



PREDICTION OF DENGUE DISASTER RISK MANAGEMENT IN SRI LANKA; SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION

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1. INTRODUCTION

The SENDAI framework for disaster risk reduction 2015-2030 was agreed at the 3rd conference of United Nations world, which was held in Sendai, Japan, on March 18, 2015 with the mandate of the substantial reduction of disaster risk and fatalities in livings, healthiness and the economic, physical, sociological and habitat resources of individuals, traders, societies and nations. This is one of the instruments to build the resilience of countries and societies to tragedies. It is globally targeted for substantial reduction of number of affected people and mortalities, and economic loss which are directly caused by the disasters. The economic loss will depend on the global gross domestic production (GDP), destruction to critical basic structures and interruption of elementary facilities; health and education. As well as, it aims to substantial improvement of domestic disaster risk reduction strategies, obtaining international supports to match the countrywide plans adequately, the availability and accessing of multi-hazard timely alarming methods, informing the disaster risk information and assessing the people (UNDRR, 2015).

Mosquito-borne diseases are the utmost significant worldwide health threats (Webb, 2008) and publics are more vulnerable to get infection of dengue fever (Guillena et al., 2010). Dengue in Sri Lanka and globally is considered as one of the seasonal disasters and cause risk and damage frequently. Therefore, the following certain control strategies are followed to control the risk of with the collaboration of the public and private sector on a prompt and long-term basis in Sri Lanka. This can be achieved by emitting possible and prevalent causes of dengue fever by reducing the usage of water holding artificial containers, water storage tanks, used tires, and even coconut shells, etc. on all sides of human habitats and by using insect nets, household insecticide aerosol products, and mosquito coils, closed open house structures, extended apparels and insecticide space spraying. Even though, when implementing the strategies and schemes proposed by SENDAI framework for disaster risk reduction may support more improved and advanced in dengue prevention and making resilience of disaster in Sri Lanka.

2. OUTBREAKING OF DENGUE IN ISLAND

Out breaking of dengue fever is severe on an island, because it dominantly contributes to the development and progress of the dengue vector. Some several prominent factors and reasons influence the outbreak of dengue fever in Sri Lanka. Of which, the containers with extended stored water for a period, on set of rainy spell and favorable humidity and temperature may be the optimum conditions for the breeding of Aedes mosquitoes; a vector of dengue fever. Emerged and reemerged crisis may be cycled by the growing population, movements of individuals, urbanization, and inadequate economic status and human assets (Gubler, 1998; Gubler, 2002; Guzmán and Kouri, 2004). Many factors are influencing in the hazards of dengue out breaking, of which lethargy, vulnerability of societies, substructures, way of living,



Darwinism of viruses, and unwise control measure are noticeable. Misguidance and lack of awareness regarding dengue control and risk management are some of the predominant causative factors to create the disaster.

3. EMERGENCIES PREPAREDNESS, RESPONSE OF DENGUE IN SRI LANKA

The suspicious of dengue cases were reported by Epidemiology Unit, 31162 for 2020 and 15848 for 2021. Hence, the highest number of dengue cases was confirmed nationally in 2017 (Epidemiology unit, 2021) due to the occurrence of a circumstance of evil huge rain falls and consequence of extended flooding and at that time, 15 out of 25 districts with almost 600,000 individuals were severely affected in Sri Lanka, where almost 600,000 people had been affected (IAMAT, 2017). 80,732 dengue fever cases with 215 deaths were accounted from the period of first of January to seventh of July in 2017 (Epidemiology unit, 2021). This was accounted as number of victims was increased by 4.3 fold in the period of 2010 - 2016. Based on the surveillance site for the past seven years, the predictable crowning months of May to July may be the coincidence with the South-Western monsoon which is usually starts at late April. The higher number of cases were confirmed in the cities due to the lethargy of public to clean the rain water stored trashes, standing water tanks and ponds and other probable breeding localities for larvae (WHO, 2018).

4. CURRENT PLANS AND DEALINGS OF DENGUE CONTROL AND MANAGEMENT IN SRI LANKA

Environmental management, which is implemented to alter the environment to minimize the vector proliferation and human interface with the vectors. It can be accomplished by screening the provision of habitats such for non-essential containers for the egg, larvae and pupae stages in the life cycle of mosquito. World Health Organization implements the environment management techniques in Sri Lanka in the ways of modification of environment, manipulation in human living structures and or changing the behavior of public. Community-based control programs are established with the target of educating the community about the actions for the termination of mosquito breeding places and early detection of dengue fever. Biological control of vectors is one of the sustainable strategies in the management of dengue disaster risk and city resilience. Predators, parasites and/or pathogens are used in the methods of biological vector control, which is mostly effective to control the larvae with the combined environmental management techniques. Chemical control methods are one of the disease disaster-resilient strategies adopted in Sri Lanka, particularly insecticides, larvicides and adulticides sprayers. Chemical larviciding is considered complementary to environmental management. Modifications and conservation of structures of cities and essential services measures are adopted in Sri Lanka. In this regard, water supply, storage and drainage systems, mosquito proofing nets for water tanks, solid waste management, street cleansing and modification or reduction of potential larval habitats are considered while planning and construction of building structures and infrastructures.

5. PERSISTENT CONTROL AND PREVENTION STRATEGY PROPOSED AND REALISTIC IN SRI LANKA

Controlling and preventing strategy for the dengue epidemic prepared by World Health Organization, which is implemented in Sri Lanka, to control dengue by 50% within four weeks (Health Minister of Sri Lanka, 2017). Control and prevention strategy is comprised of community participation, health education, model development, and Intersectoral coordination. Aggregation of these strategies and approaches support to diminish of the risk of dengue

incidence in Sri Lanka. Further, the national action plan is proposed for the avoidance and resilience of dengue in Sri Lanka from 2019-2023 (National Dengue Control Unit, 2019). There are two main goals, which will be implemented to reduce the dengue incidences and case fatality rate by the year 2023 through the central and provincial bodies. Of which, the National Dengue Control Unit, and local Medical Officer of Health Unit (MOH) defensive health amenities are expected the more contribution for the effective achievement. However, certain and limited tasks are distributed to the Ministry of Provincial and Local Government, hence who are the ideal recognized body to the rapid implementation of the action of emergency law in this regard.

6. ADOPTED STRATEGIES IN SRI LANKA INCLUDED IN SENDAI FRAME WORK FOR DISASTER RISK REDUCTION

Collection, analysis and evaluation of dengue-related information, loss and affected lives and livelihoods, vulnerable regions and health-related issues are predominantly carried out by the Sri Lankan government including Health Ministry and World Health Organization body of Sri Lanka. Sri Lanka government, public based societies and private administrations contribute the health education to all citizens regarding dengue fever incidence, to aggregate and accumulate the understanding of dengue and to know the weight of disaster incidence of dengue in regions of the island by the way of conveying histories, lessons and skills obtained, worthy applications, workshops and training and edification on dengue risk reduction with the help of professionals in the relevant field.

7. PROPOSED SENDAI FRAME WORK FOR DISASTER MANAGEMENT APPLICABLE TO SRI LANKA

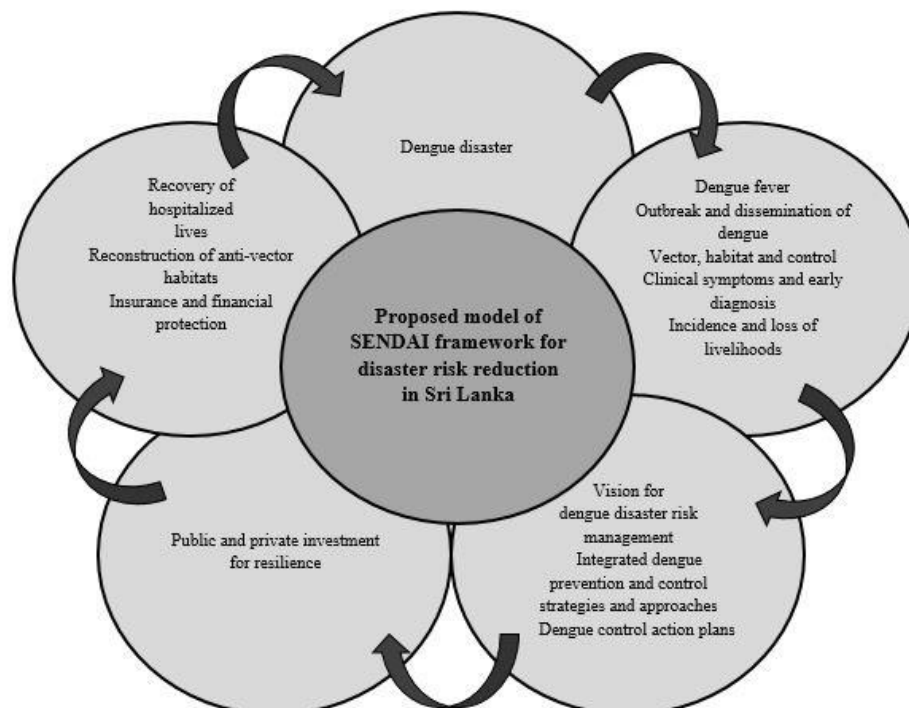


Figure 1. Frame work for action plan to implement the SENDAI frame work for disaster management in Sri Lanka



Strengthening of disaster risk governance is a very important requirement to regulate the disaster risk in Sri Lanka. The national, regional and global levels of disaster risk consultant will be the great importance for successful management of hazards. The contribution of relevant sectors and stakeholders will be mandatory with the concise vision and mission in their scope and focus. This governing body is mainly focusing the resilience of public. Therefore, necessary and fosters collaboration and partnership across mechanisms and institutions for the implementation of tools related to disaster risk reduction and sustainable development.

8. CONCLUSIONS

The severest impact of dengue disaster in Sri Lanka, in terms of loss of livelihoods reflected poor dengue risk management in the country. It is thus time to improve the disease risk management of Sri Lanka by shifting from a passive to a progressive paradigm. This article has proposed a context to implement the SENDAI framework for disaster risk reduction in Sri Lanka to overcome the past issues and predict the coming seasons of dengue and make quick resilience of island from dengue disaster.

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