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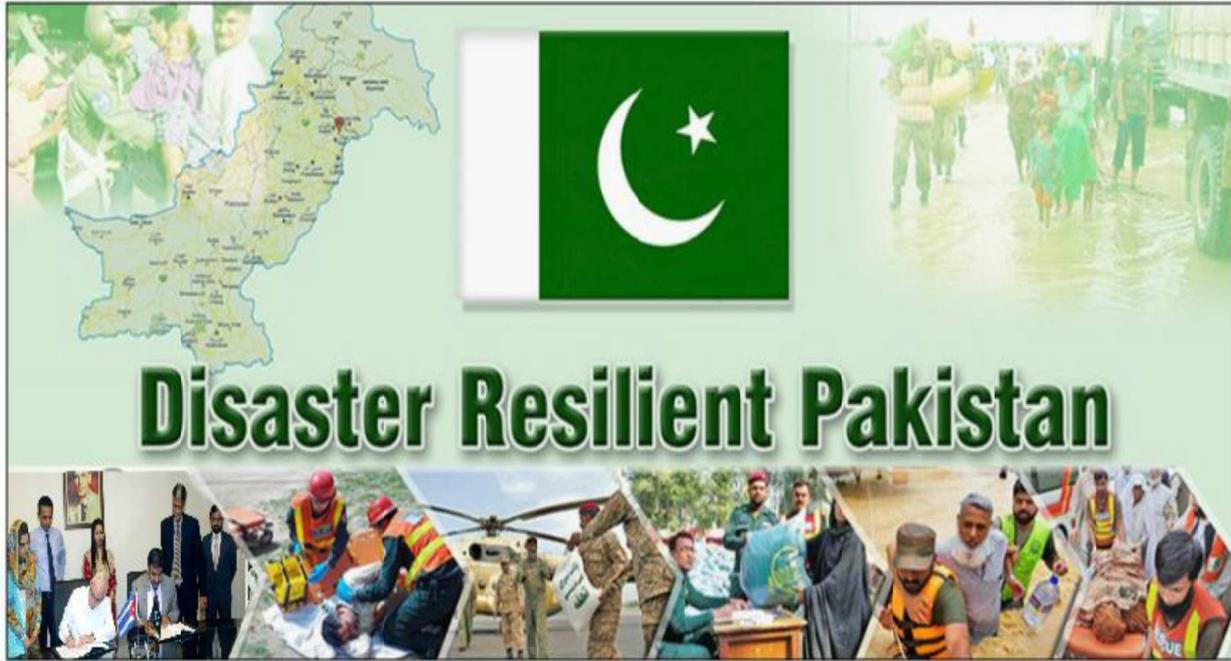


**CLIMATE CHANGE & DISASTER MANAGEMENT IN PAKISTAN
(12 JANUARY 2018)
NASURULLAH BROHI
NATIONAL DISASTER MANAGEMENT AUTHORITY (NDMA)**

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Introduction



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Sequence of the Presentation

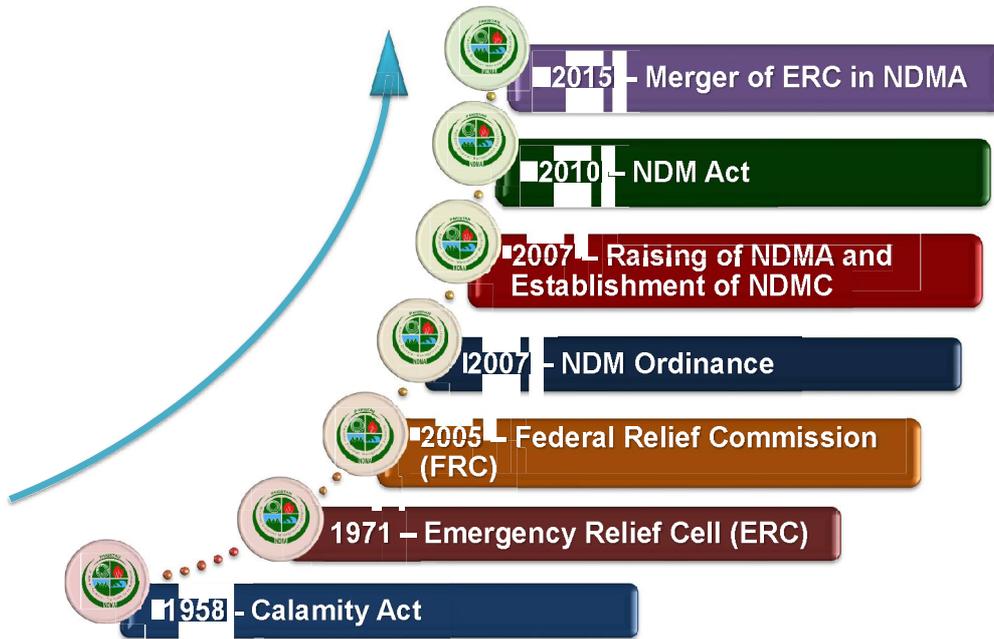


- Salient Points of Pakistan's Disaster Management Mechanism
 - Evolution of Disaster Management System
 - Disaster Management Spectrum
 - Disaster Management Structure as per NDM Act
 -
- NDMA Organization
- Pakistan's
- Disaster Management Experiences
- National Disaster Management
- Bilateral & Regional Cooperation
-
- Challenges for DM
- Theme of Research during ADRC-VR

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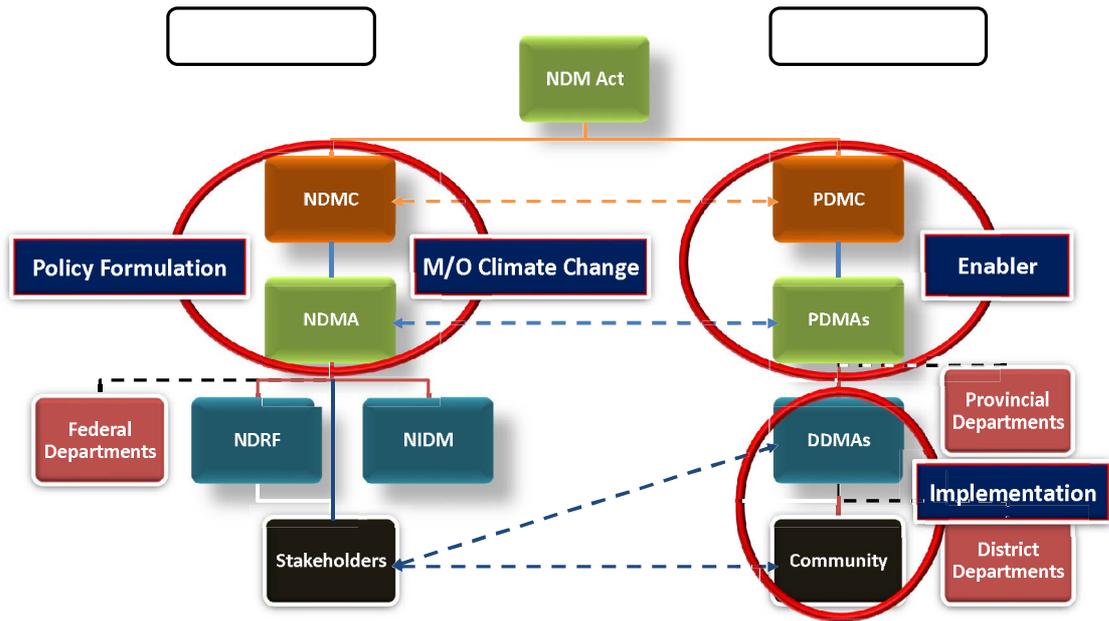
Evolution of Disaster Management System



Disaster Management Spectrum



Disaster Management Structure as per NDM Act



NDMC Composition



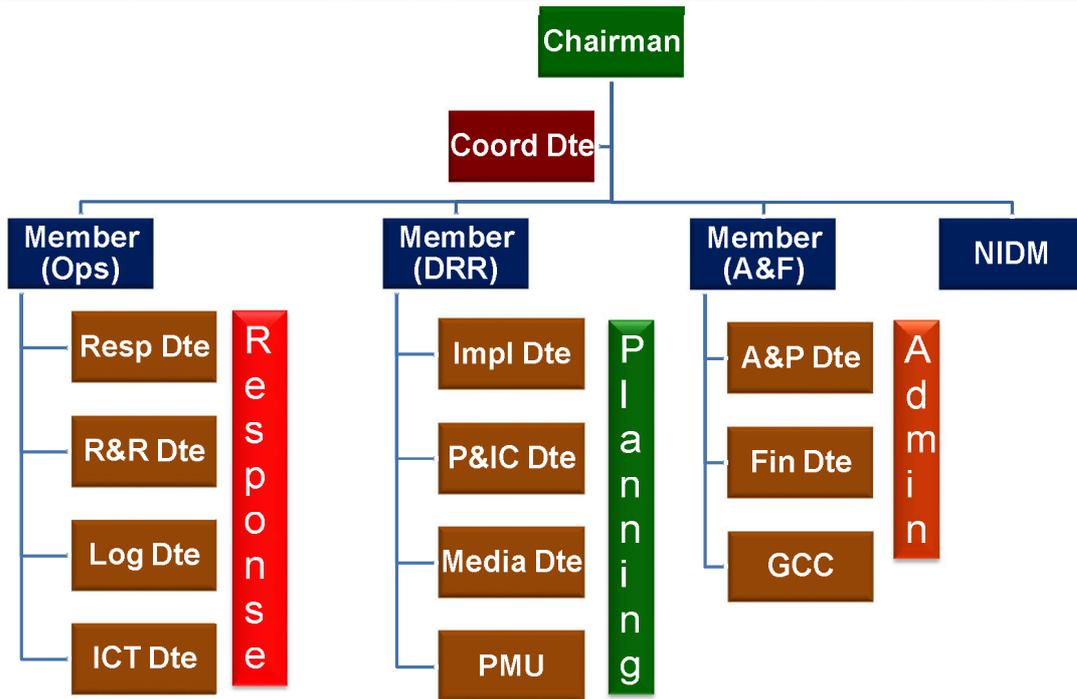
Composition

- Prime Minister - Chair
- Leaders of Opposition (Senate & NA)
- Federal Ministers (Related Ministries)
- All Chief Ministers including Chief Minister GB
- Governor KP (For FATA)

- Prime Minister AJ&K
- Chairman JCSC
- Civil Society Members
- Co-opted Members
- Chairman NDMA- Secretary



NDMA Structure



NDMA Functions



- **Implementing, coordinating and monitoring Body** for Disaster Management and National
- Preparation of **National Plans** on Disaster Management
- **Lay down guidelines** for preparing Disaster Management plans by different Ministries / Departments / Provincial Authorities & Local
- Provide necessary **technical assistance** to Provincial Governments / Provincial Authorities for preparing plans



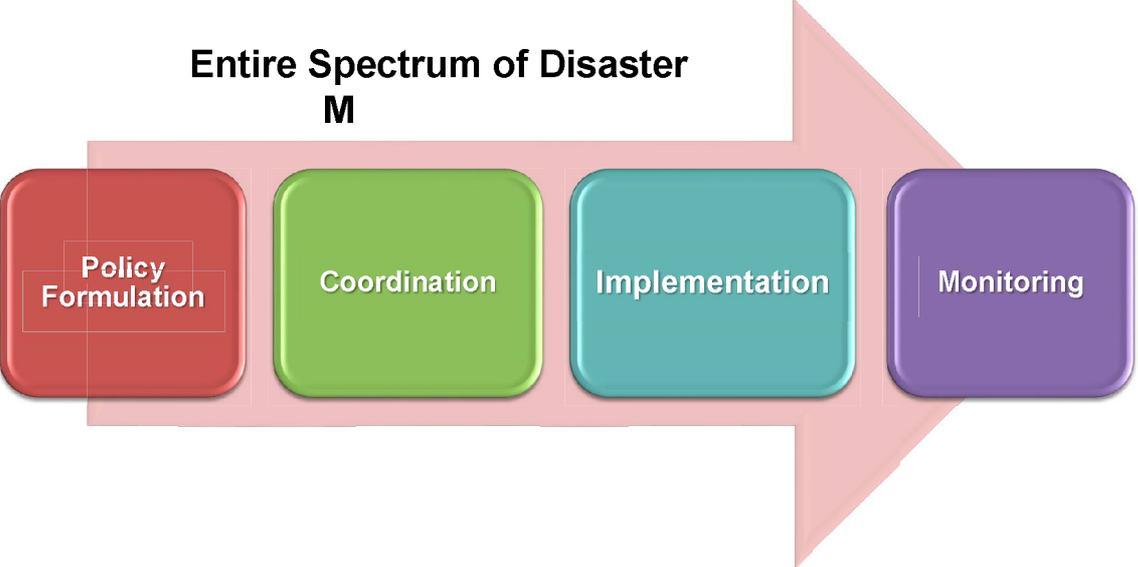
NDMA Functions



- Coordinate disaster
- For any specific purpose or general assistance **requisition the services of any person / department**
- **Promote general education and awareness** in relation to disaster
- Perform such other function **as the National Commission may require to perform**



NDMA Functions





PDMA Functions



- Formulation of **provincial disaster management**
- **Coordinate and monitor implementation** of the National Policies, National Plans and Provincial Plans
- Examine **vulnerability of the Province** to different disasters and specify **prevention or mitigation**
- Lay down guidelines for **preparation of Disaster Management Plans**
- Evaluate disaster **preparedness** at all governmental or non-governmental
- Coordinate **response** in event of disaster

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PDMA Functions



- Promote general **education, awareness and community** training in this
- Provide necessary technical assistance or give **advice to District and Local authorities for carrying out their functions effectively**
- Ensures that **communication systems are in order and DM drills** are being carried
- Perform such functions as may be assigned to it by **National or Provincial Authorities**

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DDMA Functions



- Prepare
- Coordinate **implementation** of National / Provincial Policy and Plan
- **Identify vulnerable areas**
- Ensure **implementation of guidelines**
- Give directions for
- Lay down guidelines for **preparation** of disaster management plans
- Monitor **implementation**
- Encourage involvement of **NGOs** for disaster management
- Ensure viability of

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PAKISTAN'S DISASTER MANAGEMENT CONTEXT



Hazards in Pakistan



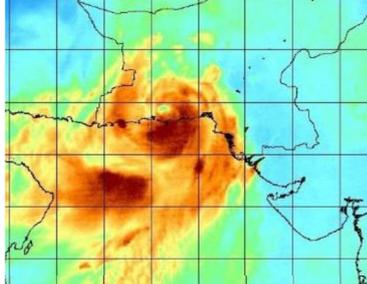
Hydro-Meteorological Hazards



Floods

Riverine Floods

GLOF



Avalanches

Drought

Cyclones



Hazards in Pakistan



Geological Hazards



Earthquake

Landslides

Tsunami

Man-Made Hazards



Oil Spills



Train Crashes



Air Crashes



Ship Fires



**Industrial /
Fires Accidents**

- **Sectoral Impacts**

- ✓ **Water** - Variability in river flow and loss of natural
- ✓ **Food** - Reduced yield of

- **Energy**

- ✓ Reduced availability of water for **hydropower**
- ✓ Reduced **thermal power plant efficiency** at high temperatures
- ✓ Increased **transmission & distribution / line**
- ✓ Increase in **electricity demand**



Effects of Climate Change on Pakistan

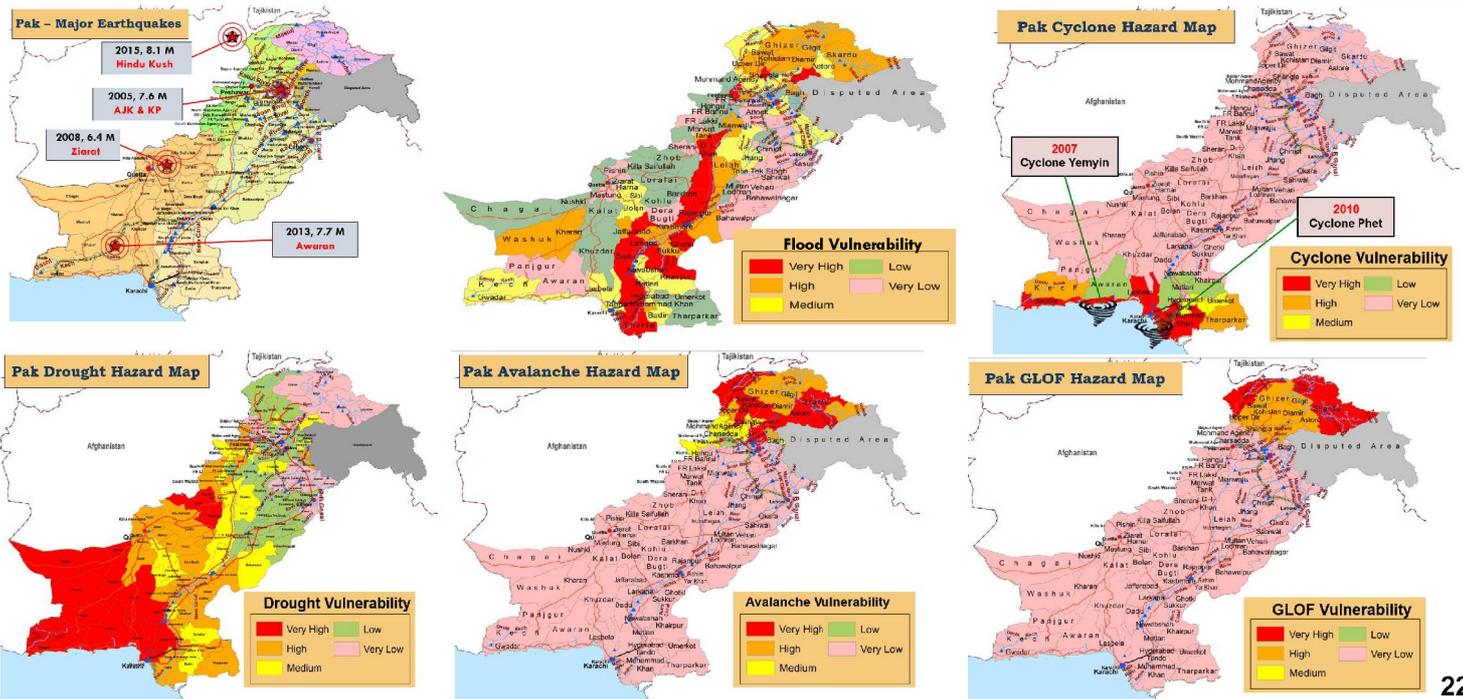


• Human Health

- ✓ Increase **Heat-related mortality** as experienced recently in
- ✓ Higher air and water temperatures favours reproduction of vectors of disease - an increase in **infectious diseases (malaria, dengue)** or other **health impacts (pneumonia, heat strokes, cholera)**



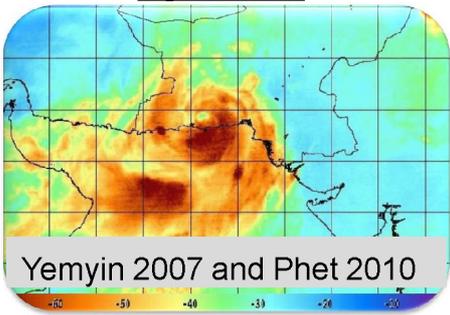
Disaster Hazards Maps



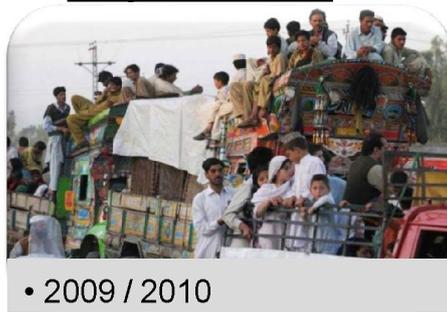
DISASTER MANAGEMENT EXPERIENCES

Major Disasters Handled

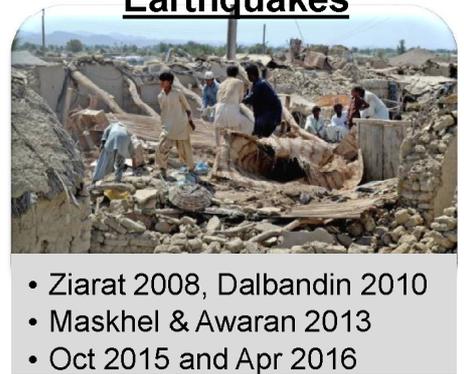
Cyclones



Displacements



Earthquakes



Landslides / GLOF



Floods



Drought





Air Crashes Handled



Air Blue, Islamabad 2010



Bhoja Airline, Islamabad 2012



PIA, Havelian 2016



Earthquake 2005



Human Losses	-	73,338
Injured	-	128,309
Families Affected	-	500,000
Houses Damaged	-	600,000
Educational Institutes	-	6,298
Health Institutes	-	796
Roads	-	6,440 km



Earthquake 2008 – 2015



Human Losses - 844

Injured - 3023

Houses Damaged - 1,62,035



Super Floods 2010



Human Losses - 1,985

Population Affected - 20 M

Houses Damaged - 1,602,765

Crops Damaged - 5,171,026 Acres

Education Facilities Damaged - 10,192

Direct Loss - 10 Billion US\$





Floods 2011 – 2016



Relief Provided – Friendly Countries





Overseas Relief Assistance by NDMA



Nepal Earthquake - 2015



Afghanistan Avalanche - 2015



Afghanistan (Kunduz Insurgency) - 2015



Sri Lanka Floods - 2016



Tajikistan Earthquake - 2016



Iran Earthquake - 2017



PROGRESS ON NDMP



NDMA Policies & Plans



- National Disaster Management Act (**NDM Act**)
 - **National & Provincial Disaster Management Authorities** established including SDMA, GBDMA & FDMA. District Disaster Management Authorities notified
 - National Disaster Management Fund (**NDMF**) →
 - National Institute of Disaster Management (**NIDM**) functioning on adhoc basis →
 - Merger of Emergency Relief Cell (**ERC**) of Cabinet Division with
 - **NDMP Implementation Steering Committee** formed
 - Gender & Child Cell (**GCC**) – National & Provincial Level

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NDMA Policies & Plans



- National Disaster Risk Reduction (**DRR**) Policy,
- National **Disaster Risk Management Framework** (2007-2012)
- **National Gender & Child Cell Framework**
- National Policy Guidelines on **Vulnerable Groups in Disasters 2014**
- **Pakistan School Safety Framework**
- **Implementation Framework** on the National Policy Guidelines 2016
- Guidelines on **Minimum Ex Gratia Assistance to Persons Affected by Natural and Man-made Disasters 2016-17**

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NDMA Policies & Plans



- National Disaster Management Plan (NDMP), 2013-
- National Disaster Response Plan (NDRP), 2010
- **Annual Monsoon Contingency Plans, 2010-**
- **Draft National Drought Management Guidelines (Mitigation & Response) 2017**
- **Nuclear Emergency Management**
- **National Plan for Industrial / Technical Disasters**
- **Cyclone Contingency Plan for Karachi -**
- **National Maritime Disaster Contingency Plan**
- **Integrated Context Analysis (ICA) 2017**

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NDMA Policies & Plans

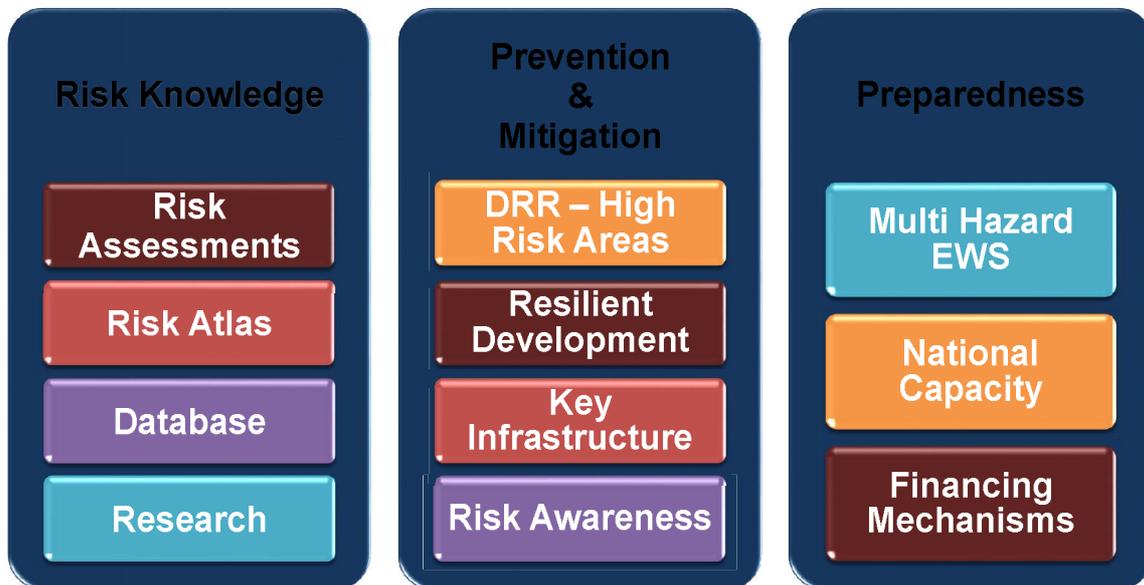


- Guidelines on **Stocking, Maintenance and Supply of Relief & Rescue Items**
- Draft Multi-Sector Initial Rapid Assessment (MIRA) Guidelines 2017
- Draft Guidelines on **Management of Dead in Disasters**
- Draft Guidelines on **Minimum Standards of Relief in Camps 2017**
- **NDMA Policy Guidelines for conduct of Multi Hazard Vulnerability and Risk Assessment (MHVRA)**
- Draft **Cash Transfer Programme in Disasters (CTPiD)**

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National DRR Policy 2013



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National Disaster Management Plan (NDMP)



Background

- NDMA through EAD had requested Government of Japan in 2009 for **technical support** to formulate DM
- Project commenced in **April 2009** and concluded in **June 2012**
- **Over 30 consultations** held both at Provincial & Federal
- **Actual field surveys** were conducted by JICA Team
- The project was finally approved with official title as "**The Project for National Disaster Management Plan**"
- NDMC endorsed the Plan in **February 2013**

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National Disaster Management Plan (NDMP)



Mission

manage the complete spectrum of disasters by development of DRR policies, strategies, measures and actions of all stakeholders, especially at the National level; and **enhance institutional capacities, and human and material resources** for mitigation, prevention and preparedness, response and recovery in

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National Disaster Management Plan (NDMP)



Objectives

The Plan, prepared in line with NDM Act 2010, aims **“enhancing the capacity of the Country to prepare for and respond to disasters (flood, earthquake, tsunami, drought, avalanches, GLOFs, cyclone, storm surge) through various hard and soft interventions”**

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NDMP Progress



Strengthening of Response Mechanism

- Capability developed to support over **0.3 Million people** across the
- Country wide elaborate **Warehouse Network** established →
- **Capacity building of about 7000 persons** through NIDM from 2010 to
- Conduct of **National Industrial Mock Exercise** with **Engro Fertilizers** in year 2010 & March 2016 & with **FFC** in **March 2017**
- **National Disaster Management Simulation Exercises** conducted in year 2014 &
- Six modern Urban Search & Rescue (**USAR**) **Teams** raised in Mardan, Islamabad, Rawalpindi, Lahore, Karachi and Gilgit →

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NDMP Progress



Advocacy & Awareness

- 8th October notified as **National Resilience Day** since year
- **Active Social Media** presence established across multiple platforms
- **Dynamic website** with Global
- **14 x Public Service Messages (PSMs)** developed
- **Documentary** on “Disaster Resilient Pakistan” developed
- **Documentary** on “Vulnerable Groups” being
- **Special Supplements on Disaster Awareness Day 2015 & 16**
- Supplement on **NDMA Achievements** on **11 July**
- Regular awareness advertisement as part of pre, during and post disaster **Media Campaigns**

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NDMP Progress



Advocacy & Awareness

- **7 x TV & Radio Programmes** aired during Monsoon Season
- **115 x Press Releases** published in 822 Newspapers during 2015 – 2016
- Conduct of one National level Media Round Table & **4 x Media Training Workshops** at Islamabad, Karachi, Lahore & Peshawar for media
- **Child Centered & Gender Sensitive IEC** material designed for all potential hazards, emergencies and disasters
- 4 x Episodes of 'Infotainment Game Show Tayyar Pakistan' in which students from all over Pakistan participated

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NDMP Progress



Community Early Warning

- **Effective SMS based Early Warning System** in place with the assistance of PTA since
- Over **58 million SMS Alerts** disseminated to public for Flood warning and Public Service Messages for **Earthquake in 2014 and 2015**
- Over **300,000 persons evacuated** through early
- Consolidation of mechanism is being pursued for inclusion in **PTA Regulations**

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BILATERAL REGIONAL & GLOBAL LINKAGES

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Bilateral Cooperation with Japan



Development Assistance

- Japan is the second largest donor to

Priority Areas

- Economic Infrastructure (Energy, Investment Climate)
- Human Security and Social Infrastructure (Health, Education, Disaster Management, Water)
- Balanced Regional Development (Border Region, Security)
- Support for Polio Eradication

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Regional Cooperation



South Asian
Association for
Regional
Cooperation
(SAARC)

Economic
Cooperation
Organization
(ECO)

Asian Disaster
Reduction
Center
(ADRC)

Regional
Consultative
Committee on
Disaster
Management
(RCC)

Heart of Asia
Istanbul Process
(HOA, DM-CBM)



Global Linkages



- Sendai Framework for DRR
- Heart of Asia Istanbul Process
- Regional Consultative
- World Humanitarian Summit



Sendai Framework for DRR (SFDRR)



Guest of Honour Ambassador in Charge of the 3rd World Conference on DRR, H.E. Mr. Kenichi Sugana addressing the audience at Pakistan's Side Event hosted by NDMA on 17 March 2015 at Sendai, Japan



Pakistan delegation headed by Minister of State for Foreign Affairs H.E. Mr. Syed Tariq Fatemi, Pakistan's Ambassador in Japan, H.E. Mr. Farukh Amil and Chairman NDMA, Major General Asghar Nawaz at Opening Session of 3rd WC DRR (14-18 March 2015) at Sendai, Japan



Heart of Asia (Istanbul Process)





Regional Consultative Committee (RCC)



World Humanitarian Summit (WHS)





NDMA RELIEF: AT A GLANCE



Relief Assistance – Displaced People due to LOC Firing on 22 November 2016





Search & Rescue Operation at Susum Chitral NDMA employed USAR Team on 22 March 2016



PIA ATR Air Crash 8 December 2016





National Industrial Disaster Mock Exercise – RY Khan 16 March 2017



National Disaster Awareness Day 8th October 2015





CHALLENGES FOR THE DM SYSTEM

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Challenges for the Disaster Management



Limited Capability of Meteorological Department

- **Obsolete** weather forecasting
- Present capability – accurate forecast of only **24 - 48 hours**
- **Critical shortage** of automatic weather stations and rainfall gauging
- **Only 65%** coverage of Pakistan by Weather Radars
- **80% area of Balochistan** **100% NAs** not covered
- Limited coverage of meteorological network at **district / tehsil level**
- Limited rainfall measuring (KP, GB, Balochistan, AJ&K)

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Challenges for the Disaster Management



Limited Capability of Meteorological Department

- Prediction of medium to long range forecasting 7 to 15 days
- Lacks in Quantitative Forecast of **Extreme Events** (2010 & 2014 floods)
- Accuracy in **Seasonal Weather Prediction** 50-60 %
- No Upper Air Weather data for Storm Tracking
- No **Urban Flood Forecasting System** except Isb - Rwp

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NDMA – Vision



Consolidate past experience and existing capacity of NDMA to **entire spectrum of Disaster Management System**, in competing resource constraint environment, through a comprehensive, professional and proactive approach to meet **desired end state defined in National Disaster Management Plan (NDMP)**



Research Theme for ARDC VR-Programme



Community Based Early Warning System in Pakistan

- Basic Concept of Community Based Early Warning System (CBEWS) in Pakistan
- Effectiveness of CBEWS
- Challenges
- CBEWS Experiences of Japan
- Prospective of CBEWS in Pakistan
- Guidelines & Recommendations

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POSITIVELY THE END

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