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RESEARCH ARTICLE

COMMUNICATION AND ADOPTION OF HOME GARDENING AMONG HOUSEHOLDS: A CASE STUDY

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ABSTRACT

Home gardening is deliberated as a beneficial practice in Sri Lanka as it increases the production of vegetables even during the off seasons. The existing literature insists that knowledge and information are basic aspects for increased agricultural production and productivity. This study focuses on examining the uses and limitations of agricultural communication about home gardening. Primary data were collected using questionnaire from fifty households in Kuchchaveli divisional secretariat in Trincomalee district, Sri Lanka which represents Muslim, Tamil and Sinhala ethnic groups. Findings indicate that around thirteen communication channels are used by the respondents to receive information on home gardening. Mostly used communication channel was Grama Niladhari (government appointed headman for villages). Mainstream mass communication channels such as television, radio and newspaper have least used by respondents to receive information related to home gardening. There is a significant relationship between communication source and adoption of home gardening. However, a significant correlation cannot be seen between communication sources and the awareness level. The study concludes that even though number of communication channels are available in the area, they have not been used effectively to disseminate information on home gardening to people. Thus, given the opportunity of being exposed to more information and support, the people of the area has the willingness and capacity to improve the adoption of home gardening and get the benefit of it.

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INTRODUCTION

"Api Wawamu Rata Nagamu" is a National Agricultural Campaign implemented from 2007 to 2013 by the former government (United People's Freedom Alliance) of Sri Lanka with the objective of encouraging every households to produce indigenous food crops by adopting short term and mid-term strategies in order to save foreign exchange in alliance with the National Agriculture Policy of cultivating every inch of arable land (Ministry of Agriculture, 2011). The main objectives of this programme were rising locally cultivated food crops by imposing import restriction on same, ensuring the food and nutrition security of the people, reduction of foreign exchange required annually for food imports, increasing the income levels of the farmer community and the reduction of the use of chemical fertilizer by the increased utilization of organic fertilizer (Ministry of Agriculture, 2011). In order to achieve the above objectives, the following strategies have been adopted, promotion of home gardening, increasing the selected crop production, make use of the state-owned farms for production purposes, cultivation of colony lands, private and state lands, promotion of the production and utilization of organic fertilizer, promotion and dissemination of environmental friendly agriculture technologies, rationalization of marketing, and minimization of post-harvest losses (Ministry of Agriculture, Sri Lanka, 2011). Among these strategies, promotion of home gardening is widely acknowledged as the best practice due to the tropical climate of Sri Lanka which predicts well for plant life and it is very common to see home gardens all around the island with a great variety of plants and trees (Ministry of Agriculture, 2011). Home gardening eventually increases the production of vegetables even during the off seasons. People can cultivate vegetables from their home gardens for their day to day consumption, so the expenditures on vegetables would be reduced. Home gardeners will be trained to use organic compost as well, thus, people would consume agro chemical free healthy vegetables from their home gardens. Communication plays a pivotal role in any kind of development (social, economic, political and cultural). Thus, for the development of agriculture, communication process deserves its substantial role. Agricultural communication deals with the planning and management of

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agricultural information in order to disseminate agricultural knowledge effectively to bring about desired changes among farmers. The intended changes among farmers will lead to the better farming practices and a better living condition (Age *et al*, 2012). Agricultural communication is also vital for developing and disseminating news and marketing information related to food, agricultural, and environmental systems (Mark Tucker *et al*, 2003: p-22). According to scholars, information has been identified as one of the resources required for the improvement of agricultural production. It is defined as the data for decision making. Davin (1976) has argued that every individual whether literate or illiterate needs information in order to make decisions, thus every sector involved in agriculture needs information. As per him, information plays a key role in agricultural development and production, and the use of effective communication will help to facilitate mutual understanding among farmers, agricultural scientists, and extension workers.

Kaye (1995) said, good information improves decision making, enhances efficiency, and provides a competitive edge. He refers knowledge and information as the basic ingredients required for the increased agricultural production and productivity. Information is a pivotal resource for the operation and management of the agricultural enterprises. Nevertheless, the lack of information and lack of technical knowledge at farm level cause low yield. Hence, Kaye recommends the use of mass media for the dissemination of agricultural information to a wide audience at a very fast rate. They are useful as sources of agricultural information to farmers and as well as establish methods of informing farmers of new developments and emergencies. Adebayo (1997) explained that, adoption and transfer would hardly take place unless the farmers (receiver) attach the correct and intended meaning to the technology (message) and also respond favourably as intended by the extension agent (source). It is necessary to bridge the gap between available knowledge on improved technologies and actual practices. Mass media have the capacity to uplift the knowledge and having impact on behaviour (Nazari and Hassan, 2011). Mass media offer effective channels for communicating agricultural messages, which can increase knowledge, and influence behavior of audience members. Broadcast media have the ability to disseminate information to large audiences efficiently, radio and television can be particularly important channels. They could equally be important in stimulating farmers' interest in new ideas and practices (Ani *et al*., 1997). Mass media are important in providing information for enabling the rural community to make informed decision regarding their farming activities, especially in the rural areas of developing countries (Lwoga, 2010).

Mahmood and Sheikh (2005) stated that creation of awareness is the first step towards the adoption process (Suman, 2003; Yawson et. al., 2010). Mass media (electronic & print media) are playing a very important role in creating awareness about new agricultural technologies among farmers. Mass media are spreading agricultural technologies to the farmers at a faster rate than personal contacts. Khushk and Memon (2004) stated that production and distribution of printed material helps farmers in the transfer of new information and technologies. Among the other earlier studies done especially in India, Mishra (1967), Singh (1971), Chauhan (1976) etc. have accepted that Doordarshan (National Television channel in India) is an effective and important medium of communication which is playing an important role in adopting and telecasting agricultural information to rural farmers (Chauhan,2007:p-42). In Nigeria, numerous communication channels are being used to communicate agricultural information to farmers in accordance to the national policy on agriculture. They are farm magazine, leaflets, newsletters, newspapers, pamphlets, radio and television, among others (Dare, 1990). Among them, radio is the most desired tool of mass communication in Nigeria. Thus, mass media is an effective tool to disseminate agricultural information to a wide variety of audience within a short period. The audio and visual messages transmitted via radio and television reach the farmers more easily than other mass medium. At present, extension workers use visual aids such as, pictures, graphics, illustrations and charts to simplify the message, so that it will reach all rural farmers and everyone can understand the message. On the contrary, in this modern era, it is found out by the researchers that, traditional media are more powerful among the farmers in the dissemination of agricultural information than mass media. They insist that, traditional media are more user friendly, it conveys the message with humor, it uses the colloquial language, and the characters of local people, so that, it will reach the audience (farmers) more than mass media.

Mughees-Uddin (2016), in his study on 'The Role of Communication in Agricultural Development in Pakistan', illustrates the failure of mass media (radio, TV and newspaper), and the use of other channels (except mass media) such as community leaders, community radio, traditional media, interpersonal and small group communication for the effective dissemination of agricultural information among farmers in Pakistan. It is evident from the review of literature that, knowledge and information are substantial for the improvement of agricultural production and productivity, and that is dispersed through agricultural communication. There are only fewer studies on the use of agricultural communication for the enrichment of home gardening in Sri Lankan households. Thus this study focuses on the uses and limitations of agricultural communication about home gardening among households in Kuchchaveli divisional secretariat in Trincomalee district, Sri Lanka which represents Muslim, Tamil and Sinhala ethnic groups.

Problem Statement

The government of Sri Lanka along with the Ministry of Agriculture has implemented several national projects to develop the agricultural production of the country. Agricultural extension workers, instructors and other officials are imparting their knowledge, skills and attitude regarding the effective gardening practices to the local home gardeners. Most of Sri Lankan Television channels and Radio channels broadcast agricultural programmes both during week days and weekends. Yet, the country still experiences low harvest and import agricultural products from foreign countries. It has been recognized that there is a gap between the agricultural information (message) and the home gardeners (receivers). Either the messages transferred by the agricultural extension workers are not sufficient or the farmers do not receive information at all. Thus, this study tries to explore the uses and limitations of agricultural communication about home gardening among the households in Kuchchaveli divisional secretariat in Trincomalee, Sri Lanka. The study assumes that the socio-economic characteristics of respondents have an impact on the awareness and the adoption of home gardening,

mass communication channels are used regularly to communicate agricultural information to the households, agricultural information received through communication channels are clear and adequate to carry out home gardening in households, and there is a significant relationship between communication channels and the awareness level and the adoption level of home gardening.

MATERIALS AND METHODS

Study Area

Kuchchaveli or Kuchaveli is a coastal town located North-West of Trincomalee, Trincomalee District, Sri Lanka, between the latitude 8.8214° N, and longitude 81.0948° E of the prime meridian. It has an annual temperature of 29°C, wind SW at 23 km/h, and 77% humidity. It has twenty four Grama Niladari divisions (villages) and has a population of 36,304 (Census Report, 2012). The major vegetation in the study area are fruits, vegetables, and yam. The major occupation in the study area is fishing. Other occupations in the study area include, farming, trading and carpentry.

Sample Selection

Non random sampling technique was used to select samples. There are twenty four Grama Niladari divisions in this divisional secretariat and it covers majority Muslims, Tamils and there are few Sinhalese households. Three Grama Niladari divisions were selected based on the highest number of Muslim, Tamil and Sinhala population. Accordingly 30 samples from Iqbal Nagar Grama Niladhari division, 15 samples from Periyakulam Grama Niladhari division and 05 samples from Vaalaiyoothu Grama Niladhari division were selected in order to represent Muslim, Tamil and Sinhala ethnic groups respectively. Thus, 50 samples were selected non-randomly from the population.

Data Collection

The primary data used for this study were collected from the respondents through the administration of fifty structured questionnaires. The questionnaire was well structured in accordance to the objectives of the study and it contained open ended and closed ended questions. Questionnaires usually ask questions that bring about ideas and behaviors, preferences, traits, attitudes and facts. Today, questionnaires can be administered in a variety of modes, such as face-to-face, over the tele-phone, and through internet. The researchers observed the respondents and their home gardens and surroundings while collecting the data through questionnaire.

Data Analysis

The primary data collected through questionnaire were analyzed using IBM SPSS statistics 22 package. Descriptive statistics such as frequency, tables, percentage, mean, Pearson correlation coefficient, and Chi-square were employed for the analysis.

RESULTS AND DISCUSSION

Findings indicate that almost all the respondents do aware of home gardening. Their awareness level on home gardening range from, growing plants (25), growing vegetables for own use (23), growing trees (1), and growing vegetables for both own use and sell (1). They do home gardening in their environment for their own use, to save money, to sell and earn income, to share with others, in order to eat fresh and chemical free vegetables, and also to ensure the pollution free green environment.

Socio-economic characteristics of the respondents

The variables examined under the socio economic characteristics of the respondents as presented on the Table 1 (please refer the annexure 1) are, gender, age, level of education, size of household, employment and monthly income of the family. The results exposed that 80% of the respondents are female, while 20% are male. This implies that women were more into farming than male in the study area, because, the major occupation of this division is fishing.

Thus, men do fishing and women look after their home gardens. The results also indicate that most of the respondents (32%) fall between 20 and 30 years of age. The mean age was 40 years. This refers that most of the respondents are adults and they are actively participating in the economic development of their households through adopting home gardening. As defined by FAO (1992), age group 16-64 is economically productive and such group is most likely active in farming and tends to develop more interest in sourcing for agricultural technology through the mass media. In terms of educational level, majority (74%) of the respondents had secondary education, whereas 24% of respondents had primary education. The percentage of respondents with tertiary education is 2%. Education is a tool to access and interpret information. Thus, this factor affects the awareness and adoption of home gardening among the households. Farmers' education usually increase productivity by the use of new production technologies (Ani, 2006). More educated agriculturalists often process information and search for suitable technologies to ease their production restrictions. The belief is that education gives farmers the ability to perceive, interpret and respond to new information much faster than their counterparts without education (Ariyo *et al*, 2013).

The results indicate that, majority (62%) of the households were sized between four to six family members. This is an advantage, because, there are number of individuals to look after the home gardens, they can allocate the task among themselves. However, on the contrary, since there are children and toddlers, there is a possibility that, families can spend money and time on them than on the home gardens. In terms of employment, 48% of the respondents have employments, whereas, 52% of the respondents have no employment. Since most of the respondents are female and unemployed, they do home gardening.

They plant vegetables (70%), fruits (58%), consumable trees (50%), yams (4%) and leaves (2%). It is evident through the results that majority (30%) of the families monthly income is 20,001-30,000. Based on the results of the study, majority of the respondents are female, aged between 20 to 30 years, possess secondary education, have 4-6 family members, unemployed and possess monthly family income of 20001-30000. As Adebayo (1997) states, farmers can interpret the intended message from the received information if they are educated. Thus, it is proved as true that the socioeconomic characteristics of the respondents have an impact on the awareness and the adoption of home gardening.

Available communication channels that have been used to communicate agriculture related information to the households

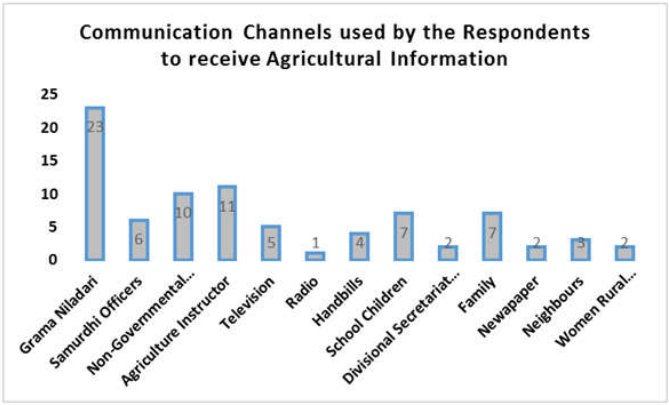

Figure 1. Communication channels used by the respondents to receive agricultural information

Findings indicate that around thirteen communication channels were used by the respondents to receive information on home gardening. They are Grama Niladari (government appointed headman for villages), Samurdhi officers, Non-Governmental Organizations, Agricultural Instructors, Television, Radio, Handbills, School Children, Divisional Secretariat Officers, Family Background, Newspapers, Neighbours, and Women Rural Development Society. Mostly used communication channel was Grama Niladhari (46%). However, the service delivered by the Grama Niladhari was distribution of seeds among households to cultivate. Whereas, information on methods of cultivation, fertilizer, possibilities of home gardening and ways of landscaping for home gardening were delivered by the other channels. Agricultural instructors who visit to these places frequently observe the landscaping, and provide instructions and seeds to home gardeners. Findings point out that, non-governmental organizations, namely, Oxfam and Berendina assist these home gardeners by giving information on home gardening, providing seeds, and fertilizers, teaching them about how to prepare natural compost, land use, how to handle new equipment and different methods of gardening. It is also evident from the findings that, school children and family background do play an important role in spreading information on home gardening. Agriculture and Physical Training Skill subjects which are taught at schools deliver information on home gardening, preparation of land and natural compost. Thus, those families which have school going children receive information on home gardening from them. Even though Samurdhi officers, Women Rural Development Society and neighbours play a role in disseminating information on home gardening, mainstream mass communication channels such as TV, radio and newspaper have least used by respondents to receive information related to home gardening. Thus, the hypotheses of mass communication channels are used regularly to communicate agricultural information to the households is proved as false since the mass communication channels have least used by the respondents to receive information.

The relative utility and limitations of the communication channels in disseminating agricultural innovations

Utility is the extent to which the respondents have benefitted enormously from communication channels in terms of imparting information and knowledge on agricultural innovations. Utility in the context of this study is the ability of communication channels in relating the agricultural innovations to home gardeners. Figure 1 disclosed that 46% of the respondents claimed that Grama Niladari disseminates agricultural information, nevertheless, 50% affirmed that they do not receive information from Grama Niladari. Likewise, other channels such as Samurdhi officers, Non-Governmental Organizations, and Agricultural Instructors are used by the respondents to receive information, but, on the contrary, they have not been used by some other respondents as a source of information. Some respondents do farming with the support of their family and neighbours, where as some others neither receive information on agricultural innovations, nor any support from the formal or informal bodies. They also mentioned that they are willing to do home gardening if they can get the information.

It is obvious from the findings that the information received from the above mentioned communication channels are not clear and adequate; - 62% of the respondents have mentioned that the information they get from the available communication channels are inadequate to practice home gardening, for instance, Grama Niladari and Agricultural Instructors provide seeds to households, however, they just distribute the seeds without providing any instruction on how to plant. Hence, most of time they remain unused. The respondents have emphasized the unsuitability of their lands as the major barrier for home gardening. However, the land could be used to grow trees and flowers. Since they do not get adequate information on home gardening they do not aware about what else could be planted in home gardens except vegetables and yams. Findings expose that 52% of the total respondents have mentioned that the information they receive from the available communication channels are not clear. For instance, one of the respondents from Vaalaiyoothu Grama Niladari Division which represent Sinhala ethnic group has mentioned that, they receive seeds from Grama Niladari and Divisional Secreatariat, but the instruction manual is in Tamil, and they could not read and understand that. Thus, it is evident that the utility of these communication channels in disseminating agricultural innovations is not effective. These channels either provide seeds, crops and equipment to home gardeners or disseminate information on methods of cultivation, fertilizer, possibilities of home gardening and ways of landscaping for home gardening. The major limitations of these communication channels are the lack of clarity and inadequacy of information, and its frequency. As Davin (1976), Kaye (1995), and Nazari & Hassan (2011) point out, information is the key for the development of farming and with the right information on right time farmers would improve agricultural productions and productivity. Thus, the hypotheses, agricultural information received through communication channels are useful and enough to carry out home gardening in households is proved as false.

The relationship between communication channels and the awareness level and the adoption level of home gardening.

A Pearson product moment correlation coefficient was run to determine the relationship between communication channels and awareness level and adoption level of home gardening. Based on the results of the study, there is a positive correlation between the awareness and the adoption level of home gardening, which is statistically significant ($r = 0.384$, $n = 50$, p

= 0.006). There is also a positive correlation between the available communication channels and the adoption of home gardening, which is statistically significant (r = 0.362, n = 50, p = 0.010). However there is no significant correlation between the available communication channels and the awareness on home gardening, r = 0.154, n = 50, p = 0.286. The hypotheses, there is a significant relationship between communication channels and the awareness level and the adoption level of home gardening is partially proved as true.

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Conclusion

The study concludes that the socioeconomic characteristics of the respondents have an impact on the awareness and the adoption of home gardening. Adult female who are unemployed do home gardening relatively more than others. Most of the farmers who are into home gardening possess secondary education, have 4-6 family members and possess monthly family income of 20001- 30000. Even though number of communication channels are available in the area, they have not been used effectively to disseminate information on home gardening to people. Mostly used communication channel was Grama Niladhari. Thus, given the opportunity of being exposed to more information and support, the people of the area has the willingness and capacity to improve the adoption of home gardening and get the benefit of it. The major limitations of these communication channels are the lack of clarity and inadequacy of information, and its frequency. A positive correlation is found between the awareness and the adoption level of home gardening, when awareness increases, the level of adoption also increase. There is also a positive correlation between the available communication channels and the adoption of home gardening. However, there is no significant correlation found between the available communication channels and the awareness on home gardening. The future researchers can provide adequate and clear information regarding the home gardening to selected households and examine its effectiveness.

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Annexure –I

Table 1. Socioeconomic Characteristics of the Respondents

Socioeconomic Characteristics of the Respondents	Frequency	Percentage
Gender		
Male	10	20%
Female	40	80%
Age		
20-30	16	32%
31-40	8	16%
41-50	11	22%
51-60	11	22%
61-70	3	6%
71-80	1	2%
Level of Education		
Primary	12	24%
Secondary	37	74%
Tertiary	1	2%
Size of Household		
1-3	17	34%
4-6	31	62%
7-9	1	2%
10-12	1	2%
Employment		
Employed	24	48%
Unemployed	26	52%
Monthly Income of the Family		
1000-5000	8	16%
5001-10000	11	22%
10001-20000	14	28%
20001-30000	15	30%
30001-40000	0	0%
40001-50000	2	4%

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