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YOUTH PERCEPTION ON FARMING AS AN OCCUPATION: CASE STUDY IN POLONNARUWA DISTRICT

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ABSTRACT

Attracting youth for farming is a challenge within the present context of rapidly developing economy of Sri Lanka and availability of advanced technologies. The study aimed at identifying the youth perception on value of farming, and the factors influencing their engagement in farming and their willingness towards agriculture. The study was based on a primary survey conducted in Polonnaruwa district in year 2011. The total sample size was 144 within youth age ranging from 15 – 29. The occupation choice model and multiple regression analysis were used for data analysis. The results indicated that the perception of youth on farming is not a significant decisive factor to be a farmer, yet farming-favored perceptions contributed for the willingness to be a farmer. The perception on value of farming becomes negative with the younger age. Decision on engaging in farming is influenced by age, experience in agriculture, formal agriculture education, vocational training, higher paddy land extents and availability of livestock. Higher education and owning agricultural assets other than lands led to the rejection of farming as an occupation. Availability of agricultural lands, possessing skills and training influences the willingness to be a farmer. Therefore, vocational training programmes, specific agricultural extension programmes and well planned agricultural land policies are recommended for inducing youth for farming.

KEYWORDS: Youth employment, perception, choice model

INTRODUCTION

The percentage of people of a country involved in agriculture undergoes a significant decline when the economies mature. This is true for all countries, however, the rate at which the decline take place differs among the countries. The reasons behind the accelerated withdrawal are growth in the economy that has a contribution in creating 'pull' from outside and low income in rural area that act as a push factor (Sharma, 2007). Higher agricultural labour in the rural areas tends to release people and resources out of agriculture. Further some migrates to reduce family vulnerability to the risks in agricultural income, which vary due to changes in climate, agricultural market prices, access to land and illness (Molaei *et al.*, 2008).

Sharma (2007) found that in India, the youth who posses non-farm skills, younger farmers, and small and marginal farmers are more likely to move out of agriculture, and that the availability of irrigation does not affect the withdrawal behavior. Further, relationship between farm size and willingness towards withdrawal was in U-shape where when average land holding size less than 17 ha, farmers would prefer less to move out of

agriculture. In Nepal, the occupational choice of agriculture is highly correlated with the uncertainty associated with the historical rainfall patterns and influence from other family members, where even if the household head is employed in agriculture, youth are less likely to choose agriculture as an occupation in the areas where rain is more uncertain (Menon, 2007). In China, decision to leave agriculture is driven largely by the availability of rural non-farm employment opportunities. If these jobs are available even at significantly lower wages, rural people have chosen to stay in villages (Zhao, 1999). A study in Iran on impact of earning gains of the rural migrants indicated that the average income of the migrants from agricultural areas have increased where the age, higher education and work experience have a significant effect on migration (Molaei *et al.*, 2008). The findings of Kelsey *et al.* (1998) in USA was that the selection of agriculture as an occupation is more prominent in youth males of lower socio-economic status, and that it was based on the father's occupation if alternative information about jobs and careers is not available.

Leaving agriculture was used as a mechanism to diversify economic activities to minimize risk. This was common among relatively educated (10 years of education or more). Those with previous migration experience, especially among youth, directed agriculture labour towards off-farm activates in Albania (Azzarri *et al.*, 2006). In Switzerland, good income situation increased the occupational choice in favour of farming and that in turn slowed down the decline in farm numbers (Mann and Mante, 2004). In Ireland, directions on future farm incomes from farm size and diversification are more emphasized on the choice of farming rather than the current farm income in Ireland. Further, heirs from more profitable and larger farmers are more likely to enter full time farming where as higher education negatively affect on farming choice (Hennessy and Rehman, 2007). In Malaysia, the younger generation preferred working off-farm and in part time farming (Terano and Fujimoto, 2009). Youth in Malaysia had positive attitudes towards contract farming (D'Silva *et al.*, 2010). A study done by Mahar (2003) in Indonesia found that the perception of younger generation on working as farmers is that it is not worth due to being tiring and having no prestige, dirty, and earned money is too small compared to routine salary at the factories.

In the Sri Lankan context, agricultural labour productivity has shown a positive growth during the post reform period (after 1977) and income per labour has increased. This is attributed to the technological development (green revolution, mechanization), reduction in agricultural workforce, expansion of land area, and increase in area under irrigation (Karunagoda, 2004). This is proven further by reduction in agricultural labour force from 52 % in 1977 to 32.7 % in 2010. Ageing population is a universal phenomenon. It looms particularly large for Sri Lanka not only due to its elderly population, but due also to that the country consists of one of the fastest ageing

populations in the world (Vodopivecand Arunatilake, 2008). Further, more youth tend to look for livelihood opportunities outside the agricultural sector (Hettige *et al.*, 2002).

Youth is the backbone of the community and are the world's future leaders. Even though more widely prevalent international practice is to treat only the 15-25 years old as youth, in Sri Lanka the National Youth Survey (NYS) conducted in 2000 adopted the definition for youth as 15-29 years old unmarried population. The exceptions made for the international norm was proved by NYS, as the majority of university entries in Sri Lanka would be graduating after the age of 25 and there is a widespread family tradition among all ethnic and religious groups to consider even those in the 26-29 age group as youth, as long as they are unemployed and unmarried (Hettige *et al.*, 2002). According to the Labour Force Survey in 2010 (third quarter report), the percentage of youth in 15-29 years old accounts 24.7 % of the total labour force in Sri Lanka and youth accounts for 72 % of the total unemployed population.

Sri Lanka is a fast developing country and in 2010 the annual economic growth rate is 8 %, and the per capita income has doubled during the past 5 years up to US$ 2399 in year 2010. The government's 10-year development plan, the *'Mahinda Chinthana'* is primarily focused on rural development. Domestic agriculture, such as rice and other food crops, is expected to improve significantly as a result of peace resulting from the end of 3 decades long war in the country. Further, National Agricultural Policy (2007) has placed a higher concern on youth involvement in agriculture. Promoting youth organizations, providing concessions for young entrepreneurs, and promoting high value crops and agro-based small and medium scale industry are identified as major policies for youth to be engaged in agriculture.

Within the context of rapidly changing economic and social conditions, many avenues are available as choices for occupation for youth. Therefore, attracting youth to future agricultural development programmes is a challenge to the government. Even though there is ample literature available addressing this issue in the world, this situation is poorly investigated in Sri Lanka. This study was conducted to assess youth's perception on value of farming and to identify the factors influencing the youth engagement in farming and the willingness to be a farmer.

MATERIALS AND METHODS

This study was based on a primary survey conducted in Polonnaruwa district where conventional agriculture is dominant and the highest percentage (3.25%) of youth agricultural operators were reported in the Census of

Agriculture (2002) in Sri Lanka. Students and non-students were considered as the two main categories of the test sample within the youth age range, due to their clear differences in opinion. Individuals from each category were selected randomly and the total sample size was 144 (55 students and 89 non-students). The survey was conducted during the period March to April in 2011.

The data were analyzed by developing a perception score, occupational choice model and regression analysis. The perception score was developed for each individual using ten positive statements on farming with 5 point Likert Scale. Marks were given for each statement according to the stated value of Likert Scale (1 mark for low relevant and 5 marks for very much relevant). The marks of all statements were aggregated to obtain the perception score and it varies between 10 (worse) to 50 (best). The mean of individual perception scores for the whole group was considered as the overall perception on agriculture. Two separate means for both categories were obtained to capture the perception differences, and the significance was tested using pooled –test at p=-0.05. Details of the independent variables used in the models used for analysis are given in the Table 1.

Table1. Description of the variables

	Category	*Symbol*	*Definition of variable*
1	Age	A	Age in years
2	Gender	G	G=1 if male, = 0 if female
3	Marital status	M	M = 1 if married, = 0 if unmarried
4	Education	Edu	Education rated as 1=no edu, 2= grade1-5, 3=grade 6-OL, 4= OL pass, 5= up to AL, 6=Higher edu
5	Experience in Agriculture	Agri Exp	Experience in agriculture in years
6	Training	T	T = 1 if obtained a vocational training, = 0 if not
7	Skills	S	S = 1 If possesses any employable skills, = 0 if not
8	Exposure to other districts	Exp	Exp =1 If anyone in the family is working in other districts except Polonnaruwa, = 0 if not
9	Formal agriculture education	Agri Edu	A score developed using average of given 1 mark each for 5 statements on school agriculture education (Learnt agri. as a subject, engage in practical, participated to work shops, Influence to select farming as an occupation, Help for present farming activities)
10	Perception score	PS	The value of the developed perception score
11	Land availability	LA	L = 1 If the person possesses land for cultivation, L = 0 if not
12	Land size (paddy)	L	Paddy land size in acres (Low land)
13	Total land size	TL	Total land size in acres (Low + High)
14	Agriculture assets	Agri Ass	An assets index developed by giving proportionate marks (based on its financial value) of owning selected agriculture machineries and equipments.
15	Livestock	LS	LS = 1 if person practicing any livestock activity, = 0 if not

The occupational choice model was applied to examine the factors affecting on engaging in farming (Equation 1). The dependent variable (Y) is

binary (an individual engage in farming = 1 and rejecting farming = 0). The Logit model did not predict the precise value of Y, but Logit value of Y [$Li = ln\left(\frac{P_i}{1-P_i}\right)$ = log of the odd ratio *i.e.* the probability of an individual engaging in farming (P_i) with respect to the probability of rejecting farming]. The coefficients (β_i) of the Logit model expressed the change in Logit (Li) for unit change in independent variables (X_i). It makes more meaningful by calculating the value of odd ratio (Probability of an individual engage in farming with respect to the probability of rejecting farming, when unit change in X_i occurs) for each X_i variable. This analysis was applied only for non-students as they are the promising category to be employed.

$$Li = ln\left(\frac{P_i}{1-P_i}\right) =$$
$$\beta_0 + \beta_1 A + \beta_2 Edu + \beta_3 Agri\ Exp + \beta_4 T + \beta_5 Exp + \beta_6 PS + \beta_7 Agri\ Edu + \beta_8 L + \beta_9 L^2 + \beta_{10} TL + \beta_{11} Agri\ Ass + \beta_{12} Agri\ Ass^2 + \beta_{13} LS \quad \text{..... (Eq. 1)}$$

The nature of involvement of youth in farming varied with respect to the degree of their association with management of farming (Sharma, 2007). Based on that, three major categories were identified as 'high-involvement' (youth who is actively involved in management and supervision), 'medium-involvement' (youth who contributed labour only), and 'non-involvement' (youth who had almost no involvement in farming). The occupational choice model considered both 'high-involvement' and 'medium-involvement' categories as the individuals who engaged in farming (due to unavailability of adequate numbers of high involved farmers in the sample to be considered for the model) where Y=1, and 'no-involvement' category as Y=0.

The factors affecting for the willingness to be a farmer was captured by multiple regression analysis (Equation 2) for the whole sample. The willingness to be a farmer (W) was applied as the dependent variable and it was measured using 5 point Likert Scale (1 = never do farming; 5 = most preferred).

$$W = \beta_0 + \beta_1 A + \beta_2 M + \beta_3 Edu + \beta_4 G + \beta_5 T + \beta_6 S + \beta_7 Exp + \beta_8 PS + \beta_9 Agri\ Edu + \beta_{10} LA + \beta_{11} Agri\ Ass + \beta_{12} LS \quad \text{.....(Eq. 2)}$$

RESULTS AND DISCUSSION

The level of employment in non-students was 21 % and the rest was unemployed. The full time farmers who are already engaged only in farming, as their occupation, were as low as 2 %. The high, medium and no-involved categoiries of farming consisted of 36, 34 and 30 % for non-students, and 9, 56 and 35 % for students, respectively. The percentage engaged in farming increased with the age (Figure 1). Involvement in higher education was expected by 69 % of the students. Most preferred to employ in the government

sector (62 %) than the private sector (18 %). Further, only 2 % of the students had the aspiration to be full time farmers (Figure 2).

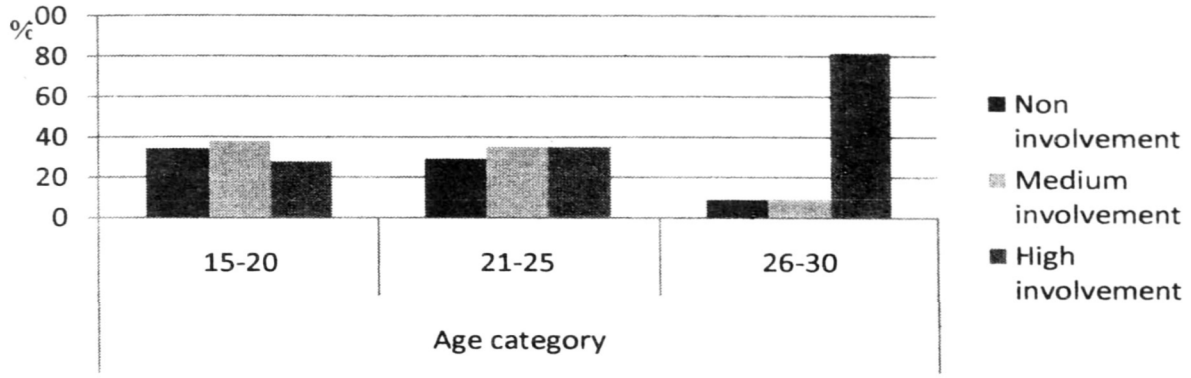

Figure 1. Involvement of farming according to the age category

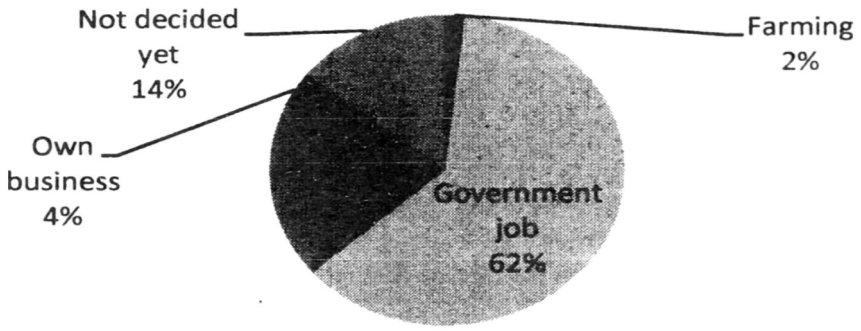

Figure 2. Occupational expectations of the schooling category

Youth perception on value of farming

The perception score for the total sample is 32.01, indicating that youth has an average perception on farming. The perception scores of students and non-students were 29.29 and 33.69, respectively, and they are significantly different ($p = 0.002$), thus confirms that the perception on value of farming is negative in the case of the younger group of respondents

Table 2. Discriptive Statistics

	Variables	*Schooling*				*Non Schooling*			
		Frequency	*%*	*Mean*	*SD*	*Frequency*	*%*	*Mean*	*SD*
1	Age			15.6	0.6			20.1	3.9
	15-20	55	100			61	75		
	21-25	0	0			17	21		
	26-30	0	0			11	14		
2	Gender								
	Male	39	71			59	66		
	Female	16	29			30	34		
3	Marital status								
	Married	0	0			10	11		
	Unmarried	55	100			79	89		
4	Education			3.0	0.3			4.0	0.8
	< 1	0	0			0	0		
	1 - 5	0	0			0	0		
	6 - OL	54	98			59	66		
	11 - AL	1	2			30	34		
	University	0	0			0	0		
6	Experience in Agriculture							2.9	2.7
7	Training								
	With training	4	7			74	83		
	Without training	51	93			15	17		
8	Skills								
	With skills	5	9			29	33		
	Without skills	50	91			60	67		
9	Exposure to other districts								
	With exposure	6	11			12	13		
	Without exposure	49	89			77	87		
10	Formal agriculture education			0.6	0.2			0.6	0.3
11	Perception score			29.3	8.1			33.7	8.3
12	Land availability								
	With land	34	62			74	83		
	Without land	21	38			15	17		
13	Land size (paddy)							2.5	1.9
14	Total land size							3.2	2.4
15	Agriculture assets			21.2	33.8			21.1	35.7
16	Livestock								
	Rearing livestock	7	13			16	18		
	Not rearing livestock	48	87			73	82		

SD=Standard Deviation

Table 3. The responses (%) of Likert scale for the ten perception statements of farming

	Perception statements	*Responses (%)*				
		Very low	*Low*	*Indifferent*	*high*	*very high*
1	Farming is a prestigious job	9	8	12	16	56
2	Farming brings high quality of life	22	16	14	15	34
3	Highly valued the freedom of farming	11	7	18	17	47
4	Farming is less stressful job	19	8	17	19	36
5	Farming confirms the domestic food security	8	1	6	20	65
6	Farming is a suitable occupation for youth	31	17	19	21	13
7	Farming is not a hard working job	32	21	20	8	17
8	Involving farming only as a occupation is sufficient	49	22	12	9	8
9	farming is less risky job	37	22	17	13	12
10	Being dirty while farming is not a valid reason reject farming as an occupation	17	11	15	16	40

The 'farming confirms the domestic food security' obtained the highest consent and 'farming is prestigious job' and 'valued the freedom of farming' were the preferred perceptions (Table 3). It is important to highlight that perception of 'being dirty while farming' is not a valid reason to reject farming for the majority of the respondents.

Factors affecting the decision of youth to engage in farming as an occupation

The results of the occupation choice model confirmed that being elder, having more years of agriculture experience, and having a formal agriculture education significantly influenced the respondents to engage in farming (Table 4). Higher education has les farming to be less demanded. The odd ratio of training indicated that a person who had any type of vocational training has significant ($p<0.05$) and 14 times more tendencies towards involved in farming than a non-trainee. Further, youth with smaller paddy land holding size and higher total cultivable land (lowland and highland) holding size are leaving out of farming significantly ($p<0.05$). With the increasing the paddy land size by 1 acre (approx. 0.4 ha), a youth is 12 times more engaged in farming. The significant variables of agriculture assets (except lands) and its squared variable confirmed that engage in farming has U-shape relationship with agricultural asset holdings. The youth who is engaged in livestock activities is engaged in farming, too. It is important to highlight that the perception on farming is not a significant factor that influence the decision to engage in farming.

Table 4. Results of the occupation choice model

Variables	*Coefficient*	*SE*	*P value*	*Odds ratio*
Age	0.308*	0.140	0.030	1.4
Education	-1.393*	0.587	0.018	0.3
Experience in Agriculture	1.137*	0.316	0.000	3.1
Training	2.698*	1.459	0.065	14.9
Exposure to other districts	1.321	1.026	0.198	3.7
Formal agriculture education	2.814*	1.709	0.100	16.7
Perception score	-0.014	0.052	0.778	1.0
Land size (paddy)	2.507*	1.005	0.013	12.3
Land size (paddy)^2	-0.038	0.087	0.666	1.0
Total land size	-1.732*	0.651	0.008	0.2
Agriculture assets	-0.099*	0.041	0.017	0.9
Agriculture assets^2	0.0005*	0.000	0.028	1.0
Livestock	3.333*	1.191	0.005	28.1
Constant	-8.64*	3.690	0.019	
Number of observations	144			
Log likelihood	-28.13			

Note: The coefficients are significant at p=0.1

Factors leading to the willingness to be a farmer

The willingness to be a farmer was mainly affected by the positive perception on farming, land availability, possessing skills and having vocational training (Table 5). The descriptive assessment indicated that the higher age group (non-students) was more willing to select farming than the younger group (students). Further, 15 % of the students' category stated that they will never engage in farming (Figure 3).

Table 5. Regression results

Variables	*Coefficient*	*SE*	*P value*
Constant	0.433	0.507	0.396
Age	-0.004	0.029	0.893
Married	0.754*	0.388	0.055
Education	0.099	0.123	0.420
Gender	0.078	0.156	0.616
Training	0.525*	0.176	0.003
Skills	0.385*	0.173	0.028
Exposure to other districts	-0.015	0.201	0.941
Formal agriculture education	0.102	0.236	0.666
Perception score	0.058*	0.008	0.000
Land availability	0.383*	0.160	0.018
Agriculture assets	0.000	0.002	0.914
Livestock	0.252	0.188	0.182
R^2 (adj)	48.7 %		

Note: The coefficients are significant at p=0.1

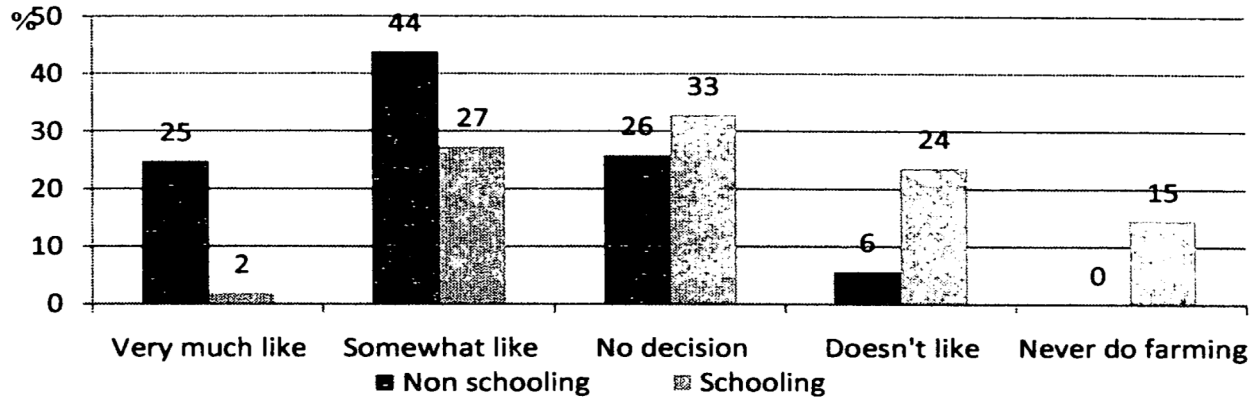

Figure 3. Willingness to select farming (%) as an occupation by schooling and non schooling categories

The major reasons to reject farming were the non-availability of agricultural resources and high risk on farming. The non-students category selected farming due to its value on household food security, high income, love for farming and desire to carry on the family tradition, whereas for the students category selection of farming was due to lack of other options and no other person to carry on farming (Table 6).

Table 6. The reasons of accepting and rejecting farming as an occupation (%)

	Reasons	Non students (%)	Students (%)	All (%)
	Not selecting farming as occupation			
1	No lands, equipments and inputs for cultivation	19	20	17
2	Farm profits are too low	23	2	13
3	There is high risk on farming	31	22	25
4	Doesn't like to work hard	1	0	1
5	Seasonality for receiving income	0	1	1
	Selecting farming as a occupation			
1	Love of farming	36	22	28
2	Desire to stay close to home	14	15	13
3	Desire to carry on family tradition	37	24	29
4	High income and high quality of farming	38	20	28
5	Farming is less stressful than other occupations	33	13	23
6	Higher experience on farming	33	16	24
7	The value of food security	44	2	25
8	the ability of family to help on farming	25	4	15
9	Could be my own boss	22	11	16
10	Family expectations to farm	1	25	10
11	Lack of other options	10	42	21
12	No other person in the family to carry on farming	11	45	23
13	For mental fitness	2	0	1
14	As extra income source	12	0	7

CONCLUSIONS

As withdrawal of farming is a universal phenomenon, recognizing the overall context, the emphasis should be on to improve the quality of withdrawal without harming rural livelihood. The findings of this study stressed that provision of vocational training for youth is beneficial for agriculture as well as for a quality migration. The farmer population already shows signs of ageing and only 2 % of youth is willing to be full time farmers. As the role of youth in farming is imperative, preparation of specific extension programmes addressing young farmers' needs as well as to inculcate farming favored perceptions is a requirement. Land is a critical factor for farming. Younger generation at present is highly affected by land fragmentation and even if there is a will, unavailability of cultivable land and other agricultural resources are major reasons for youth to move away from farming. Therefore, a well planned agriculture land policy to induce youth engagement in agriculture is emphasized.

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