

Women's Involvement in Organic (Vegetables) Farming System Activities (OFSA) in Samsung District of North-East Thailand

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Abstract: This study was designed to determine the extent of involvement that women have in regards to OFSA, as well as explore the relationships between women involved with OFSA and the characteristics they possess. The study was conducted in two villages, Ban Samoang and Ban Sawang in the Samsung District of Northeast of Thailand. One hundred women were randomly selected as a sample from a population of 300. The findings reveal that about three-quarters (70%) of the women have medium to high level of involvement in OFSA, while 30% have low level involvement. The co-relation indicates that age, annual family income, family size, education, training exposure, farming experience and knowledge of farming system of the respondents are positively co-related with their involvement of OFSA. The co-relation also indicates that farm size is negatively co-related with their involvement. The study suggests that problems of women's involvement in organic vegetables cultivation include lack of knowledge on organic farming system, scarcity of money, limited co-operation, shortage of skilled labor, price of organic vegetables, lack of suitable agricultural machinery for women, and insufficient training. This study recommends women involved in cultivation also face barriers including-sufficient training on production systems, available financial support to the farmers, suitable agricultural instruments and ensuring satisfactory price of organic vegetables will be helpful for organic vegetables cultivation.

Keywords: Organic Vegetable, Women Involvement, Farming System

I. Introduction

Organic agriculture is the most dynamic and rapidly growing sector of the global food industry (Ellis et al., 2006). Yield of organic agriculture bears the same quality of conventional agriculture. Badgley et al. (2006) shows that organic food can fulfill the demand of food maintaining environmental sustainability. Thailand is predominantly an agriculture-based country. Its rural economy is among the top ten agricultural exporters in the world for its climatic condition and well developed agricultural processing facilities.

In Thailand, production of organic crops is undertaken mainly by smallholders, farmers groups or by large agro-enterprises using organized groups of contract farmers. An estimation of Ratanawaraha et al. (2009) indicates that certified organic production increased from 2,147 ha in 2001 to 22,550 ha in 2006. This is equivalent to 0.11% of the country's total agricultural area (21 million ha) representing an increase of over 95%. However, Northeast Thailand [NET], also known as Isarn, is located in a sub-tropical area with a total population of around 21 million and a territory of 160,000 km², comprising approximately one third of the Kingdom of Thailand. It is now documented that poor rural women in Asia play crucial roles in agriculture as food producers and income earners (IRRI, 1985). However, they are not culturally perceived as farmers, therefore, encompassed with constraints such as gender discrimination in access to land, productive resources, support services, technologies, extension services and lack of control over these resources.

The Northeast population has increased from 3 million to 18 million within the 65 year period from 1920-85 (Thomas, 1988). In 2000, the population of the Northeast was 20.8 m., a third of the whole kingdom which was 60.9 m. (National Statistical Office, 2002). After decades of rapid population growth, by contrast, the rate of natural growth in the Northeast decreased continuously since 1970s. The rate of the population growth were 2.8%, 2.3%, 1.81%, 1.64% and 1.38% during 1972-76, 1976-81, 1985, 1991, 1995 respectively.

During 2000-2005, it was 0.6 percent (NESDB, 1982; National Statistical Office, 1995, 2007). The total farm households increased from 1.68 m. in 1975 to 2.62 m. in 2001 (OAE, 2001). The proportion of total Northeast population in agriculture was 93.5 percent in 1960 decreasing to 91.8 percent in 1970, and by 2000, still as high as 78.8 percent (Donner, 1978; National Statistical Office, 2002). Its population density has been

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increased from 18.1 persons per square kilometer in 1919 to 128.6 in 2005, continually higher than that of the whole country. In 2003, the national average for the ratio of economically active women among the population of women was 15 years old and over was 62.4% in Thailand, and 63.3% in Bangkok alone (National Statistical Office, 2003).

One of the distinctive characteristics of the labor markets in Thailand is that many women continue to work throughout their lives, continuing employment even at the time of marriage and when raising children. Consequently, the labor force participation curve for Thailand follows a reversed 'U' shape. It is generally thought that high female labor participation not only results in income generation for women and their families, but also makes an important contribution to the economic development of the country, and this further leads to a higher social status for Thai women in comparison with other Asian countries. Now-a-days, women play a great role on vegetables farming as a result of labor shortage which is prominent in rural areas. Women are also found to spend more time in homestead agriculture.

Women have traditionally participated as family laborer in preparing fish, catching instruments, mat in some areas. In Thailand, women's contribution to the production of fruit and vegetables in the homestead and small area of farm, tree plantation and crop processing brings a substantial share of the total family income. Women more often than men are involved in cultivating vegetables and planting fruit trees. In developing country like Thailand, most of the farmers including women are involved in farming activities. Farmers those involved in traditional farming together with integrated farming are now converted into farming system for their maximum production. Organic vegetables production is a promising sector in Thailand now. Demand of organic vegetable is increasing day by day due to increasing trend of population growth. It is a reality to increase the quality of vegetable production through alternative methods to fulfill the demand of food. It is also necessary to increase the involvement of women in organic farming system for food production. Therefore, researchers have undertaken a study entitled 'Involvement of Women in Organic Vegetables Production System Activities in Samsung District under Northeast Thailand'. The central aim of this study was to determine the extent of involvement of women in activities regarding organic vegetable farming system and their characteristics.

II. Literature Review

A. F., I. A., & S. I (2015) delve into the youth participation in indigenous farm practices of vegetable production, presenting the mean age of youth vegetable farmers in Oyo State 28.6 to 38 years. Their article captures that youths have easy access to training and skill acquisition in indigenous farm practices in cultivation, processing activities and even marketing of the products. The findings of this study also shows that 70% of the youth vegetable growers are male, whereas, 80% of female are involved in processing, packaging and marketing of these vegetable products. The authors clearly state that females cannot manage enough time and energy to effectively cope because of domestic responsibilities and low level of literacy rate. A farmer with high level of income may have high capacity of acquiring more farm inputs such as land, commercial organic fertilizers and others inputs that would be of assistance in boosting their production capacity and raising their standard of living.

Sennadisai, Trimetsoontorn & Fongsuwan (2015) quoted in 'Lactose Free Milk and Dairy Product Purchasing Habit Variables of Bangkok Thailand Metropolitan Consumers' shows USA, Germany and Spain are the most developed markets where lactose free dairy products have greater opportunity. In 2012, the Thai dairy market earned \$1.6 billion, representing a compound annual growth rate of 3.3% between 2008 and 2012. The performance of the market is forecast to decelerate, with an anticipated CARG of 2.9% for the 5 year period 2012-2017 which is expected to drive the market to a value of \$1.9 billion by the end of 2017.

A study (2015) conducted in Zimbabwe asserts that development programs for farmers should consider gender in order to sustain the intervention output so that male and female are equally benefited. This study indicates that more women used organic fertilizers than men, but they applied lower rates leading to lower yields. Quantity of mineral fertilizer and sewage sludge used were significantly correlated with gender lines. The article concludes that more women than men used ridges and furrows, raised beds and mulching as water management practices.

It is promulgated that gender roles in soil fertility and water management have also become important in UA as women and men have different but specific contributions in soil fertility and soil water management (Mbiba, 1995; Mudimu, 1996). Gender as an analytical category captures a complex set of social processes; involves the examination of men's and women's roles, responsibilities, and social status in relation to cultural perceptions of masculinity and femininity (Overholt, 1991; FAO, 2002). It is therefore important to analyze how gendered responsibilities can enable a more focused provision of extension services, training and financial support to allow for efficient and sustainable crop production. Male farmers are more likely to operate grain, oilseed farms, and livestock cattle operations, while women farmers are more diverse and run not only vegetable, fruit, nut, and horticulture operations, but also more likely to be involved in other livestock farms, and

crops including horse farms and hay farms (Wilson et al. 2014). The Organic Growers of Alabama Cooperative (OGAC) grew out of the nurturing, supportive tradition of relationship building and partnering allowing African American women and their communities to collectively succeed for centuries especially for minority, beginning, limited resource and socially disadvantaged women. The issues faced by these women farmers include: struggling to receive respect in a male dominated occupation, lack of access to land and reliable labor, limited access to farm equipment, knowledge in bartering and negotiation, program access, and building a production skill set comparable to their male counterparts.

III. Materials and Methods

Two villages under Samsung district in North east Thailand were considered study sites. Organic vegetable production was started in Sam Sung district in 2008 under the project entitled "Extension of Safe and Standard Agricultural Production" initiated by District Governor. Two villages, Huai Toei and Ban Sawang of Huai Toei sub-district started to grow pesticide free vegetables. 12 households were pioneers of the present organic vegetable production in this region. District Administrative and District Agriculture Office brought them together and made them understand the vision of organic vegetable production. However, most of the women engaged of that particular organic farm. Housewives engaged with farming activities related to production of organic vegetable were the questioned. 100 women who were engaged with organic vegetable production were sampled for study and the population of the study was selected through simple random method.

A semi structured interview guide was prepared carefully in order to meet the central objective of the study. The interview guide consist of open and closed questions with a test constructed for measuring involvement of women in organic farming system activities. Involvement of women to farming system activities was measured by using a 4 point scale which was developed for measuring involvement of women. Furthermore, there were 13 statements related to organic farming system. Each respondent was asked to response as high, moderate, low and not at all. Scores assigned to these responses were 3, 2, 1, and 0 respectively. Thus, the scores women could receive could range from 0 to 39, where '0' meaning 'no involvement' and '39' meaning 'very high involvement' respectively. Data was collected during August 15 to September 20, 2012 through face to face interviews which utilized semi structured questions which allowed the participants to give open responses. For measuring the relationships between the selected characteristics and involvement of the respondent in organic farming system activities, Pearson's Product Moment Correlation coefficient (r) was computed.

IV. Results and Discussion

Involvement in women in organic farming system

The observed score of women involvement in farming system activities range from 10 to 39 with an average of 23.65 and standard deviation 7.05. Based on involvement in organic vegetable farming system, women were classified in to three categories as shown in Table 1.

Basically, women were involved with different kinds of activities related to agriculture and non-agriculture. Data presented in Table 1 reveals that more than half (70%) of the women has medium to high involvement in farming system while 30% percent are low involvement.

Selected socioeconomic characteristics of women

Data was collected from a sample of 100 women. The salient findings of eight selected socio economic characteristics of the respondents have been presented in Table 2. Moreover, findings of each of the characteristics of the respondents have been shown in a separate table along with the interpretation of the findings.

Relationships between the selected characteristics of the women and their involvement in organic vegetable farming system are hard activities. Eight null hypotheses were tested to find out the relationships of the selected characteristics of women with their involvement in farming system activities. The coefficient of correlation indicates that age, level of education, family size, annual family income, farming experience, training received, knowledge of organic vegetable farming systems of the respondents were positively correlated with their involvements in organic farming system activities, while farm size showed no significant relationship with their involvement.

Problems regarding women's involvement in organic vegetables cultivation

The problems faced by the participants engaged in organic vegetable cultivation according to rank order were lack of knowledge, scarcity of money, lack of co-operation, lack of skilled labor, price of organic vegetables, lack of suitable agricultural machinery for women, insufficient training, lack of organic matter, lack

of input material and low transport facility. It was reasonable because knowledge on organic vegetables for better yield is necessary. Organic standards follow clear rules and regulation for maintaining the quality. Inorganic pesticides and fertilizer are not allowed at any stages for the production. Actually, farmer's perception and apposite attitude depend on farmer's knowledge. Review of studies (Wheeler, 2008; Sanderson, 2004; Gotschiet al., 2007;Stobbelaar, 2006) has shown that attitudes are affected by a set of variables like knowledge, socio structural factors such as community pressure, family concern, ethical principles and values.

The second problem was scarcity of money for organic vegetable production. This is because initial investment of money for vegetables farming is high compared to inorganic vegetables. Farmers have to do initial investment for digging water reserve to deposit water, investment for clearing forest (most of the areas for vegetables production are forest), buying relevant assets such as a vehicle to transport vegetables to market etc.

The third problem was lack of co-operation among farmers and service providers in the study region. In northeast Thailand, farmers have to be busy with their paddy fields, rubber garden and sometimes sugarcane fields. This study shows that farmers usually get more cash from these types of crops. For this reason, co-operation for organic farming is very rare in regards of knowledge sharing or farmers solving problems together.

The fourth problem was the lack of skilled labor in Northeast Thailand. However, organic farming needs more labor due to intensive cultivation for the production (Chouichom and Yamao, 2010). Dissatisfactory level of price of organic vegetables was identified as the fifth problem as price of organic vegetables is not higher as compared to inorganic vegetables.

It may be due to the negative perceptions of consumers regarding organic vegetable or that they do not know the health importance of organic vegetables. Most of the rich people prefer organic vegetables and financial factor may be reason for low price of organic vegetables. Lack of suitable machinery for women was found out as sixth problem of the study. Women are normally low energetic as compare to men. Women need small and easily useable agricultural instrument for agricultural production. In this case useful machinery for women may be solution for this problem. The room for insufficient training for women in rural region was marked as the seventh problem. The study also finds that training of the women was not satisfactory and in above it has showed the significant relationship with training and women involvement in organic vegetables cultivation. This is because training enhances knowledge of the farmers. Lack of organic matter was scored as eighth problem. In organic farm a lot of organic matter is needed for better yield. However, this problem is not so high in this region because farmers use a lot of pig manure in their field. Lack of input materials was found as the ninth problem. Sometimes farmers need high initial investment for input materials. Lack of good transport also the last problem for women involvement in organic farm. Infrastructure is not satisfactory as the desire of the farmers even farmers have to go to away to sell the vegetables.

V. Conclusion

Involvement of women in farming system activities in the study had satisfactory level. Women became aware by gaining knowledge through education given by communication agents. It increases skill, awareness, mental alertness, familiarity and acquaintance with facts, objects, practices etc. This increases women's willingness to be involved in organic vegetable farming systems. Socio-economic characteristics of women including age, annual family income, training received and knowledge of farming system have influenced women's involvement in organic vegetable cultivation activities.

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Table 1. Distribution of the respondent according to their involvement in organic vegetables farming system activities

Categories	Percentage of women	Mean	Standard deviation
Low involvement (Up to 20)	30		
Medium Involvement (Up to 21-29)	45	23.65	7.05
High involvement (above 29)	25		
Total	100		

Table 2 Salient feature

Characteristics	Unit of measurement	Range of scoring		Mean
		Possible score	Observed score	
Age	Years	Unknown	19-69	44
Level of education	Years of Schooling	Unknown	0-14	7
Family size	Number	-	1-9	5
Farm size	Hectares	-	0.2-7.63	3.91
Annual family income	Baht	-	6000 to 262,000	134,000
Farming experience	Years	-	1 to 8	4
Training exposure	Days	-	0-8	4
Knowledge of farming system	Score	0 to 30	7-30	18.5

of the selected characteristics of women (100)

Table 3. Correlation co-efficient showing relationship between independent and Dependent variables (N=100)

Dependent variable	Independent variables	Computed values	Table value of 'r' at 98 df.	
			0.05	0.01
Women involvement	Age	0.38**	0.197	0.257
	Education	0.257*		
	Family size	0.35**		
	Farm size	0.340 ^{NS}		
	Annual family income	0.277**		
	Farming experience	0.165**		
	Training receive	0.27**		
	Knowledge of farming system	0.26**		

** Significant at 0. 01 level of probability

*Significant at 0.05 level of probability

Table 4. Rank order of problems according to problem facing index (PFI)

Problems	PFI	Rank order
Lack of knowledge	274	1
Scarcity of money	273	2
Lack of co-operation	266	3
Lack of skilled labor	228	4
Price of organic vegetables	221	5
Lack of suitable agricultural	212	6
Lack of suitable agricultural Machinery for women	165	7
Insufficient training, lack of Organic matter	149	8
Lack of input material	109	9
Low transport facility	107	10