

INFLUENCE OF FLOOD ON EDUCATION: IMPLICATIONS FOR MITIGATING THE ADVERSE EFFECTS

N. M. A. Jayasinghe

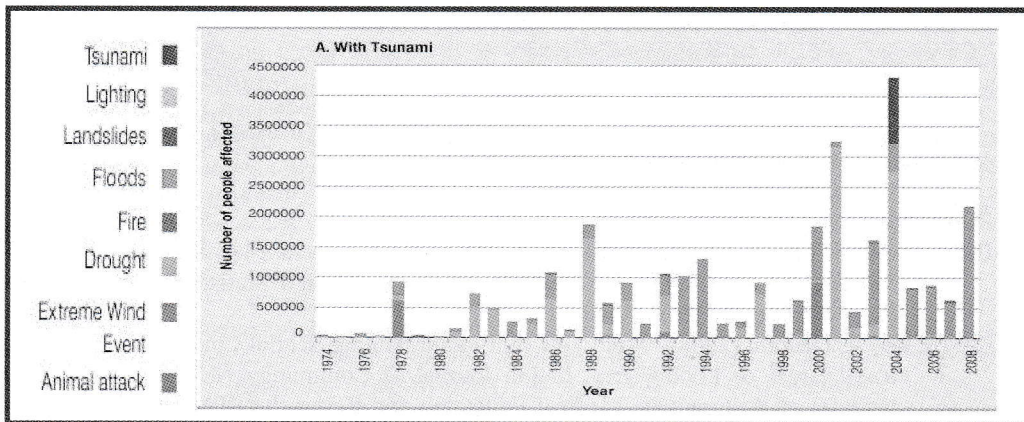
*Department of Economics,
University of Sri Jayewardenepura, Nugegoda, Sri Lanka.*

Keywords: *Education, Flood, Disaster management*

Introduction

Floods is a one of the major natural hazards among all disasters which are serious destruction of the functioning of a community or a society causing wide spread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources. As well as among the natural disasters, flood is one of the main ways of disturbing the economic performance also in Sri Lanka. Records show that in the past 34 years, 28 million people were affected by natural disasters. Occurrences of floods and landslides are higher in May, October, November & December. 92% of the people affected by disaster are either affected by floods (48%) or droughts (44%) without taking into consideration the Tsunami. Extreme wind events are also responsible for affecting 6.5% of the disaster affected people. The share of climatologically disasters is 96%. The time series distribution with respect to people affected by disaster is fluctuating from 0 to 4 million affected people as per the records. Figure 01 below shows that droughts and floods are the major common causes affecting people in almost all years.

Figure 01: Loss of Life Due to Disasters – Annual Time Series Distribution



Source: Disaster management center of Sri Lanka – 2010.

Disasters appear to bring variety damages on education. Especially, its impact on schooling generates detrimental results on poor people developing countries. As UNESCO (2011) reveals 69 million children worldwide are out of school due to war and natural disasters. For example, it reveals that education in Pakistan experiences a drop in enrolment ratio due to floods (UNESCO, 2011). This situation is severe in some districts of Sri Lanka due to their geographical characteristics. Rathnapura is one of such districts where flood affects the

schooling of children in addition to the other types of results it makes on the economy and the society. This becomes serious when the number of days affected by flood in some villages or areas is high. Hence, flood can be considered as one of the main disasters that adversely affect the human capital formation in vulnerable areas. Therefore, this study examines the influence of flood and the strategies for mitigating the adverse effects in the context of Sri Lanka.

Hence, the problem of this study is to identify the determinants of the influence of flood on the human capital formation through schooling in the flood affected areas and to find out mitigating strategies. Aim of the study is to identify the determinants of the influence of flood on the human capital formation through schooling in the flood affected areas and to find out mitigating strategies.

Methodology

Similar to other types of disasters, flood affects human capital formation directly and indirectly through changes in the supply and demand of education and health services. The damage to physical infrastructure can decrease the availability of schooling facility while increasing the cost of schooling and health care. Furthermore, an increase in the cost of education is possible resulting from increased travel and transport costs due to the destruction of educational facilities in the nearby area. An increase in health care expenditure in household budgets may reduce the allocation of expenditure for the education purpose of children. Therefore, the theoretical frame of this study has been formed with human capital theory and the effect of flood on the formation of human capital.

Context of this research focuses on the role of schooling level (stage) human capital in overcoming and recovering from the adverse impact of floods. So we can compare effect of flood on the formal education of children from this study. This is estimate the following regression equation,

$$MAP_{ij} = \alpha + \beta_1(Intensity \times D) + \beta_2 h_{ij}^1 + \beta_3 D_{ij}^1 + \beta_4 D_{ij}^2 + \beta_5 D_{ij}^1 D_{ij}^2 + \varepsilon_{ij}$$

Where; MAP_{ij} is Total Marks of term test earned by each student, $Intensity$ is estimated effect of the floods D is a dummy variable that takes a value of 1 if individual affected floods and zero Otherwise. Then h_{ij}^1 is Height for age Z - score D_{ij}^1 is total absent date of i^{th} student D_{ij}^2 means absent date due to floods of i^{th} student and ε_{ij} is error term.

Indicator our major estimation factor is impact of floods on education they are dependent and independent variables. Likewise, measure of the impact of floods is more than interest an independent variable among all that variables. It measure by variable of *Intensity*. Of course, various factors are affect it such as repair cost in household level, lives lost, disabilities, injuries, mental issues, misplace some people, epidemic diseases. But it can be able only some factors. Therefore, apply to this study for measurement impact of flood, repair cost which house or family assets, maintain cost of disabilities members in the family.

This study is oriented only school children performance in flood prone area. Size of sample is 400 families. Sample is as Students who study at grade 11 in the selected school at Ratnapura districts. For this sample plan uses stratified random sampling technique for sample selection four schools will be selected randomly from Ratnapura district. Then the

sample size will be distributed among four schools based on students share in each. For above analysis, needed secondary data collected from respective schools will be used as performing data for each individual school children. After collecting the secondary data in the sample will be visited and conducted the household questionnaire survey after the pilot survey for collect primary data such education levels of mother and father, height of children, disaster repair cost, depending cost of disability members of the family. Those are collected from the families of respective students.

On children education performance, negatively affect by disaster such as floods. Especially, children who are in such households take good educational performance than other household children. Because, for improve the economic sector of the households that are in floods prone area 'income accelerating programme' must be activated by the government and NGOs. As well as if main income source of the family is faced to the any disaster it is affected badly to children education culture. According to these findings Individual, family group, government and its other authorities and NGOs are progress in various disaster management programme and relative same activities.

Discussion and Conclusion

However, we can be identified this study is one of the research which nor touched by most researchers in order to above clarifications. Therefore, this study is important mainly due to two reasons: first one is this problem has not been touched by the researchers in Sri Lanka to date. Therefore, there is no systematically found evidence on the influence of flood on the human capital formation depending on the socially important determinants. Furthermore, there are no proper mitigating strategies have been found in a systematic way. This study becomes a solution for this problem other is the study contributes to the knowledge through its findings on the determinants of the influence of flood on human capital formation. Identification of mitigating strategies in the context of Sri Lanka is also a contribution to the knowledge.

Reference

- Asrianti, T. (2010). *Villagers empowered to deal with disasters*. [Online]. Jakarta: The Jakarta Post. Available from: www.thejakartapost.com/.../villagers-empowered-deal-with-disasters... (Accessed 28 December 2010)
- Chandrakumara, D. P. S. (2009). *Education, Human Capital and Development* (1st ed.). Nugegoda: Author.
- Disaster Management Center in Sri Lanka. (2009). *Terms of References flood Mitigation*. [Online]. Available from: [www.dmc.gov.lk/.../TOR%20for%20the%20Flood%20study .pdf](http://www.dmc.gov.lk/.../TOR%20for%20the%20Flood%20study.pdf) (Accessed 20 October 2011)
- Education in emergencies: Preparedness, Response, Recovery. (2010). [Online]. Available from: <http://www.unesco.org/new/en/unesco/themes/pcpd/education-in-emergencies/> (Accessed 08 August 2011)
- Noy, I. and Vu, T. B. (2010). The economics of natural disasters in a developing country: The case of Vietnam, *Journal of Asian Economics*, 21 (04): pp. 345-354.
- Shakil, N. (2010). *Poverty, Education and Floods in Pakistan*. [Online]. : The Pakistani spectator. Available from: www.pkhope.com/poverty-education-and-floods-in-pakistan/ - Pakistan (Accessed 26 October 2010)
- Thompson, P. M. and Penning-Rowsell, E.C. (2010). *Socio-Economic Impacts of Floods and Flood Protection: A bangladesh case study*. [Online]. Available from:

www.eird.org/estrategias/pdf/eng/doc13380/doc13380-a.pdf (Accessed 22 September 2011)

Yamauchi, F., Yohannes, Y. and Quisumbing, A. (2009). *Natural Disaster, Self Insurance and Human Capital Investment. Evidence from Bangladesh, Ethiopia and Malawi.* [Online]. : International Food Policy Research Institute. Available from: <http://www.ifpri.org/publication/natural-disasters-self-insurance-and-human-capital-investment> (Accessed 12 August 2011)