ORIGINAL RESEARCH

Livelihood Security and Determinants of Poverty of Estate Workers in Nuwara Eliya District

K.M.D.L.Wijerathne[1] ,H.W. Shyamalie[2], B.M.N.C. Karunarathna[2] ,H.M.C.G. Pilapitiya[2], and R.A.P.I.S. Dharmadasa[1]

[1]Uva Wellassa University, Badulla, Sri Lanka
[2]Tea Research Institute, Talawakelle, Sri Lanka
Corresponding author: nadeesha.ck@gmail.com

Abstract

This investigation was planned to achieve reasonable light on the various pointers of socio - economic status and livelihood security of estate workers in Nuwara Eliya district. The objectives of the study were (i) to assess livelihood security of estate workers (ii) to identify determinants of poverty in estate workers and (iii) to identify constraints faced by them. Nuwara Eliya Divisional Secretariat (DS) was purposely selected for the study because of the high estate population and as it is ranked as the poorest DS in Sri Lanka. Two hundred estate workers were randomly selected and primary data were gathered through a pretested questionnaire. Tabular and regression techniques were employed to analyze the data. The results of the study revealed that education and health security were in better condition while habitat security, economic security and food security were at moderate level. The overall livelihood security of estate workers had moderate value (3.3) and this emphasized that estate workers in Nuwara Eliya district were less vulnerable to overall livelihood security. Binary logistic regression results revealed that household size, gender of the household head, education level of household head, household income and household daily calorie intake were significantly related with the poverty of estate workers.

Constraints faced by them were high price of food commodities and energy sources, climate changes and increasing expenses one education, transport and health facilities. Pawning of jewelry, obtaining loans, buying food on credit and restricting or stopping consumption on specific food commodity, were the strategies to cope with the constraints. According to the findings of the study it could be suggested that livelihood security of estate workers in the study areas could be improved through awareness programmes on food consumption pattern among workers and encouraging workers for savings. Further, it can be identified that they need more assistance for the improvement of their habitat security. These results indicate that large families tend more to be poor. Therefore, more attention should be given to the above factors when designing poverty alleviation programmes to estate workers in the Nuwara Eliya district. The findings of the study will be useful to the government when making policies for poverty alleviation programmes in the study area.

Key Words: Livelihood Security, Poverty, Binary logistic regression

Introduction

Tea is one of the largest agricultural industries in the country and it contributes about 0.9 % to the overall GDP in Sri Lanka[1]. Total registered extent under tea is 222,000 ha and produced 328.4 million kg of made tea[1]. The tea industry is the most labor intensive crop and it generates direct and indirect employment opportunities to about 900,000 workers[2]. According to Sri Lanka labor force survey in 2013, economically active population in estate sector was about 0.07 million and it was 4.17 % of the total labour population in Sri Lanka[3]. People who live in estate sector are known as one of the most marginalized groups in Sri Lanka. Poverty is a major issue in estate sector and poverty in terms of Head Count Ratio (HCR), is highest in estate sector (10.9 %) and lowest in urban sector (2.1%), while in rural sector it records 7.6 % [4]. Poverty is expressed as lack of access to basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education etc.

Poverty line specifies the minimum standard of living condition in the society to which everybody should be entitled. Also, the household living standard has a strong relationship with the poverty of the people and there are various socio - economic factors that affect poverty and livelihood insecurity. Conceptually, livelihood is the flow of food and cash to meet basic needs[5], whereas security is ownership of or access to resources and assets to offset risks, ease shocks and meet contingencies[6]. Further, livelihood comprises the capabilities, assets (stores claims and access) and activities required to meet various consumption and economic necessities of a person for coping with uncertainties and encompass social institutions relating to kinship, family, neighbourhood and village groups, and property rights needed to sustain a given standard of living[5,7,8]. Household livelihood security has been defined as adequate and sustainable access to income and other resources to enable households to meet basic needs[9]. This includes adequate access to food, potable water, health facilities, educational opportunities, housing, and time for community participation and social integration.

The livelihood assessment process aims to enhance understanding about local livelihood systems, livelihoods, economic, socio - cultural and political system and the constraints, vulnerabilities, marginalization and risks of people. CARE, Kenya[10] has attempted to measure livelihood security of the people by using livelihood security index. The comprehensive index was made up of different indices that reflect health, education, food, habitat, economic and social network security and CARE, USA[11] documented standard indicators for livelihood outcomes which measure the lasting changes in the conditions, or aspects of the quality of life of population. The security model of CARE's livelihoods reflects three basic attributes namely; possession of human capabilities (education, health, skills, psychological counseling), access to other tangible and intangible assets (social, economic and natural capital) and the existence of economic activities. Household livelihood security assessment provides comprehensive socio-cultural, economic, and ecological assessments of a given area for planning and project implementation[12]. Also it was realized that this model is particularly useful as an analytical tool for understanding the needs of vulnerable people[13]. Since estate people are reported as one of the most marginalized groups in Sri Lanka and their poverty level is highest among all sectors, it is important to identify their needs and constraints faced by them. Also identification of the socio-economic factors which affect to poverty and insecurity in estate sector will help to find the strategies for improving their living conditions. Therefore, an attempt was made to investigate livelihood security of estate workers, to identify determinants of poverty, and to identify constraints faced by them. The findings of the study will be useful to make policies and suggestions to improve socio economic status and household livelihood security of estate workers in Nuwara Eliya district.

Methodology

This study was undertaken in Nuwara Eliya District since the highest poverty, in terms of poverty measuring index, is recorded in this District. There are five Divisional Secretariat (DS) divisions in Nuwara Eliya District. Considering the high estate population, Nuwara Eliya DS division was selected for the study. Stratified random sampling technique was used for the selection of tea estates and respondents. Of 72 Grama Niladari Divisions in NuwaraEliya DS division, 4 Grama Niladari Divisions (Talawkelle, Kotagala, Agarapathana and Henfold) were randomly selected. An estate was randomly selected from each selected Grama Niladhari Division and fifty workers were randomly chosen from each estate for the survey. Total sample size was 200 workers and a field survey was conducted in order to gather necessary information on socio economic characteristics and livelihood conditions of estate workers. Primary data were collected using a pre tested questionnaire and tabular techniques were extensively employed to workout livelihood outcomes (food security, economic security, educational, health, habitat and social network security), coping up strategies and various socio-economic constraints faced by them. Livelihood security index (LSI) consists five livelihood of out comes and those were measured based on accessibility/availability, quality and status. In order to assess the different livelihood out comes, indicators shown below were selected according to the menu indicators of CARE Bangladesh[14].

Table 1. Livelihood security indicators and measurements

Livelihood security outcomes	Indicators	Measurements
Food security	1.HH calorie intake 2.Diet diversify	24 hr recalls method 24 hr recalls method
Economic security	1.Per person income/month 2.Per person saving/month	Rs/annum Rs/annum
Health security	1.Acessibility health services 2.Quality of sanitation facilities	Distance/km Scale developed
Education security	1.Accessibility to school 2.School dropout rate before grade 11	Distance/km No. of children/household
Habitat security	Quality of house(roof, floor, wall, source)	Scale developed

Each indicator was ranked on a five - point ordinal scale and they were grouped using cube - root cumulative frequency method of stratification[15]. Livelihood security indices such as food, economic, health, education, habitat security were computed by aggregating all the scores of the selected indicators.

Binary logistic regression analysis was employed to identify the determinants of poverty. A logistic regression model was fitted using the real per capita expenditure as cut off point corresponding to Sri Lanka Official Poverty Line (OPL) Rs. 3924 in August 2014[16].

Results and Discussion

It was revealed from the results that scores of calorie adequacy ratio, diet diversity as well as composite food security of estate workers in Nuwara Eliya district obtained higher values. Thereby estate workers in Nuwara Eliya district were relatively in a better position in terms of food security. When considering economic security, the score of monthly per capita income was higher. In contrast, score of the monthly per capita saving was found to be lower in the study area. However, the aggregate score of the overall economic security showed the value to be moderate. A large number of indicators are available to measure health security of estate workers depending on the nature of the intervention in the health sector. However,

for the present purpose, the selected indicators, as per CARE recommendation, were the accessibility to health services and quality of sanitation facility. All indicators used in measuring health security in estate workers had higher scores and composite index score of health security also showed higher value. That indicates estate workers in Nuwara Eliya district were in a better position in terms of health security. Accessibility to school (distance to the nearest school) and school dropout rate were the parameters used for the assessment of education security of estate workers. When there are no school leavers before they come to grade 11 in a family, the score given for school dropout rate was 5. The results revealed that both indicators used to measure the education security obtained higher scores. This highlighted that estate workers' children were more secured in their education. In terms of habitat security, except quality of roof, the scores of other materials were above the midpoint. It was further observed that the score of road network was relatively less. On the other hand, index score of overall habitat security of estate workers took a value above the midpoint of the index score scale of 1-5.

With regards to overall livelihood security of estate workers, a higher value (3.3) was obtained which emphasized that estate workers in NuwaraEliya district were less vulnerable to overall livelihood security (Figure1).
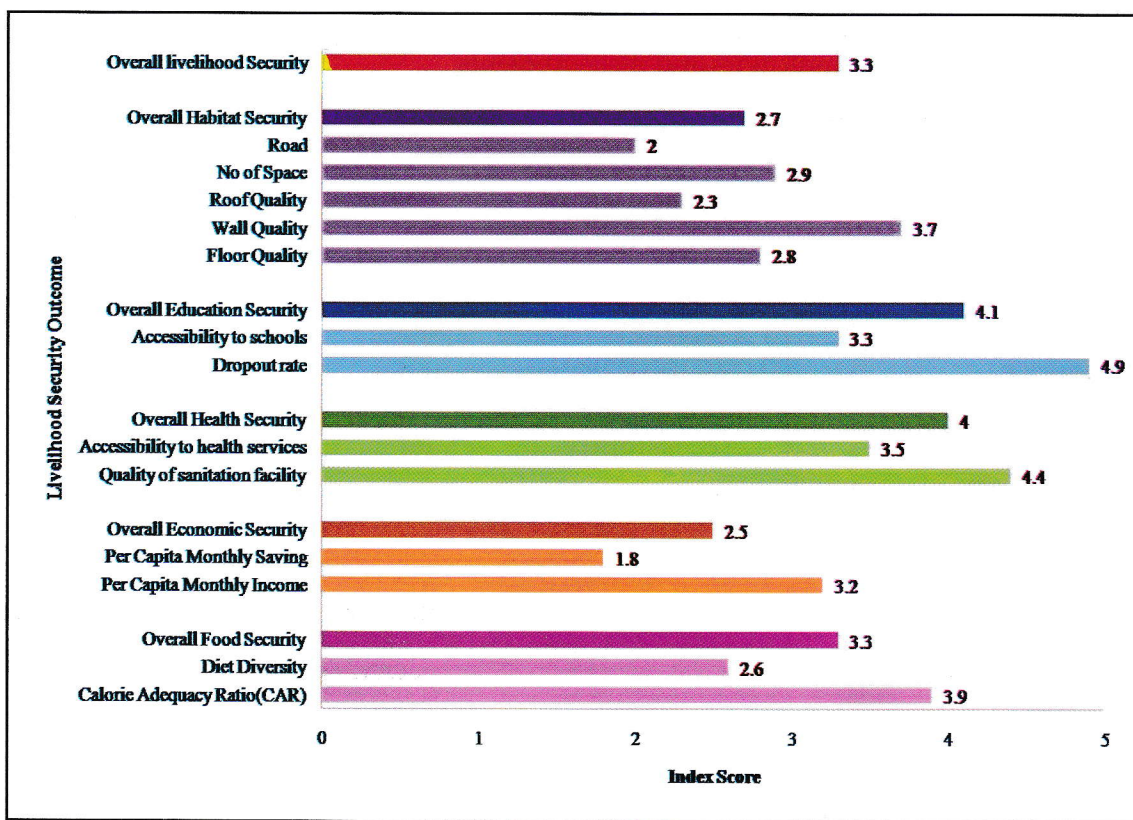
Figure . Livelihood security outcomes of estate workers in Nuwara Eliya district

Results of the binary logistic regression model (Table 2) showed that gender of household head, education level of household head, household income, and household daily calorie intake had negative and significant impact on poverty of estate workers. Meanwhile household size had positive and significant impact on poverty of estate workers in Nuwara Eliya district. Value of coefficient associated with household size was 0.723360, and it indicates that when household size increases, the poverty also increased. Also negative coefficient of income explained that low income level directly leads to increase of poverty of estate workers. It also indicated inability to fulfill their basic needs and wants when the household income decreases. When the household head become a female, the poverty also increased. The education level of household head (- 0.399094) indicated that low education level of household head led to poverty of the household. Negative significant coefficient of household daily calorie intake, revealed that there is a relationship between low household daily calorie intake and poverty of the household.

The main constraints identified were the increasing price of food commodities, high price for energy (fuel, gas, electricity), increase in charges (school fees, transport, health) and adverse impact of climate change. Majority of the sample (97%) expressed that increasing price of food commodities was a major problem to them (Table3.). High price for energy (fuel, gas, electricity), increase in charges (school fees, transport, health) and adverse impact of climate change were highlighted as constraints by more than half of the sample household in the study area. Another important constraint was longtime illness of family members.

Various coping up strategies followed by estate workers in Nuwara Eliya district are presented in Table 4. Pawning of jewelry was the main coping up strategy followed by more than 90% of the sample of estate workers. Obtaining loans from organization or neighborhood and buying food on credit were other main coping up strategies. Restricting or stopping consumption on specific food commodity and borrowing money from savings were followed by 32 and 23 % of households, respectively. Few households reported that they followed the strategy of seeking more work, reducing spending on health care and on education, water, electricity and transport.

Table 2. Parameter estimates for binary logistic regression

Variables	β	Sig	Exp (β)
Household Size	0.723360	0.000***	2.061
Gender of Household Head	-1.497702	0.083*	0.224
Age of household head	-0.035240	0.113	0.965
Education level of household head	-0.399094	0.009***	0.671
Dependency ratio	0.001365	0.628	1.001
Household income	-0.000042	0.016**	0.999
Household daily calorie intake	-0.000150	0.005***	0.999
Household members suffering chronic illness or disability	0.177778	0.619	1.195
Constant	2.507769	0.151	12.278

Note: significant levels denoted as *** P<0.01 (99%) ** P <0.05 (95%) * P <0.1 (90%)

Table 3. Constraints faced by estate workers in Nuwara Eliya district

Constraints	Percent Household
Increase in price of food commodities	97.5
High Price of Energy (gas, electricity, fuel)	62.5
Increase in Charges (school fees, transport, health)	56.0
Climate changes (drought etc.)	56.0
Long time illness of family members	44.0
Unable to pay bank loan	25.5
Sudden death of income earner	6.0

Table 4. Strategies undertaken to cope up the constraints by estate workers in Nuwara Eliya district

Strategies	Percent Household
Pawn Jewelry	90
Obtain loans from organization or neighborhood	71
Buy food on credit	71
Restrict or stop consumption on specific food commodity	32
Borrow money from savings	23
Reduce spending on health care	12.5
Seek more work	12
Reduce expenditure on education	8.5
Reduce expenditure on water , electricity and transport	8.5

Conclusion

This study was conducted to evaluate socio-economic status and livelihood security of estate workers in NuwaraEliya district. The results revealed that the score of livelihood security indicator, per capita income, was relatively higher at estate household in Nuwara Eliya district, since the working population is high in this sector. However, workers should be encouraged for savings because their saving habits were in low level.

It was observed at a moderate level of habitat security, more assistance is required to improve housing conditions of estate workers. In addition, awareness program should be conducted to increase workers knowledge on food consumption pattern, since their diet diversity was less.

According to the results, household size, gender of the household head, education level of the household head, household daily calorie intake and household income, directly influenced the poverty of the estate workers. These results indicate that large families tend to be poorer. Therefore, more attention should be given to the above factors when designing poverty alleviation programmes to the estate workers in the Nuwara Eliya district. The findings of the study will be useful to the government when make policies for poverty alleviation programmes in the study area. Also, it was found that household income directly affect poverty. Therefore, they should be encouraged for alternative income generating activities like animal husbandry to increase family income.

References

1. Central Bank of Sri Lanka. Annual Report. Colombo : Central Bank of Sri Lanka, 2013.

2. Bandara Ranjith, RWTM. The Present Status of Ecological Capital Management in the Tea Plantation Sector in Sri Lanka, An Exposition of the Concept with illustrative Case Studies [Unpublished Working Paper] University of Colombo, 1996.

3. Department of Census and Statistics (DCS). Sri Lanka Labor Force Survey. Colombo. Sri Lanka: DCS, 2013.

4. Department of Census and Statistics (DCS). Sri Lanka Labor Force Survey. Colombo. Sri Lanka:DCS,2014

5. Chamber R. Editorial Introduction: Vulnerability, Coping and Policy.*IDS Bulletin* 1989; 2 (2): 1-7.

6. Redelift M. *The Role of Agriculture in Sustainable Development. Technological change and the rural environment.* London: David Fulton Publishers Ltd,1990

7. Complain D. Preface: Livelihoods Issues in Rootcrop Research and Development. *Sustainable livelihood for rural households: Contribution From rootcrop agriculture.* Los Banos, Laguna. 1998, 9 12.

8. Haq. People's Perception: Exploring Contestation, Counter –Development and Rural Livelihoods; Cases from Muktinagar, Bangladesh *[Ph.D thesis]*Wageningen, The Netherlands: Wageningen University; 2000.

9. Frankenberger T. Measuring Household Livelihood Security: An Approach forReducing Absolute Poverty.Food Forum 24. Washington: D.C. Food Aid Management; 1996.

10. CARE Kenya. Rapid Food and Livelihood Security Assessment Report. Nairobi: Kenya CARE, July1996.

11. CARE USA.Household Livelihood Security Assessments: A Toolkit for Practitioners. Tuccon, Arizona: TANGO International Inc., 2002.

12. Molnar A. Community forestry: rapid appraisal. Rome: FAO, 1989

13. Drinkwater M, Rusinow T. Application of CARE's livelihood Approach .CARE International;1999 January. Accessed January 2015 http://www.eldis.org/go/topics&id=40253&type=Document

14. CARE Bangladesh. Baseline Survey Report. Livelihood security analysis of vulnerable urban households Jessore and Tongi Pourashares. CARE Bangladesh in Collaboration with the International Food Policy Research Institute, 2001

15. Singh R, Manget NS. Elements of survey sampling. Ludhiana, Panjab, India:PAU, 1996:108 – 122Department of Census and Statistics (DCS).

16. Department of Census and Statistics (DCS) District Official Poverty lines. Colombo. Sri Lanka DCS,2014.