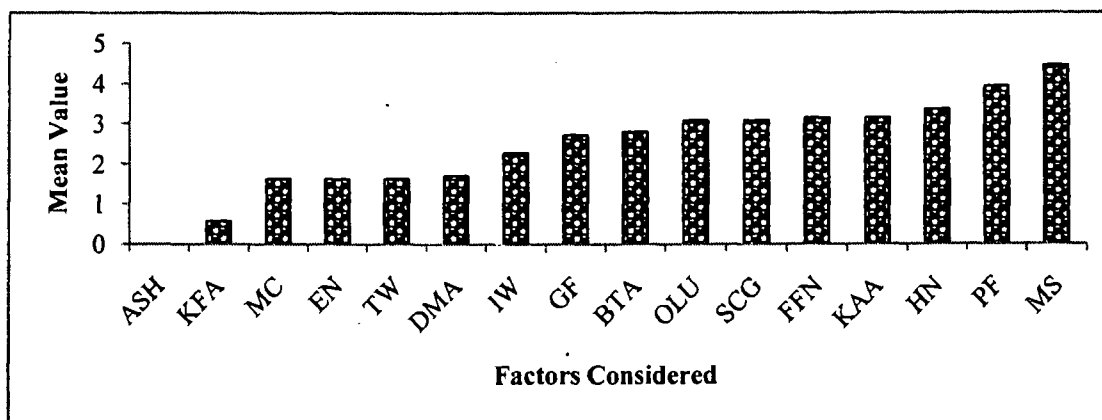


Figure 5. Impact of Urban Agriculture on various aspects of Urban Agriculture Producers' life

Note: ASH - Alcoholism and smoking habit; KFA - Knowledge on finance and accounting; MC - Marketing capabilities; EN - Entrepreneurship; TW - Team working; DMA - Decision making ability of women; IW - Income of women; GF - Gardening as a family; BTA - Better turnover from agriculture; OLU - Optimum land Utilization; SCG - Sanitary conditions of home garden; FFN - Ability of fulfill food needs from home garden; KAA - Knowledge of agricultural activities; HN - Harmony with neighbors; PF - Physical fitness; MS - Mental satisfaction

### CONCLUSIONS

The urban agriculture programme has positively contributed to household food security, savings and nutrition. Although several promotional activities, including awareness and training programmes, have been developed by the Department of Agriculture under different funding schemes, this had never been focused towards UA, and many issues unique to urban agriculture have never been addressed, including the need for growing techniques under limited space, recycling of household waste and water, disease and pest problems etc.

Survey has clearly shown the newly introduced urban agriculture program in KMC has been accepted by the people. It has strengthened the social interactions in the community. It has shown strong positive impact on individual physical health.

These developments can be used to benefit the urban life by leading to self sufficient in food, and use UA as a good income pathway. What really need is government's attention and strong organization to execute the programme strategically in an enhanced manner.

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