

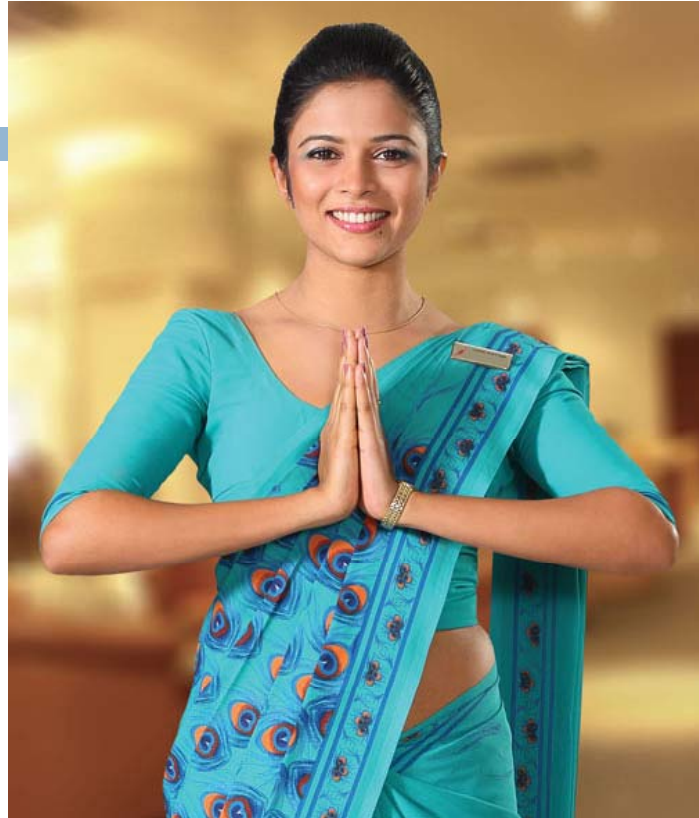
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Ayuboowan

(all living being may have a long life)



Disaster Risk Management Mechanism in Sri Lanka

Country Presentation

by

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Visiting researcher

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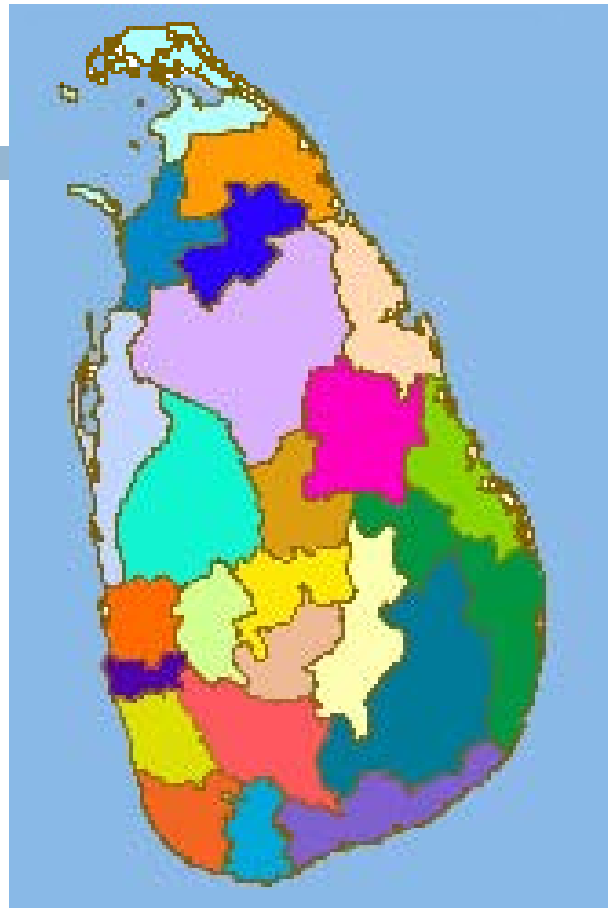
2/09/2014

Assistant Director, (Preparedness Planning)

Disaster Management Center,

Colombo 07,

Sri Lanka.



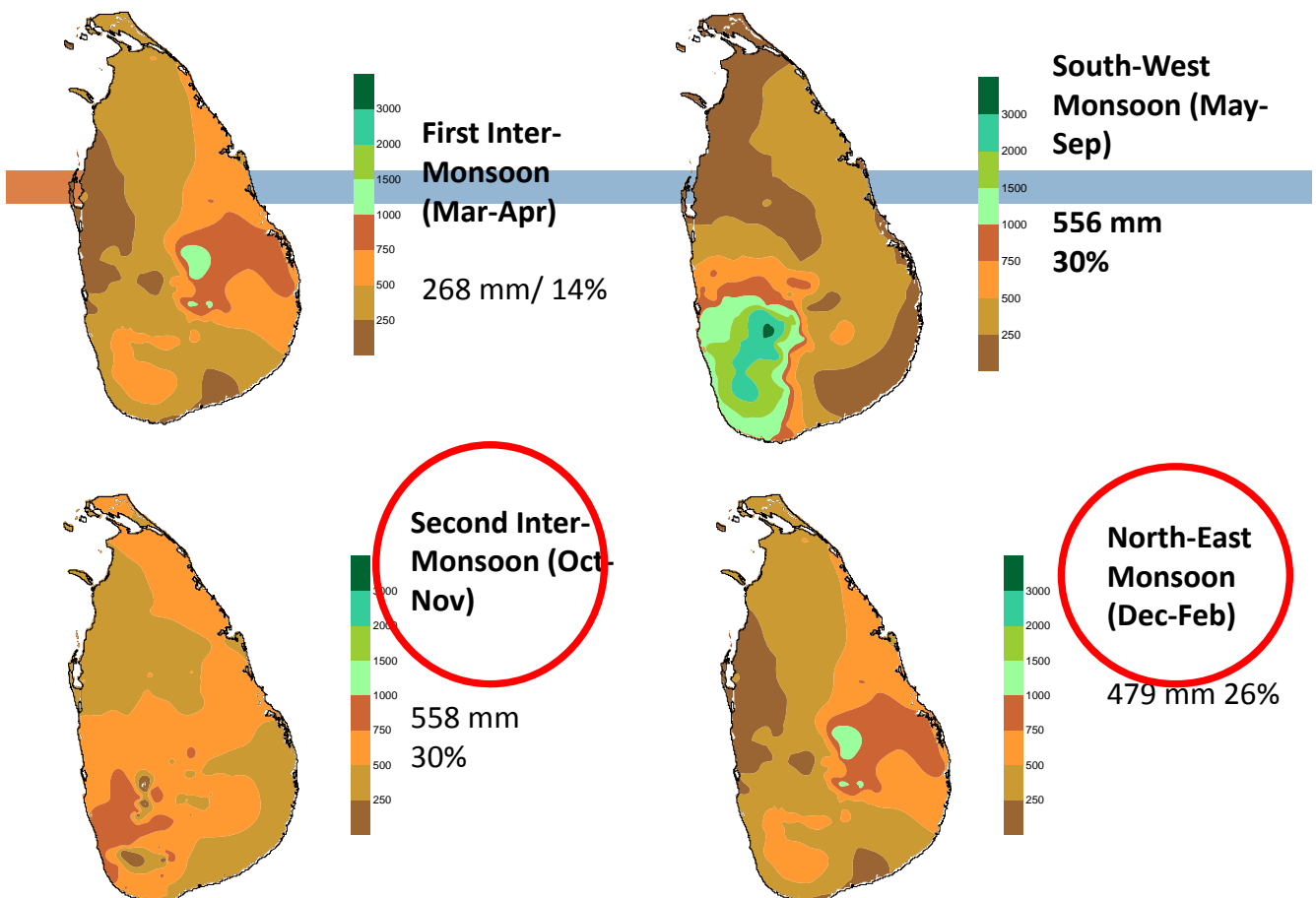
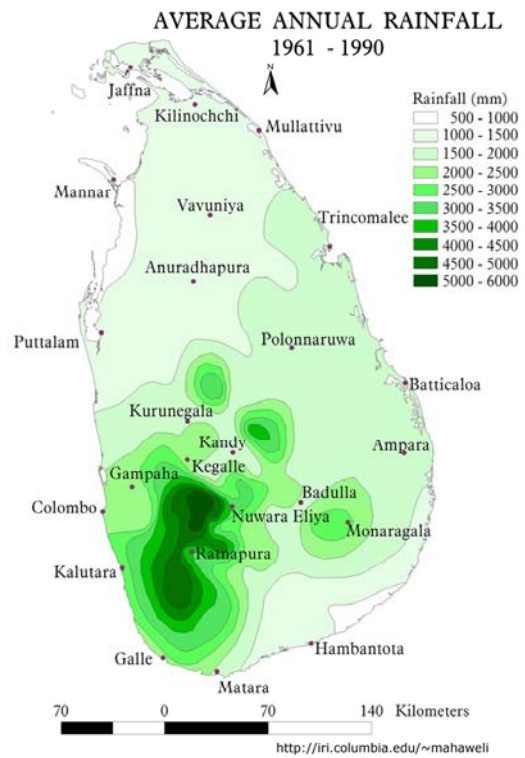
Glory of Sri Lanka





Overview of Climatology

Monsoon Season	From	To
First Inter Monsoon	March	April
South West monsoon	May	September
Second Inter Monsoon	October	November
North East Monsoon	December	February



Source: Jayatilake, H.M. et al, 2005

Disasters in Sri Lanka

Natural Hazards

- Tsunami
- Flood/flash flood
- Drought
- Landslide/rock falling
- Cyclone/high wing
- Lightning
- Strom surge
- Coastal erosion
- Tornado
- Forest fire
- Wild Elephant attach
- Biological hazard such as bird flue, dengue etc.

Man Made

Dam breach treat

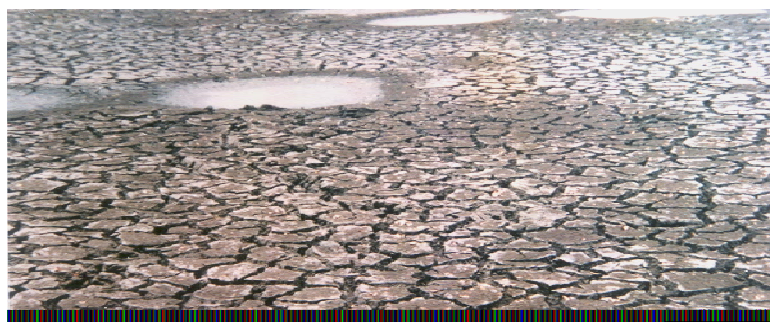
Chemical and industrial hazards

Fire

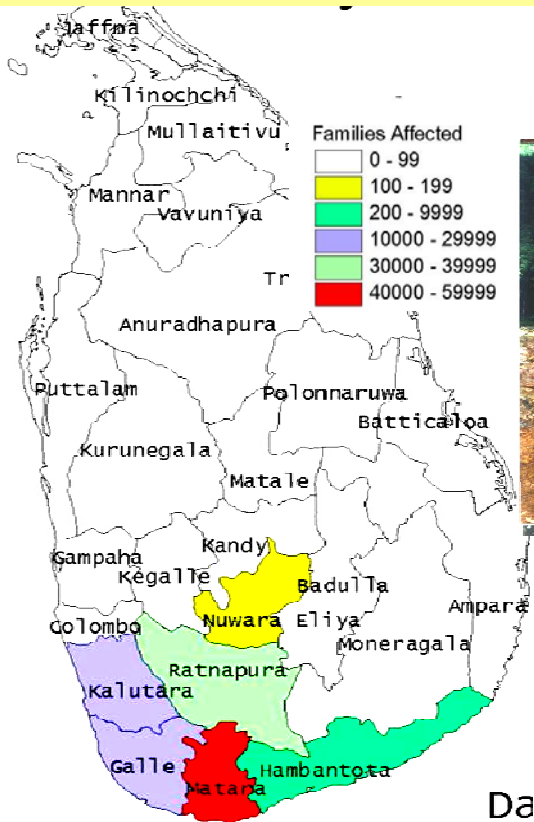
2001 – 10 districts affected Drought



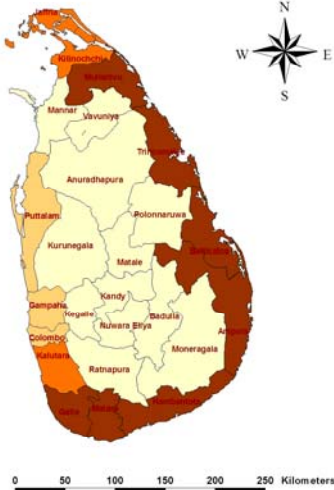
- No of effected family 370,541
- Economic loss Rs ~381,415,000



2003 May Flood and Landslide



Tsunami 9.0, Affected Districts



2004

- 13 districts directly effected
- 35,000 lives loss, 12,000 were children
- 563,000 marooned people
- More than 100,000 houses completely damaged
- Missing more than 5,000 people
- Environment rapidly damaged
- Coastal environment totally damaged
- Infrastructure damaged

Not Affected
Low
Moderate
High



27/05/2005 12:12

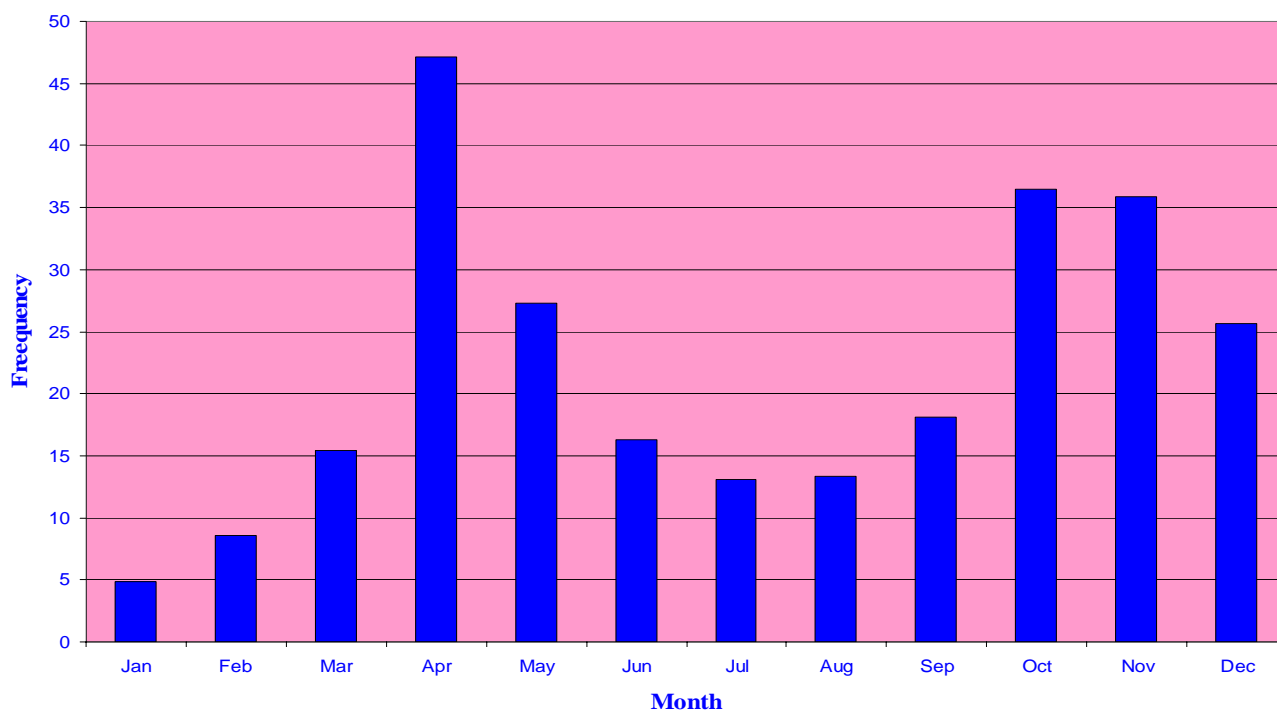
Population Affected - 2011

January 2011				February 2011		
District	Date	Affected		Date	Affected	
		Families	People		Families	People
Trincomalee	15	8479	31910	11	88874	333263
Matale	21	926	3570	11	3348	13141
Anuradhapura	13	2849	11116	6	85000	200000
Polonnaruwa	13	2705	10842	6	6011	21790
Badulla	13	357	1142	9	2589	9660
Vavunia	13	11141	39069	8	9875	25453
Nuwara Eliya	21	111	447	11	694	2480
Kandy	15	541	2643	11	334	1253
Ampara	21	120732	471556	8	81919	312890
Puttalam	15	108	324	6	249	767
Kegalle	13	4	18	6	2	6
Mannar	15	317	1284	7	9990	39948
Monaragala	13	31	118	7	46	198
Batticaloa	13	145131	541688	6	61350	240366
Kurunegala				6	104	399
Mullaitivu	13	498	1500	6	18451	59977
Kilinochchi				7	3733	14895
Rathnapura	15	162	716	8	7	24
GRAND TOTAL		294092	1117943		372576	1276510

Source : DMC - EOC

Lightning

Percentage of stations reported Thunder in each month



2008 December Jaffna Flood Situation

No	Division	2007 Population (Census & Statistics)	No of affected People	Percentage of Affected People	No of IDP Camps	No of people in IDP camps
1	Delft	5,352	1,339	25	7	1339
2	Island South – Velanai	12,247	11,706	95	45	11706
3	Island North – Kytes	13,740	12,021	87	9	3705
4	Karainagar	8,860	2,566	29	2	257
5	Jaffna	48,889	15,527	32	25	9099
6	Nallur	60,066	28,316	47	22	4966
7	Valikamam South West – Sandilipay	56,911	42,336	74	14	2154
8	Valikamam West - Chankanai	47,011	25,724	55	31	6219
9	Valikamam South - Uduvil	51,009	41,008	80	42	9679
10	Valikamam North - Tellippalai	24,010	18,516	77	16	4125
11	Valikamam East - Kopay	71,095	39,540	56	30	6078
12	Thenmarachchi - Chavakachcheri	55,478	41,012	74	55	20209
13	Vadamarachchi South West - Karaveddy	46,328	46,118	99	13	5890
14	Vadamarachchi North – Point Pedro	43,525	10,178	23	23	5537
15	Vadamarachchi East - Maruthankerney	16,326	2,172	13	5	2172

Disaster Information Inventory

The screenshot shows the Disaster Information Management System - Sri Lanka website. The page layout includes a header with the system name and logos, a navigation menu, and a search bar. The main content area is divided into several sections:

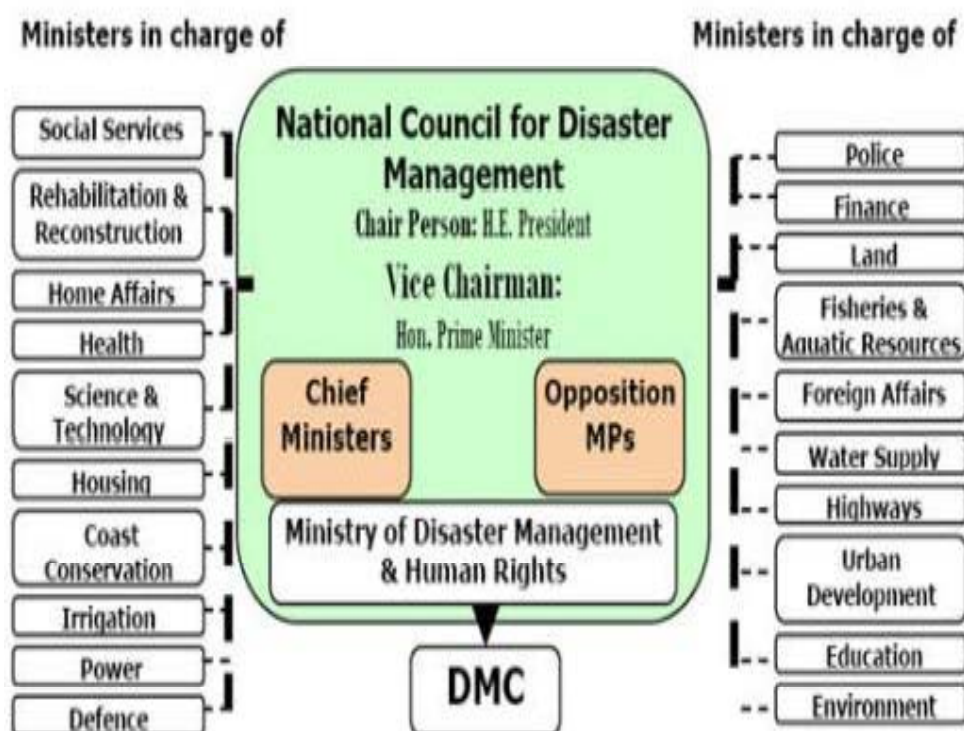
- ABOUT US:** A sidebar menu with links for 'What is Disaster Information Management System', 'Data Sources', 'Data Collection Process', 'Data Validation', 'Disaster Definitions', 'Incident Reporting Formats', 'User Manual', and 'Training and Awareness'.
- DISTRICTS PROFILES:** A section with a map of Sri Lanka and a text box describing the system's development and purpose.
- Landslides:** A featured article with an illustration of a landslide. The text states: "Until the year 2002, the annual average number of landslide records did not exceed 50. Further, landslides are most prone to occur in the months of November, December and January. With respect to spatial distribution, most landslides appear to occur in the districts of Battula, Rathnapura, Nuwara Elya and Kegalle...."
- LATEST DISASTER INCIDENT IN SRI LANKA:** A news section reporting on flooding in Sri Lanka on January 11, 2011. It mentions that heavy rains, landslides, and strong gusty winds caused significant damage and loss of life.
- DIFFERENT DISASTERS & THEIR IMPACTS:** A section with a heading for various disaster types and their effects.

The website is displayed in a browser window with the URL www.desinventar.lk. The system tray at the bottom shows the date and time as 6:01 PM on 18/11/2013.

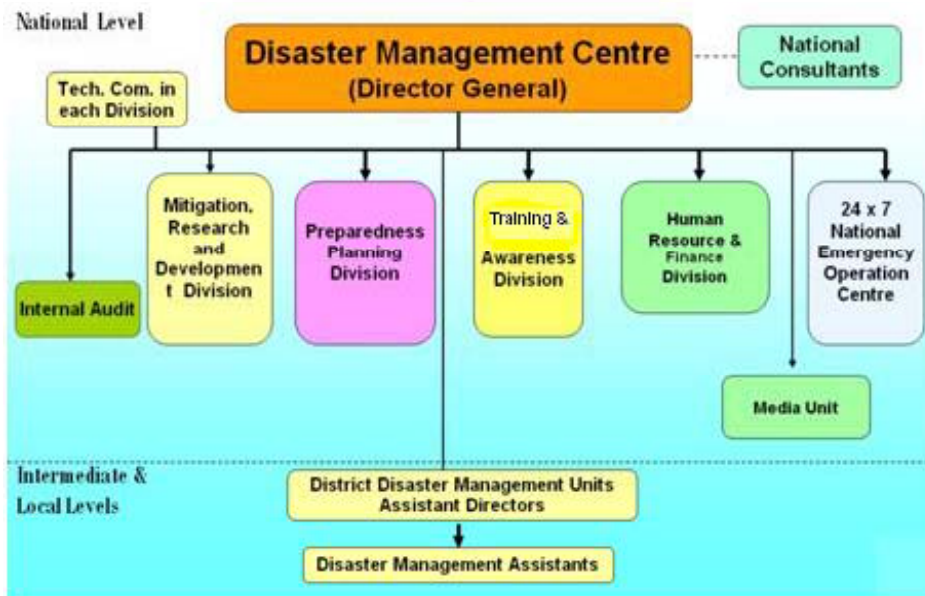
Legal Framework for Disaster Management (DM) in Sri Lanka

- Sri Lanka Disaster Management Act No.13 of 2005 was enacted with legal provisions for instituting a disaster risk management system in the country.
- The Act provides for the establishment of the National Council for Disaster Management (NCDM), which is a high-level inter-ministerial body chaired by H.E. the President and which provides direction for disaster risk management activities in the country
- It also provides for the establishment of Disaster Management Centre (DMC) that will be the lead agency on disaster risk management

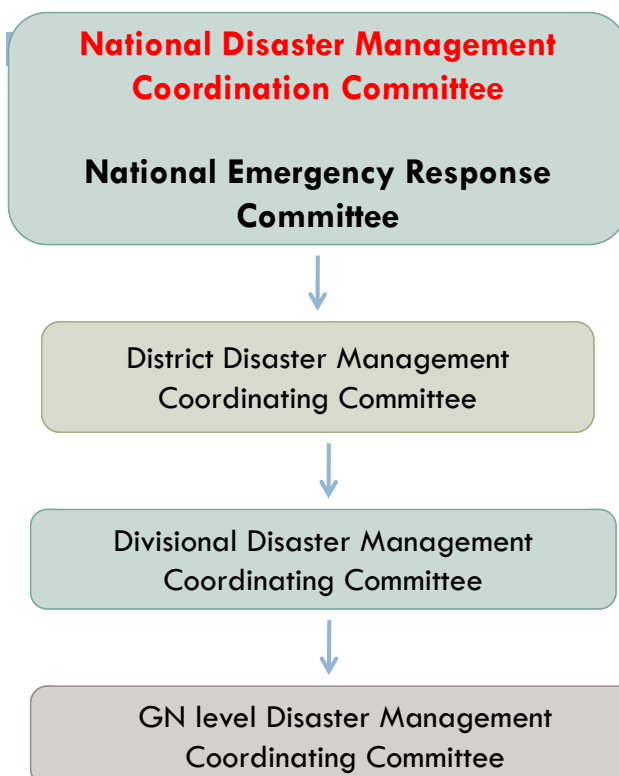
Composition of the National Council



Organizational Structure Disaster Management Centre



Disaster Management Mechanism



- Disaster Management Plan
 - **National Disaster Management Plan**
 - **Disaster Preparedness and Emergency Response Plan**
 - Early Warning Plan
 - Emergency Operation Plan
 - SOPs
 - Mitigation Plan
 - Rehabilitation and Reconstruction plan
- **Sub Committees for Response**
 - Early Warning dissemination
 - Evacuation, Search & Rescue
 - Relief camps, Food and Security
 - Health and Welfare
 - Restoration of Services, Reconstruction and Rehabilitation

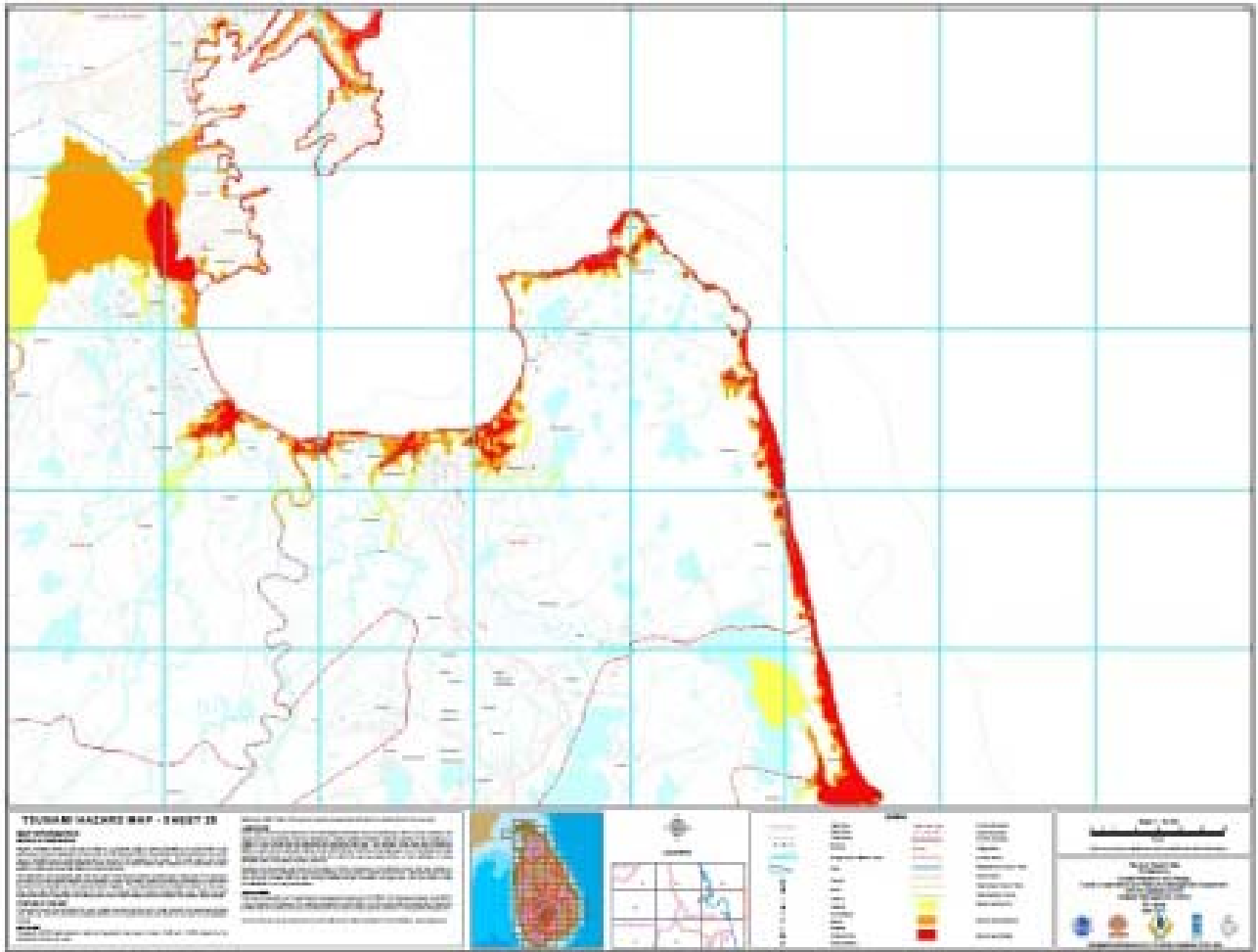
Disaster Management Center's main responsibility

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

- Hazard Mapping and Risk Assessment
- Information Management
- Disaster mitigation
- Early warning dissemination
- Preparedness for effective response at disaster situations
- Emergency Operations Management
- Management of the post-disaster activities after a disaster

Hazard Profile in Sri Lanka

In order to fulfil this requirement, in 2009, Disaster Management Centre (DMC) and United Nations Development Programme (UNDP) initiated a hazard profiles development process in collaboration with the relevant technical agencies, which are responsible for disaster mitigation activities of the country. Hence, it was decided to develop nine hazard profiles of the country namely; Coastal Erosion, Drought, Floods, Landslides, Lightning, Sea Level Rise, Storm Surge, Tropical Cyclone and Tsunami.



Disaster Mitigation Projects



Major Activities

- Flood mitigation projects such as Major Canal cleaning, culvert improvements, Flood wall, Dam Safety program, inundation map preparation...
- Improvements to evacuation routes and roads to withstand frequent flood damages
- Projects to minimize loss of lives due to animal attacks (Elephants and Crocodiles)
- Supply of Drinking water and establishment water schemes to mitigate effect of droughts
- Landslide mitigation activities, studies, removal of rocks
- Development of design guidelines to minimize the impact of cyclones & strong winds on buildings

-
- Earthquake awareness, introducing building code for newly construction houses
- Based on the severity of landslide threat certificate is issued by the local authority for the particular areas for the construction.

Flood Mitigation Projects - 2007



Crow Island, Colombo



Wadduwa ,Kalutara



Mutwal Tunnel



Kimbula Ela ,Colombo



Drought Mitigation Projects - 2008

Improvement of water supply schemes,
Distribution of water tanks and Browsers



Improvement of water supply schemes,
Distribution of water tanks and Browsers



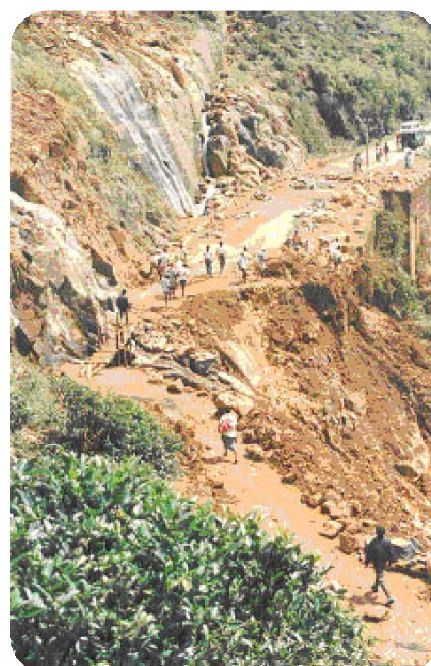
Landslide Mitigation Projects

Mitigation the affect of Landslide along the
Athwelthota Diganna Road in Palindanuwara DS
area

Removal of dangerous rock boulders

Geological Investigation – Kandy District

Geological Investigation – Matale District



Infrastructure Establishment to Mitigate the Hazards due to attacks from Crocodiles in Matara District



PREPAREDNESS & PLANNING

Major Activities

- Preparation of disaster management plans for Districts, Divisional Secretary Divisions, Vulnerable Grama Niladhari Divisions
- Coordinating with hospitals to conduct mass casualty handling exercises
- Preparation for guideline for National level to GN level drills
- Coordination and support to curriculum development for schools as well as higher education sectors of school safety plan preparation
- Development of guideline for all government and private institutes for the preparation of DM plans including business continuity plan.
- Coordinating with the Ministry of Education on preparation of School Disaster Safety Plans for vulnerable schools
- Strengthening the emergency response capacity of Local Authorities by providing machinery and equipment
- Supplying equipment such as megaphone, electric siren to vulnerable communities in Tsunami and landslide prone areas

Preparation of GN level Plan



Kegalle



Preparation of disaster management district plans



Matara



Coordination with the Ministry of Education on preparation of School Disaster Safety Plans for vulnerable schools



Supplying megaphones to vulnerable communities living in Tsunami and landslide prone areas



Participatory Hazard Mapping to identify safe routes and safe areas



Participatory Hazard Mapping in Vulnerable Areas Communities



Community Evacuation Plans



Mock Drills to ensure response capacities



Evacuation Mock Drills

Community De-briefing



Disaster Management Plans

- **School Preparedness Plans.**
- **Hospital Preparedness Plans for mass casualty transfer.**



Coordinating with hospitals to conduct mass casualty handling exercises



Capacity building for Local Authorities for emergency response



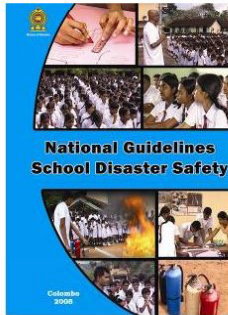
School Disaster Safety



- School safety plan for all vulnerable schools

Contents of the Guidelines

7 steps:

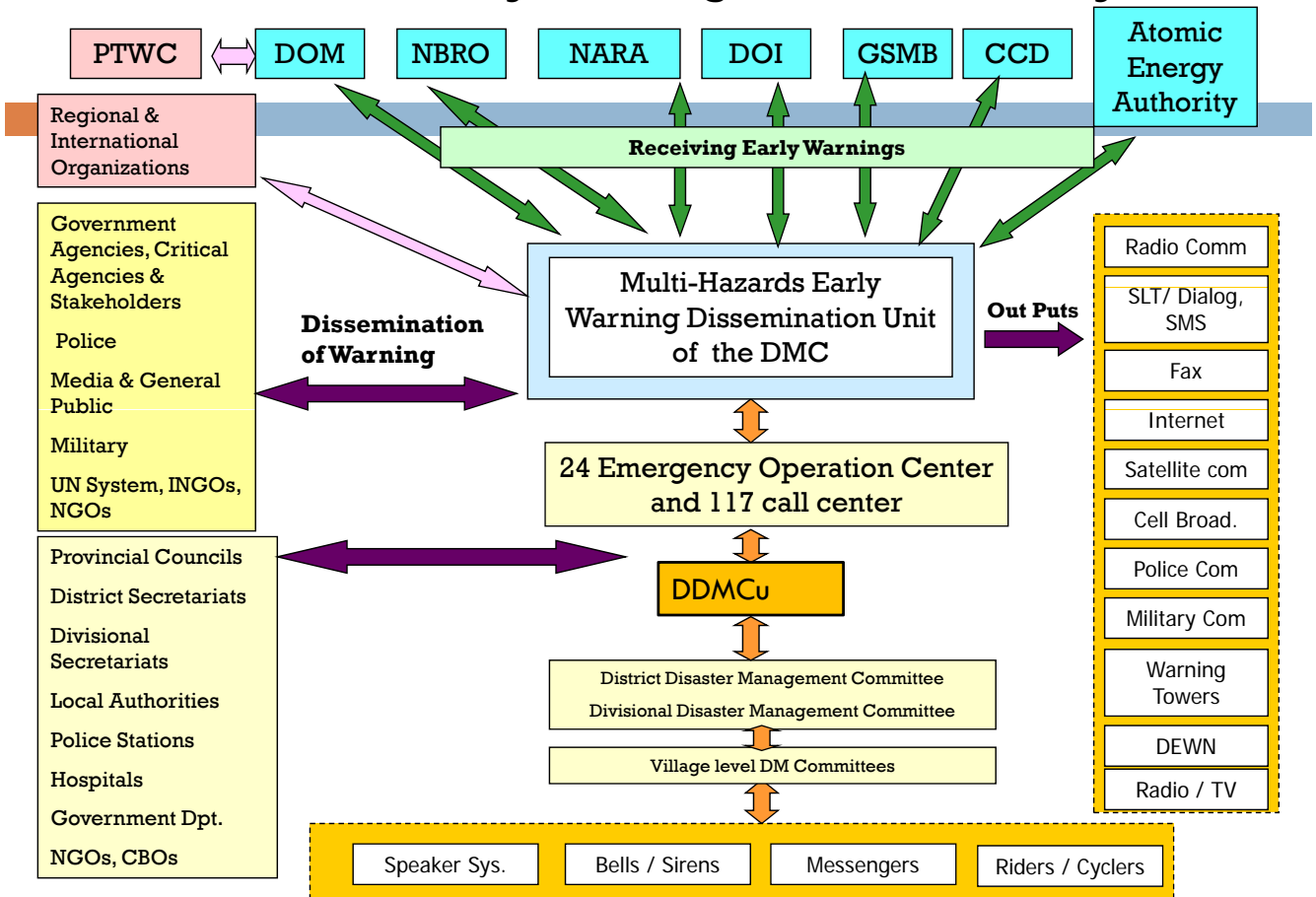


1. Establish the school safety core team
2. Create awareness among the school community
3. Identify hazards and resources in the school
4. Establish and train school disaster safety team
5. Prepare the school safety plan document
6. Disseminate the plan and conduct mock drills
7. Evaluate and update the plan

TRAINING & awareness

Multi Hazard Early Warning System in Sri Lanka

Multi-Hazards Early Warning Dissemination System



NEOP and SOP's

- Developing NEOP with all other relevant agencies
- SOP's prepared for each disasters

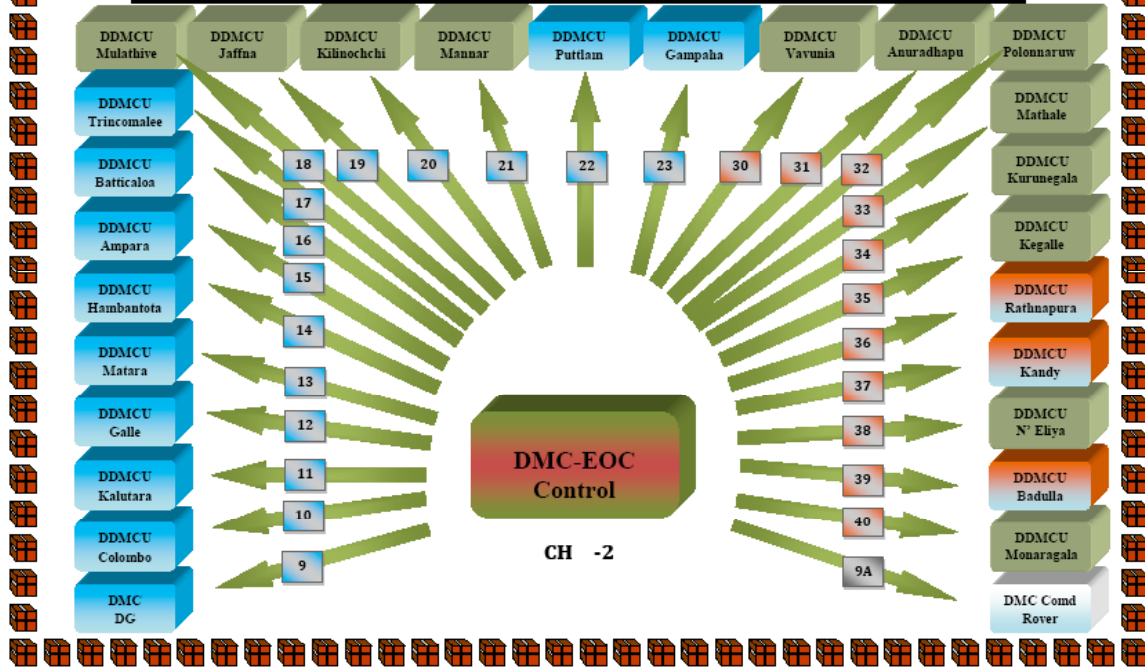


1. Early warning towers

Working through SAT and VHF



HF/VHF-Radio Communications Network For DMC

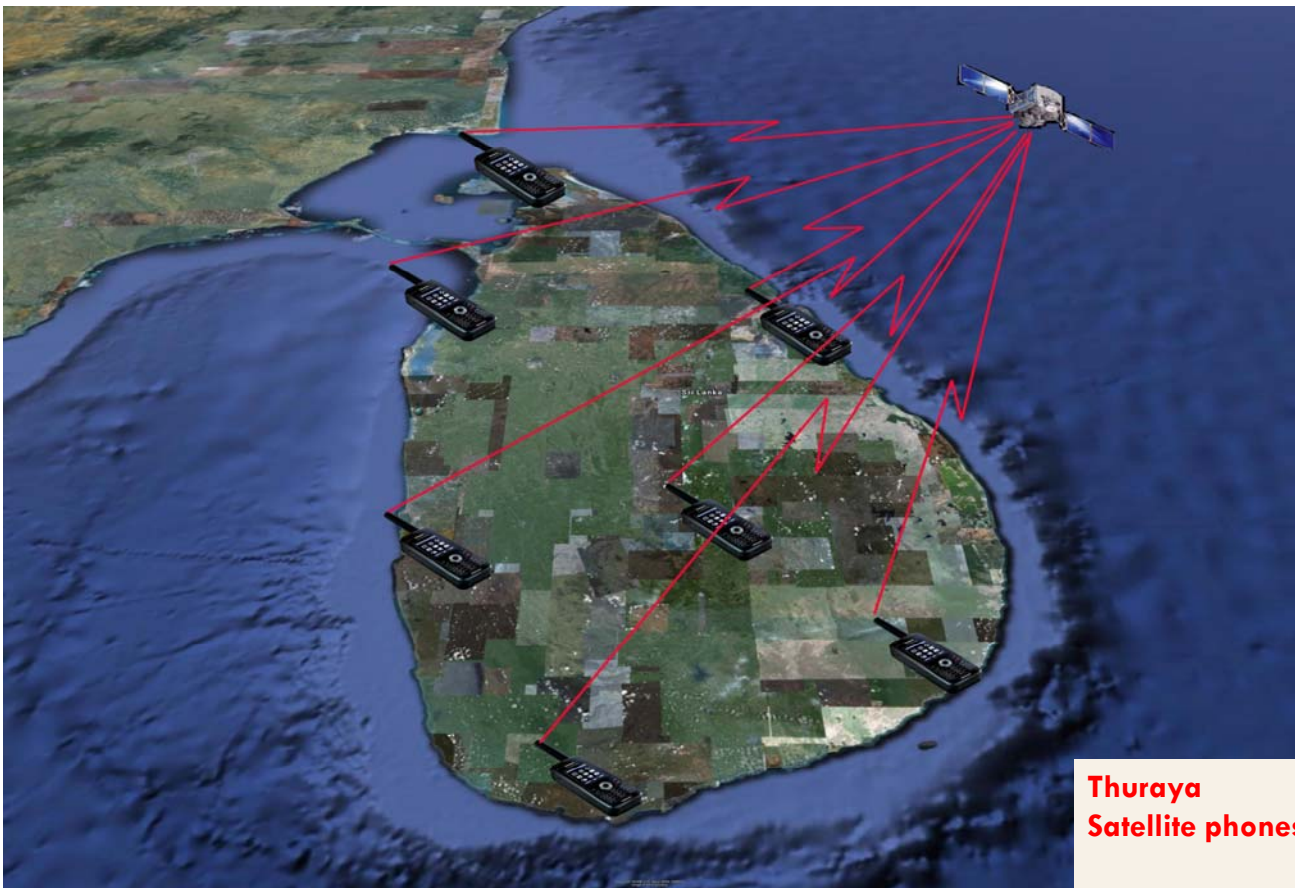


HF /VHF network



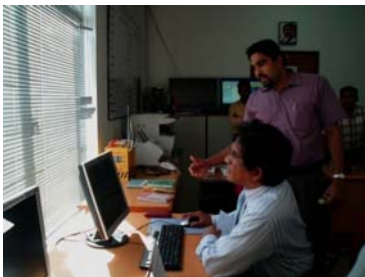
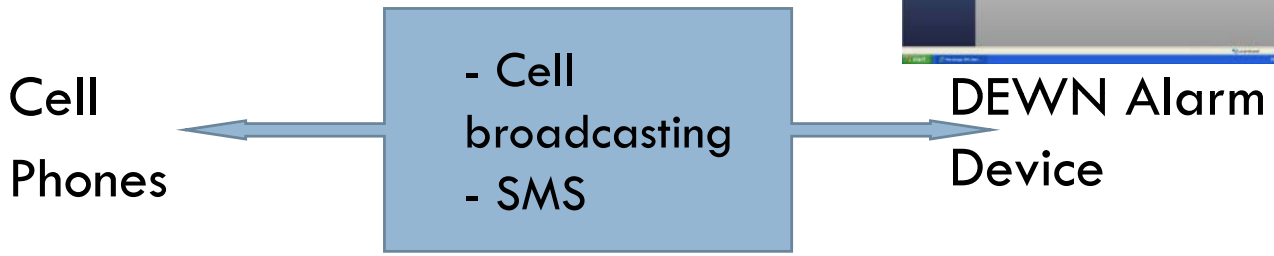
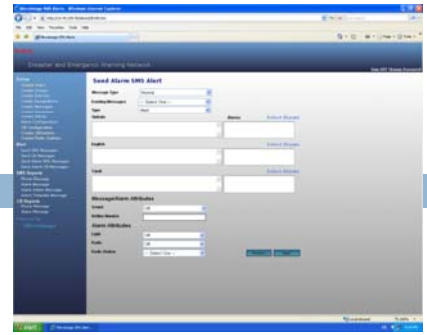


6. Satellite communication will cover the entire country

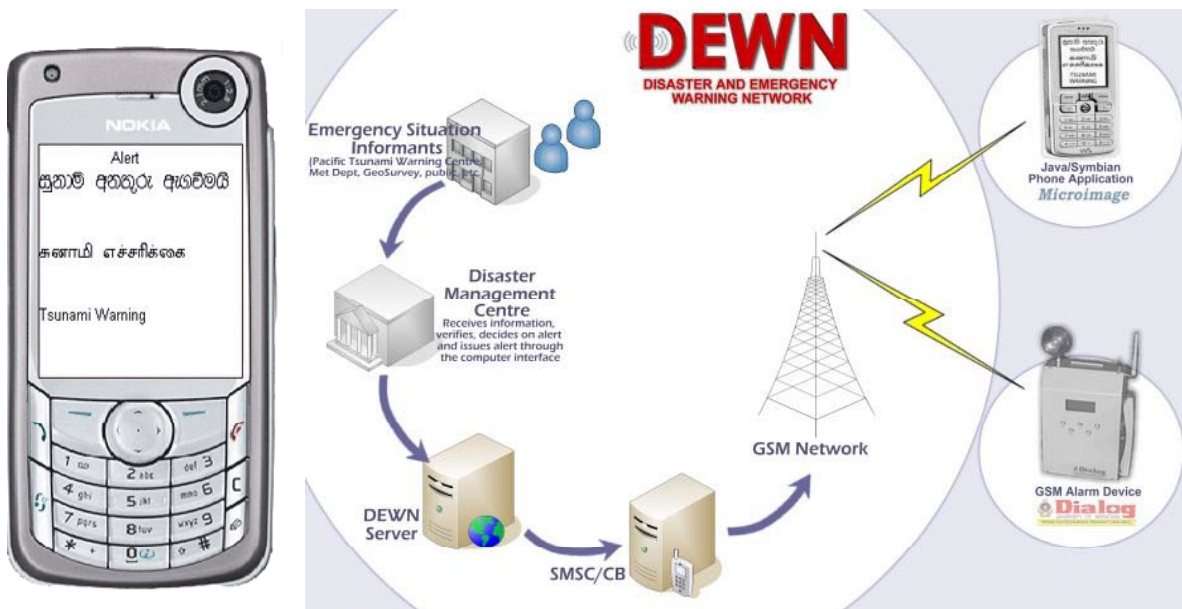


**Thuraya
Satellite phones**

10. Disaster Early Warning Network (DEWN)



- DMC carried out a SMS system (DEWN) in collaboration with Dialog Telecom Ltd



Local level EW Mechanism



Electric and manual Sirens

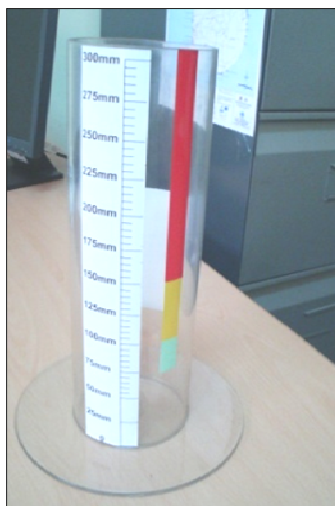
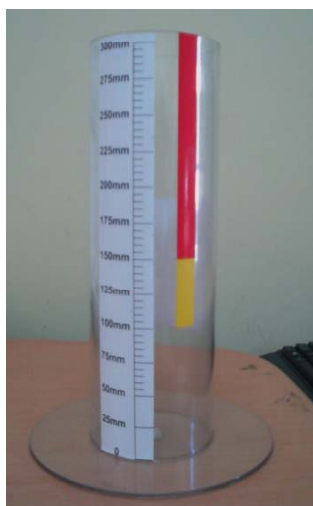
Mega Phone & Public Addressing Systems



Traditional



Community base Landslide Warning system WITH THE COODINATION OF NBRO



Research topic in ADRC visiting scholar program

Studying on community based disaster preparedness for Natural Hazards in Japan

(Case study within the Hyogo prefecture)



Thank You for your attention