COUNTRY REPORT

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1. GENERAL INFORMATION OF SRI LANKA

Sri Lanka is one of the largest islands in the Indian Ocean and lies approximately 20 miles to the South East of the Southern-most tip of India. The narrow Palk Strait divides Sri Lanka form India. The capital of the Sri Lanka is Colombo.

Sri Lanka flag has two vertical stripes of equal size in saffron and green colors, to the left. To the right of the stripes is a gold lion passant in crimson background, with a sword in its right fore paw. Ringing the background is a yellow border, with four golden *BO* leaves in each corner (Figure 1-1). The flag of Sri Lanka is also known as Lion Flag. The lion symbol was used by the Lankan rulers from the time of King Vijaya. Sri Lanka flag keep the country united and integrates majority with the minority.

Figure 1-1: National Flag of Sri Llanka

National Anthem is "Sri Lanka Matha" composed by late Mr. Ananda Samarakoon. The Blue Water Lily (Nymphaea stellata) is the National Flower. Following Table 1-1 gives more general information of Sri Lanka

Table 1-1: General Information of Sri Lanka

Country name: **conventional long form:** **conventional short form:** **former:**	 **Democratic Socialist Republic of Sri Lanka** Sri Lanka Serendib, Ceylon
Government type	Republic
Capital	Colombo; note - Sri Jayewardenepura Kotte is the Administrative capital
Administrative divisions	8 provinces; Central, North Central, North Eastern, North Western, Sabaragamuwa, Southern, Uva, Western; note - North Eastern province may have been divided in two - Northern and Eastern
Independence:	4 February 1948 (from UK)
National holiday:	Independence Day, 4 February (1948)
Constitution:	adopted 16 August 1978
Legal system:	a highly complex mixture of English common law, Roman-Dutch, Muslim, Sinhalese, and customary law; has not accepted compulsory ICJ jurisdiction
Suffrage:	18 years of age; universal
Executive branch: **Head of government:**	President Mahinda Rajapaksha (since 22 December 2005); Ratnasiri Wickramasingha(since 05 Jan. 2006) is the prime minister; in Sri Lanka the president is considered to be both the chief of state and the head of the government, this is in contrast to the more common practice of dividing the roles between the president and the prime minister when both offices exist
Legislative branch:	unicameral Parliament (225 seats; members elected by popular vote on the basis of a modified proportional representation system by district to serve six-year terms)
Judicial branch:	Supreme Court; Court of Appeals; judges for both courts are appointed by the president
International organization participation:	ADRC, JICA, AsDB, C, CCC, CP, ESCAP, FAO, G-24, G-77, IAEA, IBRD, ICAO, ICC, ICFTU, ICRM, IDA, IFAD, IFC, IFRCS, IHO, ILO, IMF, IMO, Inmarsat, Intelsat, Interpol, IOC, IOM, ISO, ITU, NAM, OAS (observer), OPCW, PCA, SAARC, UN, UNCTAD, UNESCO, UNIDO, UNTAET, UNU, UPU, WCL, WFTU, WHO, WIPO, WMO, WToO, WTrO
Flag description:	yellow with two panels; the smaller hoist-side panel has two equal vertical bands of green (hoist side) and orange; the other panel is a large dark red rectangle with a yellow lion holding a sword, and there is a yellow bo leaf in each corner; the yellow field appears as a border that goes around the entire flag and extends between the two panels
Population Growth	1.3%
GNP at market price	Rs.1,737bn US$ 18 bn

GNP per capita	Rs.90,244 US$ 935
Languages:	Sinhala, Tamil, English
Life expectancy:	72.5 years
Infant mortality:	17 deaths/1,000 live births
Rural population:	78.9% of total
Urban population:	21.1% of total
Under age 15:	25% of total
Over age 65:	6.9% of total
Labour Force Participation Rate (percent)	48.6%
Unemployment Rate (percent)	8.3%

Geographical Information:

Sri Lanka is situated in Indian sub-continent in between Latitudes $5^0.55'$-$9^0.55$ N and Longitudes $79^0.42'$-$81^0.52'$ E. Total Land area of Sri Lanka is 65,525 sq km. It has a maximum length of 445 km (Devundara to Point Peduru) and maximum breadth is 224 km (Colombo - Sangamankanda)(Figure 1-1). The length of the Coastline is 1,340 km. The central and bit of southern Sri Lanka is hilly. This region is surrounded by low flat plains and extending to the sea. The highest Point is Mount Pidurutalagala, which is 8,281 feet in height (2,524 m). Another significant mountain is Sripada or Adam's Peak, also more than 2,000 meters tall, which is considered as holiest mountain in Sri Lanka by the Buddhists.

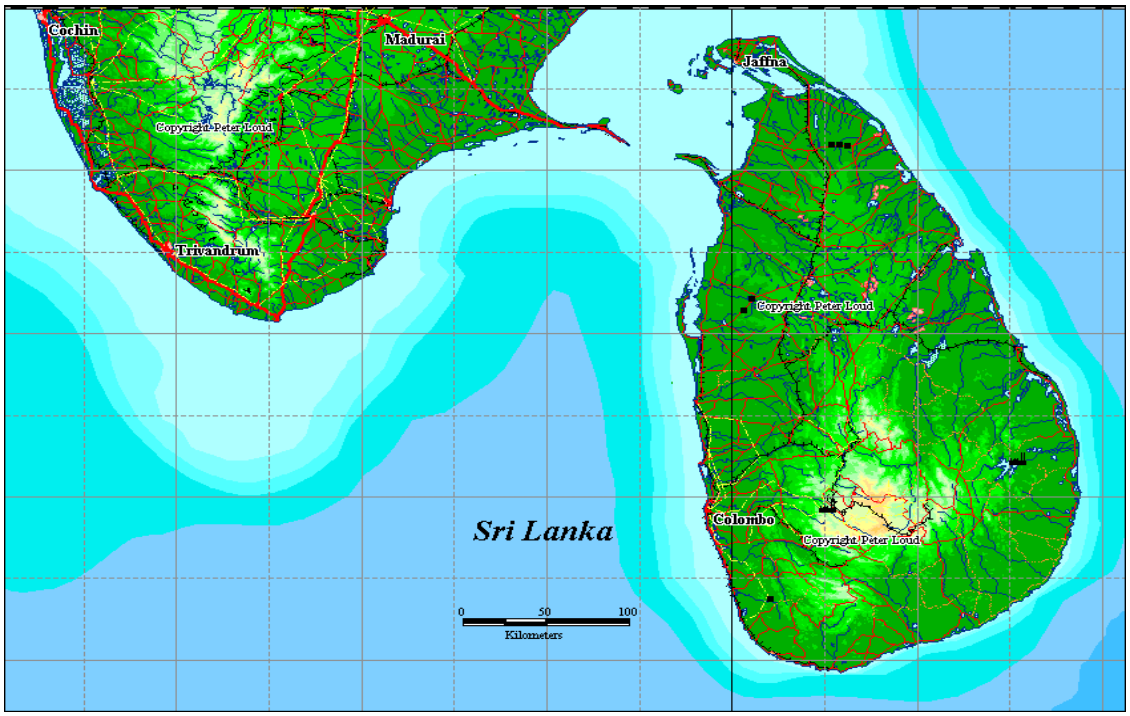

Figure 1-1: Geographical Existence of Sri Lanka

Climate of Sri Lanka:

Sri Lanka is generally a warm country having tropical climatic condition. It has warm climate, moderated by ocean winds and considerable moisture. Sri Lanka doesn't have significant changes with climatologically seasons. A special feature is that the hot and humid lowlands and the salubrious hill country. Both type of climates are separated by a few hours motoring.

Average mean temperature along the coast is 26.7^0 C (80 F) and 19.7^0 C (66.50 F) in the hill country. In Colombo, the commercial capital, situated on the west coast, the temperature varies from 26.4 C (79.5 F) to 27.8 C (82.12 F). Relative Humidity varies from 70% during the day to 90% at night. In the lowlands the climate is typically tropical with an average temperature of 27ºC in Colombo. In the higher elevations it can be quite cool with temperatures may drop down upto 16ºC at an altitude of nearly 2,000 meters. May, June and July are the hottest months of the year. Bright, sunny warm days are the rule and are common even during the height of the monsoon - climatically Sri Lanka has no off season. The main weather pattern is governed by two major monsoons known as North-East and South-West monsoons. The south west monsoon brings rain mainly from May to July, which affects western, southern and western slopes of central highlands of the island, while eastern slopes of central highlands and the Northern and Eastern regions are severely affected by North East monsoon. In addition, during the inter monsoon seasons of the year, the entire country receives heavy rain.

In ancient and medieval times merchants and sailors of other nations used these winds to sail to the coasts of Sri Lanka. Thus these winds have played a major role in the evolution of civilization in the country. Lifestyle of Sri Lankans is directly dependable on the rainfall caused by the monsoons.

Climate Zones of Sri Lanka

On the basis of rainfall, the country can be divided into two zones that are Wet Zone and Dry Zone. Wet Zone comprises of the mountains and the southwestern part of the country, receiving plenty of rainfall (annual average of 250 centimeters). Dry zone includes most of the southeast, east, and northern parts of the country, where annual rainfall is between 1200 and 1900 mm.

Statistical Information:

The population of Sri Lanka is 21,324,791. (Census data as at July 2009). Population density is roughly 309 people per sq km. Life expectancy at birth is 74 years for female and 64 years for male. Literacy rate is 98.8%. About three

forth of the population is Sinhalese. Other ethnic groups include Tamils and Muslims. There are two major local languages such as Sinhala and Tamil. English is also widely used and it is one of the official languages in Sri Lanka. There are many Religions in Sri Lanka. As percentages, Buddhism- 70 %, Hinduism- 16 %, Islam-7 %, Christianity-7 %. Sri Lankan Currency is called Sri Lanka Rupee.

Economy of Sri Lanka

Sri Lanka's traditional economy has been based on agriculture with rice being the main food crop. Spices, tea, rubber and coconuts were especially encouraged by the British under the colonial system and are still an important part of the economy. Apart from these there were more exotic products like precious stones and even elephants and peacocks which were exported. However in recent years there has been a thrust on developing new areas. One of these has been textile and garment manufacturing which has overtaken tea as an export earner.

2. NATURAL HAZARDS IN SRI LANKA

2-1. Natural Hazards Likely to Affect the Country (features, tendency)

Every year, different types of natural disasters are affected Sri Lanka. Following are the outline of such disasters.

I. Floods	II. Landslides, slope failures and rock falls
III. Cyclones	IV. Drought
V. Coastal erosion	VI. Subsidence and erosion
VII. Ground settlements	VIII. Sudden Fire/Forest fire
IX. Tsunami	X. Minor Earth quacks
X1. Lightning Strikes	X11. Sea surges
X111. Elephant Attacks	X1V. Tornadoes
XV. High Winds	XV1. Rainstorms

Except Tsunami, Earthquakes and Elephant attacks, all the other Natural Disasters in Sri Lanka are Hydro Meteorological Disasters. Among them, Landslides, droughts and floods are the most dominant problems in Sri Lanka. Following Table (2-2) describes the natural disasters and the damages caused.

2.2. Recent Major Disasters (basic data of disasters, damage situation, response & recovery info)

YEAR	TYPE OF DISASTER	NO. OF DEATHS	DAMAGED HOUSES	NO. OF AFFECTED FAMILIES	EXPENDITURE FOR DISASTERS in LKR
1993	Flood	6	42 148	219,874	30,001,904
	Landslides	29	320	870	4,419,500
	Sea Erosion	1		160	497,000
	Cyclone (High Gale)			450	700,000
	Drought			16,383	8,108,200
	Total	36	42 468	237,737	43,726,604
1994	Flood	8	52 927	353,409	37,401,904
	Landslides	10		284	628,520
	Sea Erosion			384	880,183
	Cyclone (High Gale)			456	627,500
	Drought			2,800	618,700
	Total	18	52 927	357,333	40,156,807
1995	Flood	1	10 984	89,257	50,510,660
	Landslides		418	484	2,970,686
	Sea Erosion		40	517	366,800
	Cyclone (High Gale)		265	1,403	958,807
	Drought			260	481,300
	Total	1	11 707	91,921	55,288,253
1996	Flood	3	971	8,238	12,224,897
	Landslides	10	12	75	52,400
	Sea Erosion		8 360	8,360	14,870,185
	Cyclone (High Gale)			199,535	424,855,387

	Drought				
	Total	13	9 343	216,208	452,002,869
1997	Flood	4	3 185	29,948	16,746,908
	Landslides	15	46	626	1,576,942
	Sea Erosion		263	154	363,980
	Cyclone (High Gale)		114	650	2,537,735
	Drought			434,775	296,863,722
	Total	19	3 608	466,153	318,089,287
1998	Flood	2	6 161	34,746	31,236,159
	Landslides	3	57	50	410,953
	Sea Erosion		196	188	428,080
	Cyclone (High Gale)		1 523	3,018	3,990,025
	Drought				70,600,562
	Total	5	7 937	38,002	106,665,779
1999	Flood	6	3 665	94,352	43,862,752
	Landslides	3	28	404	345,000
	Sea Erosion		61	303	254,000
	Cyclone (High Gale)		49	168	551,130
	Drought			72,188	100,981,957
	Total	9	3 803	167,416	145,994,839

2000	Flood Landslides Sea Erosion Cyclone (High Gale) Drought	15	9 692 12 39 77 102	108,674 110 2,030 146,193 675	32,721,802 638,469 293,476 31,415,351 329,900
	Total	15	86 845	257,682	65,398,998
2001	Flood Landslides Sea Erosion Cyclone (High Gale) Drought	1 5	1 008 2 143 10 292	2,631 2 143 84,771 370,541	10,225,385 8,410 144,036 114,421,335 381,415,000
	Total	6	11 445	458,008	506,214,166
2002	Landslides & Floods	02	5,112	20,201	28,389,474
2003	Landslides & Floods	254	37,227	140,310	1,740,153,392
2004	Tsunami	31723	62400	257625	

**Source: Dept. of Social Services, Sri Lanka*

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Natural Disasters caused immense damage to the society. Man-made disasters have claimed more than 64,000 lives and it affects to the economy, society and environment. In the last 10 year period, 35 major Disaster Events were reported and total economic loss was computed as US$ 6.16 Billion. Out of the different type of disasters, floods and landslides have caused a severe damage to the country economy.

Flooding & Landslides in 2003 affected 137,221 families (720,500 persons) , claimed 252 lives and also 37,227 houses were damaged. Tsunami in 2004 affected 260,967 families (1.3 million), claimed 31,225 persons, the missing people were around 41,000 and 108,467 houses were damaged. Total estimated economic loss for tsunami was around us$ 3.6 billion.

Currently, 22% of the population (total population is 21 million) live in urban areas but it has been predicted that, by the year 2015, it will increase by 50%. The rural population largely depends on agriculture-based livelihood where as the urban population mainly depends on secondary and tertiary sector jobs. Due to the change of population density, natural disasters affect the community in different aspects. Here in this case, it is important to address the problems faced by urban community due to the following reasons,

- Number of people affected will be high due to concentration of population.
- Damages to infrastructure are higher than that in rural areas.
- Difficulty in allocation of alternative land since in urban areas there is always a land scarcity.
- Disaster in an urban area will cause more direct and indirect losses (lost of property values, employment, access to work place, harvest, food storage, etc.)
- Disasters in urban areas will lead to high environment pollution (septic tanks, chemical storage, etc.)

3. DISASTER MANAGEMENT SYSTEM

3-1. Administrative System in Sri Lanka

There are 25 districts organized into 8 provinces. Each district is administered under a District Secretary, who is appointed by the central government. The main tasks of the District Secretariat are to coordinate and communicate activities of the central government and Divisional Secretariats. The District Secretariat is also responsible for implementing and monitoring development projects at the district level and assisting lower-level subdivisions in their activities, as well as revenue collection and coordination of elections in the district. A district is divided into a number of Divisional Secretary Divisions (commonly known as DS divisions), which are in turn subdivided into Grama Niladari Divisions.

3-2. LEGAL SYSTEM AND FRAMEWORK OF DISASTER MANAGEMENT

National Disaster Management Act (2005):

In July 2005, the Sri Lanka Disaster Management Act No.13 of 2005 was enacted, which provides the legal basis for instituting a disaster risk management system in the country. The National Council for Disaster Management (NCDM), is a high-level inter-ministerial body. The chairman and vice chairman of the NCDM is H.E. the President and Hon Prime Minister respectively. Other members are Leader of the Opposition, Ministers in charge of 20 selected subject areas, Provincial Council Chief Ministers and five members of the Opposition. The Act also provides for establishing

the Disaster Management Centre (DMC) under the Council to be the apex body for the purpose of planning, co-coordinating and implementing of certain natural and other forms of disasters (Figure-3-1)

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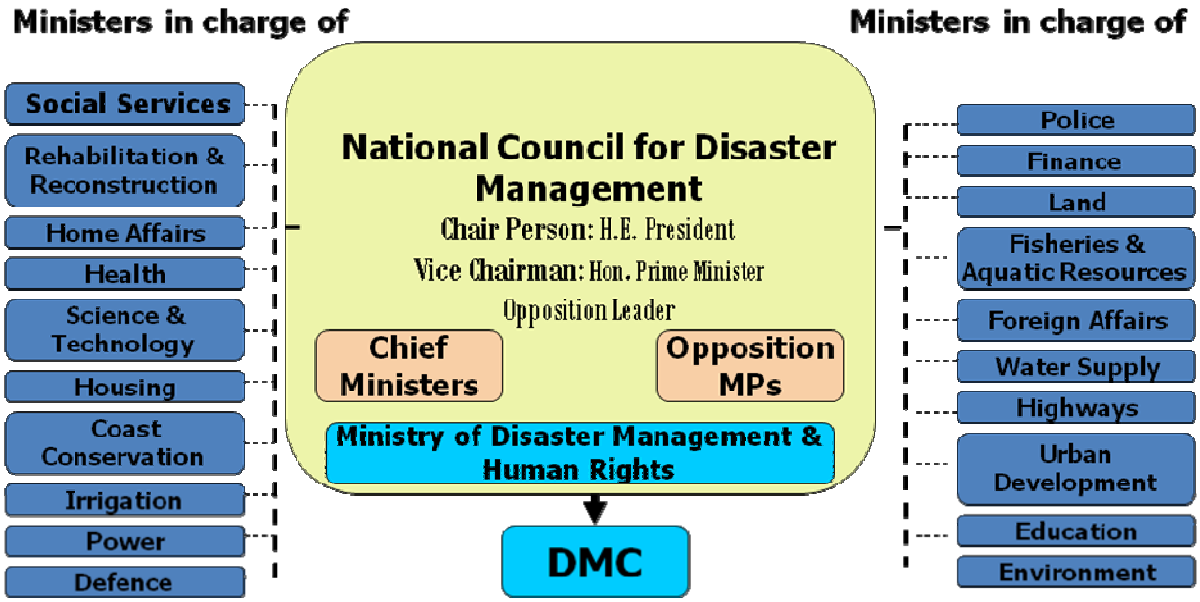


Figure 3-1: Flow chart showing the National Council for Disaster Management

THE PRINCIPAL FUNCTIONS OF THE DMC AS PER THE DM ACT

(1). Assisting the Council in the preparation of the National Disaster Management Plan and the National Emergency Operation Plan and proposals for upgrading the same when it becomes necessary

(2). Taking responsibility for the implementation of the National Disaster Management Plan and the National Emergency Operation Plan, and upon the declaration of a state of disaster to direct and coordinate the implementation of the National Emergency Operation plan

(3). Ensuring that the various Disaster Management Plans prepared by Ministries, Government Departments or public corporations conforms to the National Disaster Management Plan

(4). Based on Disaster Management Plans prepared by various Ministries, Government Departments and public corporations under section 10, preparing and implementing programs and plans for disaster preparedness, mitigation, prevention, relief, rehabilitation and reconstruction activities and coordinating of organizations

which implement such programs and plans and obtain financial assistance form the Treasury for such activities and release the same to the relevant regions and monitor and evaluate these activities

(5). Issuing instructions and guidelines to appropriate organizations, non-governmental organizations, district secretaries and divisional secretaries on activities relating to disaster management and initiating and implementing work programs in co-ordination with such organizations and secretaries

(6). Promoting research and development programs in relation to disaster management and setting up and maintaining a data base on disaster management

(7). Submitting reports to the Council from time to time and whenever required by the Council in regard to its activities.

This Act also provides for a framework for disaster risk management in Sri Lanka and addresses disaster management (DM) holistically, leading to a policy shift from response based mechanisms to a proactive approach towards Disaster Risk Management.

In terms of the Act following hazards come under the purview of Disaster Management:

Floods	Landslides	Tsunami (Seismic Wave)
Earthquakes	Air Hazards	Fire
Industrial Hazards	Epidemics	Explosions
Air Raids	Civil or Internal Strife	Chemical Accidents
Radiological Emergency	Oil Spills	Nuclear Disaster
Urban and Forest Fire	Coastal Erosion	Tornadoes, Lightening Strikes and Severe Thunder Storms

In July 2005 the Disaster Management Centre (DMC) was established under the National Council for Disaster Management (NCDM) to be functional under H.E. the President.

In December 2005, a separate Ministry for Disaster Management was established under the Hon. Prime Minister. In February 2006 the Ministry for Disaster Management and Human Rights (M/DM&HR) was established with the subject of Human Rights listed under its purview. As per the gazette notification of February 2006, National Disaster Management Council, Disaster Management Centre and Department of Meteorology and National Building Research Organization (NBRO) were placed within the purview of M/DM&HR. In 2010 the Ministry was renamed as Ministry of Disaster Management.

The DM functions implemented through the DMC according to this gazette notification are as follows:

(1). Initiate and coordinate foreign aided projects for disaster mitigation, response and recovery

(2). Liaising with Ministries, Government authorities and agencies, private sector agencies, NGOs and INGOs and all other relevant agencies to ensure timely execution of such responsibility.

(3). Coordination and Management of relief activities pertaining to natural and man-made disasters.

(4). Coordinating awareness programs on natural disasters and man-made disasters

(5). Early warning systems

(6). Supervision of the activities of non-governmental organizations and social welfare voluntary agencies in relation to disaster management, provisions of relief and promotion of human rights

(7). Facilitation of and assistance to non-governmental organizations and social welfare voluntary agencies, in the fields of disaster management and human rights

Through countrywide Ministries, Departments and Public Corporations, Provincial Council, Local Authority Administration; and District, Division and Grama Niladhari administration; to enforce coordinate and monitor activities related to

(i). Hazard Mapping and Risk Assessment

(ii). Information Management

(iii). Disaster mitigation

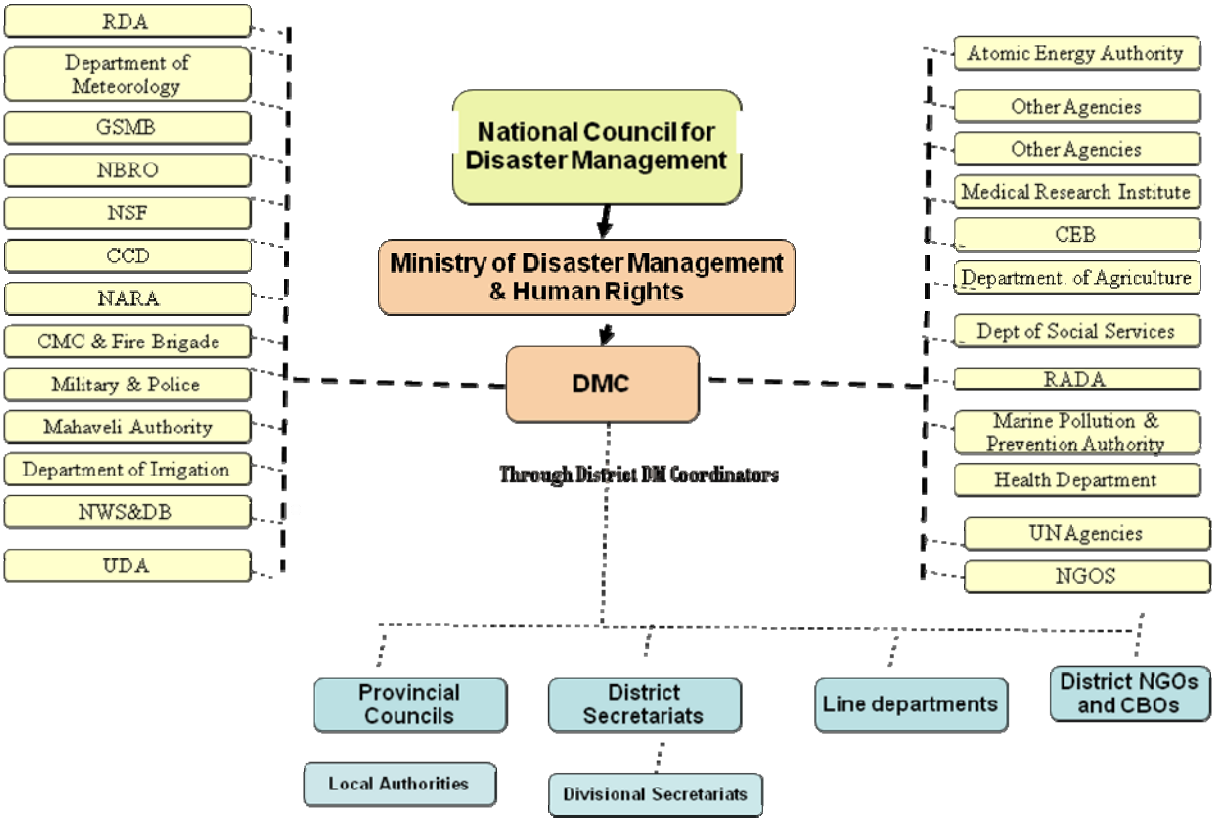
(iv). Early warning dissemination

(v). Preparedness for effective response at disaster situations

(vi). Emergency Operations Management

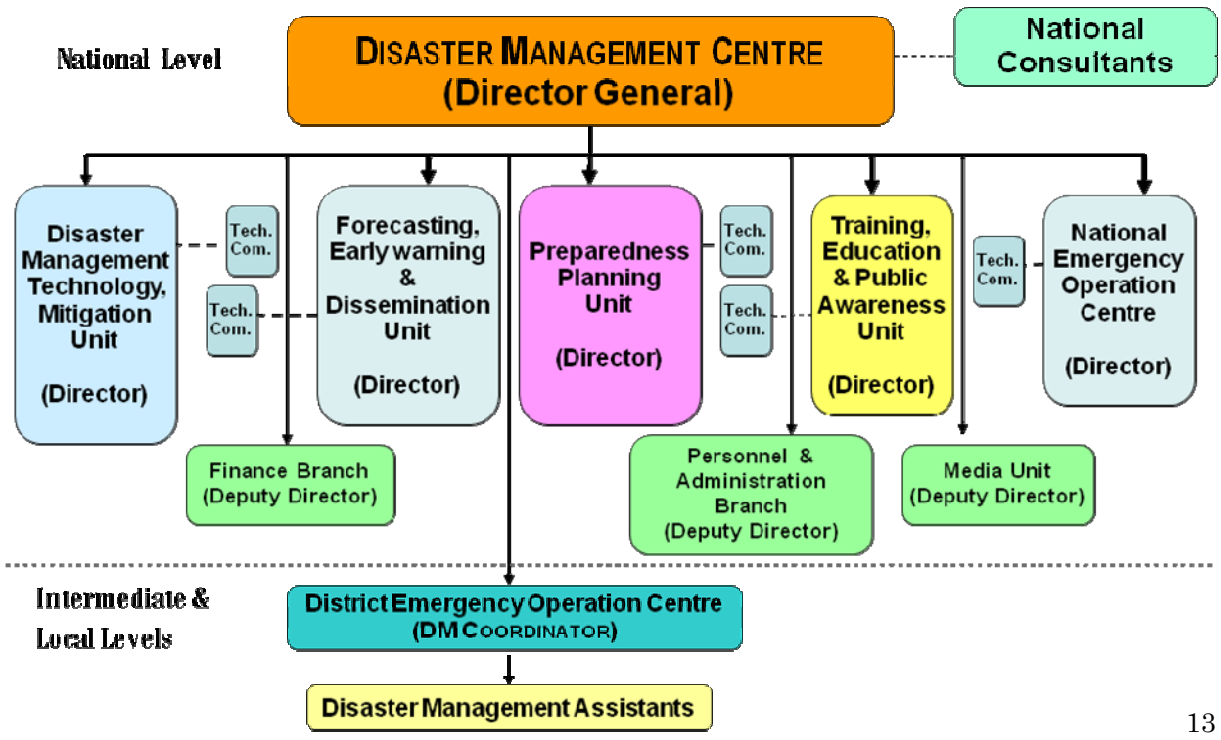
(vii). Management of the post-disaster activities after a disaster

Figure 3-2: Coordination Mechanism in Disaster Management



3-3. Structure of Disaster Management

Figure-3-3: Organizational structure of Disaster Management (national level to district level)



(a). National Platform for Disaster Risk Reduction

As shown in the following figure 3-3, there is a strong link among all stake holders concerned in disaster management. Disaster Management Centre operates all the DM related activities through District Disaster Management Coordinators.

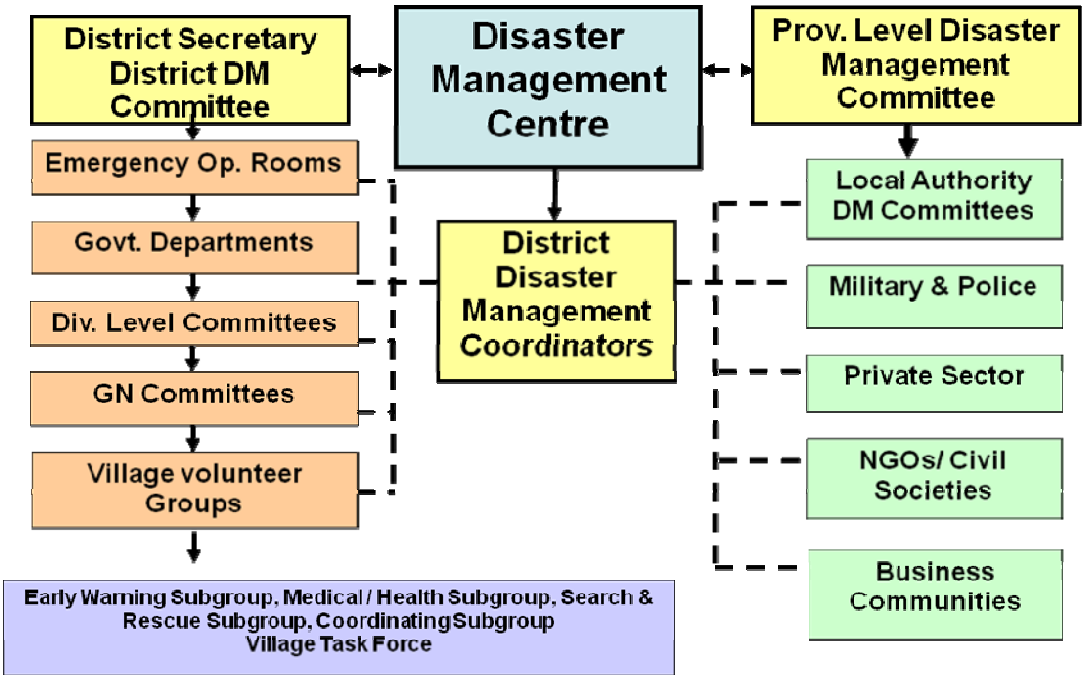


Figure-3-3 Disaster Risk Management Mechanism at Sub-National Level

The above mechanism addresses the disaster management activities up to the grass root level (village level)

(b). NATIONAL ORGANIZATIONS FOR DISASTER RISK REDUCTION

There are several technically sound government organizations, which can predict, forecast and issue early warning to the general public. Organizations such as Department of meteorology, Geological Survey and Mines Bureau, National Building Research Organization, Coastal Conservation Department, NARA, Urban Development Authority, Fire Brigade, Military and Police, Department of Irrigation, Atomic Energy Authority, Central Environmental Authority, Medical Research Institute, Department of Agriculture, Health Department etc. They are capable of handling activities related to different disasters. As shown in Figure 3-4, Disaster Management Centre disseminates the Early Warning to all stake holders. Here in this regard, early warnings are issued up to Divisional and Village level DM committee. Presidential secretariat, three forces and POLICE, all electronic and paper media are also aware soon after issuance of any type of early warning. This is practiced in Sri Lanka up to a satisfactory level.

It has been identified that local authorities, Non-governmental organizations, village committees, youth committees are the Local Organizations for Disaster Risk Reduction.

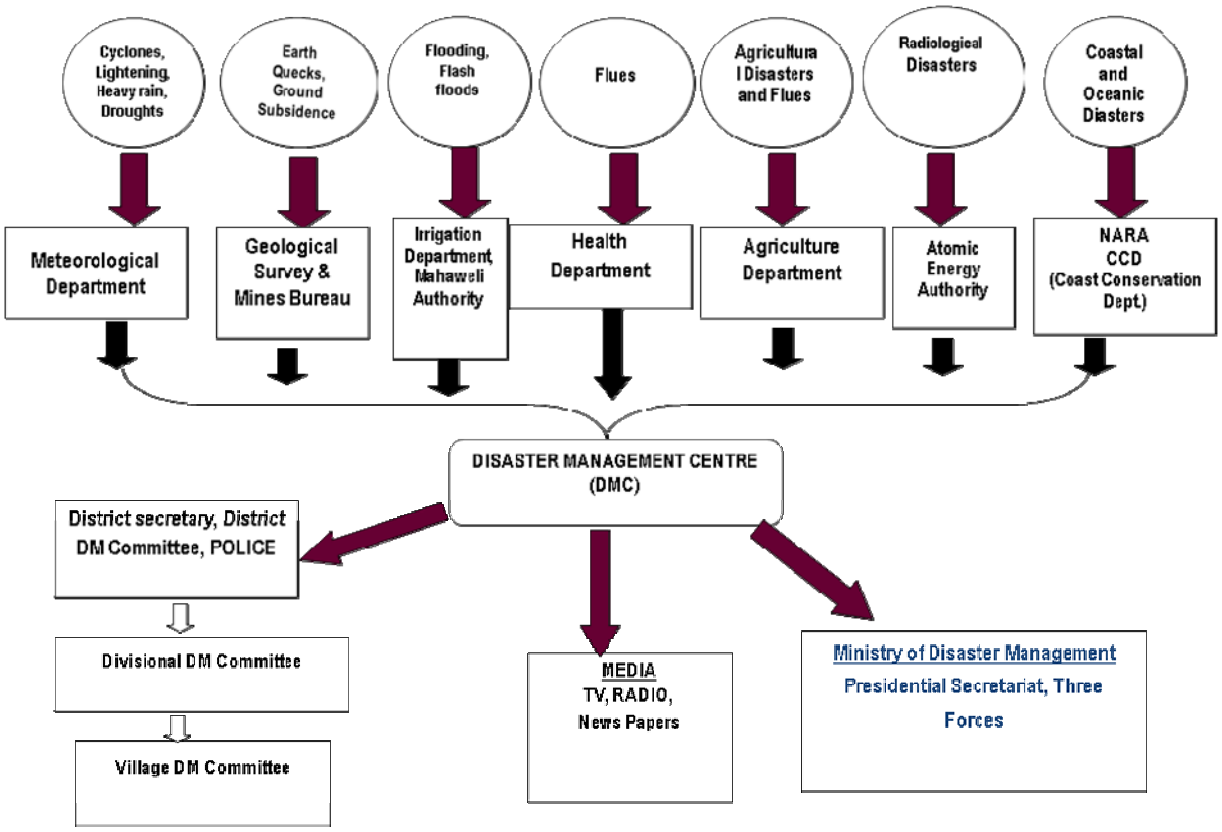


Figure 3-4: Flow Chart Showing Early Warning Dissemination

(c). STRUCTURE OF THE DISASTER MANAGEMENT CENTRE

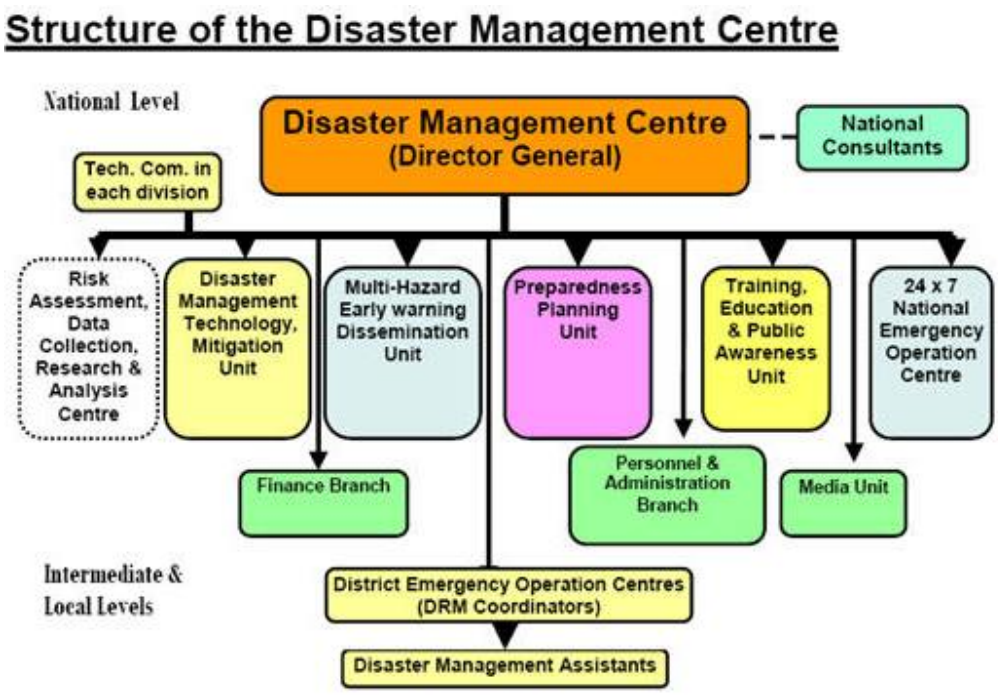


Figure 3-5: Structure of the Disaster Management Centre

Disaster Management Centre (DMC), which was established as per the Disaster Management Act of Sri Lanka consists of several subdivision in order to function the DM activities properly (Figure 3-5). DMC will be directing, issuing guidelines, facilitating, coordinating, monitoring , where necessary directly implementing or enforcing activities related to:

(1). Disaster Management Technology, Long-term Mitigation & DRR

Under the Technology and mitigation activities, many activities are carried out such as Hazard Mapping and Risk Assessment, Information and Data Collection, Research and Analysis, Building Technology, Development and maintenance of DMC Website, Long term Disaster Risk Reduction, Implementation of specific risk reduction projects to reduce specific identified risks that can cause future disasters, DRR integration in Development, long-term action planning.

(2). Early Warning

When a disaster has been predicted or forecast by a respective scientific organization, DMC do have systems in place for receiving forecasting and early warning. Also DMC is forecasting impending disasters followed by early

warning and dissemination procedures.

(3). Emergency Operations in case of a disaster

DMC has Established a National Emergency Operation Centre, which is 24x7 in service. It is now under the process of establishment of emergency operation rooms at provincial, district and divisional levels in some districts, provincial and district level emergency operation centers have already been established. In addition, DMC is carrying out Emergency Operations, coordinating with armed forces, police and other related agencies at national and all sub levels.

(4). Preparedness Planning (National and other levels)

Preparation of National Disaster Management Plan and Emergency Operation Plans along with district level and divisional level preparedness plans are in progress. Under such preparedness plans, DMC is facilitating, issuing guidelines, coordinating, directing and monitoring of preparation of disaster preparedness and response plans at provincial, district, local authority, divisional and village levels. The major objective of the preparation of preparedness plans is to improve response on time and effective response, equitable relief distribution, speedy recovery, timely rehabilitation and reconstruction at national level and all sub levels such as District and Divisional levels.

(5). Training, Education & Public Awareness

In order to train aware all groups of the general public, school community, employees of government, private and all other organizations, training programs are conducted. Public Awareness Programs for officials at all levels, school children and community level are also conducted. Objective of these activities is to reduce Disaster risks. Disaster management is being included in school curricula and in university curricula as appropriate.

RECENT MAJOR DISASTERS

Many hydro-meteorological and geological disasters hit the country causing severe damages to human beings, their properties and economy. Following table shows the major disaster events experienced in the recent past.

Year/Month	Type of Disasters	Affected area	Damage caused
2003/May	Landslides & Floods	Districts of Rathnapura, Kalutara, Galle, Matara, Hambantota	254 –deaths; Damage of LKR-1,740,153,392/=, Number of families affected- 140,310
2004/December	Tsunami	Entire Coastal Belt	> 40000-deaths,
2006/January	Landslides	Central Highlands-(Nuwaraeliya District)	
2006/ October & November	Flood	Western and North-Western part- Puttalam, Colombo, Gampaha, Kalutara disticts	No of Deaths 51 Families affected 94, 225 Houses Damaged- 5370 Damage of LKR 593,552,000
2011/January & February	Floods & Landslides	Central Highlands-Badulla, Matale, Kandy, Nuwaraeliya Districts, North, East & North-Central parts- Jaffna, Trincomalee, Polonnaruwa, Anuradhapura, Baticaloe & Amapara districts	26 Deaths, Damage of LKR- >30,000,000,000/= Paddy Fields- 10,000,000 Acers fully destroyed Number of families affected >1,000,000

The damage caused was unaffordable for developing country like Sri Lanka. Currently, 22% of the population (total population is 21 million) live in urban areas but it has been predicted that, by the year 2015, it will increase by 50%. The rural population largely depends on agriculture-based livelihood whereas the urban population mainly depends on secondary and tertiary sector jobs. When this population density is considered, natural disasters affect the community in different aspects. Following are the major reasons for such a very high damage.

I. All the disaster prone areas are highly populated due to the lack of land availability and unplanned land use regulations in Sri Lanka. Most of them are self employed. Government is still in a difficulty in creating alternative jobs for them. Therefore, implementation resettlement procedures are also almost impossible.

II. Negligence of the people is also a very big problem to be overcome natural hazards with an immediate effect. Although, the institutions, involved in the disaster mitigation activities, are already carrying out public awareness programs, public participation is still unsatisfactory. In addition, government has introduced several favorable construction methodologies and guidelines for disaster prone areas, people never follow such construction methodologies. It is true that, most of the people living in disaster prone areas are not having the required financial strength (Figure 3-6).

Figure 3-6: Settlement in Flood Prone area- Santee house

III. Difficulty in allocation of alternative land since in urban areas there is always a land scarcity. Disaster in an urban area will cause more direct and indirect losses (lost of property values, employment, access to work place, harvest, food storage, etc.) and will lead to high environment pollution (septic tanks, chemical storage, etc.)

TSUNAMI DISASTER

The most powerful Tsunami generated before 4 years in the Indian Ocean nearby Sumatra, Indonesia had claimed thousands and thousands of human lives and their properties. A long stretch of Sri Lanka's coast was devastated by these killer waves, with more than 40,000 dead (Figure-3-6) and staggering 2.5 million people displaced. Although there was 1,600 km from the epicenter to Sri Lanka, the waves struck with huge force and swept inland as far as 5 kilometers. Waves as high as six meters had crashed into coastal villages, sweeping away people, cars and even a train with 1700 passengers (Figure 3-7). It was the worst human disaster in Sri Lanka history. More information on damages caused by Tsunami has been tabulated in Table-3-1.

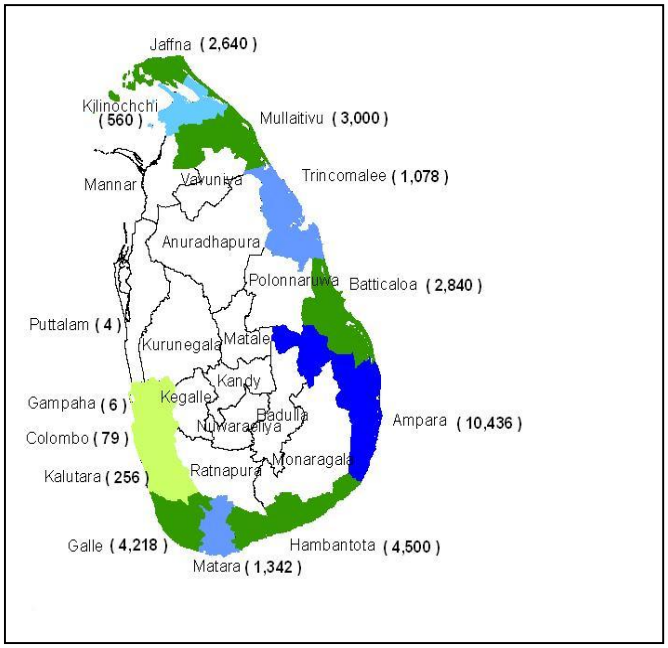


Figure 3-7: Map showing the Tsunami affected areas and number Deaths with respect to districts

Figure 3-8: Ill-fated crowded train- Nearly 2000 passengers were killed by Tsunami

Although the people affected and damages caused were unaffordable, Sri Lankan government was in position to rehabilitate affected community with the help of donor countries and agencies. Victims were provided with fully completed and furnitured houses. They were settled away from Tsunami prone areas as new villages.

FLOODING

The most devastating floods that had battered the Eastern coast of Sri Lanka(February,2011) and wreaked havoc in most parts of the island had cost the emerging economy a staggering Rs. 30 bn or US $ 27mn. This is slated to be worse than the Cyclone of 1978, which devastated the low-lying areas and displaced nearly one million persons. Disaster Management Minister Mahinda Amaraweera told media recent flooding were the worst experienced in the districts of Batticaloa, Ampara, Jaffna since 1913.

In the recent past, highly populated area got severely affected by flash floods, which were totally caused by unplanned human activities such as illegal and inappropriate construction, blocking of water ways through unplanned construction, poor waste dumping procedures, unplanned land use practices, low land reclamation, river sand mining, cultivation on hill slopes without applying soil erosion prevention procedure etc. During recent disaster, which was caused by heavy rainfall due to sudden change of climatic condition, such improper land use practices worsened the situation (Figure 3-8).

Figure 3-8: Flash flood in a populated area due to inappropriate land use practices

The Disaster Management Centre of the Ministry of Disaster Management informed the Asian Tribune that over 835,575 persons belonging to 220,265 families in 12 districts have been victimized by floods and land-slides. 123,732 persons belonging to 32,078 families were in housed in 334 relief assistance camps. The death-toll has risen to 23 persons. 4,110 houses have been partially damaged while 932 houses have been completely destroyed. Majority of the victims are from the Batticaloa district, which received a rainfall of 317 millimeters.

LANDSLIDES

During the last heavy rainy seasons, central highlands of Sri Lanka were highly threatened by landslides, rock falls and slope failures. There were 6 districts such as Badulla, Kandy, Nuwaraeliya, Matale, Rathnapura and Kegalle highly threatened by landslide disasters. However, due to the successful awareness among vulnerable people lowered the number of deaths reported. Unfortunately, six members of the same family were killed by a sudden rock fall in Kandy (Figure 3-10).

Figure 3-10: Recent rock fall that kill 06 people in Kandy- January, 2011

National Building Research Organization (NBRO) alerted the public that hill country districts such as Kandy and Nuwar-Eliya were highly vulnerable to landslides. According to the Disaster Management Center , heavy rains have affected over 758,000 people so far in this year island-wide while floods and landslides. All the recent mass movements were totally caused by unplanned human activities on hill slopes such as

(i). Improper land use practices such as inappropriate quarrying, constructions, cultivation (Figure 3-11) without applying proper soil erosion prevention techniques, construction of highways and roads over hill slopes without applying proper techniques.

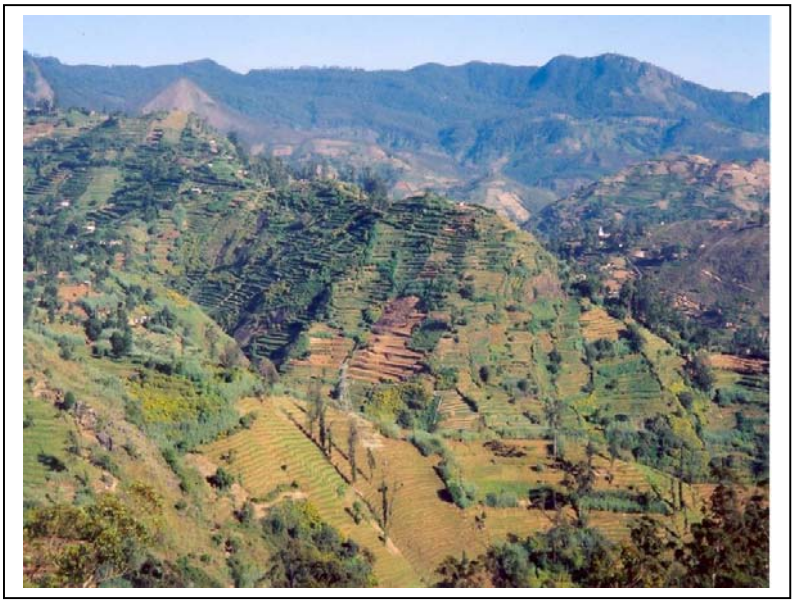


Figure 3-11: Cultivation without soil erosion techniques on hill slopes

(ii). Cutting and filling the slope- Cutting of slope is commonly done on hill slope prior to the construction of building, which will later lead for severe harmful cutting failure. Currently in Sri Lanka, more than 70% of the landslide occurrences reported are totally due to disturbances to existing soil slope through vertical cuttings.

Figure 3-12: Cutting failure behind a house situated on a hill slope-more common type of mass movement

(iii). Backwater at reservoirs- there are three major reservoirs situated over the central highlands of Sri Lanka namely Kothmale, Victoria, Randenigala and Samanalawewa. All the areas, where these reservoirs are situated have been declared as landslide prone areas. Several minor landslides have been reported in the recent past in the surrounding areas of these reservoirs.

(iv). Water leak from irrigation channels etc. – continuous leaking from irrigation canals and water storage pits used or cultivation have caused several failures in the year 2011. This is a very common practice applied for cultivation in hill slopes of Sri lanka (Figure-3-13)

Figure 3-13: Water storage pits used for cultivation in hill slopes

Province	District	Affected Families	Displaced Families	Displaced Persons			Deaths	Injured	Missing	Damaged Houses		No. of Camps
				In Welfare Centers	With Relatives and Friends	Total				Completely	Partially	
Northern	Jaffna	13.652	12.631	12.301	27.632	**39.933**	2.640	1.647	540	6.084	1.114	**
	Killinochchi	2.295	318	305	1.298	**1.603**	560	670	1	1.250	4.250	2
	Mullaitivu		6.007	11.993	10.564	**22.557**	3.000	2.590	552	3.400	600	23
Eastern	Trincomalee		27.746	19.559	62.084	**81.643**	1.078		337	5.974	10.394	42
	Batticaloa	63.717	12.494	27.491	31.509	**59.000**	2.840	2.375	1.033	15.939	5.665	45
	Ampara	38.624		75.492		**75.492**	10.436	120	876	29.077		82
Southern	Hambantota	16.994	3.334	214	17.168	**17.382**	4.500	361	963	2.303	1.744	4
	Matara	20.675	3.268	4.067	9.254	**13.321**	1.342	6.652	613	2.362	5.659	30
	Galle	23.174	1.562	5.504		**5.504**	4.216	313	554	5.525	5.966	46
Western	Kalutara	6.064	6.105	3.785	19.756	**23.541**	256	400	148	2.572	2.930	16
	Colombo	9.647	5.290	6.077	24.575	**30.652**	79	64	12	3.398	2.210	28
	Gampaha	6.827	5.258	911	20.443	**21.354**	6	3	5	292	307	2
North Western	Puttlam	232	18	66		**66**	4	1	3	23	72	2
	Total	**201.901**	**84.031**	**167.765**	**224.283**	**392.048**	**30.957**	**15.196**	**5.637**	**78.199**	**40.911**	**322**

Source: National Disaster Management Center

Table 3-1: Information on damages caused by Tsunami

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