

Farmer Perception and Attitude Towards Organic Paddy Farming in Kurunegala District

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ABSTRACT

With the realization that combination of high external input and high yielding variety is not sustainable in the long term and driven by improved customer concern with good food quality and safety, increase of demand for organic products as well as increase of awareness to protect land resources, many farmer groups in the rice producing areas are trying to convert into organic rice farming. Considering the timely importance, this study was carried out with the aim of examining the level of knowledge and awareness and the attitudes towards the benefits and the potential health impacts of organic paddy farming in Kurunegala District. The data were collected primarily from a questionnaire based survey by means of face-to-face interviews from a sample of sixty paddy farmers of six Divisional Secretariat Divisions in the District. The farmer responses revealed that they are well aware of the popular old organic farming practices of Sri Lanka but no knowledge about the concepts of organic farming or the technical aspects of the practices. Mean scores were calculated from the responses given by the farmers to the attitudinal statements. The results highlighted that farmers are having positive attitudes towards organic paddy farming considering the extended benefits and health impacts. However, farmers are not satisfied about the performances of organic product output with compared to the non-organic product performances. Farmers show positive attitudes towards the favorable health effects of not using non-organic products. The study suggests that mainstreaming of available agricultural policies that enhance the organic paddy farming in order to meet both local and international demand for green products is a timely need.

KEYWORDS: Attitudes, Knowledge, Organic farming, Paddy farmers

INTRODUCTION

Organic farming is gaining popularity in all over the world today as it can diversify agricultural production system toward attaining improved productivity, farm income and food safety and seen as a sustainable alternative to chemical-based agricultural systems. International Federation of Organic Agriculture Movements (IFOAM) has defined organic agriculture as "a process that develops a viable and sustainable agro ecosystem" (IFOAM, 2000). The system is based on minimizing the use of costly external inputs, such as synthetic fertilizers and pesticides, by increasing and efficiently utilizing farm-based resources (Ramesh *et al.*, 2005). Organic methods have been adopted more rapidly in most industrialized countries than in the Third World (Lampkin and Padel, 1994).

Interest in organically produced food is increasing throughout the world in response to concerns about intensive agricultural practices and their potential effect on human health as well as on the environment. The growth in consumer demand for organically produced food and the standardization of organic farming methods have created a distinguished marketing opportunity for agricultural producers.

Organic farming is not widespread in Sri Lanka though there is a growing interest for

organic products exists. Due to the increasing environmental awareness and the health concern among the people however have led to increase the farmers engage in organic cultivation though the number is very low. However, in Sri Lanka too interest in organic agriculture has gained importance in recent times, and there are many non-governmental organizations trying to promote this type of farming (Smith, 2002).

According to IFOAM (2006) report, the number of farmers engaged in organic agriculture in 2006 is 3,300 occupying 15,215 hectares (It is only 0.65% of total cultivated land. According to United Nations Economic and Social Commission for Asia, Sri Lanka is in leading positions among major organic food producers and organic tea is primary. But, in accordance to the survey: conducted by the Sri Lanka Nature Forum revealed that in 2008, total land occupied under the organic agriculture is 25,335.03 hectares. It is 1.08% of total cultivated lands. Certified organic agriculture lands are 16,161.28 hectares (0.81% of total). Under the nongovernmental organizations, there are 6,741.25 hectares of organic agriculture lands are occupied. It is 0.28%. Among them 0.23% are home gardens. Private sector companies handle 18,492.18 hectares on organic agriculture (0.79% of total), among them, there are 10,554 hectares

belongs to farmers groups. It is 57.07% of company' managed organic agricultural lands.

Crops grown in home gardens in Sri Lanka are organically cultivated in the most of the instances. Fruit crops, vegetables and spices are given priority in these situations. In addition, production of organic tea is becoming popular because of the demand for such products particularly in the European markets.

In Sri Lanka, rice is not only the staple food, but also a main source of income providing jobs for most villagers. From the very ancient days, increasing rice production has been one of the priorities of the Sri Lankan agricultural development. It is not only to meet the rice growing demand, but also to improve farmer income and to support food security. Like other rice producing countries, planting high yielding varieties and adding more mineral fertilizers are widely implemented to elevate rice and land productivities.

It is coming to realize that combination between high external input and high yielding variety is not sustainable in the long term. In many rice growing areas are showing a leveling-off, even a decline or loss in productivity. Many farmers are in fact failing to achieve a high level of production leading to sustain a profitable agriculture. Furthermore, most farmers felt that it is difficult to do land preparation and to face pest and diseases attacks. Consequently, more production cost is spent to manage their soil and crop.

Even when considering the staple food, researchers have not given much attention to introduce technologies to cultivate paddy organically. But in recent past, driven by improvement of customer concern with good food quality and safety, increasing demand for organic products as well as increasing awareness to protect land resources, many farmer groups in the rice producing areas are trying to convert into organic rice farming. Furthermore, improving healthier and tastier rice product, fast growing urban market for rice organic products, and the prospect of higher prices are also considered as the driving force in converting from the conventional to organic farming system. Also, introduction of favorable policies towards organic paddy farming has encouraged farmers to move towards the technology.

With this light, the specific objectives of this study were to assess the level of knowledge and awareness on organic paddy farming in farmers in Kurunegala District and to evaluate their attitudes and perception towards organic paddy farming and the health concerns associated with non-organic farming.

METHODOLOGY

Study Area and Data

The data were collected from a sample of paddy farmers (n=60), selected randomly from six Divisional Secretariat Divisions in Kurunegala District from March to April 2013. Kurunegala is one of the main paddy cultivating Districts in Sri Lanka. A pre-tested structured questionnaire was administered to gather the data from the respondents via face-to-face interviews.

The questionnaire was consisted of four main question categories including; (1) General information of the farmers, (2) Knowledge and awareness on organic farming, (3) Attitudes towards organic farming and (4) Awareness on health effects caused by organic farming. The knowledge on organic farming was investigated through simple-dichotomy statements (i.e. True/ False) where as the attitude was measured by using five-point Likert scale statements ranging from strongly disagree to strongly agree.

Analysis of Data

The data were mainly analyzed by employing descriptive measures such as means, percentages etc. Mean scores provided by the respondents to the given statements were calculated used to compare between the statements.

RESULTS AND DISCUSSION

Descriptive Statistics of the Sample

Eighty five percent of the respondents were male and equal percentages (36%) of respondents had either primary or secondary education.

Table 1. Socio-demographic characteristics of the sample

Parameter	Percentage (%)
Gender	
Male	85
Female	15
Level of Education	
Primary	36
Up to O/L	36
Up to A/L	23
Degree	05
Extent of Cultivation	
Small	26.6
Medium	66.7
Large	6.7
Income from paddy farming	
Rs. 20,000 – 59,000	37.7
Rs. 60,000 – 100,000	11.5
> Rs. 100,000	50.8

Twenty three percent of the respondents had Advanced Level qualifications. Among them, 38% of the respondents stated that they

Table 2. Knowledge on organic paddy farming

No.	Statement	Count	Percentage (%)
1	Use chemical fertilizers to increase plant growth	59	98.3
2	Use chemical pesticides to control pest	59	98.3
3	Use chemical herbicides to control weed	58	96.7
4	Do not control weed manually as it will only waste time	56	93.3
5	Use kitchen wastes, plant wastes and animal wastes to fertile soil	50	83.3
6	A knowledge has been gained on organic paddy farming methods	26	43.3
7	Do composting to improve soil fertility and water conservation	20	33.3
8	Rotate crops to control weed, pest and also to improve soil fertility	10	16.7
9	Limit the use of chemical pesticides to control pests	3	5.0
10	Choose resistant paddy varieties to reduce damage to plants	2	3.3

have learned Agriculture as a subject in their education programme. Also, level of education is considered as one of the most important factors that determines the awareness and knowledge on organic farming systems (Table 1).

Majority (66.7%) of the farmers were medium scale growers having 1–5 acres of cultivatable paddy lands. Only, 6.7% of the farmers cultivate a land area more than 5 acres to be considered as large scale growers. Per annum income level of the farmers varied from Rs. 20,000 to >Rs. 100,000, and more than 50% of them earned more than Rs. 100,000 per annum (Table 1). It was also reported that majority of the farmers cultivate paddy not for commercial purposes, but for home consumption.

Knowledge and Awareness on Organic Paddy Farming

Table 2 shows the number of respondents who answered the ten given 'true/false' statements correctly. These 10 'true/false' statements were asked from the respondents and the respondents have to give their responses to each of these statements whether the statement is 'true' or 'false' in relation to the organic farming.

Majority of the respondents (98%), aware only about the inorganic fertilizers and pest control measures as they are commonly available, easy to use and generate quick results. Ninety three percent of the farmers stated that, they perceive organic methods such as manual weeding are effective but time consuming methods compared to chemical controls through herbicides. Interestingly, 83% of the farmers aware that they can use kitchen wastes, plant/animal wastes to increase the fertility level of the soil and, a considerable percentage (33%) is aware on the use of compost to improve the soil structure and fertility.

However, only 10% of the farmers are aware on that the crop rotation can be used as

an organic farming mechanism which reduce the growth of weeds and pests and has the ability of improving soil fertility. Farmers always try to stick into one crop for several seasons due to economic benefits, but lose a lot of indirect benefits. As expected, only two percent of the farmers had knowledge on the use of resistant varieties under organic farming technologies. Most of the farmers did not know that the amount of benefits they can earn by cultivating resistant varieties with the recommended level of appropriate technology.

Indicating highest percentages for inorganic or chemical cultivation systems reveals that farmers in Kurunegala District are not well aware on the organic paddy farming practices. Even though, they do aware on common practices such as composting their knowledge is not that adequate to perceive the benefits of organic farming systems.

Attitudes Towards Organic Paddy Farming

Data were gathered on eight attitudinal statements prepared based on various aspects of organic farming (Table 3). Respondents were asked to indicate their score from one to five based on the level they accept the particular statement.

Table 3. Attitudinal statements

No.	Statement	
1	Organic farming will decrease the production cost by reducing the input purchases	S ₁
2	Chemical pesticides are more suitable to control pests	S ₂
3	Chemical herbicides are more suitable to control weeds	S ₃
4	Organic farming will only troublesome the farmers as it needs more attention	S ₄
5	Organic farming is difficult to implement due to difficulties in obtaining organic matters	S ₅
6	Organic farming will only be benefiting the consumers not the producers	S ₆
7	Organic farming is effective in increasing the texture and fertility of soil	S ₇
8	Organic farming can increase the income of farmers	S ₈

The mean scores were calculated for separate statements to evaluate the attitudes of average respondent with respect to each statement (Figure 1).

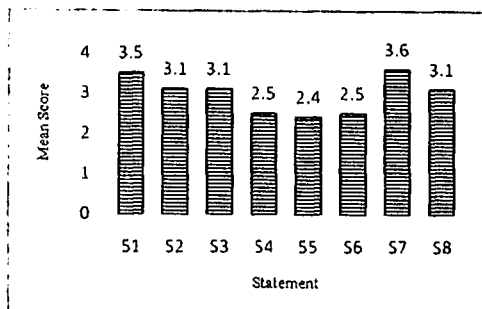


Figure 1. Attitudes towards organic paddy farming

The majority of the respondents agreed on the effectiveness of organic farming systems on improving soil texture and fertility with a mean score of 3.6. Farmers also agreed on the ability of organic farming to reduce the cost of production by reducing the input cost with a mean score of 3.5. Farmers were in an indifferent situation with the suitability of using organic products to control weeds and pests compared to non-organic products. Also, they disagreed on the statements (i.e. S₄, S₅ and S₆) which reflect the barriers of adapting organic farming systems and disadvantages of it with mean scores of 2.5, 2.4 and 2.5 respectively (Figure 1).

The results suggest that farmers are having positive attitudes towards organic farming and its' extended benefits. But, still they are indifferent with the effectiveness of organic farming systems with respect to non-organic systems especially in the situations where they demand immediate results.

Attitudes Towards Health Hazards

Table 4. Attitudinal statements

No	Statement	
1	A risk on kidney diseases due to application of chemical fertilizers	A ₁
2	Polluting drinking water sources due to non-organic paddy cultivation.	A ₂
3	Use of chemical herbicides and pesticides affect on human health	A ₃
4	Inorganic herbicides and pesticides cause diseases on end consumers	A ₄
5	Use of chemical herbicides and pesticides will destroy natural ecosystems including beneficial organisms for paddy farming	A ₅

Farmers were inquired about the health hazards involved with the adaptation of non-

organic paddy farming systems. Their attitudes in this concern were examined through five attitudinal statements (Table 4) and responses were gathered on five-point Likert scale.

Mean scores were calculated for separate statements to evaluate the attitudes of average respondent towards the health concerns of non-organic farming systems (Figure 2).

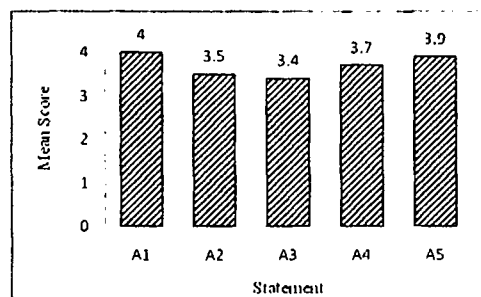


Figure 2. Attitudes towards health hazards

Farmers agreed on all the statements provided highlighting that they are well aware about the health hazards of adapting non-organic farming systems. They have agreed to the statement on potential risk of kidney diseases caused by non-organic products with the highest mean score of 4.0. This reflects that farmers pay their attention to the increasing trend of causing unknown kidney diseases which is now frequently found among paddy farmers and, they have also stated that it is one of the main reasons for them to shift towards organic paddy farming systems. Further, they pay much attention to the fact that, non-organic products do cause negative impacts not only on human beings but also on other animals including beneficial organisms found in paddy fields.

CONCLUSIONS AND POLICY IMPLICATIONS

This study explored the knowledge and awareness of paddy farmers about organic farming systems and how they perceive the importance of shifting into organic farming while concerning its extended benefits and health impacts. The outcome of the study suggested that farmers are aware on most common practices of organic paddy farming but still, not knowledgeable enough on technical aspects which help them to understand the concept and the practices of organic farming. However, majority of the farmers are aware on general concepts of organic farming.

The results also highlighted that farmers possess positive attitudes towards organic paddy farming, but still there are certain factors that hinder them from shifting into that.

They do understand the benefits of organic paddy farming, but the problem they face is that organic products do not yield immediate effects compared to the non-organic products. Characteristics such as; cost effectiveness and less health impacts have induced farmers to adapt organic farming practices. Also, the increasing trend and customer demand on green and organic products in both local and international markets attract customers towards organic farming. The present favorable government agricultural policies (e.g.: higher prices for organically produced rice) of the country have become another important catalyst for farmers to move towards organic farming.

The outcome of the study, as a result, highlights the importance of augmenting the awareness of farmers on more technical aspects of organic paddy farming. The Rice Research and Development Institute of Sri Lanka can take the lead of this initiative as they already possess a separate division for organic farming. It is also recommended to strengthen the available agricultural policies related to organic paddy cultivation in order to encourage the farmer involvement. For example, more subsidies for organic inputs and higher and fixed prices for organically produced paddy can be implemented.

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