

# Non-Farm Activities and Rural Poverty in Sri Lanka: Review of Literature

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**Abstract** – Rural poverty is a concept of deprivation of basic needs in the rural area which is a geographic area located outside cities and towns. In order to have a long term solution to such a deprivation of needs in rural human being, Non-Farm-Opportunities would be sustainable strategies. Although for last few decades, many subsidiary programs were introduced in order to alleviate rural poverty, still rural sector has poverty. However, there is a structural change in the rural sector due to either subsidiary programmes or free education system or Non-Farm Orientation. Hence, the objective of this review is to explore how Non-Farm-Opportunities have influenced on expanding the horizons of; income, consumption and standard of living in the rural sector to decrease rural poverty as identified by literature. Two hundred sixty nine (52) journal articles were referred for last 20 years in order to grasp the real gravity of Non-Farm-Opportunities as poverty alleviation tools in the rural sector. The objectives guiding the analysis of literature were to; understand the relationship between income and poverty, identify the existing barriers in the field of rural Non-Farm-Opportunities and impact of lack of resources in rural sector to Non-Farm-Opportunities, identify the impact of education to Non-Farm-Opportunities, discuss the relationship among education, human development and rural agricultural productivity and to observe the employability of rural youth as Non-Farm-Opportunities. This review is instigated by searching key academic databases using relevant search questions. The literature suggests that there is a positive relationship between Non-Farm-Opportunities of the rural and the level of rural poverty.

**Keywords:** Human Development, Labour Productivity, Non-Farm Agriculture

## I. INTRODUCTION

Village is a remote area which consists of biological, economical, geographical, sociological diversities. Typical village, the poor are to be found scattered in the periphery of the village nucleus, eking out a precarious living on often hilly, eroding, marginal lands that edge the fertile fields and irrigable lands of the non-poor. Regarding economic and geographical aspects, rural people are more scattered among many jurisdictions, with varying degrees of local control. They are citizens of remote places and too numerous to count with low population density with inherent smallness with each

distinguishing socio-economic characteristics. On the other hand, they are often homogeneous in terms of socioeconomic characteristics, ethnicity and social networks. Rural places mostly nurture participation in civic and social affairs and as such can be viewed as node to anchor people to place. Insofar as activities are concerned, agriculture is the main economic activity in rural area. It shows that the rural sector is directly or indirectly linked with the agricultural sector. Agriculture is in two folds as applicable to rural sector as farm agriculture and non-farm agriculture.

## II. OBJECTIVES OF THE STUDY

The objectives guiding the analysis of literature are; to see the significance of non-farm agriculture on rural economy, to understand the relationship between non-farm agriculture and rural poverty and to explore the impact of education on non-farm agriculture.

## III. METHODOLOGY OF THE STUDY

This review is instigated by searching key academic databases using relevant search questions. The collected data are surveyed first and reviewed secondly under two phases as individual review and cluster review.

## IV. SIGNIFICANCE OF NON-FARM AGRICULTURE

As literature reveals, agriculture is the main income avenue of the rural sector. But all rural people don't have lands to engage in agriculture. Even if they have lands, they don't receive rain/water throughout the year to cultivate. Even if they get rain/water, they don't have economic possibilities to get the other inputs cultivation. Even if they cultivate, they don't get a right market and a right price to sell the agricultural production. Therefore, under these typical conditions, rural community experiences certain difficulties to make their life move comfortable. Hence, as alternatives, they have to find out non-farm options or opportunities to make their subsistence requirements balanced for which they need new skills, capabilities and abilities. Then education concept comes into play. Therefore the problem is how to obtain these new skills, capabilities, and abilities. Then the level of education is a crucial vehicle to drive farm oriented rural sector into non-farm oriented productive sector in order to grab these opportunities and possibilities.

The reason why rural people must go for non-agricultural activity is positively reviewed by Senaratne (1990) and (Ahmed, 2000) with sensible views on non-farm activity. Senaratne in his article on '*the transformation of the rural economy: a societal perspective*' published in *Upanathi*, indicates that, a village does not have, all the economic characteristics which are commonly available as in the urban sector. Some villages count more people whose high income is derived solely from land; others have a large complement in extra village employment while the others, the labour component are unusually large. These dissimilarities compel rural farmers to choose different approaches to enhance their economy by diversifying their activities. Ahmed opposed to the conventional idea of the rural economy being confined only to the agricultural sector, and refers to mounting empirical evidence showing the rural households (including the farm households) are often highly diversified and consist of both agricultural and non-agricultural activities, with the latter often contributing significantly to the household income. The rural sector earlier, mainly consisted of farmers, but today other than farmers, there are some people living with or without having any asset base struggling to find their basic needs. Therefore in order to find a way of living, for them they ought to engage in non-agricultural activities. In order to drive their non-agricultural activities successfully, their level of education plays a huge role.

Non-farm sector in the village exists due to number of reasons. As Abeygunawardena and Kudaligama (1989) claim that labour displacement is inevitable when the agricultural sector develops. As a result of such development, a few efficient farmers will remain in the industry by which education and agricultural productivity would make them so efficient and effective to retain them as farmers. This may be the case for the displacement farmers to have other options to join the urban industrial labour force or to be engaged in as self-employed.

Many studies have found that off-farm income as a stabilizing income source. It provides income sources to rural sector to find out their survival needs. But even if farming is not consistently profitable (Stephan and Debertain, 2001), some rural farmers continue farming as being the core opportunity. Therefore, rural people should continue to acquire non-farm opportunities specially to gain the stable income on a continual basis. Then education would make the basic corner stone for non-farm opportunities to identify and match the opportunities with the resource available. Hence with good education facilitates the rural farmers with required skills, knowledge and abilities.

Education makes people wholesome with the knowledge and know-how in order to facilitate employment or to employ themselves on their own entrepreneurship. If they employ on their own non-agricultural sector, it is called 'pluriactivity'. Depending on the successfulness of their efforts; they are called better-off pluriactive households (who are successful in non-farm activities) or worse-off pluriactive households (who are not successful in non-farm activities). 'Better-off pluriactive households are dissimilar from worse-off pluriactive households due to combinations of income generation activities and the way as to how they have obtained benefits through social network of which ultimately result in exhibiting entrepreneurial qualities that worse-off households are still behind.

#### V. CLASSIFICATION ON NON-FARM AGRICULTURE

Non-farm agricultural groups are different in types consists of entrepreneurs, employees, migrants and traders. Pertaining to rural entrepreneurship, Palanivel (1995) in his article on '*Rural entrepreneurship*' regarding rural businesses in India; states that entrepreneurs are different in types as; agricultural entrepreneurs, artisan entrepreneurs, trading entrepreneurs, tribal entrepreneurs and other entrepreneurs. Agricultural entrepreneurs are those entrepreneurs who undertake agricultural activities as rising and marketing of various crops through modern mechanism, technology etc. They include both agricultural and allied occupations like poultry, diary etc. Artisan entrepreneurs are those entrepreneurs who represent the skilled persons in rural society. Such skills are either-acquired through professional training in association with their kinship group or through in heritage like blacksmiths and carpenters etc. Trading entrepreneurs are those entrepreneurs who commence trading activities but not manufacturing activities. They recognize potential markets and create demand for their products and create a desire and interest among buyers to go in for their products. Tribal entrepreneurs are those entrepreneurs who predominantly present in the tribal villages and could be regarded as an entrepreneurial class itself. Their source of origin is the tribal community. Their entrepreneurship may however lead to the pursuit of any vocation in the rural areas villages. Other entrepreneurs are those who are educated, unemployed, landless laborers, wage earners and persons belonging to economically backward communities who are not coming in any of the above type entrepreneurs (Palanivel, 1995). In a country like Sri Lanka, other than tribal entrepreneurs, all other such as agricultural entrepreneurs, artisan entrepreneurs, trading entrepreneurs and other entrepreneurs are available. But

even tribal entrepreneurs are the one such as 'Sattara Ballana'<sup>1</sup> 'Nai Natawanna'<sup>2</sup>, 'Wanduru Nattawanna'<sup>3</sup> and 'Rodi Community' (gypsies).

According to Palanivel (1995), most of the successful entrepreneurs like agriculture or non-farm agriculture do not come spontaneously on their own. Instead they have been motivated by a combination of factors along with educational oriented factors such as level of education, level of skills, level of occupational diversification, level of aspiration levels, clarity of chosen enterprise, achievement and motivation. That's why education is needed to strengthen even the rural sector with plenty of such knowledge to inculcate entrepreneurial abilities as in the urban sector. Today urban sector has moved fast in developmental aspects partly due to better utilization of knowledge based know-hows. But unfortunately due to lack of knowledge in rural sector and due to brain drain in the sector, at present available skill level is not adequate.

Palanivel (1995) points out that rural entrepreneurship partly depends on personality and personal skills of which are derived from better knowledge as a result of better education, training and development. Any enterprises set in the rural sector cannot continue for a longer period without having better entrepreneurial skills. That's why most of the enterprises established in the rural sector are not continuous and only few businesses or activities have a long time of survival.

#### VI. EDUCATION AND DIVERSIFICATION AS A COMPONENT IN NON-FARM AGRICULTURE

'A household moving into more than one income generation activity is defined as diversification and the significant shift towards diversification has led to consider improving household income as an imperative solution to the problem of poverty' (Silva and Kodithuwakku, 2005). Diversification which refers to a shift away from traditional rural sectors such as agriculture, to non-traditional, often non-agricultural activities leads to growth of the rural non-farm economy.

Davis & Bezemer, D. (2004) in their research '*the development of the rural non-farm economy in developing countries and transition economies: key emerging and conceptual issues*' have critically evaluated the non-farm opportunity based on UK experience. As they refer as in figure 1, the potential sources of rural income can be divided into three components as: Income from agricultural sector; Income from non-farm

enterprises; and unearned income. This classification is shown in the following Figure 1.

According to them, non-farm diversification has two sides as Income Driven Diversification and Activity Driven Diversification. The Income Driven non-farm Diversification is profit maximizers, while the second Activity Driven non-farm Diversification enjoys different comparative advantage to household members as underlying incentives (Davis and Bezemer, 2004).

Thus, as per the above Figure 2, the two types of non-farm diversification are shown as *income-driven* diversification and *activity-driven* diversification. *Income-driven* diversification aims to enjoy capital accumulation (including financial and social capital, and information) while *activity-driven* diversification often tries extensive objectives but beyond the capital accumulation. Again in case of *activity-driven* diversification, there are three different types of diversification as: (i) inside-diversification; (ii) ebb-diversification (or distress-push); and (iii) flow-diversification (or demand-pull) diversifiers. (i) *Inside-diversifiers* 'are those who choose a second job in the same domain (either agricultural or non-agricultural sector) as their primary activity (e.g. a farmer with a secondary activity of off-own farm work for cash). This would be most common in the case of low capital endowments (financial capital or human capital), or among those rural inhabitants who are not prepared to risk entering into a different activity domain'. (ii) *Ebb-diversifiers* 'are those whose primary activity is in the non-farm domain and who choose a second activity in the agricultural sector. A predominance of ebb-diversifiers indicates a situation where either non-farm income does not cover subsistence needs, forcing people back into agriculture, or where there are distorted agricultural prices (either high due to low levels of agricultural productivity and efficiency, or low due to state policies protecting low income consumers in urban areas but with a concomitant de-capitalizing impact in farming communities. Ebb-diversification (Distress-push diversification) is said to occur when rural households are involved in economic activities that are less productive than agriculture and is motivated by the need to escape further income declines. It generally occurs in an environment of risks, market imperfection and hidden agricultural unemployment and is typically triggered by distressed economic conditions. (iii) *Flow-diversifiers* 'are those with a primary activity in agriculture and a second activity in the non-farm economy. These are the demand driven, risk-taking diversifiers, often having a better financial and/or human capital endowment, hence they are better equipped to take advantage of market opportunities, and thus able to diversify. It may also be

<sup>1</sup>A fortune teller

<sup>2</sup>A snake charmer

<sup>3</sup>A person who uses a Monkey to perform Dancer

the case that these flow-diversifiers cannot find opportunities for diversification within agriculture and, therefore, try to re-orient their activities (and/or sources of income) to non-agricultural activities. However this classification is not agreeable with the classification on

distress economic diversification made by Ahmed (1993; 2000) that is referred as ‘the diversification as ‘defensive’ ‘survival’ or ‘coping strategy’ in order to keep rural farmers away from distressful economic situations.

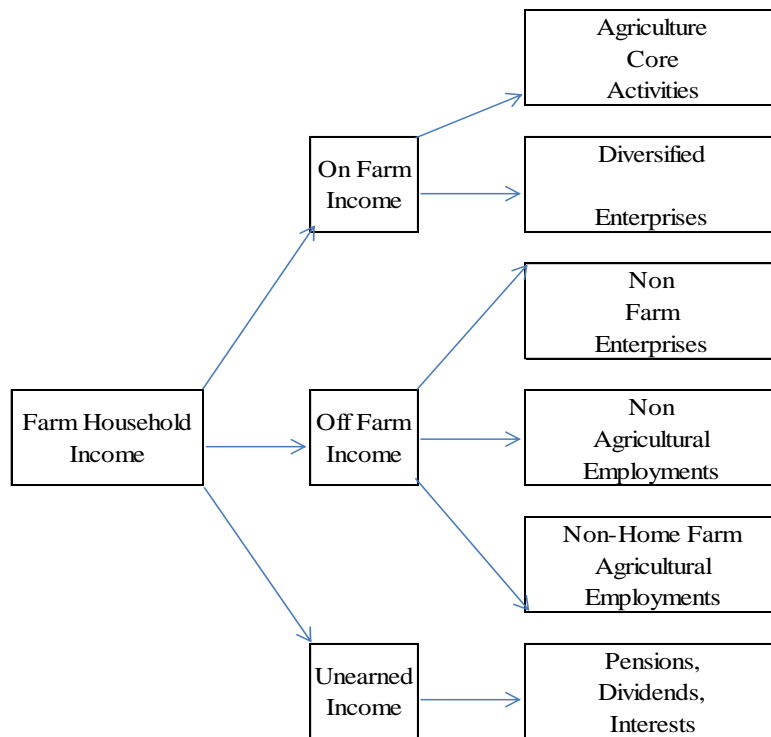


Figure 01: Classification of Rural Income

Source: Davis & Bezemer (2004: p.6). *‘The development of the rural non-farm economy in developing countries and transition economies: key emerging and conceptual issues’*

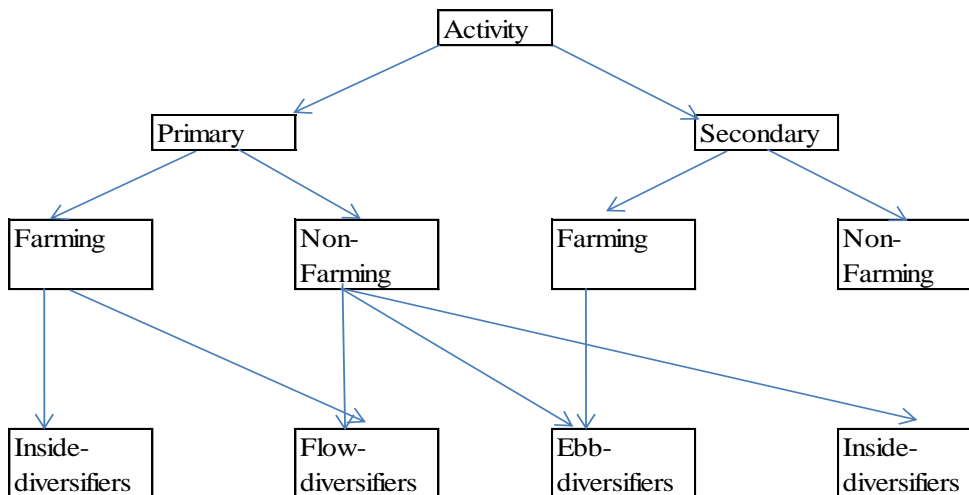
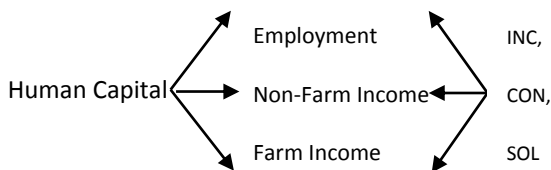


Figure 2: Diversification patterns

Source: Davis & Cristoiu (2002) *‘Patterns of rural non-farm diversification and employment in Romania: A county level analysis’*

Non-farm opportunities can absorb few opportunities such as rural surplus labour with better remunerative activities to rural community. It provides means of survival needs to rural community and exploit rural excess comparable resources (like resources location and labour cost), foster rural growths and improve the overall quality of life goods and services in the rural areas.

On the other hand Davis & Bezemer (2004) analyses the livelihood of rural sector with the contribution from rural farm, non-farm, employment and migration. It shows how multiple capital flows generating such as natural capital, physical capital, human capital and social capital are transformed in to non-farm activities or farm activities. It make sure the wellbeing of the people by enhancing their income, consumption and expenditure. Figure 3, shows the transformation of how human knowledge which is coming from education, skills and experience (Human Capital) convert into human life by means of income, consumption and standard of living through non-farm activities.



Where:

INC= Income, CON=Consumption, SOL=Standard of Living.

Figure 3: The relationship between human capital and Poverty dimensions as per Davis and Bezemer (2004)  
Source: Author creations based on Davis and Bazemer (2008) Conceptual framework

Lyson (2002) in his article on 'What does a school mean to a community? Assessing the social and economic benefits of schools to rural villages in New York', has used the data in 1990 as the secondary data. Lyson goes on to examine the impact of school on rural income. He finds that workers in the smallest rural communities reported high income from self-employment than workers in communities without schools. He considered self-employment as a non-farm activity. And in case of per capita income, earning from self-employment is considerably higher in communities with schools than without schools. Self-employment is an extra income source to rural poor families for those who do not have financial capacity to start a sizable investment nor land to

do farming. Hence, self-employment is a key indicator of the economically independent middle class and has been shown to be a foundational element of the "civic community". Education as a prerequisite to success of the self-employment is a result of human development and creativity. Hence, Lyson indicates that having schools would determine the level of human development and creativity by which it decides the level of employment too. He has recognized per capita income, income level, wages of the jobs, consumption, and poverty level as the dependent variable while as independent variable he has taken, children enrolment ratio, children enrollment in private schools, ethnicity and age etc.

Janvry *et al* (2005), have done a research on 'The Role of Non-Farm Incomes in Reducing Rural Poverty and Inequality in China' with the objective to investigate how far non-farm opportunities would enable rural people to escape from rural poverty. As the sample, they have used 7333 households selected on quasi random basis from 193 villages in central China. They basically use the linear regression model with logarithm as shown below

$$\log y_{0i} = E \log y_{0i} + \mu_{0i} = \beta_0 X_i + \gamma_0 \lambda_i + \mu_{0i}$$

Where;

$y_{0i}$  =the total income

$E \log y_{0i}$  =log-income conditional on observed characteristics and regime participation,

$X_i$  =observed characteristics of the households,

$\lambda_i$  =function of observed characteristics

$\mu_{0i}$  =accounts for unobserved characteristics.

As the dependent variable they have taken, farm income, non-farm income (income earned from wage-paying activities, income earned from self-employment activities). Janvry *et al* (2005) have taken number of workers, number of years in education, land area, per capital land area, number of dependents, distance between house hold and the capital, peers land area, peers number of years in education and average number of year's education squared as the independent variables.

Basically as the objective, their study aims to examine how far the non-farm opportunities would influence on consumption or standard of living of peoples. And in that same way as Davis *et al* (2004) have classified the agricultural income, even Janvry *et al* (2005) also classified the rural income in to four categories as income earned from agriculture, income earned from self-employment in non-farm activities such as industry, transportation, construction, and services, income earned from formal or informal employment and other non-productive incomes unearned income.

In the end, Janvry et al (2005) conclude that due to non-farm opportunities, the standard of living of the rural people had increased. And further due to non-farm income the incidence of poverty had declined from 68.9 percent to 10.9 percent. Depth of the poverty also had reduced from 39.2 percent to 2.9 percent and even the severity of poverty also had been reduced from 26.3 percent to 1.2 percent. They further state that education level of the household has a positive impact on income generating from non-farm activities. Non-farm engagement improves the rural well-being and it reduces the income inequality. Regarding participation of other family members in non-farm activities, the study find that education level of peers has a positive effect with non-farm income. In brief, results show that peers' participation in non-farm employment has a positive impact on household's ability to engage in employment. On the other hand, their study indicates that participation in non-farm activities has noticeably reduced rural poverty by means of the depth and severity of poverty. The study points out that 10 percent increase of education can reduce the poverty by 0.2 percent. Further it indicates that even neighbors' and peers' education influence on reducing poverty. As the study pin points 10 percent increase of peer's education can reduce poverty by 1.5 percent. On the other hand the study shows that number of dependents in the family also is a significant indicator to decide one's poverty. This is supported by even Babatunde and Qaim (2010). Further as Kurosaki and Khan (2003) sees the non-farm sector is considerably and significantly influenced not by the primary or lower secondary education but higher secondary or advanced level or degree education.

Raphael and Qaim on their research on 'Impact of off-farm income on food security and nutrition in Nigeria' have based 220 families in rural sector in Nigeria in the year 2010. As the sample selection basis, they have selected multi stage sampling technique. They have based basically cross sectional data as the main data source. Primarily they wanted to examine how far non-farm income influences on consumption poverty. Their empirical model is based on structural model as shown below.

$$C = \alpha_1 + \alpha_2 H + \alpha_3 FS + \alpha_4 OFI + \alpha_5 FI + \varepsilon_1$$

$$OFI = \beta_1 + \beta_2 H + \beta_3 I + \varepsilon_2$$

$$FI = \gamma_1 + \gamma_2 H + \gamma_3 FS + \gamma_4 I + \gamma_5 OFI + \varepsilon_3$$

$$FS = \delta_1 + \delta_2 OFI + \delta_3 V + \varepsilon_4$$

Where;

C =calorie supply,  
OFI =off-farm income, and

FI =farm income, all measured in per AE terms.  
H =vector of household variables,  
FS =farm size,  
I = the set of asset and infrastructure variables used as instruments  
V =the vector of village

The independent variables used in the study are; Household size, Age of household head, Number of years of schooling of household head, Farm size, Area cultivated by household in survey year, Productive assets, Value of household productive assets, Electricity and Distance to the nearest market place. The dependent variables consist of Farm income, Income from on-farm activities and Income from off-farm sources. They indicate that "off-farm income has a positive net effect on food security and nutrition, which is in the same magnitude as the effect of farm income" (Babatunde p. 2). They further highlight that moving on to non-farm income can reduce the level of poverty deeply than being concentrating only to farm income. And in addition, they indicate that while non-farm income can increase food production in the rural sector, farm income can facilitate capital requirement so as to finance both non-farm and farm sector. Although this particular research primarily focuses on to see how far non-farm opportunities would have an impact on food security and consumption requirement, research concludes that farm opportunity has a major impact on them rather than non-farm opportunity. Besides that, research finds that non-farm opportunity is influential in increasing the income of the rural sector to enable rural people to find out better quality foods and micronutrient food supply. In the end the study concludes that non-farm income has an impact on calorie supply at the household level and as such it can be deducted that non-farm income has a positive impact on dietary quality and micronutrient supply. And further study finds that both farm and non-farm activities can contribute to better food security and nutrition.

However, as former studies reveal, that farm income influences on non-farm income as a recursive relationship. Education level of family members also plays a major role in family farm and non-farm income for which the research has not given adequate attention. Importantly, the ideal model to use in this study is the simultaneous model as there are few of reciprocal relationships and recursive relationships as per the above empirical evidence.

Kurosaki and Khan (2006) in their study on 'Human capital, productivity, and stratification in rural Pakistan' aim to see the impact of education on selection of farm, non-farm, self-employment or employment

opportunities. They examine the impact of human capital on farm, impact of human capital on non-farm income and impact of human capital on productivity. They use the cross sectional data from 1996 (355 families) to 1999 (304 families) in three villages.

$$Prob(z_{it} = j) = \frac{\exp(X_{it}\gamma_{j1} + X_{ht}\gamma_{j2})}{\sum_{k=0,1,2,3,4} \exp(X_{it}\gamma_{k1} + X_{ht}\gamma_{k2})}, \quad j = 0, 1, 2, 3, 4,$$

$X_i$  =vector of individual attributes such as education, and age

$X_h$  = vector of household attributes such as wealth and production assets

J =household work = 0,

non-agricultural wage employee = 1,

agricultural wage employee = 2,

non-agricultural self-employed = 3,

agricultural self-employed = 4).

As per Kurosaki et al (2006), the wage determination function they have shown the following models where  $\ln W_{ijt}$  = indicates the wages earned,  $X_{it}\beta_j$  indicates the level of human capital,

$$\ln W_{ijt} = X_{it}\beta_j + \rho_j \lambda_{ijt} + \alpha_{hj} + e_{ijt}, \quad j=1, 2$$

As the productivity determinant factor of human capital, its relationship has been shown as below.

$$\ln q_{hjt} = b_{j0} + b_{j1} \ln L_{hjt} + b_{j2} \ln H_{hjt} + X_{hjt} \gamma_j + \rho_j \lambda_{hjt} + \alpha_{hj} + e_{hjt},$$

The dependent variable for their study was the farm income, non-farm income, productivity, and agricultural wages. The independent variables are number of years in education, level of schooling (primary/secondary/higher), experience and age. Estimated results show that there are significantly positive effects of education on the wage level. A worker with primary education is expected to be paid 17 percent higher than a non-literate worker (reference group); with middle school education, 31 percent higher; and with high and higher school education, 64 percent higher. These parameters imply the following Mincerian rates of returns: 3.1 percent for education up to the primary level, 3.4 percent for education up to the middle level, and 4.4 percent for education up to the secondary and higher level; or 3.9 percent for additional middle education after primary education and 5.8 percent for additional higher education after middle education. This range is consistent with the estimates in earlier studies on the returns to schooling in rural non-farm activities in Pakistan.

Kurosaki and Khan (2006) hypothesize that agriculture is affected by only primary education and non-farm sector and productivity are affected by the overall education. They indicate that the educated people have more comparable advantages in non-farming as an alternative to farming options. They stress the importance of primary education as prerequisites to farm opportunity and higher education as the essential component in non-farm options. In case of age factor, the study indicates that, age is a positive variable to farm income where it is negative variable to non-farm sector. Kurosaki and Khan (2006) concluded that private returns to education are significantly positive in non-farm wages for males and the effects of human capital are insignificant on agricultural wages. Next, the effects of education on non-farm enterprise productivity are positively correlated with non-agricultural wages. Then, the effects of primary education on crop productivity are positive and related but the additional gain from higher education is small. However, the effects of education on crop productivity are more significant at more aggregate levels in farm production, possibly reflecting the efficiency in factor allocation by educated farmers. But all these are further contradictory with Yang (1997) who negatively see the relationship between education and non-farm income

However, they have used 03 villages for field study within two years from 1996 and 1999. The attempt in generalizing the effect of this study to overall Pakistan is subject to further controversy as geographically and periodically the spread is different. Their study mainly focuses to see whether the return to education is significantly positive in non-farm wages or non-farmers. However this finding cannot be generalized to most of countries as the common attitude towards woman's' education level and freedom of education to them is not clearly indicated by the researchers. However research concludes that return to education are significantly positive with non-farm wages of man.

As Arunathilake and Jayawardena (2010) state by education up to primary level, decreases the likelihood of being in self-employment and increases the likelihood of being unemployed. Having education up to secondary level had the exact opposite effect; it increased the likelihood of being self-employed and being unemployed. On the other hand, by having education up to professional or training level decreased the likelihood of being self-employed, and by having education up to vocational or technical training increased the likelihood of being unemployed (Arunathilake and Jayawardena 2010). According to them, education could enhance the non-farm opportunities such as employment or self-employment of the rural sector as a source of revenue

making. And also education can find people better opportunities or possibilities to match with their desires and skills. No education mean, no such matching can be done except do what is left.

Further as Ashok *et al* (1997) indicates education can provide knowledge to explore the marginal returns and risks associated with the non-farm options. Basically, risk-neutral farmers might divide their labor supply between farm and non-farm employment opportunities in such a way to expect marginal returns are equalized. If expected marginal returns are greater in one opportunity, more labor will be devoted to that particular alternative. However, if a farmer feels a particular alternative is risk averse and if he perceives the variance of wages (or earnings) to be greater in one occupation than another, then, he would allocate less duration to the risky job and will be willing to accept even lower salaries in the less risky alternative. Hence he would make changes in the riskiness of employment alternatives thus change the allocation of labor. As Ashok (1997) pointed out that off-farm employment is an important means by which farmers and their spouses may attempt to reduce the variance of their income (Ashok *et al* 1997). Therefore in order to reduce such income variances, most of recent studies have shown that off-farm employment is the best option which is influenced by a number of demographic and economic factors such as education and knowledge. A survey of farmers' attitudes and motivations done by Barlett (1991) found that the primary reason that farmers engage in off-farm activities is due to income variability, high risk, and uncertainty associated with farm (Ashok *et al* 1997).

Lyson (2002) used descriptive analysis as the empirical model to his study. Then Arnold *et al* (2005) used quasi random to choose the sample and analyzed data on Regression model. Raphael *et al* (2010) used multi stage sampling technique to select the sample. As the model Raphael *et al* have used structural model. At last Kurosaki and Khan (2006) used probit model to analyses the data. As the data variable for the studies they have used, enrolment ratio, number of years in schooling, number of years in education, education level, experience, distance to market, distance to capital, male/female, peer's education, land size, family size and etc. as the independent variables. As the dependent variables they have used; farm income, non-farm income, productivity, poverty gap etc.

Lyson (2002) in his article has used secondary data and New York as the base of his region for study. But Janvry *et al* (2005) used cross sectional data in order to conduct their study in China. Then Raphael *et al* (2010) has used

cross sectional data in Nigeria. Next Kurosaki, *et al* (2006) conducted their study in Pakistan using both secondary and cross sectional data. These countries are, USA, China, Nigeria and Pakistan while some of the countries are developed but some are not. Due to their inherent differences in PESTEL forces (Political, Economic, Technological, Sociological, Ecological and Legal) the way how rural people behave or react with education to poverty, education to productivity and education to farm and non-farm activities are different.

However none of the studies had found the level of informal education, the level of non-formal education, level of social capital which influence to non-farm income. On the other hand, the way how farm income influence on non-farm income and again how non-farm income influence on farm income as a recursive manner, have not been analyzed. It has not been the concern of any of studies. In case of education, especially more than formal education; non-formal and informal education plays a huge role, but it has not been taken as important BY ANY OF RESEARCHERS. THEY HAVE USED STRUCTURAL MODEL as there is a reciprocal relationship or recursive relationship.

## VII. SUMMARY

As many empirical studies reveal non-farm agriculture is an important aspect in the rural sector due to numbers of reasons. It enhances the earning power, provides best way to come out of poverty, and enhances the standard of living of the people. And most of the studies mainly emphasize that non-farm agriculture can be a successful attempt, if it is tailored with better education or human capital only. On the other hand it is broadly concerned with as a poverty alleviation tool, especially in the rural sector, non-farm agriculture serves as a key role. But how far all findings can be related to Sri Lanka Rural sector need to be assessed. Rohana (2006) and Ahmed (2006), are concern with basically on the non-agricultural activity as an additional income source but not as a poverty elimination tool. Again, although the income enhancement is viewed as the prime objective of the non-agricultural activity, it still plays the role as a poverty alleviation strategy. But in order to have sustainable development in rural economy or to alleviate poverty permanently in terms of non-farm opportunities, people must be knowledgeable, so then the education must be there with rural community. The literature supports that the level of education influence on non-farm income, and such non-farm income strongly influence on poverty. On the other hand as there are recursive relationship with farm income to non-farm income and non-farm income to farm income, structural model or simultaneous methods is to be used as the empirical model. As the data source, it is advisable to use cross sectional data.



## VIII CONCLUSION

In conclusion it can be stated that education has an impact on poverty by; employability, risk assessment, cost benefit assessment, as a tool to bridging the wage differences, resource optimization and ability of spotting opportunities. All these all tactics at the end, set farmers to deviate from their usual way of traditional agricultural sector to non-farm options with better education output with better know-how of which at the end could results in poverty alleviation. However Non-Farm Options will help to minimize income fluctuations and to decrease the dependency on agriculture as a secured source of income (Silva and Kodithuwakku 2005), to generate the availability of off-farm employment and to avail the productivity gains in agriculture (Gundersen and Offutt, 2005). These are now seen as very crucial to insulating rural families from poverty (Tambunam, 2005), to develop both individual and community well-being, to act as a poverty reduction strategy (Silva and Kodithuwakku, 2005) and to creating prosperity (Gundersen and Offutt, 2005). It means overall well-being (Adams, 2007, Erin et al., 2008) (Budge, 2006) not only for individual and society but also for overall social spectrum due to human capital development.

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