Democratic Socialists Republic Of Sri Lanka

The Disaster Management Status

Overview

- About Sri Lanka.
- Natural Disasters in Sri Lanka.
- Recent Natural Disasters in Sri Lanka.
- Disaster risk management in Sri Lanka.
- Counter measures & International Commitment.
- Objectives of Visiting Research and expected Outputs.
Democratic Socialist Republic of Sri Lanka

Geography

Location
Indian Ocean
Indian Sub Continent
Latitudes 5.55-9.55 N
Longitudes 79.42-81.52 E
Land Area 65,610 SQ KM
Maximum Length: 424 km
Greatest width is 225 km.
Administrative Districts 25
Divisions 324

Background Information

Head of State: His Excellency the President Hon. Mahinda Rajapaksha
Head of Parliament: Prime Minister Ratnasiri Wickramanayaka
Capital: Colombo
Population: 19.9 Millions (2005)
Language: Sinhalese, Tamil
Religion: Buddhism

Member of:
ADB, C, CCC, CP, ESCAP, FAO, G-24, G-77, IAEA, IBRD, ICAO,
ICC, ICFTU, ICRM, IDA, IFAD, IFC, IFRCS, IHO, ILO, IMF, IMO,
IOM, Intelsat, Interpol, IOC, IOM, ISO, ITU, NAM, OAS
(Observer), OPCW, PCA, SAARC, UN, UNTAET, UNESCO, UNIDO,
UNTAET, UNU, UPU, WCL, WFTU, WHO, WIPO, WTO, WTrO

Currency: Rupees (Rs.100 = 1.00 US$)
GNP: Rs.1,737bn US$ 18 bn (2004) at current market prices
Major Industries: Textiles and Garments, Gem Cutting, Food Processing, Handy craft.
Village Life of Sri Lanka

Ancient Heritage of Sri Lanka

Ruins of Vatadha Geya - Polonnaruwa

2000 Years Ago - Sketch of Vatadha Geya
Demographics

- Population of 19.8 million,
- 75% are Singhalese,
- Female 51.8%, Male 48.2% Rural Population - 78.9%
- Average annual population growth rate of 1.3%
- Life Expectancy - 72.8
- Labour Force Participation Rate (percent) - 48.6%
- Un Employment - 8.6%

Department of Statistics and Census

Climate of Country

- Tropical monsoonal climate.
- South west monsoon and North east monsoon
- Average annual rainfall is 1836 mm.
- Clearly Demarcated Three Zones.
  - Wet Zone: >2200 mm
  - Intermediate Zone: 2000 > 2200 mm
  - Dry Zone: <2000 mm
- Average temperature 25-28 Degrees C.

Evening
Main Exports: Tea, Rubber, Coconut Garments, Gems & Minor Crops

Major Imports: Transport Machinery, Foods, Electronic Items, etc.

Tourism and foreign Employment Play major role in Economy

Economic Targets of 2010

8% Growth in GDP by 2010

An Increase of in domestic savings from 17.3 percentile to 32% of GDP by 2010.

An Increase of investment from 28% of GDP to 35% by 2010.

An increase of exports 39.1 % to 50.8 of GDP by 2010.
Primary Natural Disasters of Sri Lanka

Main Natural Disasters

- Flood
- Land slides
- Cyclone
- Drought
- Sea erosion
- Tsunami (Rare)
No. of People Affected Due To Floods from 1974-2004

Source: DisInventar-NDMC

Rivers vulnerable to floods

Sri Lanka has 103 Rivers but only 10 are vulnerable to floods. Main rivers Vulnerable to flood are.

1. Kalu Ganga
2. Kelani Ganga
3. Nilwala Ganga
4. Gin Ganga
5. Mahaweli Ganga
Landslides

Heavy rains, geological changes and indiscriminate clearance of steep slopes increased the occurrences of landslides in **Central and South Western regions** of the Island.

Out of 25 Districts of Sri Lanka 9 Districts are vulnerable to landslides, (Specially Ratnapura, Kegalle, and Matara)

The landslides of January 1986, May and June 1989 and May 2003 surpassed all previous landslides in recent memory,
Recent Landslides At Ratnapura (Palawela)

High Risk Areas

Source: National Building Research Organization (NBRO)

Landslides con.d

RATNAPURA DISTRICT
DS Divisions within which Landslides and Cutting Failures occurred

Source: National Building Research Organization (NBRO)
Droughts of Sri Lanka

2/3 rd of the country is under the Dry Zone, so that vulnerable to Droughts as

- Local Significant Drought: Every Year
- Regional Significant Drought: Every 2 to 3 years.
- National level Drought: Every 10 to 15 years.

No. of Reported cases of Droughts from 1974-2004

Source: DisInventar-NDMC
A large number of cyclonic disturbances had either formed or passed close to Sri Lanka, only 35 cyclonic storms/cyclone had crossed the coasts during the period 1881 - 2001.

26 cyclonic storms/cyclones had crossed the coast in November and December. Therefore in Sri Lanka November/December is recorded as the cyclone season.

No. of Reported cases of Strong Wind from 1974-2004

Source: DisInventar-NDMC
Tracks of Cyclones and Storms (1901-2000)

Department of Meteorology

Sea Erosion of Sri Lanka

- Length – 1620 km including shoreline bays
- Coastal erosion – along 340 km of Coastline. The most critically affected areas are those between Kalpitiya in the Northwest and Matara in the South.
- Coastal zone supports:
  - 34% of Population and 24% of land area of the country
- 3 Major commercial ports located:
  - Colombo
  - Galle
  - Trincomalee
VARIATION OF SEA LEVEL

Source: WMO-IPCC

Tsunami

- Tsunami is a very rare disaster of Sri Lanka but.
- 2000 years ago Sri Lanka had one documented evidence of Tsunami disaster hit to the western coast of Sri Lanka. It was the Era of king Kelanithissa. At that time the sea eroded the land of 12 km from coast to inland (Mahawansa).
- Again historic and a well documented tsunami incident that hit Sri Lanka on 27th August 1883 was not widely known.
- The 26 December 2004 Tsunami tragedy.
Recent Natural Disasters of Sri Lanka

Floods and Landslides
May 16 & 17, 2003
### Flood 2003 Districts at a glance

**As at 06th October, 2003**

<table>
<thead>
<tr>
<th>District</th>
<th>Affected Families</th>
<th>Deaths</th>
<th>Missing</th>
<th>Damaged Houses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fully</td>
</tr>
<tr>
<td>Hambantota</td>
<td>2241</td>
<td>21</td>
<td>585</td>
<td>649</td>
</tr>
<tr>
<td>Kalutara</td>
<td>24555</td>
<td>11</td>
<td>944</td>
<td>2330</td>
</tr>
<tr>
<td>Galle</td>
<td>28173</td>
<td>16</td>
<td>1533</td>
<td>4037</td>
</tr>
<tr>
<td>Matara</td>
<td>47642</td>
<td>64</td>
<td>17</td>
<td>2145</td>
</tr>
<tr>
<td>Ratnapura</td>
<td>34478</td>
<td>122</td>
<td>3668</td>
<td>9531</td>
</tr>
<tr>
<td>Nuwara Eliya</td>
<td>132</td>
<td>1</td>
<td>360</td>
<td>255</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>137221</strong></td>
<td><strong>235</strong></td>
<td><strong>17</strong></td>
<td><strong>9235</strong></td>
</tr>
</tbody>
</table>

National Disaster Management centre. (NDMC)

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### Areas Affected

**D.S. Divisions Affected by Floods: May 2003**

- **District Boundary**
- **Partially affected**
- **Totally affected**
- **Not affected**
## Plan of Action

<table>
<thead>
<tr>
<th>Activity</th>
<th>By</th>
<th>Between</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Identification of affected families</td>
<td>District Secretary</td>
<td>01 - 10 July</td>
</tr>
<tr>
<td>2 Identification of Lands</td>
<td>District Secretary</td>
<td>01 - 10 July</td>
</tr>
<tr>
<td>3 Recommendation of NBRO/Irrigation</td>
<td>NBRO / Irrigation</td>
<td>03 - 19 July</td>
</tr>
<tr>
<td>4 Awareness Creation Programme</td>
<td>National Disaster Mng. Centre,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>of the Ministry of Social Welfare</td>
<td></td>
</tr>
<tr>
<td></td>
<td>University of Moratuwa</td>
<td></td>
</tr>
<tr>
<td>5 Finalization of plans &amp; cost of Houses</td>
<td>Sri Lanka Ins. Of Architecture</td>
<td>10 - 20 July</td>
</tr>
<tr>
<td></td>
<td>Sri Lanka Ins. Of Town Planning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NHDA</td>
<td>19 - 24 July</td>
</tr>
<tr>
<td>6 Construction of Houses</td>
<td>Dept. of Social Services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>of the Ministry of Social Welfare</td>
<td>20 July to</td>
</tr>
<tr>
<td></td>
<td>District Secretary</td>
<td>15 October</td>
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<tr>
<td></td>
<td>NHDA</td>
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</table>
December 26, 2004

Massive earthquakes of magnitudes ranging from 8.6 to 9 that have occurred in Sumatra (Indonesia) and Nicobar region (India) have caused tsunamis (tidal waves).

- These waves hit the Eastern, Northern, Southern and Western coast of Sri Lanka on 26th December 2004.
- This has caused extensive damage to life and property in those areas.

National Disaster Management Center

**Situation Report**

Comparison of Situation between Districts, Tsunami Disaster, Sri Lanka Update: 18/02/05 15.00 hrs

<table>
<thead>
<tr>
<th>Province</th>
<th>District</th>
<th>Affected Districts</th>
<th>Depopulated Districts</th>
<th>Depopulated Persons</th>
<th>Casualties</th>
<th>Separated</th>
<th>Missing</th>
<th>Damaged Houses</th>
<th>Total</th>
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<tbody>
<tr>
<td>Northern</td>
<td>Jaffna</td>
<td>14757</td>
<td>16,827</td>
<td>7,025</td>
<td>33,881</td>
<td>40,614</td>
<td>2,640</td>
<td>1,047</td>
<td>540</td>
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<tr>
<td></td>
<td>Kilinochchi</td>
<td>3,597</td>
<td>407</td>
<td>0</td>
<td>1,053</td>
<td>1,603</td>
<td>555</td>
<td>670</td>
<td>0</td>
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<tr>
<td></td>
<td>Mullaitivu</td>
<td>6,793</td>
<td>6,067</td>
<td>11,983</td>
<td>10,984</td>
<td>22,507</td>
<td>3,003</td>
<td>2,580</td>
<td>421</td>
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<tr>
<td></td>
<td>Trincomalee</td>
<td>55,545</td>
<td>55,545</td>
<td>14,569</td>
<td>60,000</td>
<td>84,614</td>
<td>1,978</td>
<td>1,529</td>
<td>40</td>
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<tr>
<td></td>
<td>Batticaloa</td>
<td>65,815</td>
<td>20,464</td>
<td>22,002</td>
<td>16,047</td>
<td>31,669</td>
<td>2,976</td>
<td>2,378</td>
<td>546</td>
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<td></td>
<td>Ampara</td>
<td>51,725</td>
<td>51,725</td>
<td>24,195</td>
<td>26,168</td>
<td>165,272</td>
<td>15,456</td>
<td>5,015</td>
<td>555</td>
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<tr>
<td></td>
<td>Hambantota</td>
<td>14,568</td>
<td>3,334</td>
<td>1,025</td>
<td>45,105</td>
<td>66,524</td>
<td>4,005</td>
<td>454</td>
<td>1,541</td>
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<tr>
<td></td>
<td>Matara</td>
<td>18,305</td>
<td>2,308</td>
<td>2,613</td>
<td>6,405</td>
<td>9,018</td>
<td>1,342</td>
<td>6,502</td>
<td>812</td>
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<td></td>
<td>Galle</td>
<td>24,549</td>
<td>23,279</td>
<td>2,761</td>
<td>119,427</td>
<td>125,184</td>
<td>4,248</td>
<td>313</td>
<td>527</td>
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<tr>
<td></td>
<td>Kalutara</td>
<td>9,443</td>
<td>7,009</td>
<td>2,439</td>
<td>32,003</td>
<td>34,247</td>
<td>279</td>
<td>401</td>
<td>69</td>
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<tr>
<td></td>
<td>Colombo</td>
<td>9,048</td>
<td>2,140</td>
<td>5,585</td>
<td>29,180</td>
<td>32,713</td>
<td>798</td>
<td>54</td>
<td>12</td>
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<td></td>
<td>Gampaha</td>
<td>8,027</td>
<td>368</td>
<td>878</td>
<td>872</td>
<td>1,463</td>
<td>8</td>
<td>3</td>
<td>270</td>
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<tr>
<td>North Western</td>
<td>Jaffna</td>
<td>232</td>
<td>18</td>
<td>0</td>
<td>64</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Source: Ministry of Social Welfare 18-02-2005

www.cnrdotalka.org
Area Affected

Divisions 63

Source: Geological Survey & Mines Bureau
Estimated losses.

- **Education Sector:** Rs.1131.25 million
- **Fisheries Sector:** Rs. 19600 million
- **Tourism:** Rs.1960 million
- **Health Sector:** Rs.6757 million
- **Railways:** Rs.7620 million

A train express from Colombo was hit by the tsunami wave at 9:35 a.m. at Telwatta in Southern Sri Lanka. With 1500 people on board, only 200 survived. Villagers who were trying to escape were blocked by the train. More than 500 bodies found.
Government Response to the Disaster

Government of Sri Lanka established three main task forces on the 26th December 2004:
1. Task Force for Rescue and Relief (TAFRER)
2. Task force for Rebuild the Nation (TAFREN)
3. Task force for Logistic Law and Order (TAFLOL)

Operational Structure

TAFRER – Emergency Rescue and Relief

TAFLOL
Logistics, Law and Order

TAFREN
Rebuild the Nation

Strategy - Phases of Development

Phase 1 Humanitarian - Rescue & Relief (TAFRER) - CNO
To coordinate and facilitate relief measures to mitigate after effects of the crisis. All vulnerable groups and key sectors were addressed in cooperation with the government, private, international and civil society.

Phase 2 Rehabilitation/Reconstruction
Task force to rebuild the nation (TAFREN) has initiated work on reconstruction plans. www.tafren.gov.lk

Phase 3 Sustainable Economic Development
With the successful completion of phase 1 and 2, the overall objective of the government was to ensure sustainable economic development with special focus on linkages between macro and micro sectors. The corporate sector, donors and civil society - and all partners contributed to rebuilding Sri Lanka based on their comparative and competitive advantages.
Current Disaster Management Situation of Sri Lanka

By The extra ordinary gazette notification on 8th Dec. 2005 His Excellency the President Mahinda Rajapaksha formed Two Ministries to Disaster Management.

- Ministry Of Disaster Management.
- Ministry Of Disaster Relief Services.
Agencies and Functions allocated to Ministry of Disaster Management

**Agency:** National Disaster Management Council.

**Functions:**
- Coordinating and management of relief activities pertaining to natural and man made disasters.
- Coordinating awareness programmes on natural disasters.
- Early warning systems.

Agencies and Functions allocated to Ministry of Disaster Relief services.

**Agencies:**
- National Disaster Management Centre.
- Emergency Relief unit.

**Functions:**
- Formulation and Implementation of projects and programmes to provide emergency relief to the affected parties in disaster situations.
- Implementation of rescue operations under natural and man made Disasters.
- Coordination with relevant authorities to provide relief facilities to the affected parties.
- Formulation and Implementation of programmes to restore normal life and livelihood of people affected by natural and man made disasters.
Early warning Systems of Sri Lanka

Responsible organizations

- Meteorological Department has a responsibility of early warning for Tsunami, Flood, Cyclones and other geologically induced Disasters with collaboration of Irrigation Department, Geological survey Department, NDMC and other relevant Organizations.
- Around Clock Warning centre functioning at Meteorological Department.
- Yet we have not properly organized and developed early warning systems for all natural Disasters.
Proposed Disaster Management System For Sri Lanka

Legal System:

- Sri Lanka Disaster management act No 13. (Already Passed by parliament on 13th May 2005)
- According to act formed, National council for Disaster Management. (NCDM)
- Disaster Management Centre (DMC)
- Technical Advisory committees.
Members Of National Council for DM

His Excellency The President:
Chairmen
Hon. Prime minister: Vice chairmen
Leader of The Opposition.
The ministers in charge of the following subjects:
(i) Social Welfare
(ii) Rehabilitation and Reconstruction
(iii) Environment,
(iv) Home affairs,
(v) Health
(vi) Science and Technology
(vii) Housing
(viii) Coast Conservation
(ix) Irrigation
(x) Power
(xi) Defense
(xii) Police
(xiii) Finance
(xiv) Land
(xv) Fisheries and aquatic resources
(xvi) Foreign affairs
(xvii) Water supply
(xviii) Highways
(xix) Urban Development
(xx) Education

The chief ministers of every provincial council
Secretary To the Council.
Five members of opposition.

Institutional Framework for National Disaster Management
(Proposed by Parliamentary Select Committee for DM)
Main Functions of the National Council for Disaster management (NCDM)

- Formulate: A National Policy
- Prepare, formulate, Monitor and implement: National Disaster Management Plan Emergency Operation Plan
- Facilitate: Emergency response, recovery, relief, Rehabilitation and reconstruction
- Direct, coordinate and monitor: The Disaster Management Centre
- Specify Guidelines: To prepare of Disaster Management Plan by every ministry, government department and public corporations.
- Promote: public awareness campaigns
- Assign: Functions and responsibilities to the DMC
Main Functions of DMC

- Assisting to Council to Prepare & Implement:
  - National Disaster Management Plan (NDMP)
  - Emergency Operation Plan
- Ensure:
  - Preparation of Disaster Management Plans by ministries, departments and public corporations
- Facilitate and support:
  - Local and community self-reliance
- Prepare and implement programmes:
  - For preparedness, mitigation, prevention, relief, rehabilitation and reconstruction

Counter measures and International commitment for Disaster Reduction In Sri Lanka
Coordination with International Organizations (IO) on Capability and Capacity Building

Asian Disaster Reduction Center (ADRC)

Asian Disaster Preparedness Center (ADPC)

Coordination with UN Agencies and IOs on capacity and Capability Building Activity

- WFP, UNDP, UNICEF, WHO, WMO and FAO
- European Commission Humanitarian Office (ECHO)
- Office for the Coordination of Humanitarian Affairs (OCHA)
- International Federation of Red Cross and Red Crescent Societies (IFRC)
Counter Measures-Flood Mitigation

- Flood protection Bunds for Kelani Ganga. 1935-1945
- Gin Ganga Flood Protection Scheme-1975 (Funded by China)
- Nilwala Flood Protection scheme-1993
- Kelani Ganga Flood protection Study & Flood forecasting System -2000(DANIDA Project)

- Land slide Hazard Mapping (LHMP) Project – GOSL/NBRO/UNCHS
- Drought Mitigation: Rain Water Harvesting Project in Monaragala and Hambantota Districts (NDMC & ITDG).
- Disaster Risk Information Management – DisInventar system (NDMC & UNDP).
- Sri Lanka Urban Multi-hazard Disaster Mitigation Project (SLUMDMP)- CHPB & Asian Urban Disaster Mitigation Programme (AUDMP).
Disaster Management and Preparedness

- Establishment of multidisciplinary national disaster operation center. Including training of core staff, equipment to improve communication and information management.
- Geographic Information System to determine priority areas for disaster mitigation and preparedness and create hazard maps upgrading disaster preparedness at village, divisional, district and national levels.

Current needs

- Development of Disaster Information Management System.
- Stock filing and providing equipments
- Establishment of a National Emergency Response capacity.
- Enhancement of Training and educating.
- Strengthening international and regional cooperation.
- Establishment of an Early Warning System.
Objective of the Visiting Research and Expected Outputs

- Research on the facts leading to Natural disasters with special reference to Tsunami, earthquakes, floods, droughts, landslides etc. and studying the counter measures taken in Japan and studying how it could be applied to Sri Lanka.

- The awareness programmes on Disaster preparedness, emergency drills etc. to general public, school children, Community leaders and develop systems to improve the local system in comparison with Japan.

- The systems to be adapted for prevention, preparedness arresting emergency hazards giving with special attention to early warning systems for Natural disasters. and study planning of education, and training on Disaster reduction.

- Studying how the International Cooperation works disaster prevention, mitigation, and preparedness at central and local administrative levels.

Thank you for listening

G M J K Gunawardana
Asst. Director
(Visiting Researcher ADRC 2006)
National Disaster Management Centre
Ministry Of Disaster Relief Services
Sri Lanka