

DETERMINANTS OF MIGRATION CHOICE OF PEOPLE LIVING IN VULNERABLE LAND SLIDE AREAS IN RATNAPURA DISTRICT

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Introduction

Landslides are the most significant natural hazard in Sri Lanka, seconded only to floods and cyclones (Herath and Rathnayaka 2005). Of the 65,000 Sq Km area of Sri Lanka nearly 20,000 Sq Km (31%) are highly prone to landslides (Bandara, 2007). In a Sri Lankan context land slides occur mainly due to the heavy rain fall receives from the South West and North East monsoon. Landslide hazard index which was calculated by plotting the recorded instances of landslides based on the occurrence area showed eight districts in the central highlands are at risk. According to Zubair, Perera. et.al, (2005), the highest prevailing risk is Kegalle followed by Rathnapura and Nuwara Eliya districts. Rathnapura district shows severe landslides in the past two three decades. The reasons for the acceleration process of landslides occurrence in the Rathnapura is due to human interventions in terms of gem mining, deforestation for tea and rubber cultivation.

Present research general objective was to find out what is the socio-economic and other factors influence on people choice for migration from vulnerable areas to safe areas. Specific objectives were to identify the people living condition and their understanding of the vulnerability of their activities on the stability of living and to investigate the factors contributing for their lifestyle or live in the susceptible/ suspected area, where they live.

Methodology

Because of frequently more vulnerable land slides occur in this area, Batakada village in Ratnapura district was selected for the study. Data was collected from a stratified random sample of 70 households, which includes 33

occupants who had migrated out and 37 non-migrants in the Batakada village in the Elapatha Divisional Secretariat Division. Personal and key informant interviews were carried out at their sites by using a structured interview schedule. Secondary data were collected from the Elapatha Divisional Secretariat Division in the Rathnapura district in 2008.

To achieve research objective of assessing the household choice between moving or not moving from the vulnerable area binomial logit model was constructed and estimated. Migrants will choose whether to leave temporarily or permanently, only if the expected utility from the migration is greater than the utility obtainable from other available alternatives. The relationship can be described as follows:

Observed $Y = 1$ if U of short term $> Y = 0$ if U of alternative of long term,

The general form of the binomial Logit model is:

$$\text{prob.}[choice] = \frac{e^{\beta_j x_{j1}}}{\sum e^{\beta_j x_{j1}}}$$

Where, 'j' indexes the observation or individual households and j indexes the choice. X_j is socio-economic and demographic factors that determine the choice levels. β is a factor of unknown parameter. It was hypothesized that a set of factors such socio economic and demographic vector explain the decision. A logit model of the following form was fit to estimate the likelihood of long term permanent decision to move from the vulnerable area. Thus, the empirical logistic model to examine the

choice of migration levels by the households is:

$$\text{CHOICE} = \beta_0 + \beta_1\text{FS} + \beta_2\text{AG} + \beta_3\text{ED} + \beta_4\text{IN} + \beta_5\text{GN} + \beta_6\text{LO} + \beta_7\text{PC} + \beta_8\text{AC} + \beta_9\text{EM} + \beta_{10}\text{LV}$$

Family size (FS), age (AG), education level (ED) of the head of the household, Gender (GN), income level (IN) of the household, land ownership (LO), extent of perennial crop cultivation (PC), extent of annual crop cultivation (AC), type of employment (EM), land vulnerability (LV) and the extent to which the house are build upon were measured. Satisfaction level towards the government and non government welfare programmes such as the rehabilitation, provision of new lands and compensation provisions were measured using five point Likert scaling method. Delaying factors were measured as a composite factor of income dependency, livestock, ownership, degree of vulnerability established houses, inadequate incentives, difficulties in migration, leaving of native lands and tendency to start a new life. The computed single variable for delaying factors had a reliability score of 0.763 the reliability for the computed institutional programme satisfaction variable was 0.77. These reliability levels allowed performing statistical analysis.

Results and discussion

There is no significant difference in age between the two groups. But family size and education level showed a significant difference between the two groups. The average family size for the non migrant families is 7, and that of migrated families group is 4.5. About 21% of the household head had not received any level of education in the non migrant group. About 70% of the non migrant are involved in permanent tree crop such as coconut, banana etc or annual crops such as vegetable cultivation. There is significant difference concerning the average size of land ownership in between short term and long term migrants groups. The mean own land area is small (0.03 ha) in migrated group compared to non migrant group land

ownership 0.4 ha. It should be noted that the majority of the short term migrants are practicing permanent tree cultivation in the upper water shed area. Both groups fall into low income category receiving cash income less than Rs.5, 000.00 per month.

Binomial logit model results indicate that education could be a push factor for the long term migrational decisions. Since educated people can secure employment elsewhere. Other significant variable that is related to long term migration decision is the delaying factors such as income dependency, land ownership, tendency to start new life, leaving of native lands seem to have a negative effect on long term migration decision.

Chi square analysis revealed that socio-economic and demographic factors have different impact on the short term and long term migration decisions. This is similar to findings of Amit Shah in Gujarat India in 2005. While level of education, infrastructural facilities, and awareness program were acted as push factors, wealth, multiple income, perception on non-occurrence of future disasters and social factors are found to act as pull factors for permanent migration from the vulnerable areas to safe areas, this study found that lack of coordinated actions by different government and non government organizations in providing different services to villages were inadequate and often failed.

Conclusions

This study has shown that residents in vulnerable areas delay their migration decision due to inadequate incentives in the resettlement programmes. Therefore, government needs to grant them a reasonable amount of incentives to resettle these people. Since the education has a positive impact on the long term emigrational decisions, government can use education as a tool to change minds of these people to migrate from vulnerable area to safer areas.

References

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Table 1. Binomial Logit Estimates of the Determinants of Short-term Migration
 Dependent variable = 1 if short term choice, 0 otherwise

Explanatory Variable	Coefficient.	P> z
Age (yrs)	-0.053	0.575
Family size (No)	-0.409	0.601
Education (yrs)	2.145	0.087***
Monthly income (Rs.)	-1.053	0.271
Perennial Crops (ha)	0.082	0.976
Homesteaded (ha)	28.756	0.225
Programs (Scale dummy)	4.327	0.133
Delaying Factors (Dummy)	-9.450	0.042**
Constant	25.021	0.076

Observations = 70 Prob > chi2 = 0.0001
 Level of significance * = 1%; ** = 5%; *** = 10%.