

Increasing trend of floods and landslides disasters in Sri Lanka: Socio-Economic Perspective

W.M.S.B. Wanninayake* and P.S.K. Rajapakshe

Department of Environmental Management

Rajarata University of Sri Lanka, Mihintale, Sri Lanka.

**Corresponding author: sisirawanninayake@gmail.com*

Introduction

It is well evident that extreme events create huge social and economic impacts around the globe. Due to the floods and landslides which occurred in May 2017, nearly two hundred and fifty people in eight districts of the island were deprived of their lives and nearly 80 people have disappeared meanwhile 2,093 houses were completely damaged and 11,056 houses were partially damaged. Further, approximately 0.7 million people were affected by those incidents Ratnapura, Kalutara, Matara, Galle and Hambantota districts were dominating as the highly affected districts (Disaster Management Centre, 2017). It had also been recorded in 2016 that 24 districts were affected by the floods and landslides, affecting adversely on approximately 493,319 people of 124,398 families while 93 people died, 33 were injured and 117 were missing (Ministry of Disaster Management, 2016).

When the number of floods and landslides occurred in last decade (2006 – 2016) were considered and associated impacts on the communities, disaster management has become a big challenge to Sri Lanka thus public policy should have to be developed with suitable enhancements to face such hazards. With that background, this study attempted to review the trend of floods and landslides events occurred in recent past and to understand the magnitude and severity of impacts to human being.

Methodology

Secondary data were used to identify the floods and landslides events from 2006 to 2016. The required data were collected from Disaster Management Centre (DMC) and the Ministry of Disaster Management (MDM) in Sri Lanka. Data analysis was made using descriptive method with simple statistical tools.

Results and discussion

The landslide occurred at Aranayaka area in Kegalle District in May 2016 and the landslide occurred at Koslanda area in Badulla District in October 2014 were two major natural events. In addition, heavy rains in May 2017 resulted in huge flooding in the Colombo and Gampaha Districts following the overflowing of the

Kelani River and its associated water streams. In the aftermath of Tsunami incident in 2004, many floods have been reported in the North, East, North Central and North-Western Provinces of the island. All these events have created series of socio-economic and environmental impacts at different levels across the country.

Table 1 Flood impacts in Sri Lanka, 2006 – 2016

Year	Number of affected people	Number of deaths	Number of injured people	Number of missing people	Number of completely damaged houses	Number of partially damaged houses
2006	605903	34	22	1	1334	5412
2007	499881	16	12	2	1635	9690
2008	1262506	44	11	3	1305	6323
2009	453429	3	2	0	140	1534
2010	1163932	24	10	1	1180	7199
2011	724349	40	49	1	6390	14268
2012	158411	25	13	0	942	6698
2013	450343	2	0	0	84	281
2014	1174073	35	32	3	4877	15220
2015	237331	15	18	1	419	5046
2016	444505	26	20	0	379	2518
Total	7174663	264	189	12	18685	74189

Sources: - <http://www.desinventar.lk>

According to Table 1, the total number of affected people and deaths during the study period was 7174663 and 264 respectively. Whereas, the highest number of affected people and death were recorded in 2008. Though similar incidents were reported in 2010 and 2014, the number of affected people have been reported is varied. During the study period, 18685 houses have been reported completely damaged while 74189 houses have been reported partially damaged during floods.

As shown in Table 2, the data revealed that 112231 people have been affected and 206 people have been died by the effects of landslide from 2006 to 2016. The highest number of 28270 people have been affected and 67 people have been died in 2016 while the next highest damaged landslides have been reported in 2007 and 2006 respectively.

Over the study period of 2006-2016, 470 lives have been lost due to floods and landslides and it was also recorded that the number of disappeared persons was 163. Also, 20,013 houses have been completely damaged and 80,856 houses have been partially damaged. Although there are no recorded data, excepts to the mentioned damages in above two tables, Public and Private sector buildings, offices, commercial enterprises, their furniture, business equipment and

machinery have been damaged or destroyed. In addition to that, the infrastructures like roads, bridges, culverts, water supply systems, telecommunication systems have been badly affected and the damage to agricultural and industrial sector is not negligible. All these damages have impacted from micro household to the national economy in Sri Lanka.

Table 2 Landslide impacts in Sri Lanka, 2006 - 2016

Year	Number of affected people	Number of deaths	Number of injured people	Number of missing people	Number of completely damaged houses	Number of partially damaged houses
2006	26889	27	57	0	265	2018
2007	27537	34	28	3	495	1822
2008	3273	16	17	0	48	248
2009	1376	11	12	0	26	91
2010	1686	2	9	0	16	82
2011	2564	10	11	0	134	124
2012	5154	0	3	0	5	60
2013	824	2	3	0	12	149
2014	13848	30	5	31	72	147
2015	810	7	1	0	11	150
2016	28270	67	9	117	244	1776
Total	112231	206	155	151	1328	6667

Sources: - <http://www.desinventar.lk>

Conclusion and recommendations

In all the cases of disasters, governments have provided foods, dry rations and relief services to the affected communities in response stages. Nevertheless, the governments have also compensated for damaged houses, industries, livelihoods and also the governments have reconstructed affected infrastructures. In some cases, new housing schemes have been built in safer places and the affected people have been resettled.

According to the Post Disaster Need Assessment (PDNA) report prepared after the floods and landslides events in 2016, by the Ministry of Disaster Management with several other organizations, it was estimated that the total effect of the disaster was around LKR 105 billion, which comprises damages worth LKR 87 billion (83%) and losses worth LKR 18 billion (17%). According to the PDNA, total recovery needs for the floods and landslide impacts were LKR 139 billion. Out of this amount LK R6.7 billion (4.8%) was assessed necessary to address short-term needs, LKR 35.3 billion (25.4%) to address medium-term needs and LKR 97.0 (69.8%) to address long-term needs. Furthermore, it was found that the damage occurred Housing, Land and Settlements sector, accounting for over 53.5

percent of the total effect. The Industry and Commerce sector contributes almost 30 percent, while all other sectors are shown below 10 percent.

Disaster Risk Management Financing Analysis of budget estimates from 2013 to 2016 reveals that the total allocation for direct interventions related to Disaster Management activities by agencies under the purview of the Ministry of Disaster Management, varies from 0.05 percent to 0.11 percent against the total annual budget of the government. The World Bank stated in 2015 that “annual expected sector-specific loss from natural disasters represents 0.50 percent of Sri Lanka’s GDP and is equivalent to 3 percent of total government expenditure” (Ministry of Disaster Management, 2016). This reflects the need for an increased allocation for disaster risk reduction of the country in the future.

The governments of Sri Lanka had used considerable amount of national income to overcome the damages caused by disasters in the past decade. However, the prevailing disaster management mechanism of the country should be advanced giving high priority to the phases of disaster prevention, mitigation and preparedness in pre-disaster management stage (Disaster Risk Management). Disaster risk reduction projects should be identified based on proper disaster risk assessments and the necessary projects should be implemented where necessary. The post disaster damage assessments should be done for every disaster events to identify the real damage for the sectors of economy, social and environment.

Keywords: Disaster management, disaster management mechanism, floods, landslides.

References

- Disaster Management Centre. (2014/2016/2017). Situation reports, Disaster Management Centre, Colombo, Sri Lanka.
- Disaster Management Centre. (2017). Rapid impact assessment report, Disaster Management Centre, Colombo, Sri Lanka.
- Disaster Management Centre. (2012). Hazard Profile of Sri Lanka, Disaster Management Centre, Colombo, Sri Lanka.
- Ministry of Disaster Management and Ministry of National Policies and Economic Affairs of Sri Lanka. (2016). Sri Lanka post disaster need assessment, floods and landslide may 2016, Ministry of Disaster Management, Colombo, Sri Lanka
- www.desinventar.lk (Accessed on 02/10/2017)