# Disaster Management in the Eyes of Victims - A Perception Study on Flood Disaster Management

**G.S. Jayarathna [a], H.K. Amarasinghe [b] and W.D.N. Prasad [c]**

[a] *Information Technology Resource Centre, University of Sri Jayewardenepura, Sri Lanka*
*gothami.usjp@gmail.com*

[b] *Department of Business Economics, University of Sri Jayewardenepura, Sri Lanka*
*harinik@sjp.ac.lk*

[c] *Department of Information Technology, University of Jayewardenepura, Sri Lanka*
*nilanthapra@gmail.com*

## INTRODUCTION AND RESEARCH PROBLEM

Among the natural disasters which human life and its territorial integrity are adversely affected, flood is a common form of disaster that many countries are confronted with worldwide. It causes havoc in affected areas. The costs of floods include both thousands of lives and millions of dollars of physical resources and belongings every year to the global economy. Sri Lanka is also among those countries that are severely and frequently affected by devastating flood conditions. The damages had reportedly increased during recent years. Massive funds are allocated annually for disaster management by the government (Ministry of Disaster Management, 2014). Yet, aggravation of the repercussions of flood disaster is a major issue which hinders the progression of major economic activities of the affected areas. There is little literature support to analyse the failures of disaster management in Sri Lanka (Gamage, 2010).

This research is aimed at determining whether the flood disasters management was a success during the period of 2010 to 2014 as perceived by the victims. In case of a failure, whether such failure can be attributed to the shortcomings of disaster management system or shortcoming of stakeholders of disaster management.

Lives are affected detrimentally by the floods and Disaster Management Centre (DMC) has provided various solutions to mitigate those. Massive funds are allocated annually in this regard by the government. Yet mismanagement of the repercussions of flood is a major issue which hinders the progress of Disaster Management function within the country.

Hence this research, is aimed at determining whether the solutions provided to control flood disaster were successful and in case of a failure, whether such failure can be attributed to the shortcomings of disaster management system or shortcoming of internal stakeholders of disaster management. Identifying the reasons for the failures of disaster management can be of vital importance in formulating infallible policies in the realm of disaster management.

The research objectives were to identify the perception of the victims regarding the disaster management process in the cycle inclusive of Disaster Prevention, Situational Management and Post Disaster Phase. Further it was intended to identify the attributes of disaster management system and disaster management stakeholder of flood disaster management.

## LITERATURE

According to Hewitt, (1997, cited in Mark Pelling et al, 2002) disaster can disrupt or destroy many different sorts of functions and institutions all at once. It may bring society-wide or systemic crisis. Annual flooding is a familiar experience to the people in the Kalu river basin. These floods are stimulated with rain from South West

and second inter monsoons. The river drops its slope at 2250 meters within 36 Kilometers at this stretch. Therefore, flood forecasting is difficult with limited lead time. Main reasons for floods in the river basin include: high rainfall intensity, deforestation in upper catchments, sand and gem mining activities, and unplanned development activities. Kalu river basin experienced huge floods in 2003 and 2008. The assessments were conducted to examine the existing flood preparedness, response capacity and mitigation options (Gamage, 2010). The study highlights the importance of needs assessments. Regular comprehensive, multi stakeholder needs assessments, linked to a coordination framework, can help to ensure that the appropriate assets are provided to military and civilian when they are needed. Further it facilitates the withdrawal of assets that are no longer required or appropriate (Wiharta et al, 2008).

According to United Nations Disaster Relief Coordinator (UNDRCO, 1991 cited in Pelling et al, 2002) different disaster types can occur in quick succession or as secondary or tertiary damages to a primary event. A resent research indicated that knowledge is a powerful resource to help governments, organizations and communities prevent, mitigate, plan for and recover from disasters and crises. Destinations need knowledge in the three stages of disaster management pre disaster prevention and planning, disaster situation management and post disaster phases of resolution and return to normality. (Mistilis & Sheldon, 2005).

A recent Kenyan report revealed that weaknesses of the current disaster management system are inadequate policy, legal and institutional frameworks, inadequate finances, human resources and equipment, inadequate information and data, weak disaster management capabilities within communities and institutions' inadequate integration and coordination and inadequate regional and international linkages (Draft National Policy for Disaster Management in Kenya, 2009).

The accomplishments in flood risk reduction seem at less-fulfilled level with limited capacity and human and physical resources. Weaker coordination with local governments inhibits the sustainability of flood management programmes. Further, disaster risk management should be included in regular planning. Inadequate flood preparedness may lead to loss of life, assets and infrastructure facilities. Lack of communication and coordination among the government and non-governmental partners have worsen the situation. Holistic flood risk management systems should be introduced. Ultimately, comprehensive flood management strategies should be activated with development disciplines and linked with all direct and indirect stakeholders. For this purpose, further research needs to be carried out to identify the real failure points of the disaster management system (Gamage, 2010).

Authorities of DMC - Kurunegala mentioned that, in an emergency situation, decisions are taken by district assistant directors. All the decisions are made in several phases (Disaster prevention, situational management and post disaster phase). Under these phases, response, relief, recovery, reconstruction, prevention, mitigation, preparedness and early warning are usually considered. They further stated that, general practice has been to over emphasise the response and relief processes but not the others. Officials of Maspotha divisional secretary stated that different types of relief are offered for affected people during and after the disaster period. Ready-made food to maintain substance levels is main relief during disaster while housing and material equipment are the most prominent category during post-disaster period. Housing damage claim is given only to the legal residential people. There is no such claim for illegal residential units though.

The Regional Irrigation Office of the district mentioned that one of the major objectives of the department is to control flood. It was further explained that the main cause of floods is illegal building construction. In this discussion they further noted that they did not take the bridge, tap line system, and damp of Thummodara water

management program into consideration. Lack of coordination among the related institutions is the main reason for flood disaster failure of the Kurunegala area. In addition they brought to light the fact that the communication channels are not so well established to work effectively in a disaster condition.

Officers in Disaster Management Coordination Unit in Kurunegala stated though there are sub systems of the disaster management system, the effectiveness of those systems are questionable. Neither the decisions are taken properly nor they are channelled to the affected groups, he further added. This was due to two major causes; 1. Flooded areas being unable to contact for circulation of required material support and; 2. The most affected areas get the priority in support systems as well.

Hence this study attempts to fill the research gap to identify perception held by victims regarding the support system delivered by the Disaster Management Center.

## METHODOLOGY

This empirical study is focused to discuss the perception held by victims of floods regarding the disaster management system. The study was designed as an exploratory research with quantitative data. Population refers to people who are affected by flood management wing activities of Disaster Management Centre and the internal stakeholders of Disaster Management process. This research collected data using a structured questionnaire. The questionnaire was used to collected data related to the perception held by flood victims on disaster management system. Using convenience sampling method a sample of 400 villagers of *Galagedara, Rekkawa and Wilgamdematawa* Grama Niladhari divisions who are frequently affected by floods in *Maspotha* divisional secretariat was selected to gather information regarding internal stakeholders failures. The measurement scale for the questionnaire was the 5-point Likert Scale

from strong positive to strong negative perception. Perception on the disaster management system were measured using six independent factors measured using stakeholders' knowledge, availability of information and availability of required resources, the level of comprehension of the system, effectiveness of the system and the coordination of the system.

## ANALYSIS AND DISCUSSION

Majority of the respondents were dissatisfied with the provided solutions provided by the DMC. They describe that the decisions taken by disaster management system poorly suit and work for the affected people. This decision can be categorized as short term decisions and long term decisions. 60% people who are affected by floods are not satisfied by the short term solution taken by the disaster management system while 90% people who are affected by floods are not satisfied by the long term solution taken by the disaster management system. There is a strong positive perception regarding the stakeholders' knowledge and availability of information. But the perception held by victims on all the other factors are not strong positive ones.

Further the analysis brought out the fact that the perception held by victims regarding availability of required resources, comprehensiveness of the disaster management system, the effectiveness of the disaster management system and the level of coordination of the disaster management system are at the neutral level. The overall disaster management system is perceived at neutral level.

## CONCLUSIONS AND RECOMMENDATIONS

There is strong positive perception regarding the stakeholders 'knowledge and availability of information on disaster management

system. The main consideration need to be aimed at disaster management system comprehensiveness, effectiveness and coordination. The perception on knowledge and information availability should be given priority in future projects in to improve disaster management processes. The stakeholders' facilities need to be rationalized. The facilities should precisely include new technological methods along with the required supplies, proper coordination system, organizational cohesiveness and strong leadership.

Flood disaster cannot be eliminated. Hence the most essential element of it is to confront it with knowledge, information, facilities and good disaster management system by coordinating the relevant parties. It is a must to have preventive actions specially attributed to recent developmental projects. The risk gradually changes therefore risk information should be updated regularly and timely. Alternative economic activities should be introduced to people who rely upon flood-risk livelihoods.

## REFERENCES

Draft National Policy for Disaster Management in Kenya 2009, Ministry of state for Special Programmes office of the president, Kenya.

Kurita, T, Nakamura, A, Kodama, M & Colombage, S R N 2006 Tsunami public awareness and the disaster management system of Sri Lanka, *Disaster Prevention and Management: An International Journal,* vol:15, no:01, pp: 92-110.

Ministry of Disaster Management 2015, http://www.disastermin.gov.lk/, http://www.disastermin.gov.lk/web/images/pdf/Performance_Report/ministry%20english.pdf; retrieved on 15.09.2015

Mistilis, N & Sheldon, P J 2005, *Knowledge Management for Tourism Crises and Disaster,* University of West Indies Kingston, Jamaica.

Pelling, M, Ozerdem, A & Barakt, S 2002, The macro-economic impact of disaster, *Progress in Development Studies*, vol:2, no: 4, pp:283-305.

Wiharta, S, Ahmad, H, Haine, J Y, Lofgren & Randall, T 2008, *The Effectiveness of Foreign Military Assets in Natural Disaster Response,* Thailand.

# APPENDICES

**Table 1: Coefficient of Correlation between Knowledge and Stakeholders' Failure**

| | | | Knowledge | Stakeholders' failure |
|---|---|---|---|---|
| Spearman's rho | Knowledge | Correlation Coefficient | 1.000 | .915** |
| | | Sig. (2-tailed) | . | .000 |
| | | N | 400 | 400 |
| | Stakeholders' failure | Correlation Coefficient | .915** | 1.000 |
| | | Sig. (2-tailed) | .000 | . |
| | | N | 400 | 400 |

***. Correlation is significant at the 0.01 level (2-tailed).*

**Table 2: Coefficient of Correlation between Information and Stakeholders' Failure**

| | | | Information | Stakeholders' failure |
|---|---|---|---|---|
| Spearman's rho | Information | Correlation Coefficient | 1.000 | .459** |
| | | Sig. (2-tailed) | . | .000 |
| | | N | 400 | 400 |
| | Stakeholders' failure | Correlation Coefficient | .459** | 1.000 |
| | | Sig. (2-tailed) | .000 | . |
| | | N | 400 | 400 |

***. Correlation is significant at the 0.01 level (2-tailed).*

**Table 3: Coefficient of Correlation between Facilities and Stakeholders' Failure**

| | | | Facilities | Stakeholders' failure. |
|---|---|---|---|---|
| Spearman's rho | Facilities | Correlation Coefficient | 1.000 | .209* |
| | | Sig. (2-tailed) | . | .037 |
| | | N | 400 | 400 |
| | Stakeholders' failure. | Correlation Coefficient | .209* | 1.000 |
| | | Sig. (2-tailed) | .037 | . |
| | | N | 400 | 400 |

**. Correlation is significant at the 0.05 level (2tailed).*

**Table 4: Coefficient of Correlation between Disaster Management Failure and Stakeholders' Failure**

| | | | Stakeholders | Disaster management failure |
|---|---|---|---|---|
| Spearman's rho | Stakeholders | Correlation Coefficient | 1.000 | .160 |
| | | Sig. (2-tailed) | . | .111 |
| | | N | 400 | 400 |
| | Disaster management failure | Correlation Coefficient | .160 | 1.000 |
| | | Sig. (2-tailed) | .111 | . |
| | | N | 400 | 400 |

**Table 5: Coefficient of Correlation between Disaster Management Failure and Stakeholders' Failure**

| | | | Disaster management system | Disaster management failure |
|---|---|---|---|---|
| Spearman's rho | Disaster management system | Correlation Coefficient | 1.000 | .744** |
| | | Sig. (2-tailed) | . | .000 |
| | | N | 400 | 400 |
| | Disaster management failure | Correlation Coefficient | .744** | 1.000 |
| | | Sig. (2-tailed) | .000 | . |
| | | N | 400 | 400 |

***. Correlation is significant at the 0.01 level (2-tailed).*