

United Nations/India Workshop on Use of Earth Observation Data in Disaster
Management & Risk Reduction: Sharing the Asian Experience

8-10 March 2016

Hyderabad, India

**UTILIZING SPACE INFORMATION TO
SUPPORT DISASTER MANAGEMENT IN
MALAYSIA**



Prepared by:

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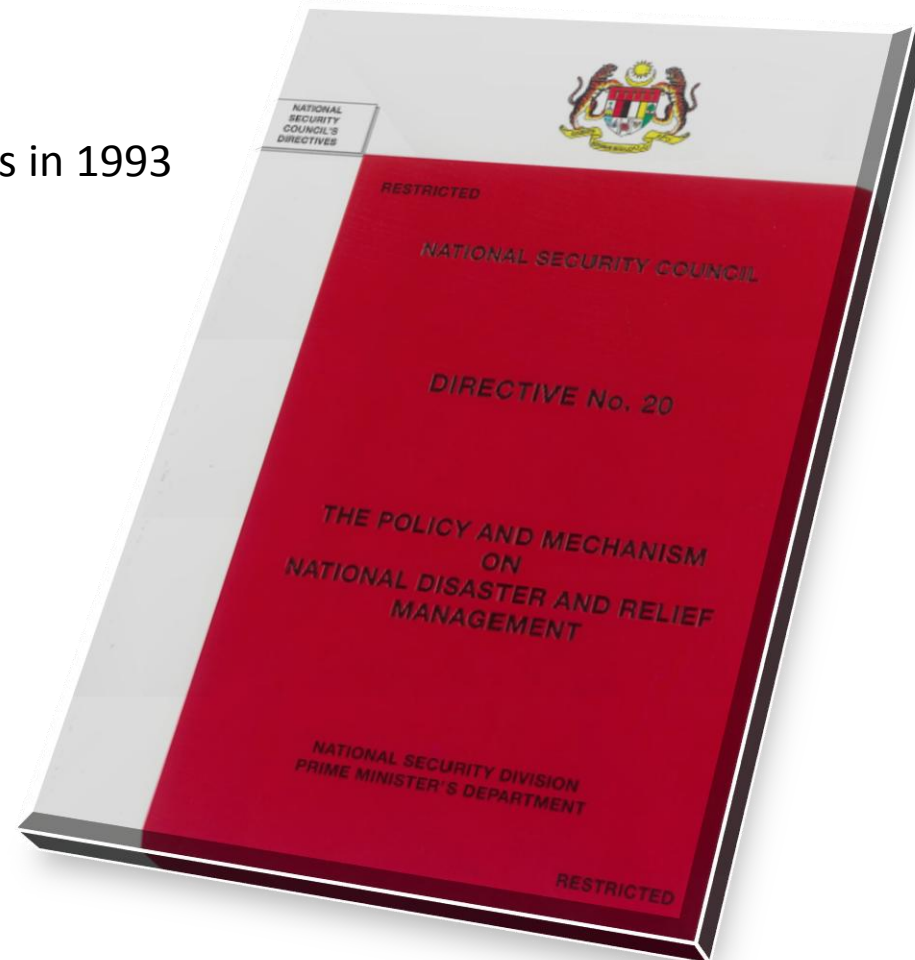
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NATIONAL FRAMEWORK & MECHANISM

NSC DIRECTIVE NO. 20

- Experience the collapse of Highland Towers in 1993
- NSC Directive No. 20 came into force in **11 May 1997**
- Reviewed on **30 Mac 2012**
- covers:
 - Total Disaster Risk Management (TDRM);
 - increase in complexity;
 - engage private, NGO and community;
 - take into account AADMER & other international treaties.



Content of NSC Directive No. 20

Outlines:

Policy and Mechanism on Disaster and Relief Management on **Land**

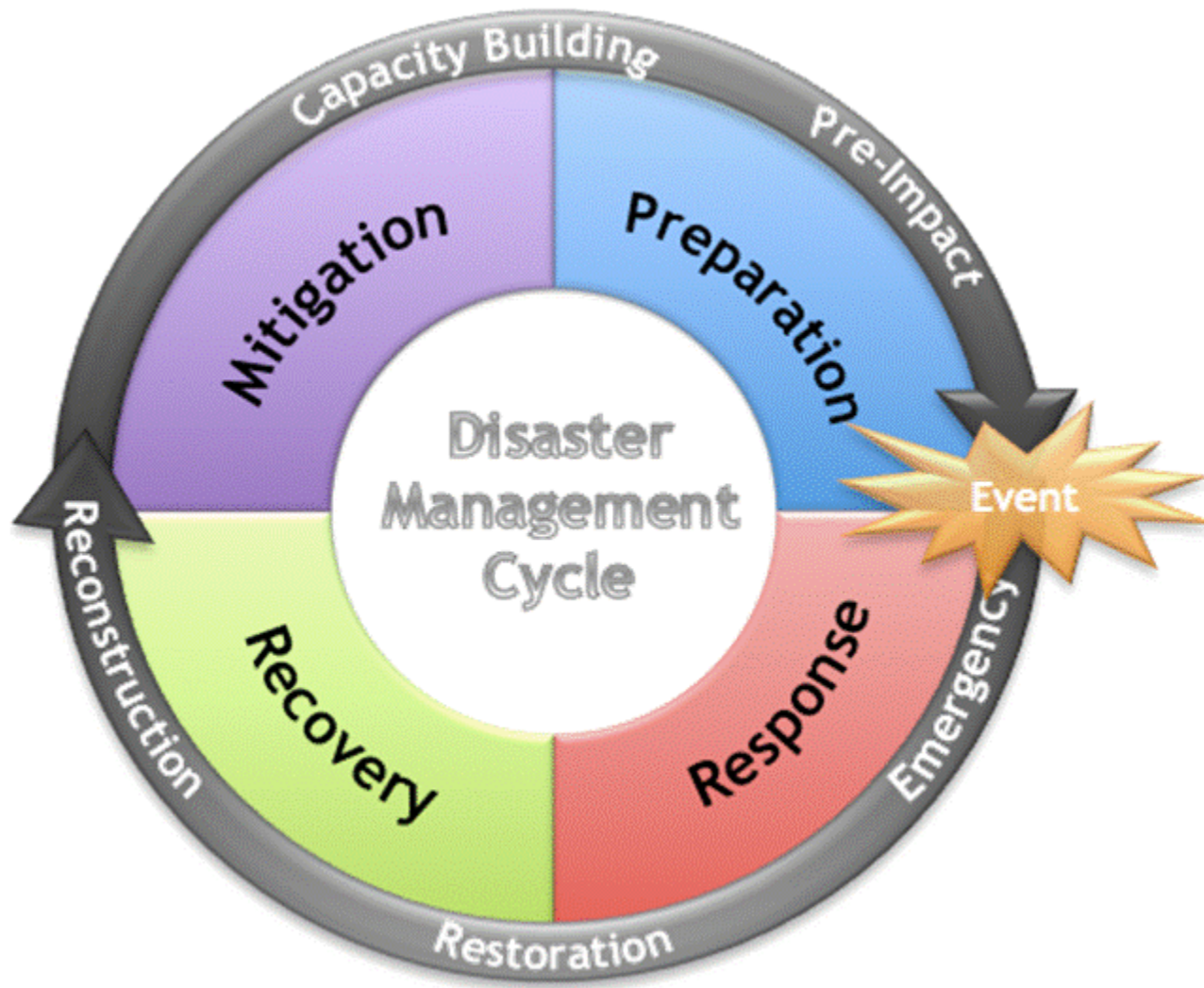
Based on:

Levels of **Government Administration**
(Federal, State, District)

By:

Establishing a holistic **management mechanism** at the stage of **pre, during & post disaster**; and **supported by other SOP** which outline the mechanism as well as **roles and responsibility** of various agencies for specific disasters.

NSC D-20: Total Disaster Risk Management



Definition of Disaster D-20

- For the purpose of NSC Directive No. 20, disaster is defined as an **incident** that occurs **unexpectedly, complex** in nature, resulting in the **loss of lives** and **damage to properties** and the **environment** as well as **interfering in the daily activities** of the local community.
- The incident requires the management which involves resources, equipment, frequency and extensive manpower from various agencies as well as effective coordination and the possibility of taking complex actions over a long period of time

Types of Disaster Defined Under D-20

- Natural disaster such as floods and landslide.
- Industrial & technological disasters.
- Accidents of dangerous or hazardous materials.
- Collapse of high rise buildings & special structures
- Aviation accidents in public areas.
- Railway accidents.
- Major Fire Incidents.
- Collapse of hydroelectric dams or reservoirs.
- Nuclear & radiological accidents.
- Release of poisonous & toxic gases in public places.
- Air & environmental disasters such as haze
- Pandemic and epidemic disease spreads
- Maritime related hazards

Disaster Management Platform

DISASTER
MANAGEMENT
LEVEL
III

Central Disaster Management Committee (JPBP)

- Chaired by the Minister in the Prime Minister's Department
- Setting up policy and strategy in disaster management , mobilise assets, monetary assistance and human resources

DISASTER
MANAGEMENT
LEVEL
II

State Disaster Management Committee (JPBN)

- Chaired by the State Secretary
- Assist the District level in terms of assets, monetary assistance and human resources

DISASTER
MANAGEMENT
LEVEL
I

District Disaster Management Committee (JPBD)

- Chaired by the District Officer
- Ensure coordinated actions, sufficient assets and human resources, and manage the media

Disaster Management Level

DISASTER MANAGEMENT TIERS

DISASTER MANAGEMENT LEVEL I (DISTRICT)

- Localized incident, controllable and has no probability to spread
- Disaster managed by the authorities at the District Level



DISASTER MANAGEMENT LEVEL II (STATE)

- Incident covering two (2) or more Districts but no potential to spread
- Coordinate assistance at the State levels to the affected Districts



DISASTER MANAGEMENT LEVEL III (CENTRAL)

- Complex and covering wide area or more than two (2) States
- Greater financial, human resources and assets coordination

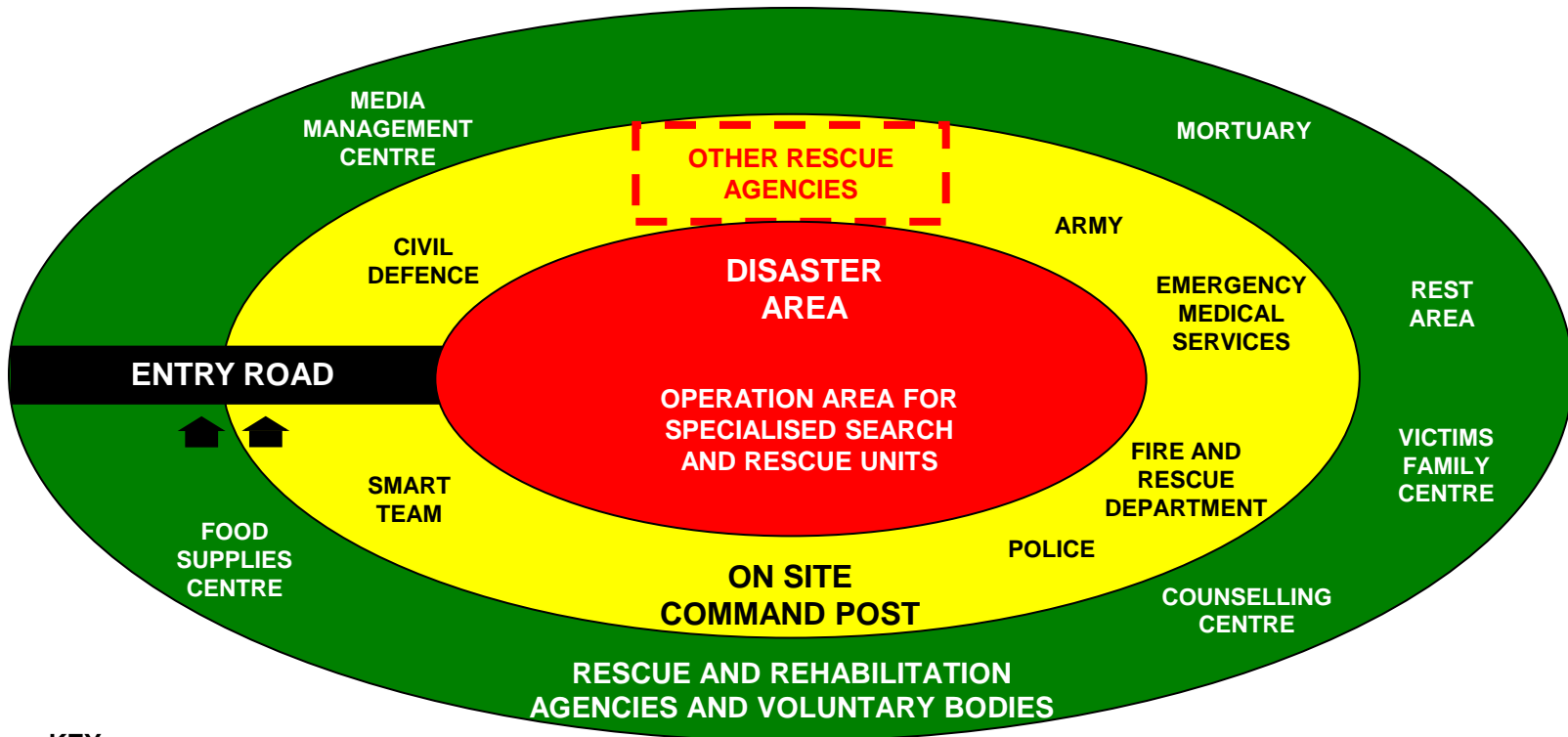


State of Catastrophe

NSC can coordinate **REQUEST OF ASSISTANCE** or accept **OFFER OF ASSISTANCE** from foreign countries or international organizations

Disaster Response at Scene

THE CHART FOR DISASTER MANAGEMENT AT THE SCENE OF INCIDENT ACCORDING TO ZONES



KEY

- RED ZONE : Work area for Specialised Rescue Teams with Special Expertise
- YELLOW ZONE : Placement area for On Site Command Post, and Main and Supporting Rescue Post
- GREEN ZONE : Placement area for Media Management, Victims Family Centre, Counselling Centre, Food Supplies Centre, Mortuary, Rest Area, Supporting and Rehabilitation Agencies and Voluntary Bodies
- SENTRY POST

NOTE : Movement from one Zone to another is not allowed except with the permission of the Commander of Disaster Operations

NATIONAL SECURITY COUNCIL

NATIONAL SECURITY COUNCIL

- DISASTER MANAGEMENT AUTHORITY

- National Security Council (NSC) is the principal policy making and coordinating body for disaster management in Malaysia.
- Coordinates and plans all activities related to preparedness, prevention, response/relief operations and recovery/rehabilitation of disaster management.



LAMAN WEB RASMI

MAJLIS KESELAMATAN NEGARA

JABATAN PERDANA MENTERI

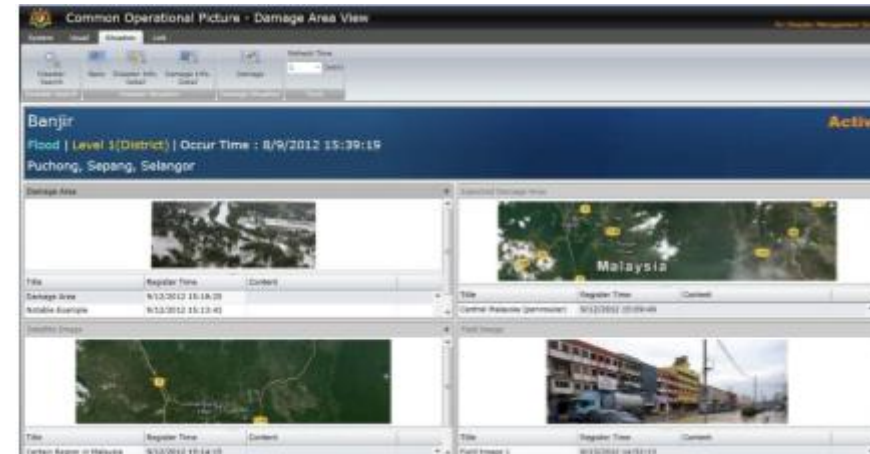


Roles of National Security Council (NSC) as NDMO



NSC Emergency Command Centre

- National level Disaster Management Operation Centre
 - 4 phases: Mitigation, Preparation, Response & Recovery
- Operational: 3rd quarter of 2013.
- National Disaster Risk Management Information System
 - Command, Control, Comm., Coordination, information





JPS

(Flood / Water-level)



JAS

(Environment Info.)



JMM

(Weather / National Tsunami EWS)



JKR

(Landslide / Closed Road)

Regular Data Collection

UIS (Information Gathering)



Data Collection & Processing



UWS (Information Dissemination)



SMS



FAX



Automatic Calling

Activity Coordination Info. Dissemination

Public




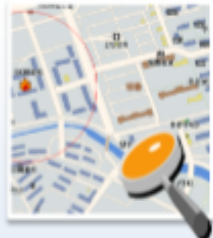
Related Organization



Disaster Mgmt. Organization



Disaster Information

	Disaster Info.	System Info.	GIS	
	Disaster SOP	System User	Base Map	
	Hospital Info. Etc.	SOP Configuration	Risk Map	
Elementary Information Management				

(Source: MKN, 2013)

**MULTITUDE PARTIES
INVOLVEMENT IN DISASTER
MANAGEMENT**

MINISTRY OF SCIENCE, TECHNOLOGY & INNOVATION (MOSTI)

- Inter-Agency Committee for Comprehensive Study on Extreme Weather Prediction & Forecasting
- MOSTI Disaster Management Committee
 - Task Force : 1st Responder
 - Task Force : Logistic & Humanitarian Effort
 - Task Force : Science, Technology & Innovation

Earth Observation Programs

- Space-and Air-borne Remote Sensing Technology Development & Applications
- Water and Ocean Monitoring and Forecasting
- Marine Exploration
- Seismic Activity & Tsunami Monitoring
- Meteorology-Oceanographic Interaction
- Sun-Earth Relationship



ANGKASA ROLES IN DISASTER MANAGEMENT

National Space Agency (ANGKASA)

- Space-Based Technical Organization (National Focal Point)
- Promote the applicability and usage of space technology by having disaster management support programs and activities
- Develop and strengthen regional and international cooperation and networking by participating in regional cooperation mechanisms relevant to space technology for DM – APRSAF, Sentinel Asia
- Bridging technology gap by promoting dialog and platform to govt. agencies, research institute and industry
- Spearhead the National Space Policy and National Space Act

Programs and Activities

- 2013
 - Radar & SAR Training for Disaster Management (March)
 - 2nd Training on ALOS-2 Data Applications using ALOS Archived Data (November)
 - Handbook: Satellite Imagery Processing Procedure in Support Disaster Management
- 2014
 - Disaster Mitigation System by Using Space and Geospatial Information Technology Workshop (September)
 - Sentinel Asia: Kelantan Flood EOR
- 2015
 - 2nd ASEAN WS on Development of Mechanisms for Acquisition and Utilization of Space-based Information during Emergency Response (UNESCAP)
 - 3rd ASEAN WS: Harmonizing SOPs (UNESCAP)
- 2016
 - UN/India WS (March)
 - Satellite-based Information for Natural Disaster Management Workshop (April)



MRSA ROLES IN DISASTER MANAGEMENT

Malaysia Remote Sensing Agency (MRSA)

- Mapping and satellite imagery distribution
- Establishment of Integrated Geospatial Database and Planning System (IGDP)
- Central system for collecting, storing, processing, analysing and disseminating value added data and information to support the relevant agencies in the mitigation and relief activities of disaster management.
- Integrate databases with standardised data (in terms of format, scale and level of mapping accuracies)
- Consists of 3 components: Early Warning (producing risk maps), Detection and Monitoring (identify hotspots forest fire using NOAA) , Mitigation and Relief (inter-agency)

MET MALAYSIA ROLES IN DISASTER MANAGEMENT

Malaysia Meteorological Department (MET MALAYSIA)

- Studies on Weather and earth crustal motion , Early Warning System
- Installed several disaster risks monitoring system for local used such as weather monitoring and hotspot/haze monitoring.
- Development of Integrated Water Vapour (IWV) using GPS to support Numerical Weather Prediction (NWP)
- To ssimilate in-house data with relevant agency for effective disaster modeling

DISASTER MANAGEMENT TECHNICAL ORGANIZATION

- **Department of Irrigation and Drainage (DID)**
 - Flood EWS, forecasting and modeling
- **Atomic Energy Licensing Board (AELB)**
 - Nuclear & radioactive material, Nuclear Emergency Team
- **Department of Environment (DoE)**
 - Haze, air quality index
- **Department of Public Work (DPW)**
 - Landslide information, road management

**NATIONAL DISASTER
MANAGEMENT AGENCY
(NADMA)**

NADMA ESTABLISHMENT

- September 2015, announcement of the new **National Disaster Management Agency (NADMA)**
- Taking over NSC roles and mandate in national disaster management
- Still in the process of adapting roles and structuring
- Has been in operation since its announcement

The Way Forward

- Optimization of the Emergency Command Centre (ECC) with the new establishment of NADMA
- Development of National EOS Program
- Compilation of national database on expertise and technology is still in progress under MOSTI's initiatives
- Proper set up of data announcement and dissemination – data & value-add product pool
- Development of Guideline for Participation in International Space-Related Initiatives in Disaster Management
 - *to provide the clear direction to relevant agencies;*
 - *useful data and/or services that country could provide and be provided to support the local/global initiative DM.*
 - *strengthen national capacity and maximizes the potential usage of space technology.*

THANK YOU

