

Use of Space Technology for Disaster Management in Sri Lanka Beijing China



**SRIMAL PRIYANTHA
SAMANSIRI**

Assistant Director R&D
Disaster Management Centre

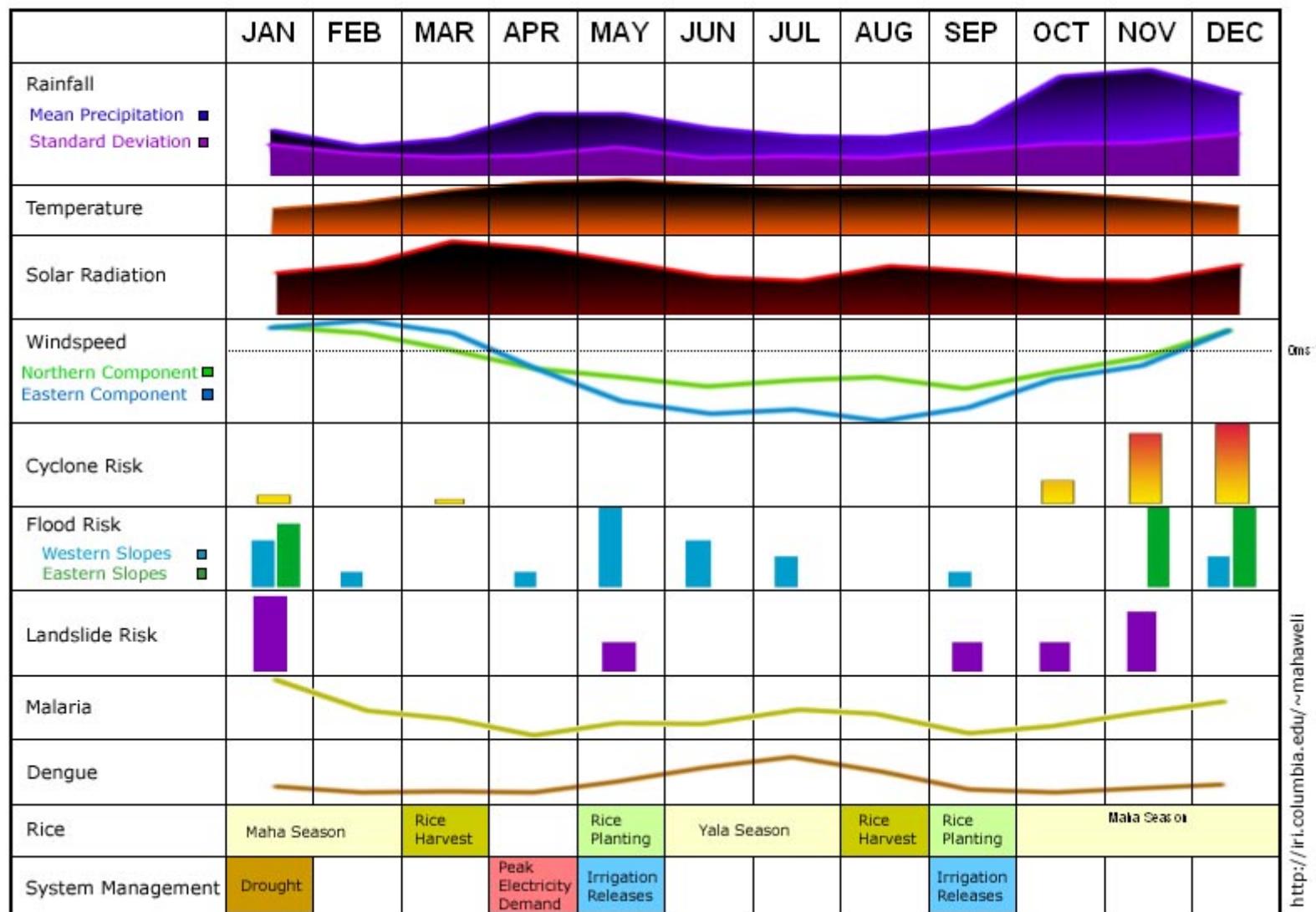
SRI LANKA DISASTER MANAGEMENT ACT, No.13 OF 2005

- Framework for Disaster Risk Management (DRM) in Sri Lanka
- Addresses Disaster Management (DM) holistically, leading to a policy shift from response based mechanisms to a proactive approach
- Establishment of *Institutional* and *Legislative systems* for a 'legal' framework for DRM
- National Council for Disaster Management (NCDM) and Disaster Management Centre (DMC) established in accordance with the Act.



Sri Lanka Climate Calendar

Sri Lanka Climate Calendar



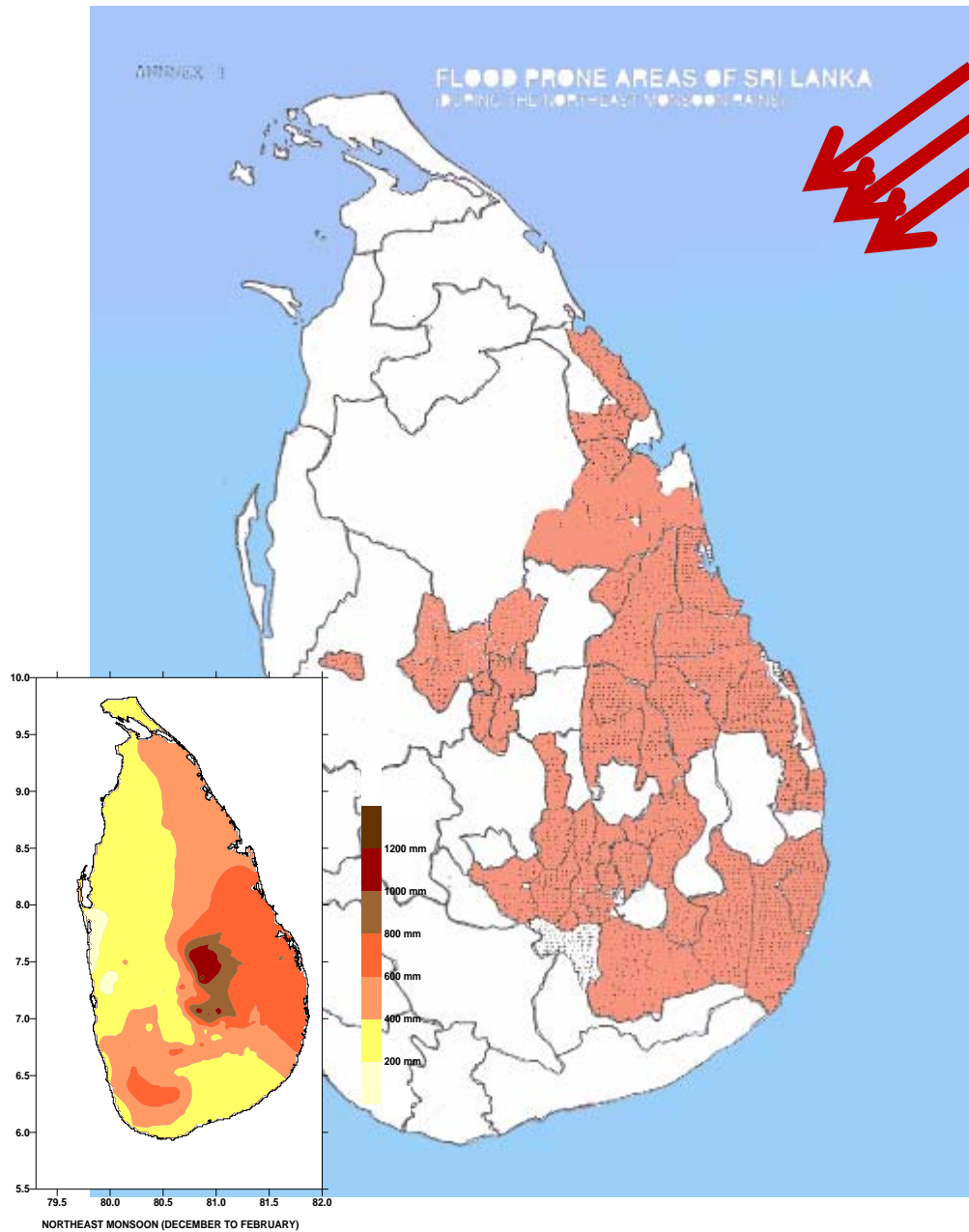
<http://iri.columbia.edu/~mahawell>

Source: Dr. Lareef, Columbia University

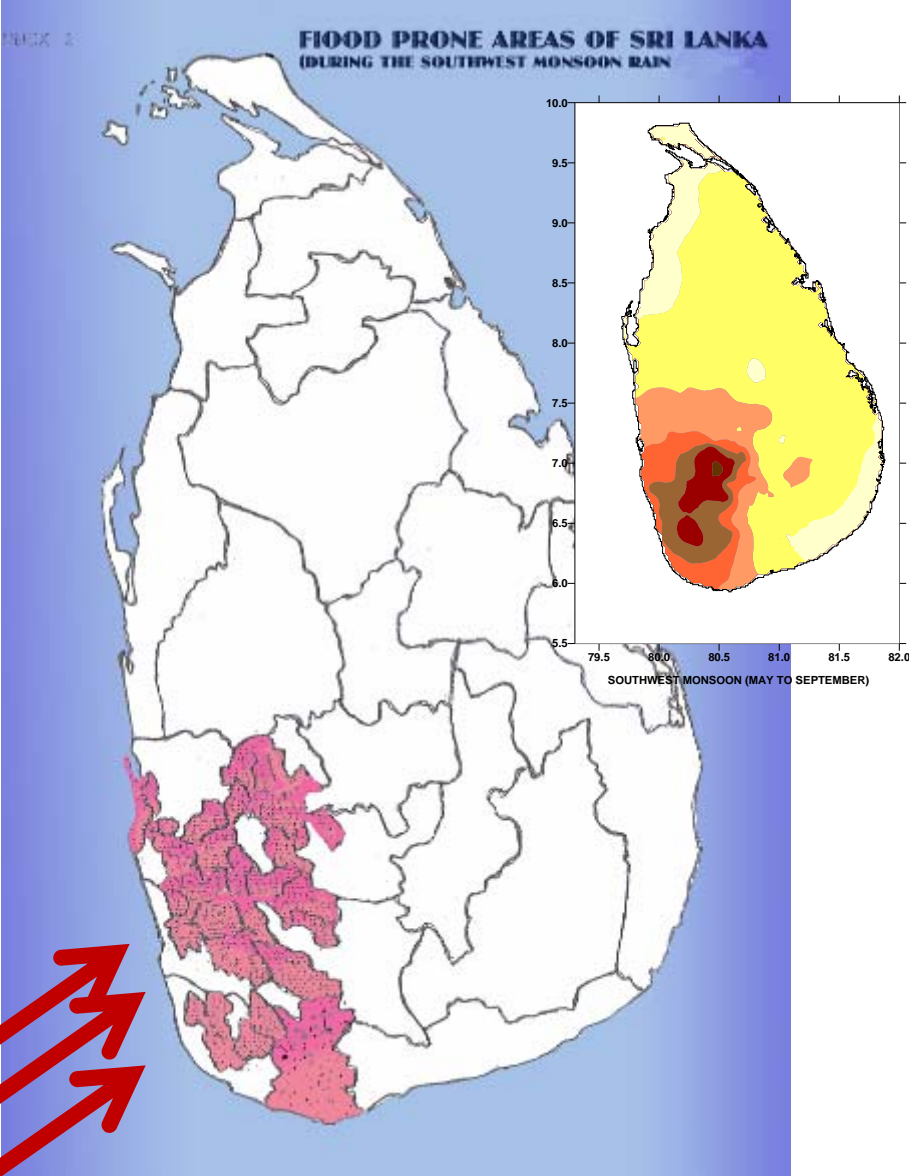
Sri Lanka



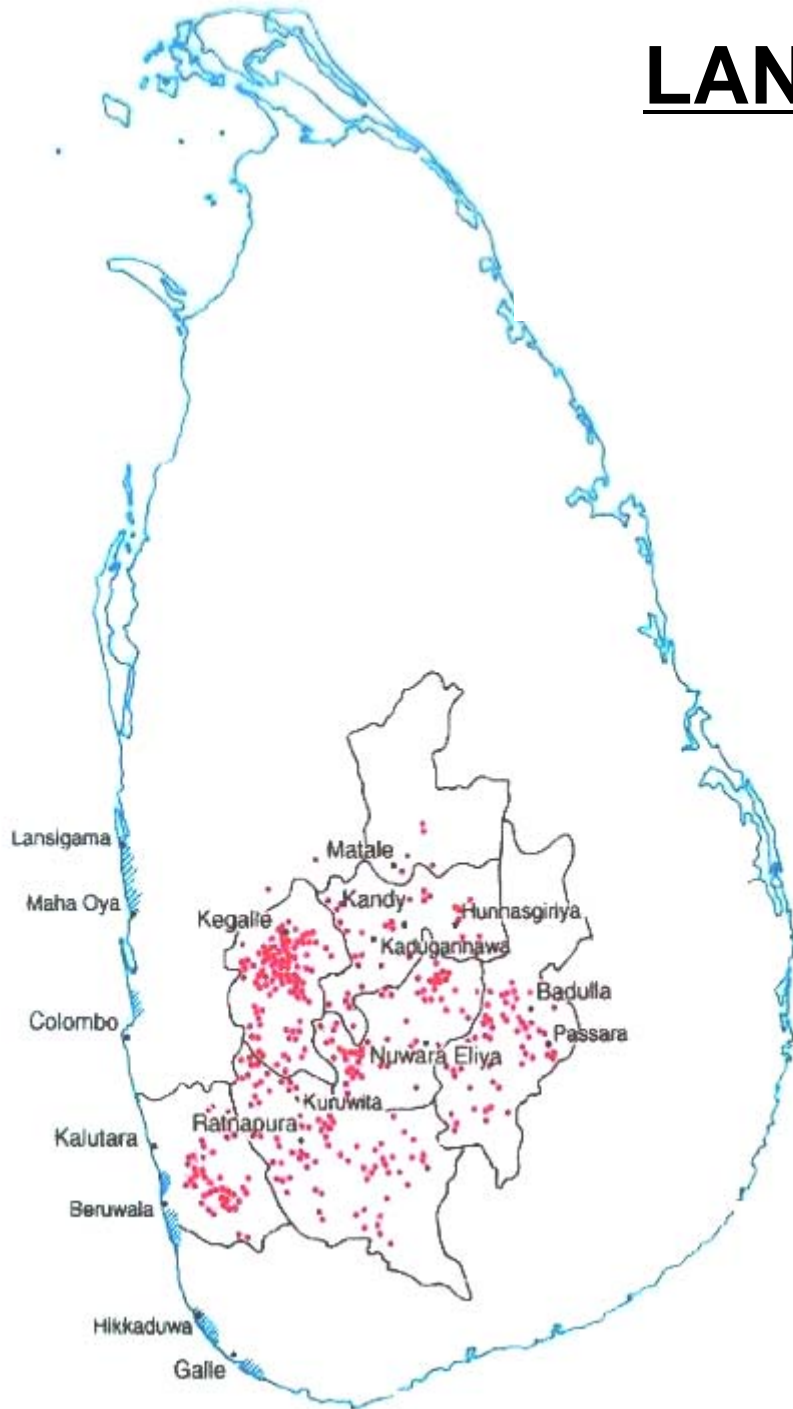
FLOODS DURING THE NORTH EAST MONSOON



FLOODS DURING THE SOUTH WEST MONSOON



LANDSLIDES



Hazard, Vulnerability and Risk Mapping

National Risk Profile Development Project

Five Hazards / Five Technical Agencies



Landslide

Flood

Coastal

Cyclone/Winds

Drought

Floods – Irrigation Department (ID)

Coastal – Department of Coast Conservation (CCD)

Tsunami, Sea Level Rise, Coastal Erosion and Sea Surge

Landslides – National Building Research Organization (NBRO)

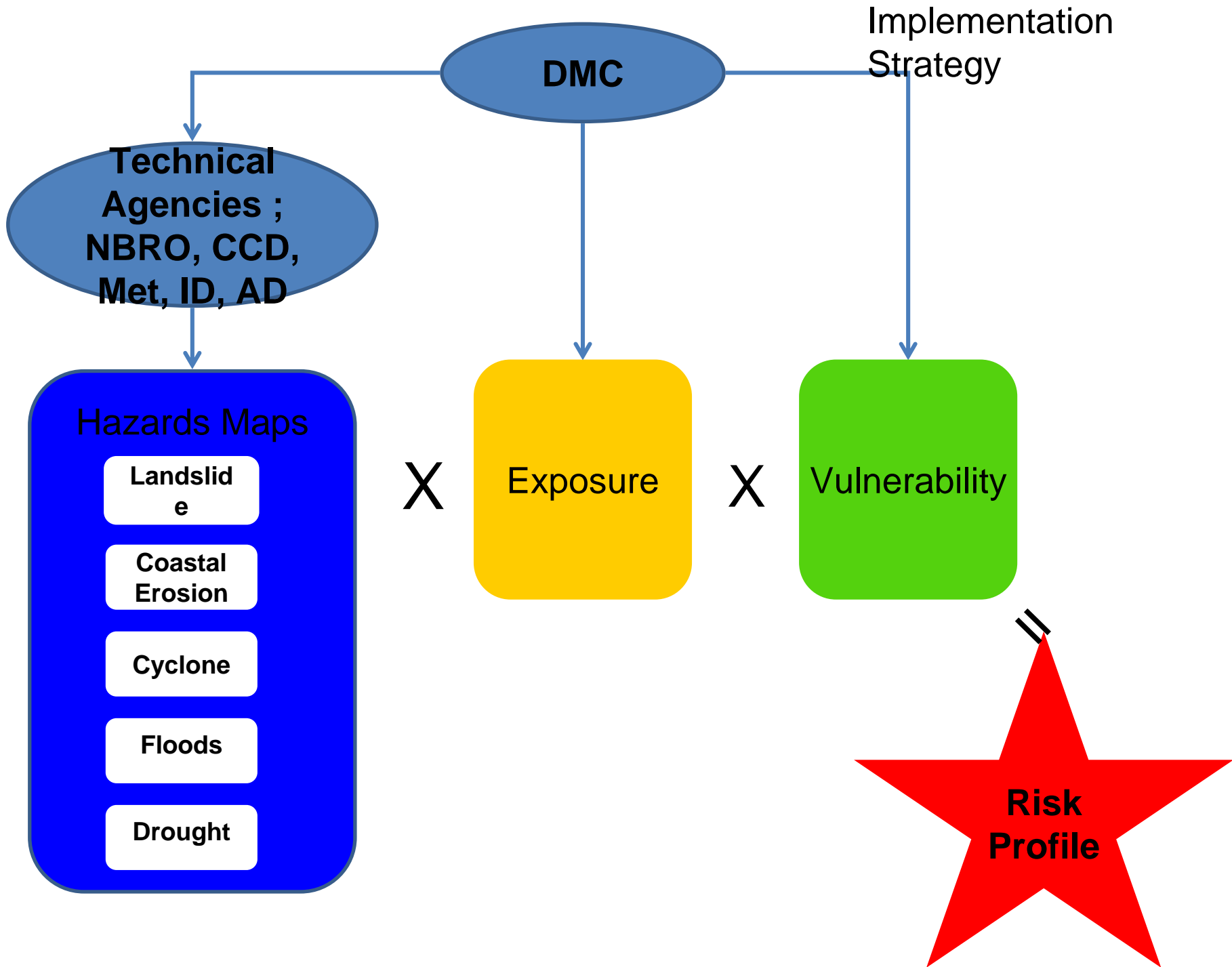
Drought – Department of Agriculture

Cyclone – Department of Meteorology

Project monitoring & funding – **United Nations Development Program**

Project Implementation / Coordination - **Disaster Management Centre**




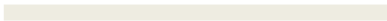









Agreed Upon

- Detail Methodology
- Data sharing and acquisition strategy
- Inter-operability
- Information products and ownership
- Scales / Resolution
- Hardware and software gaps
- Capacity building needs
- Expert group
- Project implementation

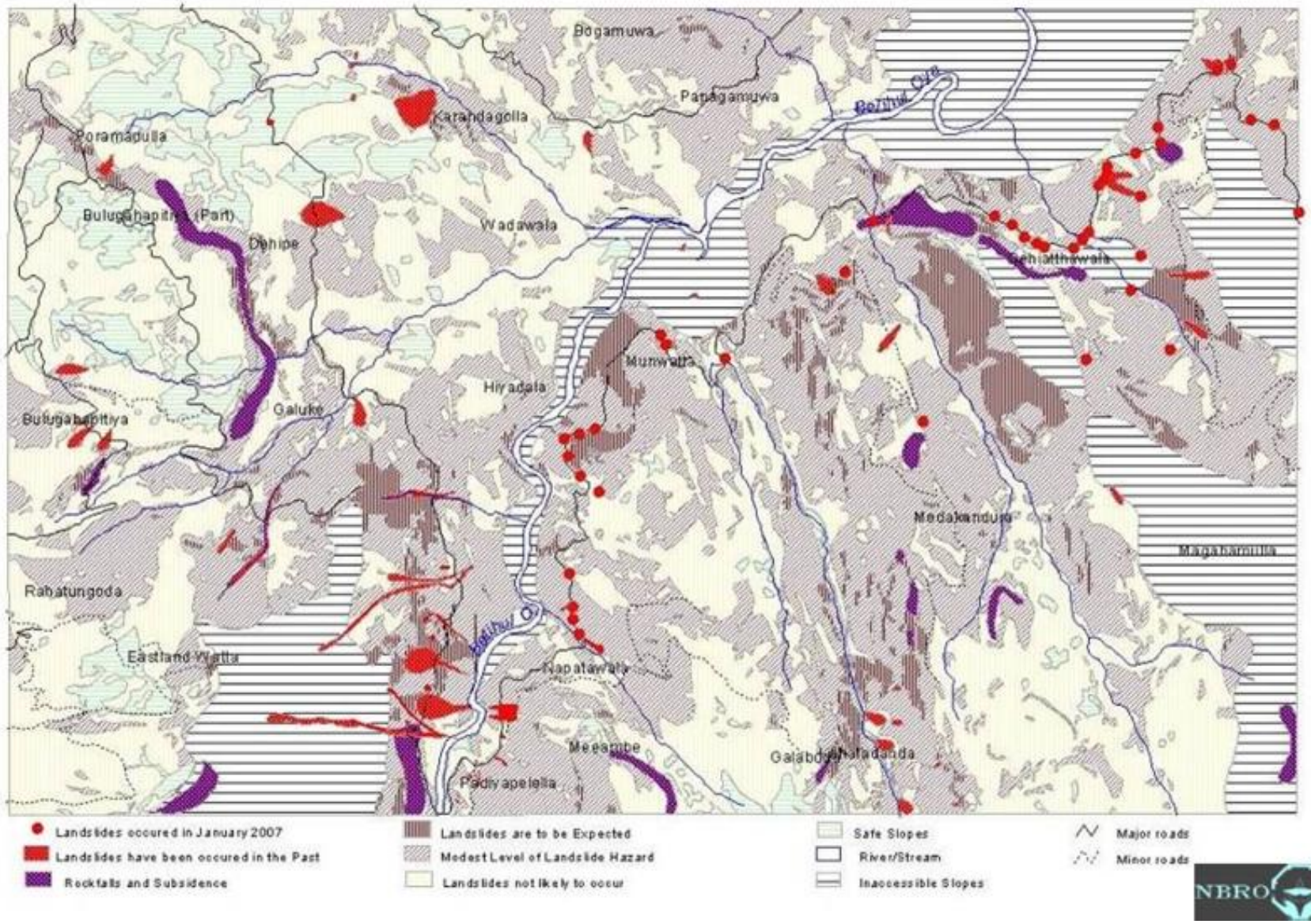
Risk Profile – Current Progress

Hazard	Status	Grid / Resolution / Scale	Deadline
Landslide 	75% Completed	1: 10,000	Deadline 31 st Dec. 2011
Floods 	DEM, river discharge, cross sections, inundation maps etc.	50 m 1:10,000 1:50,000	Not started yet
Cyclone 	50% completed Waiting for consultant from	5 – 10 km grid 1: 250,000 <	Deadline 31 st Dec. 2011
Drought 	100 % Completed	5-10 km grid 1: 250,000 <	-
Tsunami 	90% completed	50 m grid 1: 10,000 1: 50,000	Deadline 31 st Dec. 2011
Sea level rise 	90% completed	1: 10,000 1: 50,000	Deadline 31 st Dec. 2011
Storm Surge 	90% completed	1: 10,000 1: 50,000	Deadline 31 st Dec. 2011

DISSEMINATION

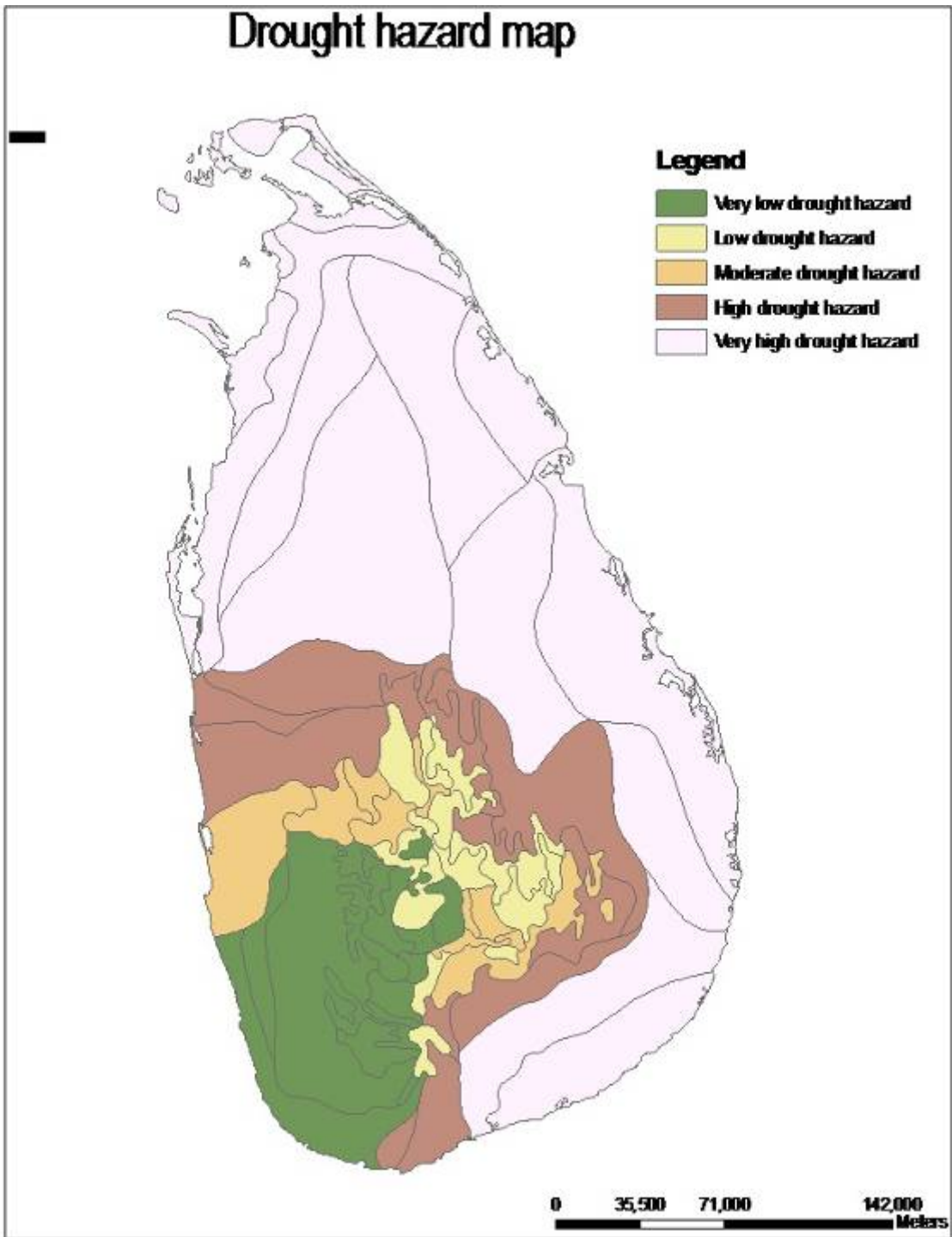
1. Hard Copy format
2. Soft Format
3. Web Server – similar to Google earth

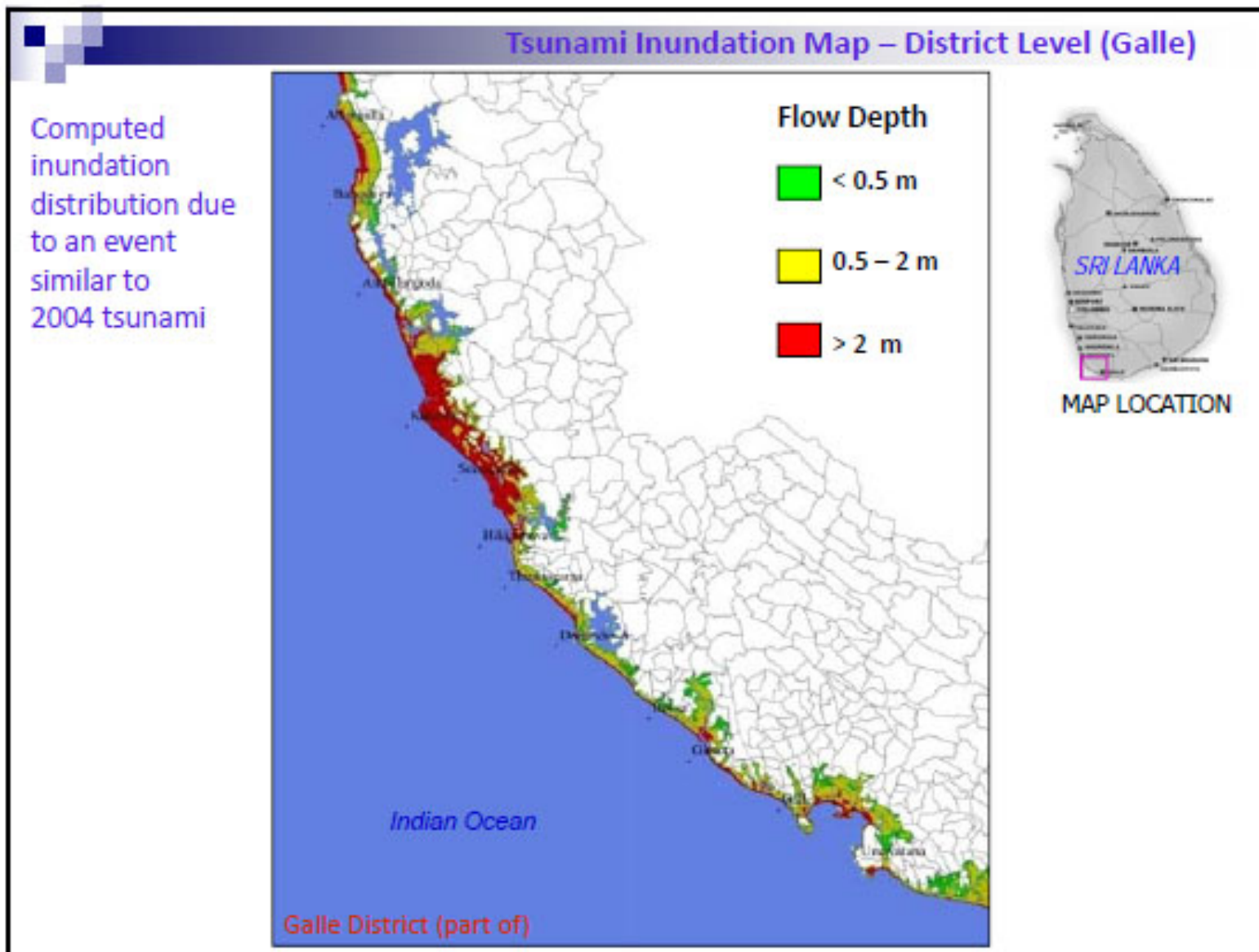
- Hard and soft copy formats for public sharing - Public access
- Spatial Decision Support Systems via Internet GIS for simple querying and map generations - Controlled access
- Sharing GIS based layers – limited access



Landslide Susceptibility Map
 Source: National Building Research Organization, Risk Profile Project

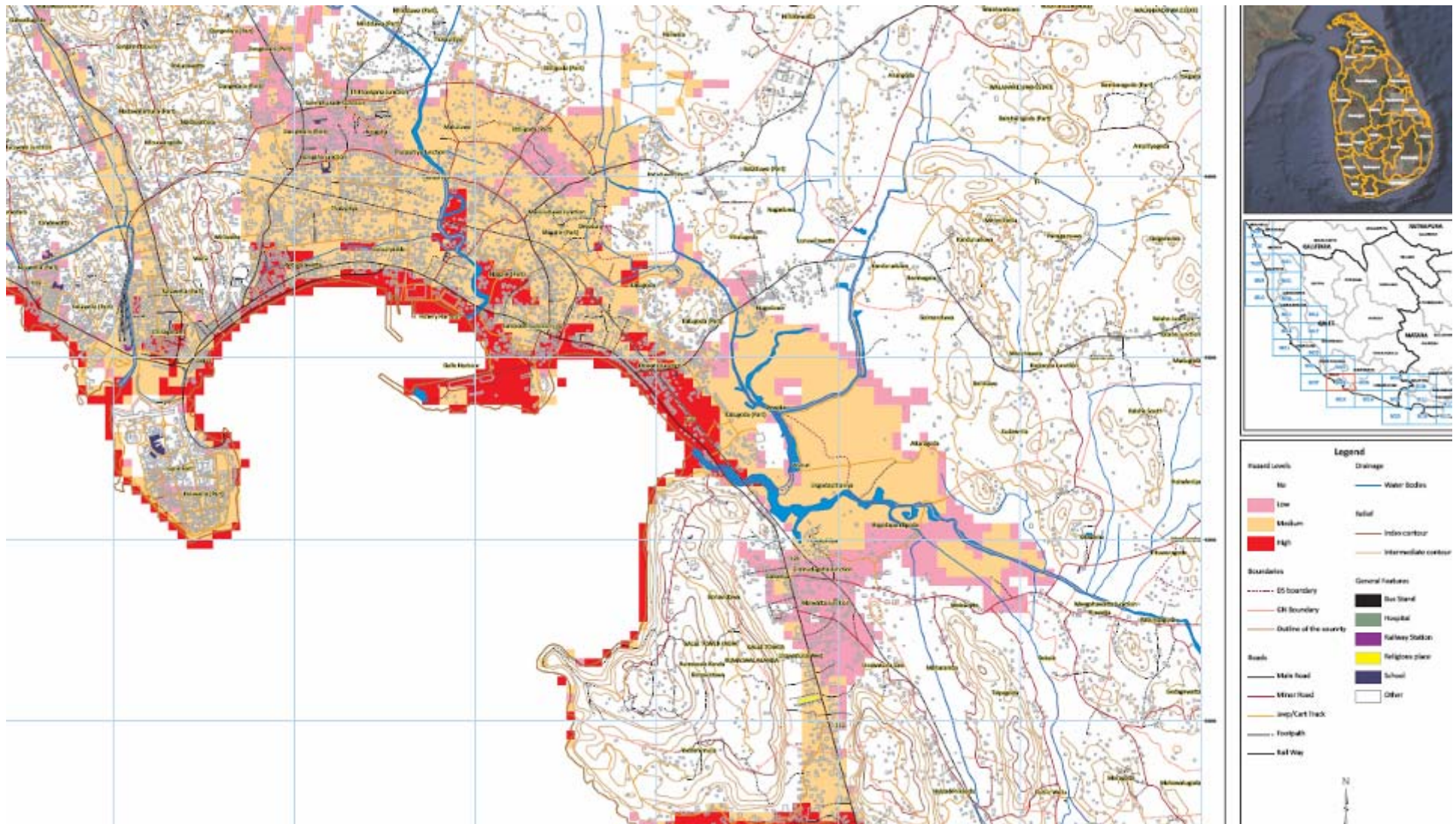
Drought hazard map





Tsunami Inundation Map

Source: Department of Coast Conservation, Risk Profile Project

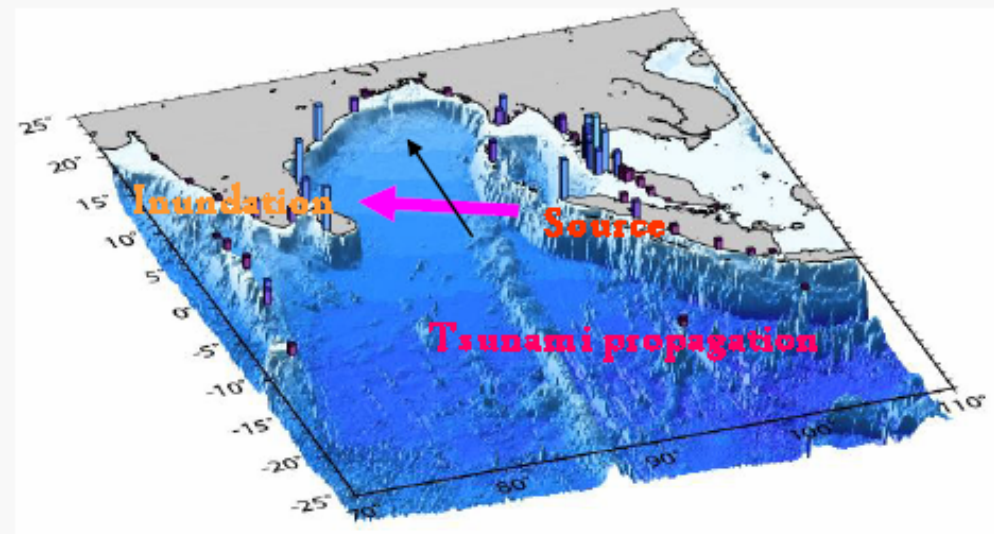


Tsunami Hazard Map – Galle City
 Source: Coast Conservation Department

Tsunami Modeling

The COMCOT tsunami model is a dynamically coupled combination of the following three components:

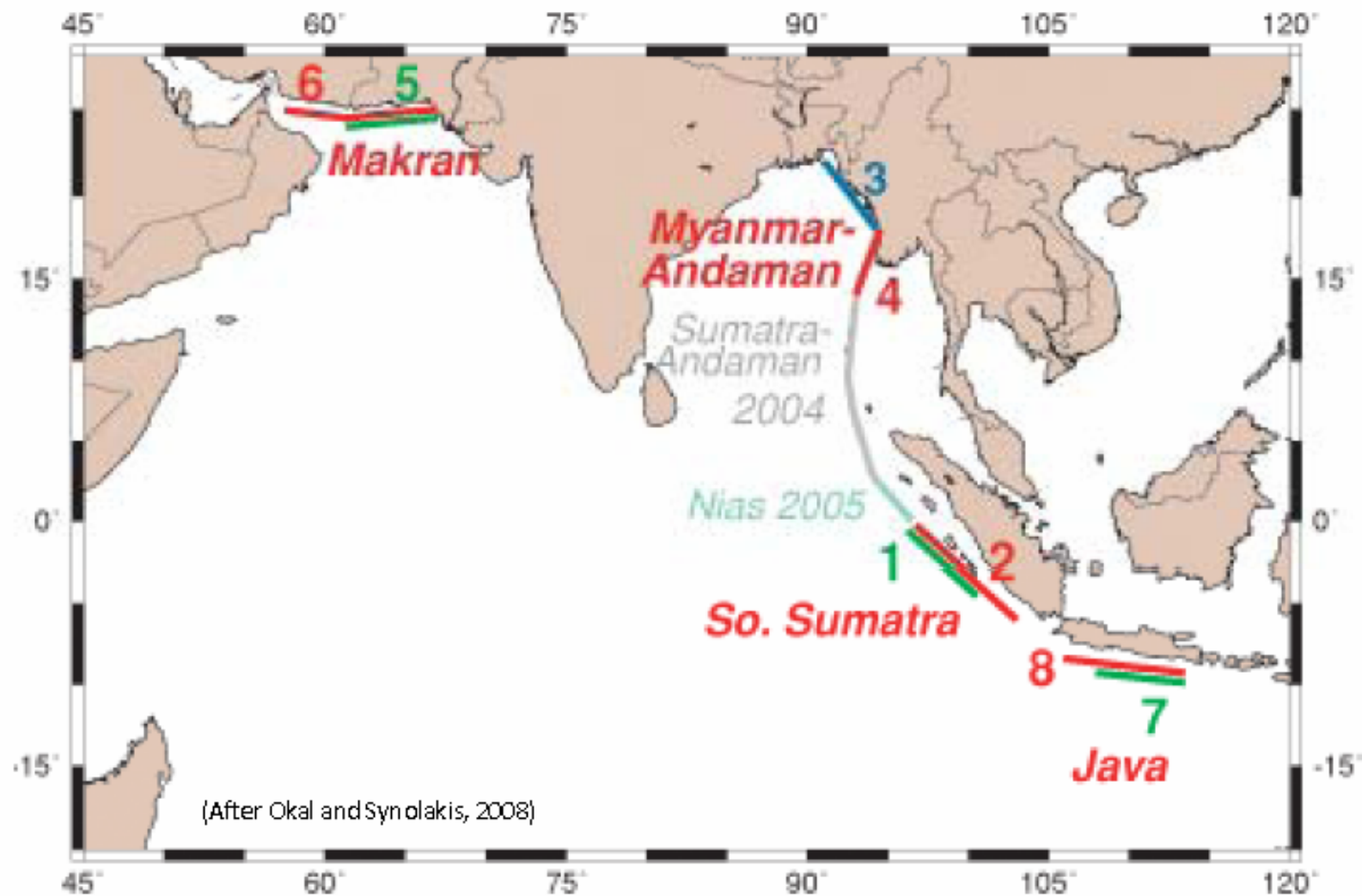
- a) source model which creates the initial water surface disturbance given the earthquake parameters
- b) tsunami propagation from its origin to the near shore coast
- c) tsunami run-up and inundation



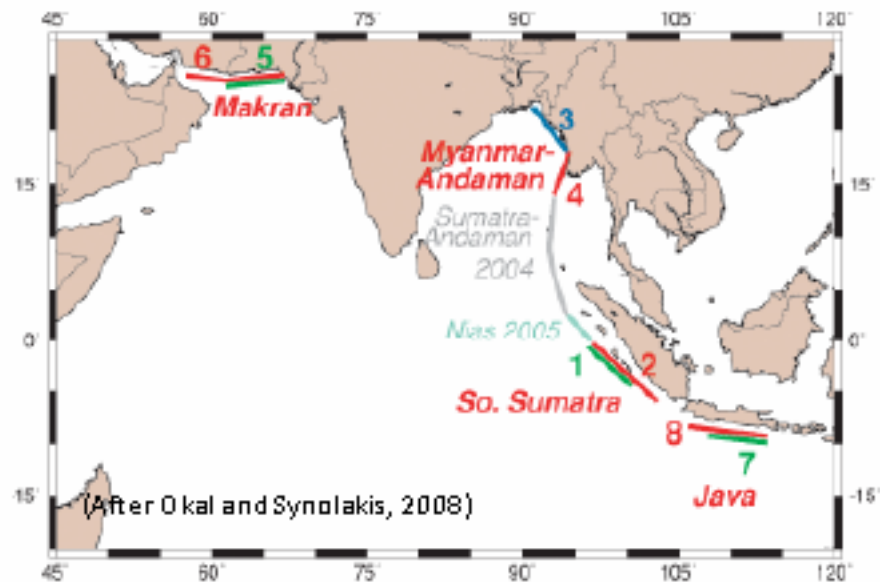
Tsunami Model
Cornell Multi-grid Coupled Tsunami Model (COMCOT)

Active subduction zones around Sri Lanka

- Southern Sumatra
- Northern Sumatra-Andaman
- Andaman-Myanmar
- Makran



Active subduction zones around Sri Lanka



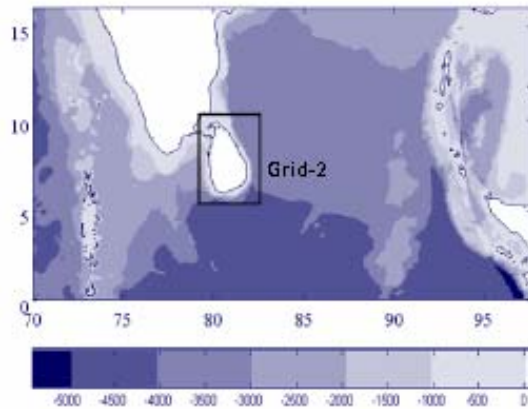
- Southern Sumatra
- Northern Sumatra-Andaman
- Andaman-Myanmar
- Makran

Okal & Synolakis

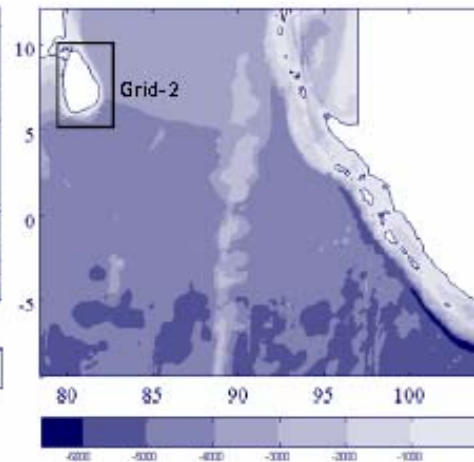
**'Maximum Credible'
Tsunami Scenarios**

**'Maximum Credible'
Seismic Scenarios**

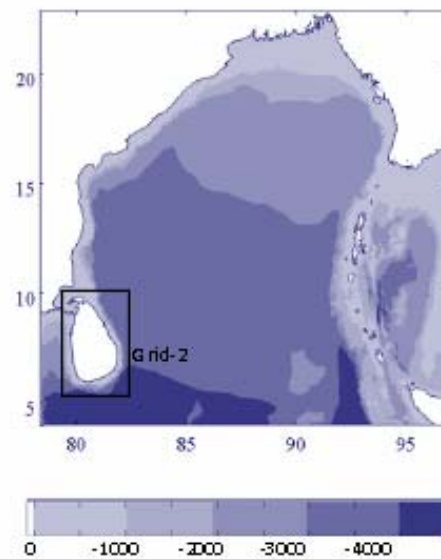
Possible Tsunami Scenarios



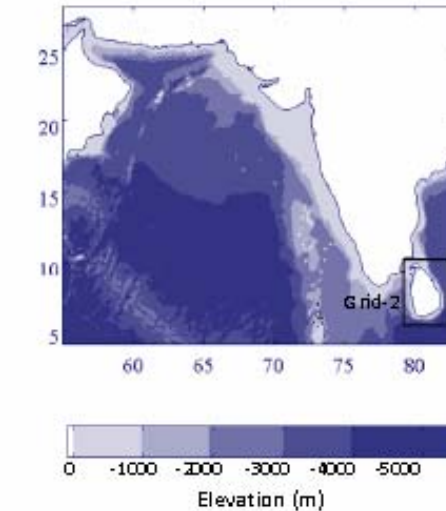
(a)



(b)



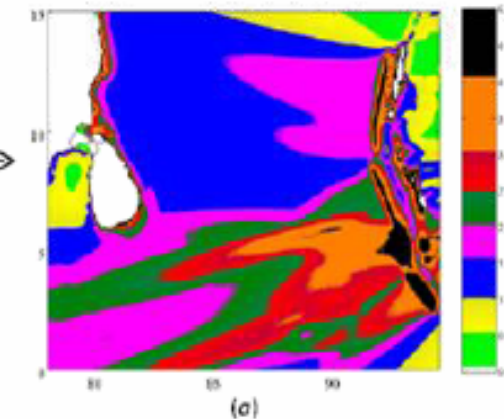
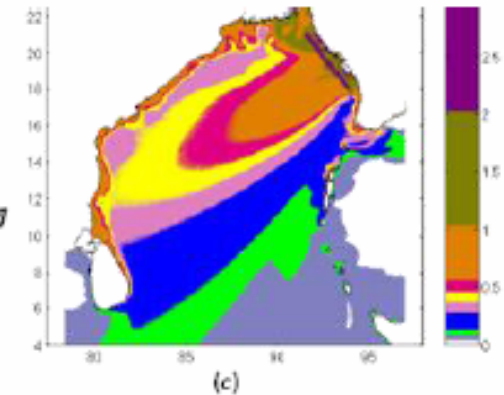
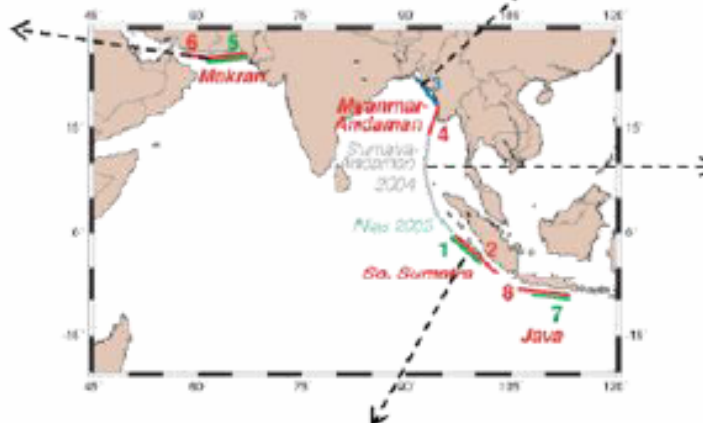
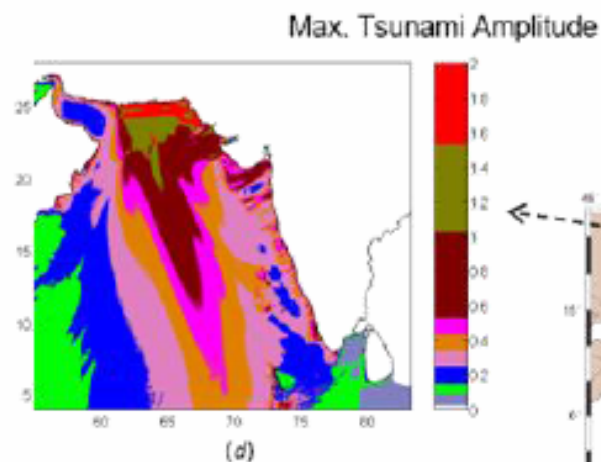
(c)



(d)

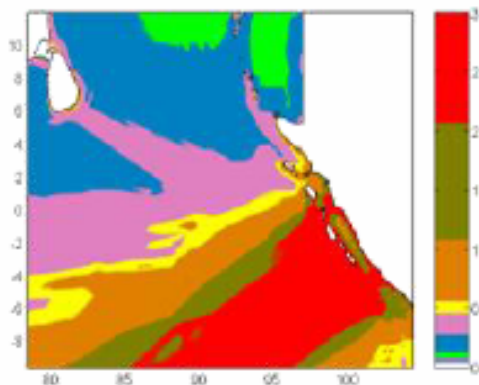
COMCOT Model
Used to
1. Tsunami generation
2. Propagation
3. Inundation

Four 'Maximum-Credible' Tsunami Scenarios in the Indian Ocean Basin



Four seismic zones:

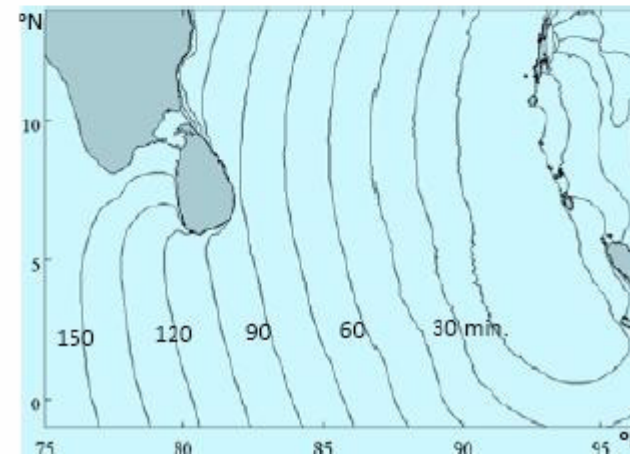
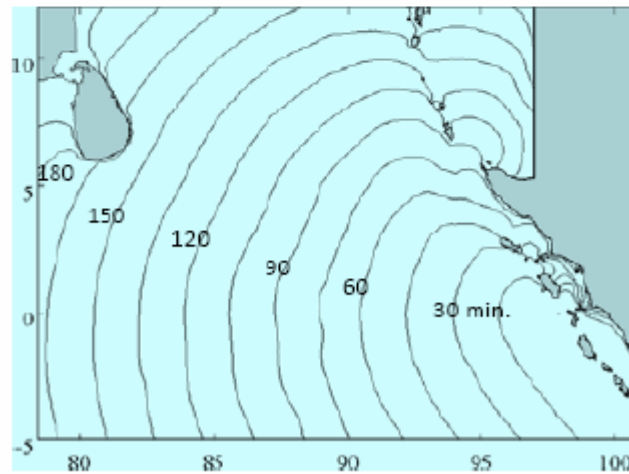
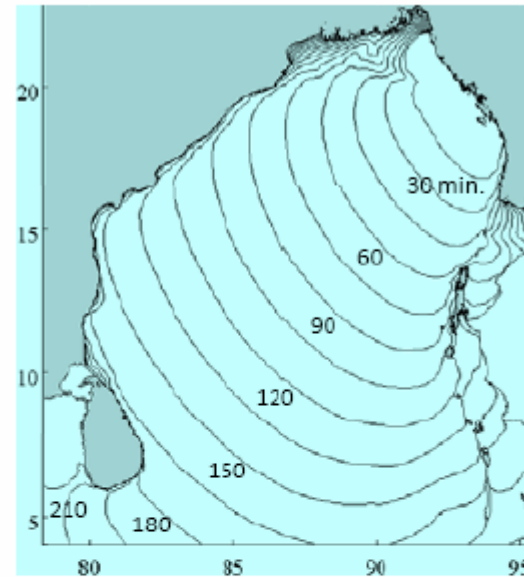
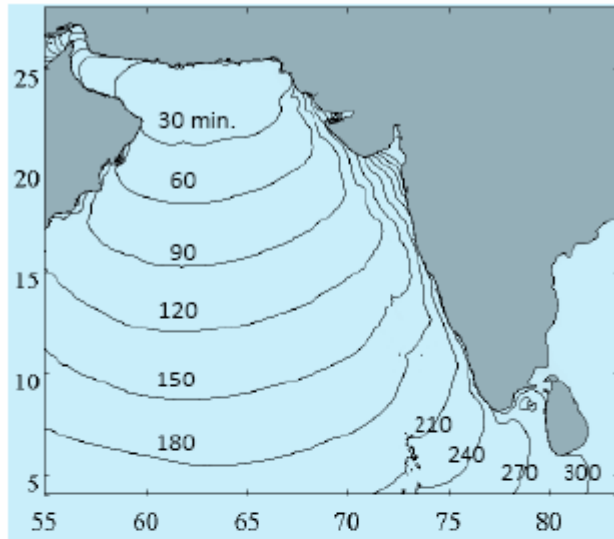
- Northern Sumatra-Andaman
- Southern Sumatra
- Arakan off Myanmar
- Makran off Iran/Pakistan



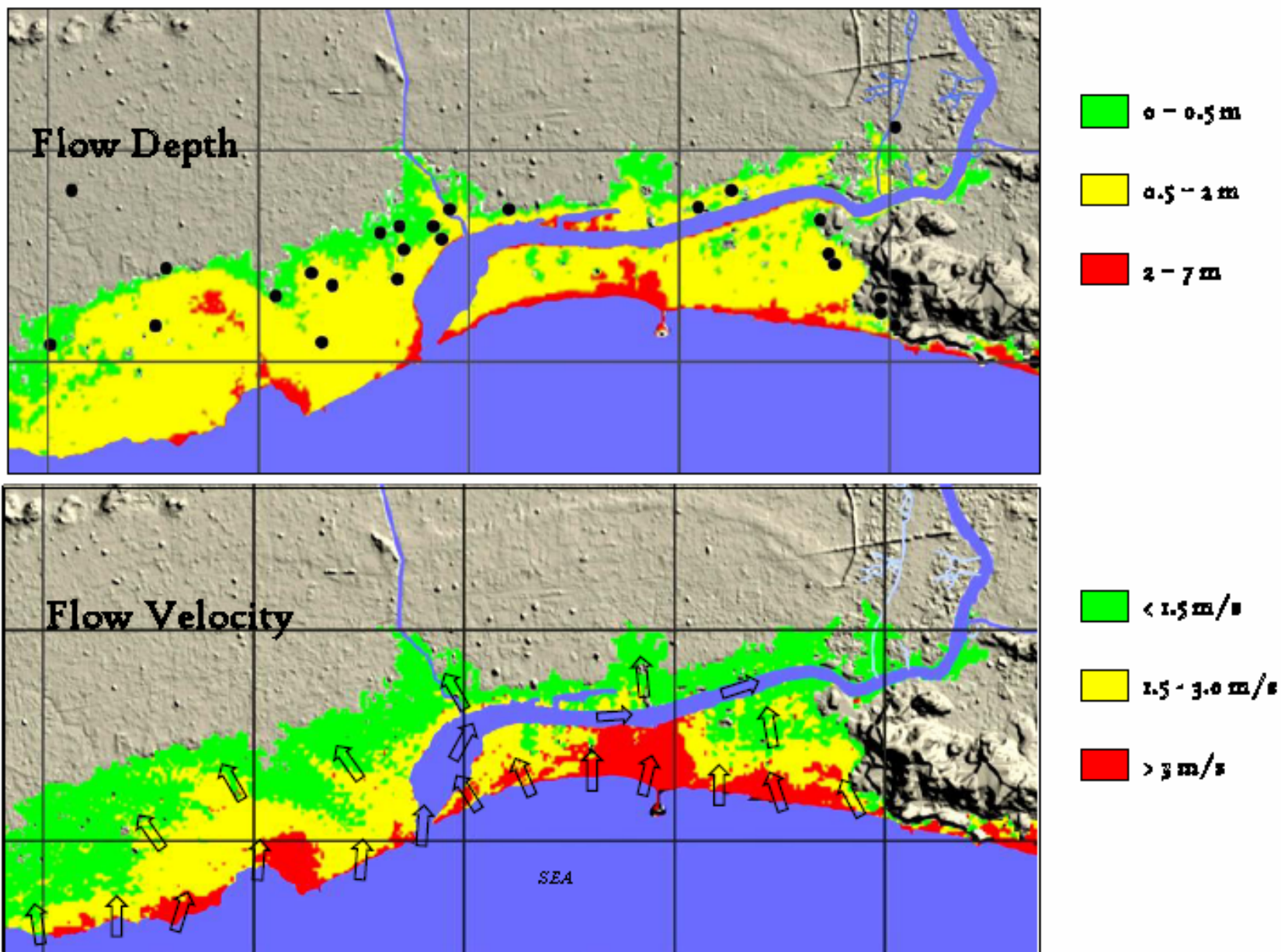
- Computed tsunami heights from scenarios (b), (c) and (d) are less than 20-30% of those due to scenario (a), i.e., 2004 tsunami.

Tsunami – Arrival Time

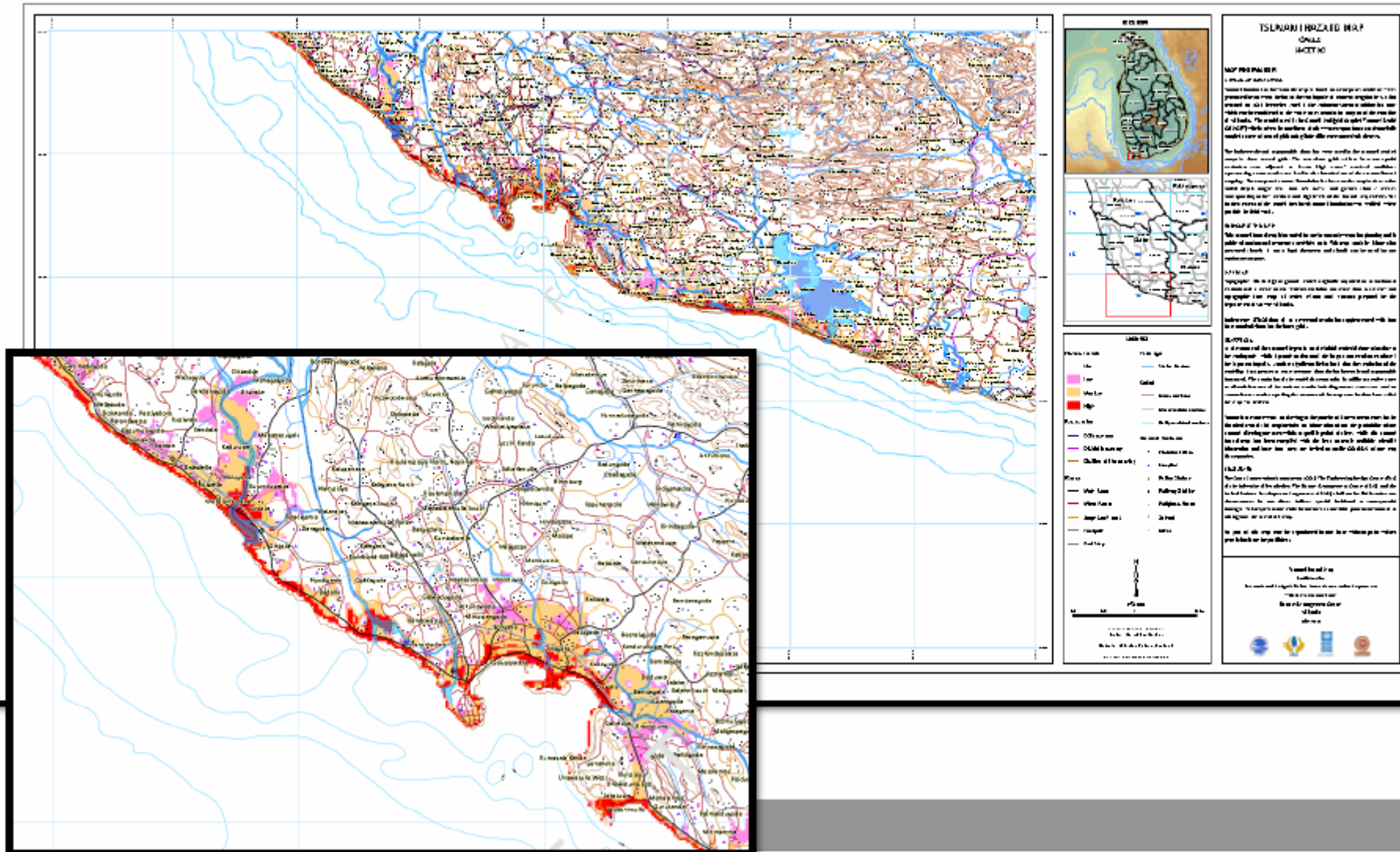
A



Inundation Depth and Flow Velocities



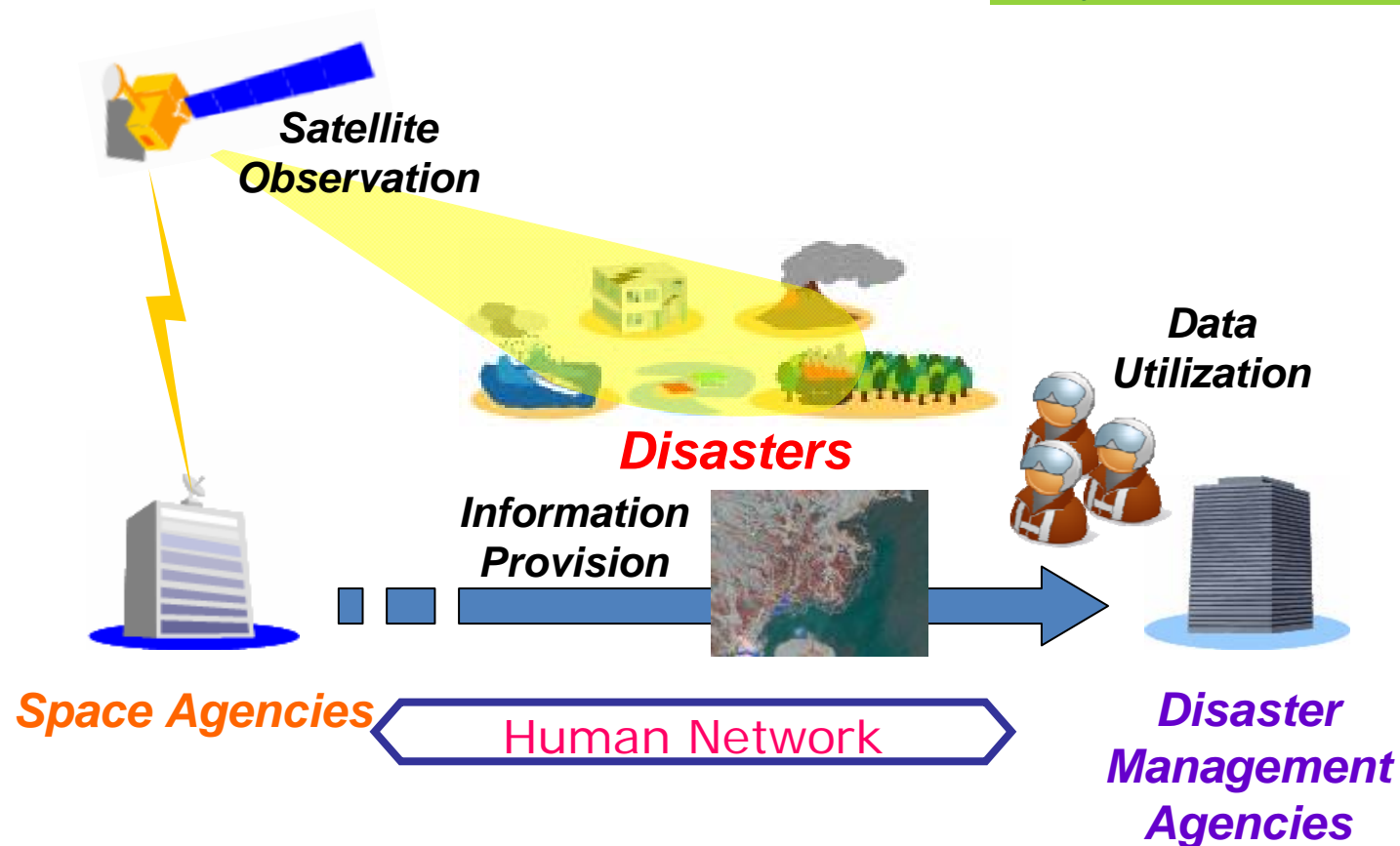
Tsunami Hazard Maps



Geo-Spatial Application for Disaster Response

Sentinel Asia implementation

- Facility to receive near real time satellite imageries to countries like Sri Lanka, is limited. Overcome this, an regional initiative were initiated called “Sentinel Asia”.





Sentinel Asia



Emergency
Observation

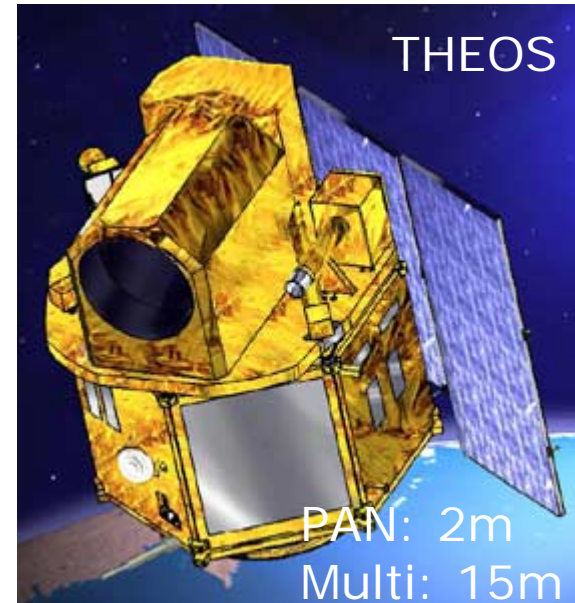
Current Participating EO Satellites

ALOS



PRISM: 2.5m Pan
AVNIR-1: 10m Multi
PALSAR: 10-100m L-Band

THEOS



PAN: 2m
Multi: 15m

KOMPSAT-1



EOC: 6.6m
OSMI: 1km

Resourcesat-1



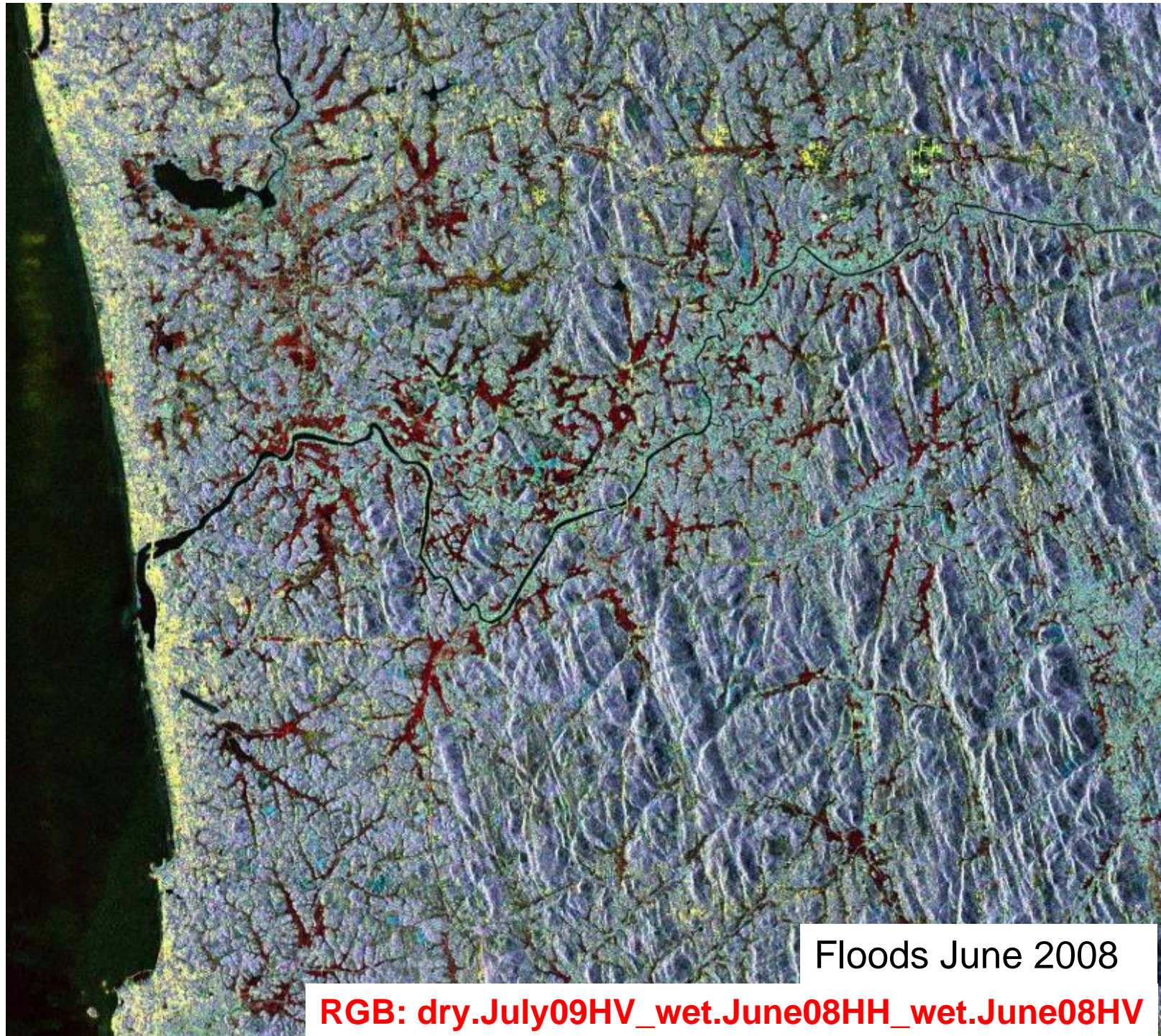
LISS-4: 5.8m Pan
LISS-3: 23.5m Multi
AWiFS: 56m Multi

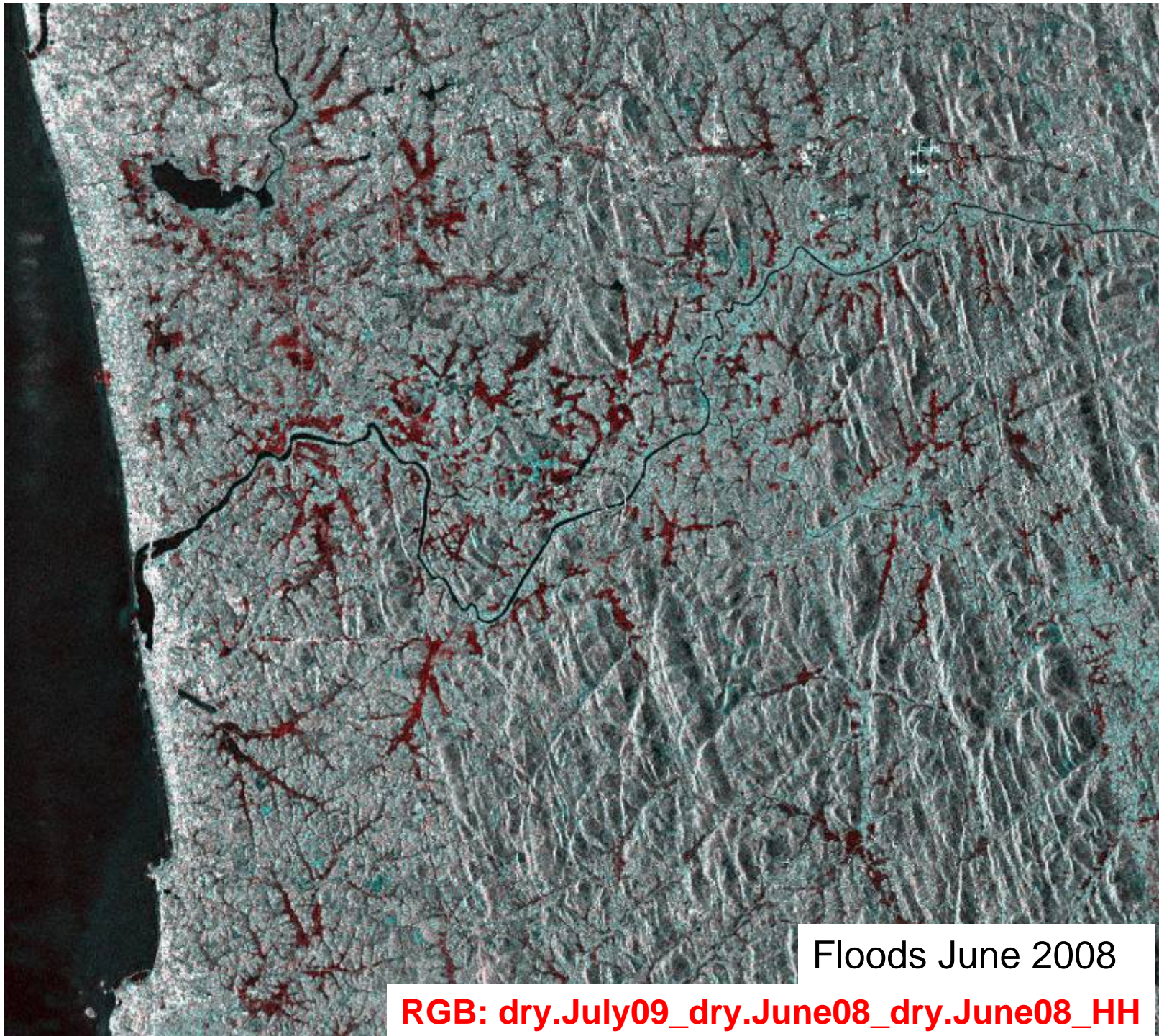
Sentinel Asia Operations in Sri Lanka...

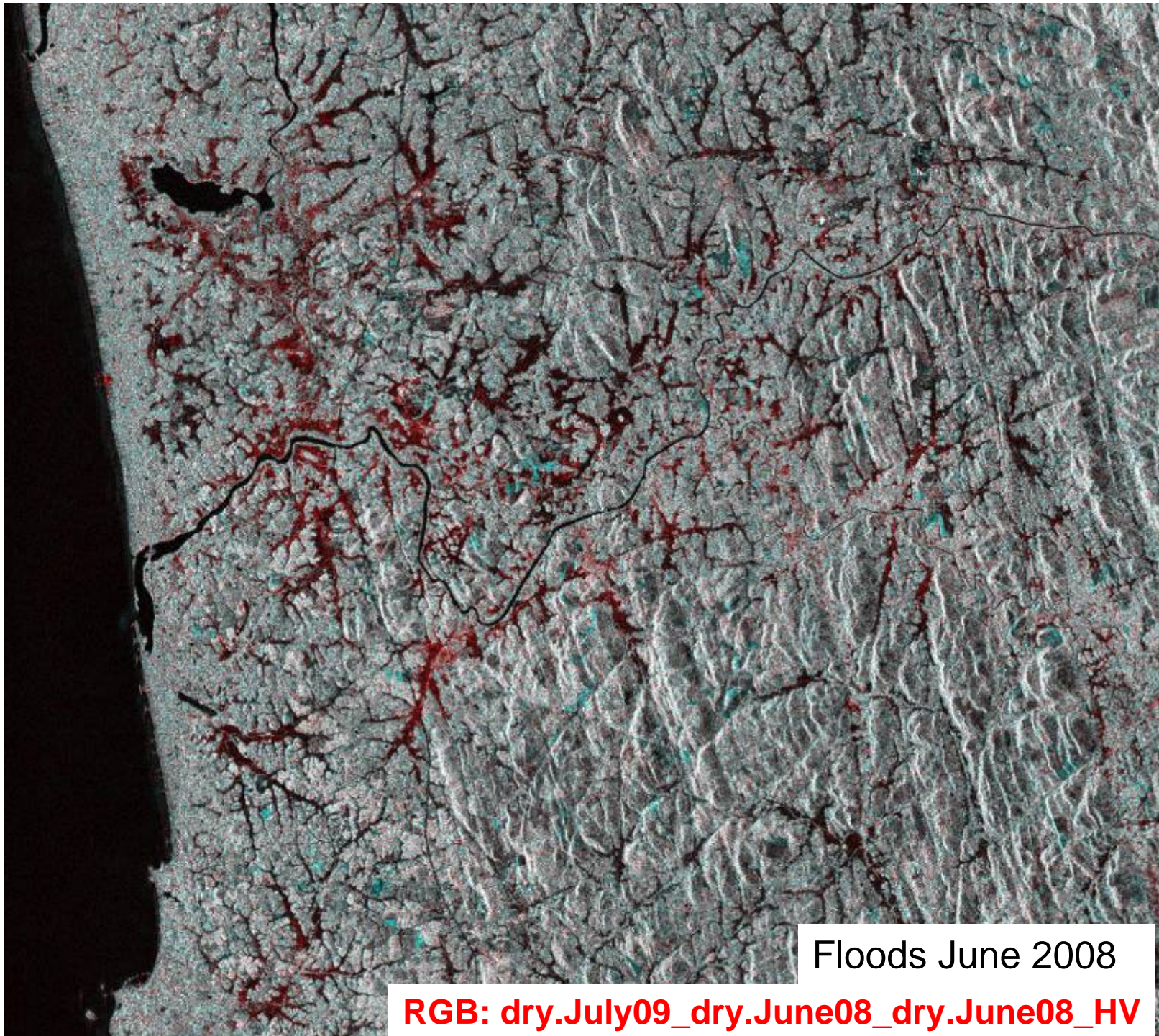
- Ministry of Disaster Management is member of JPT since 2008
- Disaster Management Centre officially started SAS Operations since February 2009
- There are 05 emergency observations been conducted:
 - 04 - successful operations
 - 01 un-successful operation
- Became Data Analysis Node (DAN) in 2010
- WINDS receiver has been established in 2011
- Sentinel Asia regional server under development

Summary of Operations

	Disaster Type	Activation Requested	Observation Conducted	Map Disseminated	Peak Time of Disaster	Data	Result
1	Floods	17th Dec 2009	18 Dec 2009	No map generated	16 Dec 2009	ALOS Prism	Un successful due to cloud
2	Floods	17 May 2010	19 May 2010	20 May 2010	18 May 2010	ALOS Palsar	Successful
3	Floods	08 Dec 2010	09 Dec 2010	10 Dec 2010	8-10 Dec 2010	ALOS Palsar	Successful
4	Floods	11 Jan 2011	13 Jan 2011	14 Jan 2011	10-12 Jan 2011	ALOS Palsar	Successful
5	Floods	04 Feb 2011	06 Feb 2011	07 Feb 2011	03-05 Feb 2011	ALOS Palsar	Successful

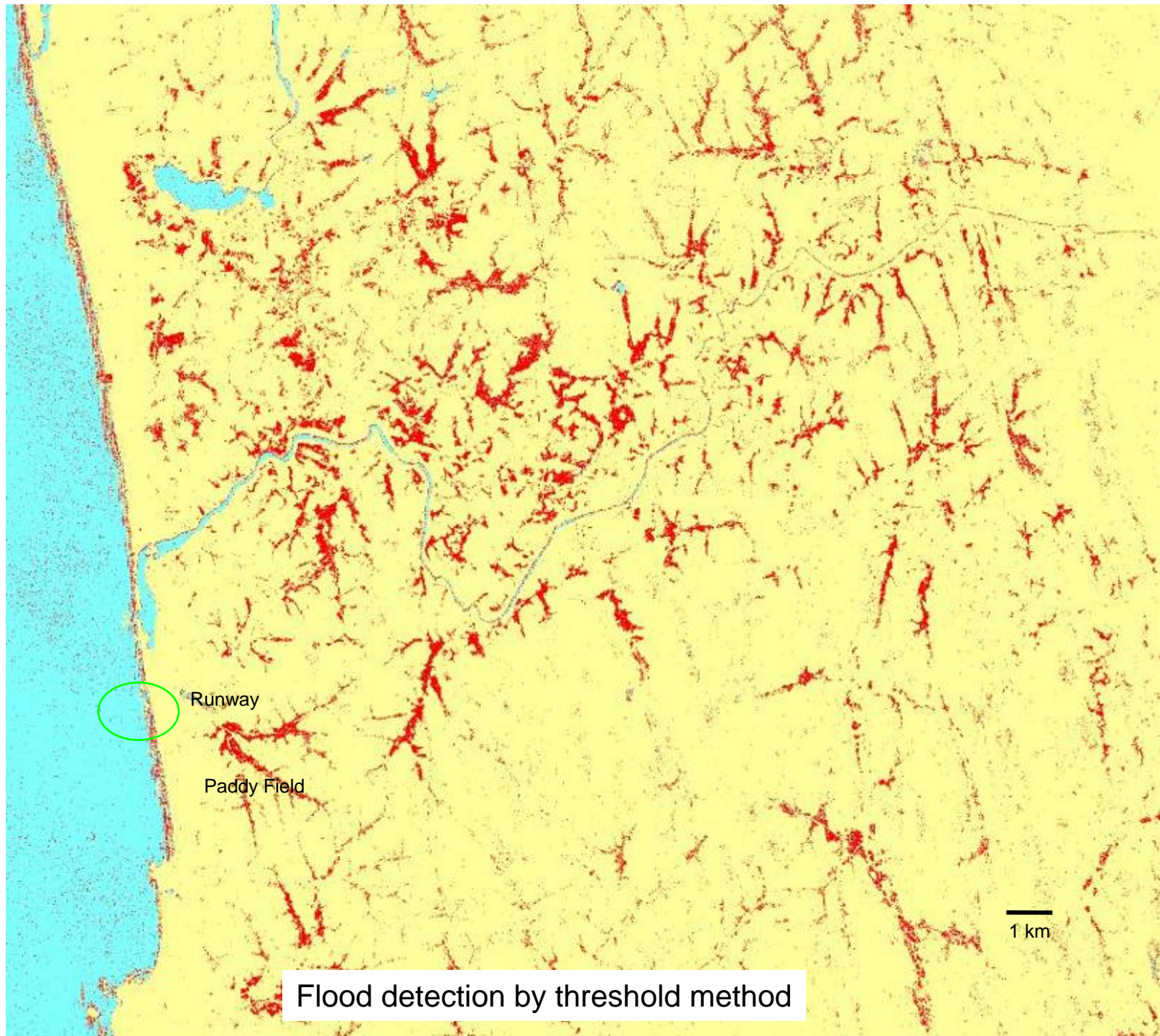






Floods June 2008

RGB: dry.July09_dry.June08_dry.June08_HV



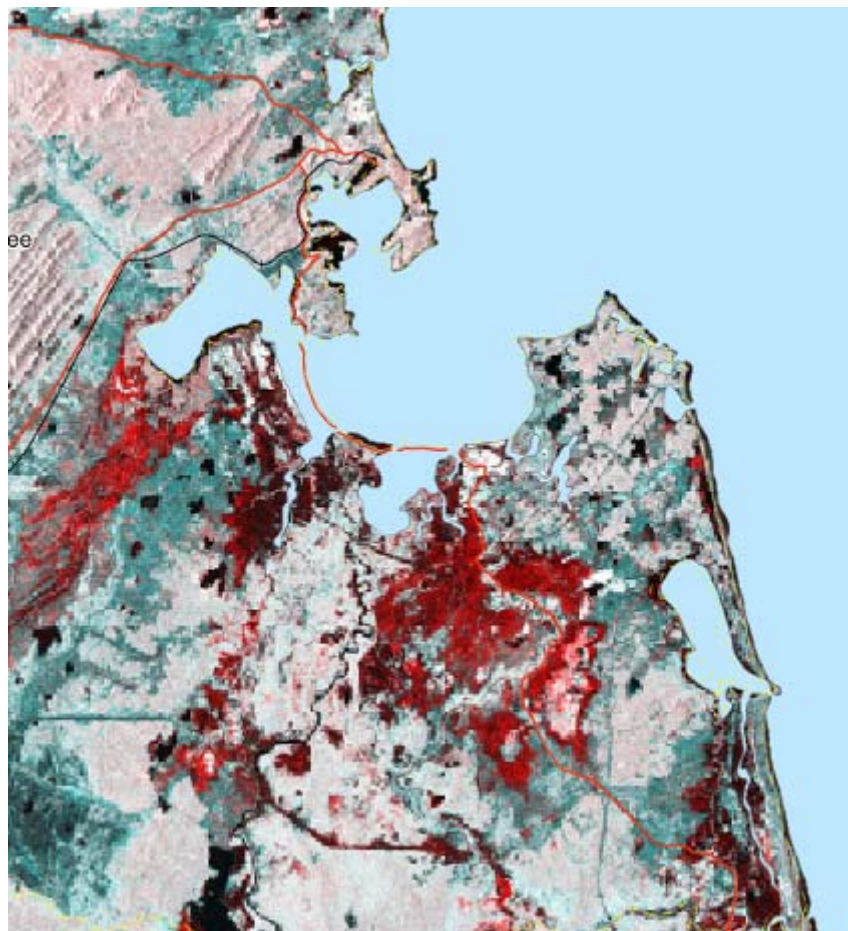
Runway

Paddy Field

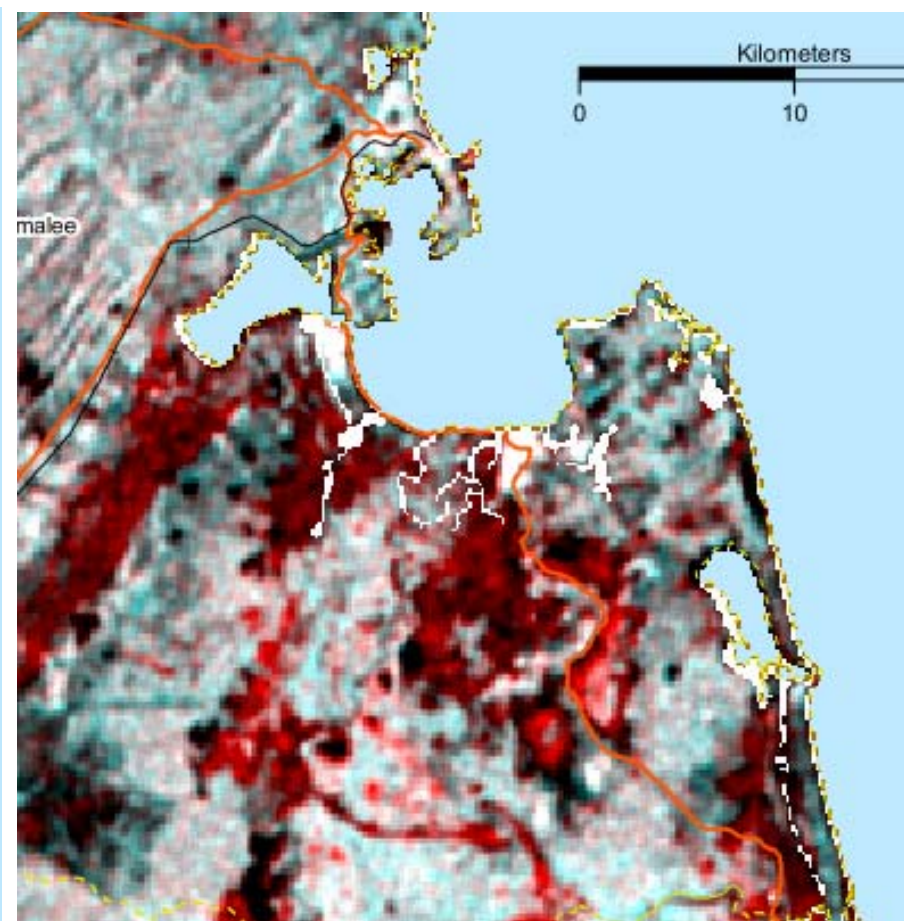
1 km

Flood detection by threshold method

Flood February 2011 Eastern Province Sri Lanka



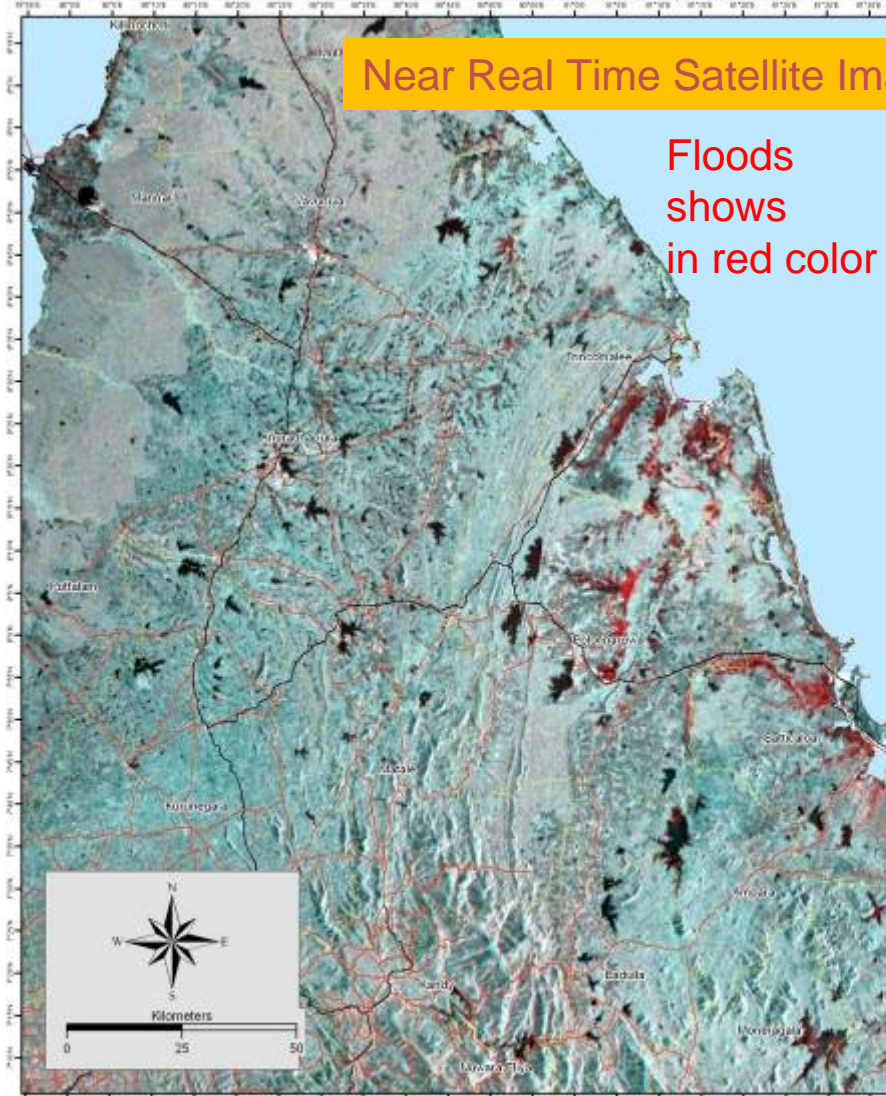
10.30 am 06th Feb. 2011 PALSAR 6m



11.45 pm 06th Feb. 2011 PALSAR 100m

Flood Inundation Mapping, East and North Central Province

Flood Inundation as at 06th February 2011

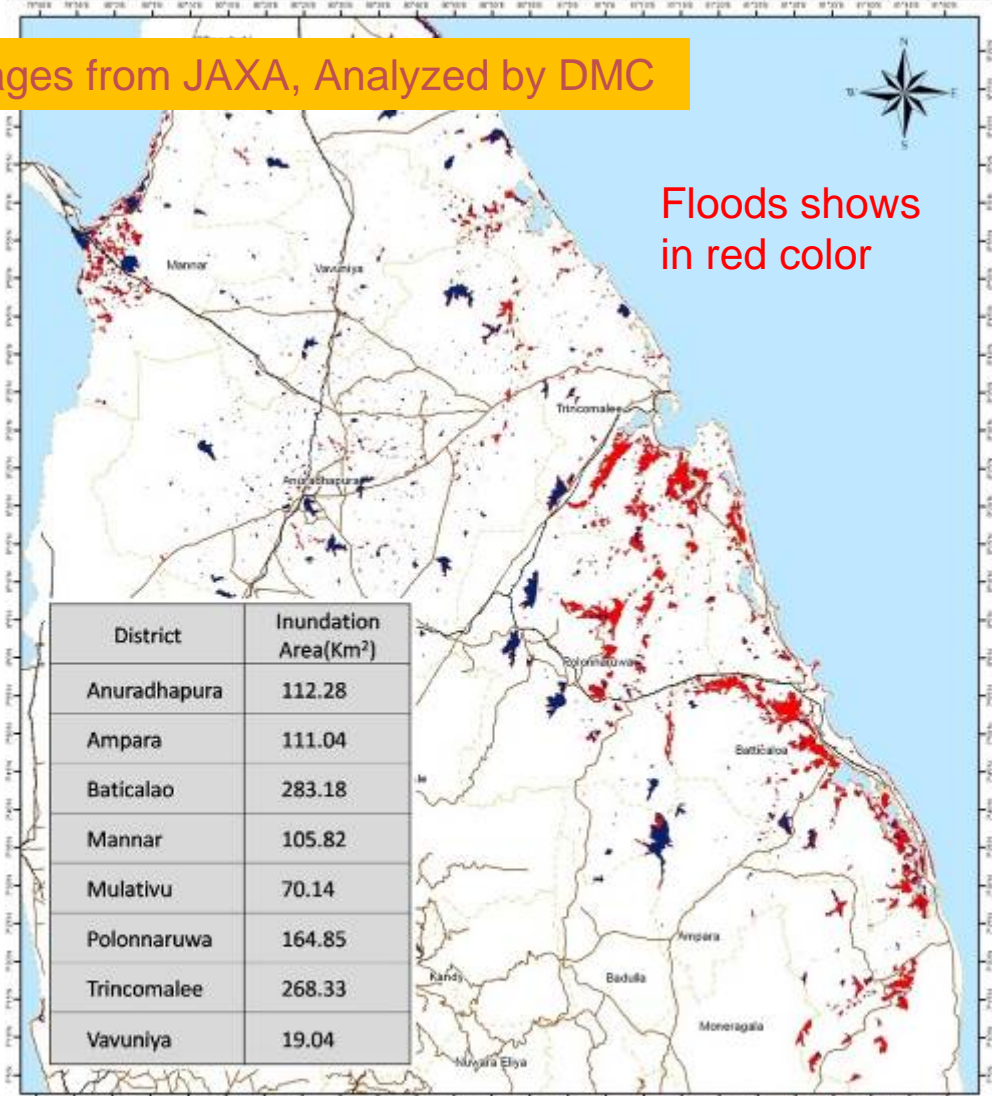


Near Real Time Satellite Images from JAXA, Analyzed by DMC

Floods shows in red color

Flood Inundation Mapping, East and North Central Provinces

Flood Inundation as at 06th February 2011



Floods shows in red color

District	Inundation Area(Km ²)
Anuradhapura	112.28
Ampara	111.04
Batticalao	283.18
Mannar	105.82
Mulativu	70.14
Polonnaruwa	164.85
Trincomalee	268.33
Vavuniya	19.04

Legend

- Flood Inundation
- Sea
- Main Road
- Rail Road
- District Boundary

Data Source:
ALOS Palsar 1.5 data products, by Japanese Aerospace Exploration Agency (JAXA)

Resolution: 100m ground resolution

Observation Dates:
Flood Event - 06th February 2011
Pre Flood - 01st January 2009

Satellite Activation by:
Sentinel Asia Secretariat with cooperation of Asian Disaster Reduction Centre (ADRC)

Base Data:
Department of Survey and Mapping, Sri Lanka

Map Analyzed by:
GIS Unit of Disaster Management Centre, Ministry of Disaster Management, Sri Lanka

Version 1.0 - February 2011

Legend

- Flood Inundation
- Internal Water
- Sea
- Main Road
- Rail Road
- District Boundary

Data Source:
ALOS Palsar 1.5 data products, by Japanese Aerospace Exploration Agency (JAXA)

Resolution: 6.25m ground resolution

Observation Dates:
Flood Event - 06th February 2011
Pre Flood - 04th March 2010

Satellite Activation by:
Sentinel Asia Secretariat with cooperation of Asian Disaster Reduction Centre (ADRC)

Base Data:
Department of Survey and Mapping, Sri Lanka

Map Analyzed by:
GIS Unit of Disaster Management Centre, Ministry of Disaster Management, Sri Lanka


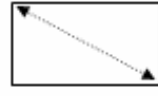
Version 1.0 - February 2011

Satellite Activation

DMC authorized to place emergency activation through SAS

National committee was formed and taking decision on emergency activation.

- DMC is Chairing
- Dept. Of Meteorology
- National Building Research Organization
- Dept. of Irrigation
- Dept. of Coast Conservation
- Ministry of Defense

SENTINEL ASIA EMERGENCY REQUEST FORM	
Your name and organization	
Your name	Srimal Samansiri
Your organization	Disaster Management Centre, Ministry of Disaster Management and Human Rights, Sri Lanka
	Membership <input checked="" type="checkbox"/> JPT member <input checked="" type="checkbox"/> ADRC member
Your phone	+94 11-2136166
Your cellular phone	+94 77-3957907
Your fax	+94 11-2670048
Your E-mail	srimal@dmc.gov.lk
Other E-mail(s) for notification	srimalst@yahoo.com
Disaster type	
<input checked="" type="checkbox"/> Flood	<input type="checkbox"/> Landslide <input type="checkbox"/> Storm <input type="checkbox"/> Fires
<input type="checkbox"/> Volcano	<input type="checkbox"/> Earthquake <input type="checkbox"/> Ice hazard <input type="checkbox"/> Industrial danger
<input type="checkbox"/> Other :	
Place of occurrence	
Country	Sri Lanka
Date of occurrence	
Date and time (UTC)	14 / 15 / 16 / 17 May 2010
Request area	
Name of a place	Districts of Gampaha, Colombo and Kalutara
Please select one	<input type="checkbox"/> Circular zone  Latitude : ° ' " N Longitude : ° ' " E Radius : km
	<input checked="" type="checkbox"/> Rectangular zone Coordinates of corners Lat. : 07° 80' 14" N Lon.: 79° 48' 59" E  Lat. : 06° 32' 24" N Lon.: 80° 21' 31.5" E
Details, news source	
Heavy rainfall received since 14 th May 2010, and was continuing till date. Most of the areas in Colombo, Gampaha and Kalutara district has been affected by floods. Transport was difficult due to submerge of main roads and difficult to make emergency response. In addition to that more than 80,000 families has been directly affected by floods. More over there has been only 1 death and few injures has been reported. Since the data is still receiving the the actual figures may increase. Situation reports has been posted to DMC web site www.dmc.gov.lk .	
The latest situation report has been attached for information.	

Satellite Activation – May 2010

Date	Time	Action
2010.05.17	-	Third consecutive day received heavy rain to Western province.
2010.05.17	14.00	Consultation with national committee
2010.05.17	18.00	Request image activation via SMS to JAXA Satellite tracking Centre @Tsukuba
2010.05.18	8.30	Received satellite observation plan, to be utilize ALOS PALSAR
2010.05.19	17.30	Emergency observation over Western Province
2010.05.20	8.30	Received ALOS Palsar raw data from JAXA
2010.05.20	16.30	Produced draft inundation maps and uploaded to the web

Lead Time

Observation – 48 hrs

Data Reception – 12 hrs

Flood Inundation Mapping, Colombo District, Sri Lanka

Flood Inundation as at 19th May 2010



Legend

- Main Roads
- DS Boundary
- Paddy Fields

Inundation

- Pre Flood Standing Water
- Flood Inundation
- No data

Data Source:
ALOS Palsar 1.5 data products, by Japanese Aerospace Exploration Agency (JAXA) and Ministry of Economic, Trade & Industry (METI), Japan

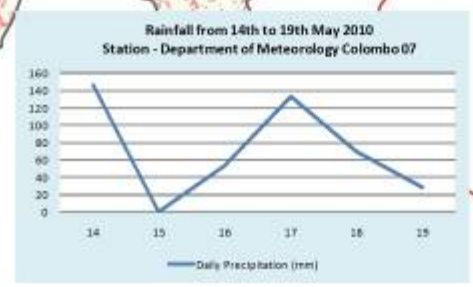
Resolution:
6.3 m ground resolution

Observation Dates:
Flood Event - 19th May 2010
Pre Flood - 09th March 2010

Satellite Activation by:
Sentinel Asia Secretariat with cooperation of Asian Disaster Reduction Centre (ADRC)

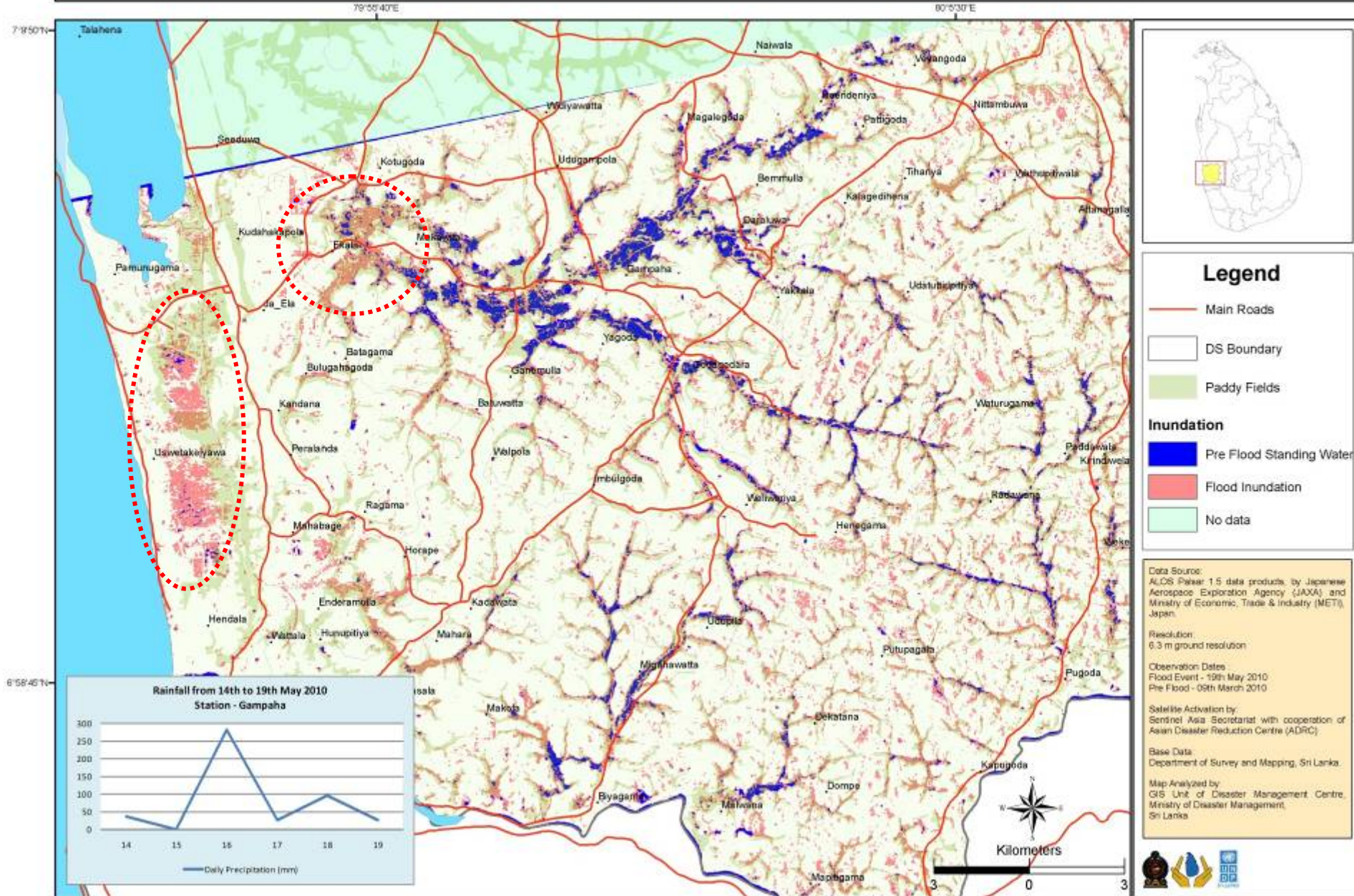
Base Data:
Department of Survey and Mapping, Sri Lanka

Map Analyzed by:
GIS Unit of Disaster Management Centre, Ministry of Disaster Management, Sri Lanka



Flood Inundation Mapping, Gampaha District, Sri Lanka

Flood Inundation as at 19th May 2010



WINDS Antenna – Sri Lanka



Sentinel Asia - Training Colombo



SAHANA System



National Disaster Relief Services Center, Ministry of Disaster Management
ජාතික අපද්‍රව්‍ය සේවා මධ්‍යස්ථානය, අපද්‍රව්‍ය කළමනාකරණ අමාත්‍යාංශය
தேசிய அனர்த்த நிவாரண சேவைகள் நிலையம், அனர்த்த முகாமைத்துவ அமைச்சு



Home Purpose Circular

Vision

Towards a safer Sri Lanka through disaster relief services

Mission

To protect human life, properties, environment and wildlife from both natural and man-made disasters through awareness, prevention, preparedness, mitigation and coordination

Objective

To contribute the national objective of sustainable development through minimised human suffering and loss and damage to the economic infrastructure by promoting and strengthening national capacities for disaster Relief

Member Login

Username

Password

Sign In

Clear

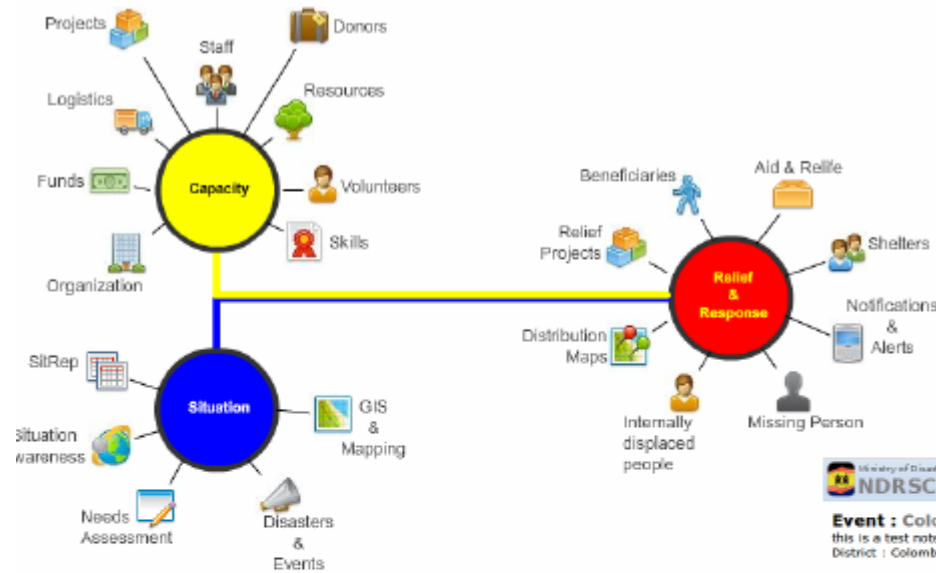
© 2010 National Disaster Relief Services Center, Ministry of Disaster Management - All rights reserved
Developed in Association with ICTA



256 Divisional Secretary Regions
1140 Users
14,349 Government Agencies

- Web based Disaster and Relief Management System to facilitate NDRSC's Disaster Relief Management activities
- Based on the globally deployed Sahana Open Source Disaster Management System
- Implemented for the NDRSC in collaboration with ICTA by Respere, with hSenid

Open Users	Alerts	Latest Alerts Administration																																																																																																																																																													
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11.08.17</td><td>අනතුර</td></tr><tr><td>ලදානුවිසමයේ 11.08.18</td><td>අනතුර</td></tr><tr><td>ලදානුවිසමයේ 11.08.19</td><td>අනතුර</td></tr><tr><td>ලදානුවිසමයේ 11.08.20</td><td>අනතුර</td></tr><tr><td>ලදානුවිසමයේ 11.08.21</td><td>අනතුර</td></tr><tr><td>ලදානුවිසමයේ 11.08.22</td><td>අනතුර</td></tr><tr><td>ලදානුවිසමයේ 11.08.23</td><td>අනතුර</td></tr><tr><td>ලදානුවිසමයේ 11.08.24</td><td>අනතුර</td></tr><tr><td>ලදානුවිසමයේ 11.08.25</td><td>අනතුර</td></tr><tr><td>ලදානුවිසමයේ 11.08.26</td><td>අනතුර</td></tr><tr><td>ලදානුවිසමයේ 11.08.27</td><td>අනතුර</td></tr><tr><td>ලදානුවිසමයේ 11.08.28</td><td>අනතුර</td></tr><tr><td>ලදානුවිසමයේ 11.08.29</td><td>අනතුර</td></tr><tr><td>ලදානුවිසමයේ 11.08.30</td><td>අනතුර</td></tr></tbody></table>	Event	Details	ලදානුවිසමයේ 11.07.08	අනතුර	ලදානුවිසමයේ 11.08.01	අනතුර	ලදානුවිසමයේ 11.08.02	අනතුර	ලදානුවිසමයේ 11.08.03	අනතුර	ලදානුවිසමයේ 11.08.04	අනතුර	ලදානුවිසමයේ 11.08.05	අනතුර	ලදානුවිසමයේ 11.08.06	අනතුර	ලදානුවිසමයේ 11.08.07	අනතුර	ලදානුවිසමයේ 11.08.08	අනතුර	ලදානුවිසමයේ 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11.08.09</td></tr><tr><td>ලදානුවිසමයේ 11.08.10</td></tr><tr><td>ලදානුවිසමයේ 11.08.11</td></tr><tr><td>ලදානුවිසමයේ 11.08.12</td></tr><tr><td>ලදානුවිසමයේ 11.08.13</td></tr><tr><td>ලදානුවිසමයේ 11.08.14</td></tr><tr><td>ලදානුවිසමයේ 11.08.15</td></tr><tr><td>ලදානුවිසමයේ 11.08.16</td></tr><tr><td>ලදානුවිසමයේ 11.08.17</td></tr><tr><td>ලදානුවිසමයේ 11.08.18</td></tr><tr><td>ලදානුවිසමයේ 11.08.19</td></tr><tr><td>ලදානුවිසමයේ 11.08.20</td></tr><tr><td>ලදානුවිසමයේ 11.08.21</td></tr><tr><td>ලදානුවිසමයේ 11.08.22</td></tr><tr><td>ලදානුවිසමයේ 11.08.23</td></tr><tr><td>ලදානුවිසමයේ 11.08.24</td></tr><tr><td>ලදානුවිසමයේ 11.08.25</td></tr><tr><td>ලදානුවිසමයේ 11.08.26</td></tr><tr><td>ලදානුවිසමයේ 11.08.27</td></tr><tr><td>ලදානුවිසමයේ 11.08.28</td></tr><tr><td>ලදානුවිසමයේ 11.08.29</td></tr><tr><td>ලදානුවිසමයේ 11.08.30</td></tr></tbody></table>	Alert	ලදානුවිසමයේ 11.08.01	ලදානුවිසමයේ 11.08.02	ලදානුවිසමයේ 11.08.03	ලදානුවිසමයේ 11.08.04	ලදානුවිසමයේ 11.08.05	ලදානුවිසමයේ 11.08.06	ලදානුවිසමයේ 11.08.07	ලදානුවිසමයේ 11.08.08	ලදානුවිසමයේ 11.08.09	ලදානුවිසමයේ 11.08.10	ලදානුවිසමයේ 11.08.11	ලදානුවිසමයේ 11.08.12	ලදානුවිසමයේ 11.08.13	ලදානුවිසමයේ 11.08.14	ලදානුවිසමයේ 11.08.15	ලදානුවිසමයේ 11.08.16	ලදානුවිසමයේ 11.08.17	ලදානුවිසමයේ 11.08.18	ලදානුවිසමයේ 11.08.19	ලදානුවිසමයේ 11.08.20	ලදානුවිසමයේ 11.08.21	ලදානුවිසමයේ 11.08.22	ලදානුවිසමයේ 11.08.23	ලදානුවිසමයේ 11.08.24	ලදානුවිසමයේ 11.08.25	ලදානුවිසමයේ 11.08.26	ලදානුවිසමයේ 11.08.27	ලදානුවිසමයේ 11.08.28	ලදානුවිසමයේ 11.08.29	ලදානුවිසමයේ 11.08.30	<table border="1"><thead><tr><th>Alert</th><th>Status</th></tr></thead><tbody><tr><td>ලදානුවිසමයේ 11.08.01</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.02</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.03</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.04</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.05</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.06</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.07</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.08</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.09</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.10</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.11</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.12</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.13</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.14</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.15</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.16</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.17</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.18</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.19</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.20</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.21</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.22</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.23</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.24</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.25</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.26</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.27</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.28</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.29</td><td>පවසන</td></tr><tr><td>ලදානුවිසමයේ 11.08.30</td><td>පවසන</td></tr></tbody></table>	Alert	Status	ලදානුවිසමයේ 11.08.01	පවසන	ලදානුවිසමයේ 11.08.02	පවසන	ලදානුවිසමයේ 11.08.03	පවසන	ලදානුවිසමයේ 11.08.04	පවසන	ලදානුවිසමයේ 11.08.05	පවසන	ලදානුවිසමයේ 11.08.06	පවසන	ලදානුවිසමයේ 11.08.07	පවසන	ලදානුවිසමයේ 11.08.08	පවසන	ලදානුවිසමයේ 11.08.09	පවසන	ලදානුවිසමයේ 11.08.10	පවසන	ලදානුවිසමයේ 11.08.11	පවසන	ලදානුවිසමයේ 11.08.12	පවසන	ලදානුවිසමයේ 11.08.13	පවසන	ලදානුවිසමයේ 11.08.14	පවසන	ලදානුවිසමයේ 11.08.15	පවසන	ලදානුවිසමයේ 11.08.16	පවසන	ලදානුවිසමයේ 11.08.17	පවසන	ලදානුවිසමයේ 11.08.18	පවසන	ලදානුවිසමයේ 11.08.19	පවසන	ලදානුවිසමයේ 11.08.20	පවසන	ලදානුවිසමයේ 11.08.21	පවසන	ලදානුවිසමයේ 11.08.22	පවසන	ලදානුවිසමයේ 11.08.23	පවසන	ලදානුවිසමයේ 11.08.24	පවසන	ලදානුවිසමයේ 11.08.25	පවසන	ලදානුවිසමයේ 11.08.26	පවසන	ලදානුවිසමයේ 11.08.27	පවසන	ලදානුවිසමයේ 11.08.28	පවසන	ලදානුවිසමයේ 11.08.29	පවසන	ලදානුවිසමයේ 11.08.30	පවසන
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System to assess capacity and situation coupled with workflows for efficient relief and response

Web based forms allow information to flow top-down and bottom-up real time between participating agencies

Ministry of Disaster Management
NDRSC | Disasters - Map - Organisations - Shelters - Projects - MissingPersons - Inventory - Funds - Needs Assessment

Event : Colombo/Cyclones/2011-09-07
 this is a test note
 District : Colombo Status : Active [Close Event](#)

Form1 Form2 Form3 - DMS Form4 - Cooked Meals Form5 - Dry Rations Form7 - House Damage Form8 - Crops Damage Form9 - Drought Relief

GN	Affected					House Damages			Camps
	Families	Members	Deaths	Injured	Missing	Fully	Partially	Property Damaged	
✓	0	0	0	0	0	0	0	0	0
Sammanthrapura									
Metakulpa									
Molara									
Malampla									
Mahawala									
Athnavatha									
Lunupikane									
Dharmadhal									
Kalahana East									
Kalahana West									
Kochchikade North									
Jethipitiya									
Messangaweedya									
New Sazaar									
Grandpass South									

Total Records: 0 0 0 0 0 0 0 0 0

respere <http://respere.com>

Technical Advisory Mission 17-21 Oct 2011

- Conducted 10 agency visits and assessed capacities, needs and gaps
- Conducted national workshop participating over 100 from various stake holders
- Interaction with ICTA was very important to put forward NSDI as a priority area
- Policies will be formulate on recommendation of the TAM report

Challenges / Issues

- Peak time of image acquisition ...difficult to predict.
- Difficulty of acquisition near real time satellite data, specially Radar imageries
- Data sharing, duplication and interoperability issues
- Connectivity issues
- Usability of processed data / map products developed by emergency observation – Awareness of policy makers, national regional, local level administrators, disaster managers is required.

Opportunities

- Policy interventions:
e-Government policy implementation is on going and as a part of that the **NSDI** has been identified as a key requirement
- RS/GIS Education
 - In 2004 : less than 20 master qualified professionals
 - In 2011: more than 400 master qualifies professional
- ICT Literacy and Mobile Penetration
 - ICT Literacy – 30 % of population
 - Mobile Penetration – 90 % of population

What We Need...

- More cooperation with data providers and setup alternative mechanism for image acquisition in emergency situation.
- Infrastructure development
- For flood hazard mapping, high resolution terrain is needed (Lidar)
- Transfer of technical knowhow, modeling techniques through Long term / short term capacity building
- Technical advise to implement NSDI

what we can offer.

- Tsunami / Sea surge hazard modeling and mapping
- SAHANA system implementation

Recommendation

Setup proper monitoring and evaluation mechanism (by setting up KPIs) to capture the level of utilization is essential

Eg:

Output:

No. of satellite activations and image products disseminated

Outcome:

- How many emergency teams used such information
- No. of persons rescued



**towards a safer
Sri Lanka**