

# Science & Technology to implement Sendai Framework

## Gaps and challenges of science based decision making: Pakistan perspectives

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### Contents

1. Pakistan Profile
2. Science & Technology in decision making
3. Investment in Science & Technology
4. Science link to people
5. Lessons /issues in DRR
6. SFDRR 4 priorities and immediate emphasis

# Pakistan: Profile

- ▶ Pakistan has a long history of wide range of natural and human-induced disasters.
- ▶ The climate change has further aggravated the hydro-meteorological events. Almost every year the impacts of disasters put tremendous pressure on the country meager budget.
- ▶ In Pakistan, the devastating 2005 earthquake was a turning point to restructure the disaster risk management system
- ▶ The national disaster management commission (NDMC) was established in 2006 to proactively respond to disasters and national disaster risk management framework (NDRMF) was developed to provide guidelines for the key stakeholders.
- ▶ NDMA, a focal body was assigned a task to implement DRR policies, strategies and programs.
- ▶ The progress on national disaster management plan 2012-2022 is in full swing.
- ▶ A network of Disaster management authorities has been introduced at all levels.
- ▶ The frequent devastating disasters have convinced the decision makers to mainstream science and technology in decision making and preparedness.

# Pakistan: Science & Technology in Decision Making

- ▶ The NDRMF has insisted on application of S&T in collection, compilation, analysis and dissemination of disaster risk.
- ▶ The inter-ministerial coordination on DRR related scientific solution is slowly gaining importance.
- ▶ Many institutions/organizations such as S&T, COMSTECH, PSF, PARC, PEC, HEC, PCSIR, National Institute Of Oceanography, Pakistan Council For Renewable Energy Technologies, Pakistan Council of Research in Water Resources etc. are working to enhance the awareness of decision makers and prioritize application of S&T while handling DRR issues.
- ▶ NDMA has recently established scientists and technical expert groups on each hazard e.g. seismic expert group and to provide policy guidelines for decision making process.
- ▶ The NDMP 2012-2022 plan typically focuses on risk assessment and mapping, strengthening the existing forecasting and early warning system.
- ▶ The S&T policy specifically insisted on real-time application of remote sensing and GIS in DRR
- ▶ The NESPAK has devised structural/building codes, which needs implementations in true spirit

# Pakistan: Investment in Science and Technology

- ▶ In Pakistan, investment in Science and Technology is limited. In this regards, the decision makers need sensitization.
- ▶ The percentage of GDP spent on education, science and technology is one of the lowest amongst the south Asian countries.
- ▶ Research based investment in science and technology especially in DRR is either lacking or in fractions.
- ▶ The existing investment is spread over wide range of organizations and departments with acute shortage of DRR expertise.
- ▶ Recently, the NDMA has devised project guidelines to avoid overlapping and insisted on the sponsoring agencies to keep NDMA in loop, while undertaking DRR projects.
- ▶ NDMA has established exclusive DRR related National Institute of Disaster Management (NIDM), which supervises training and capacity building programs for managing disasters.
- ▶ NIDM has started database development of Disaster Management related capacity building and training initiatives being carried out by public, private and humanitarian community.

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# Pakistan: Investment in Science & Technology

- ▶ To effectively address DRR and create awareness, several chapters of DRR Forums of practitioners are also working at national and provincial/regional level.
- ▶ The PDMA have allocated funds in their roadmap for Disaster Risk management 2014-2019 and invited research scholars to conduct research on Disaster Management.
- ▶ The NDMA, SUPARCO and related organizations are investing and applying Geo-informatics in MHVRA and mapping.
- ▶ The Ministry of Climate Change has been vested with the mandate to comprehensively address Disaster Management along with spearheading national climate change initiatives of adaptation and mitigation.
- ▶ The recent development includes Strengthening of Pakistan Meteorological Department, Global Change Impact Study Centre and establishment of Pakistan Scientific and Technological Information Center (*PASTIC*).
- ▶ In addition to academia, Geological survey of Pakistan, Federal Flood Commission, Flood Forecasting Division, Drought Monitoring Centre, Space and Upper Atmospheric Research Commission etc. are also working in DRR.

# Pakistan: Science Link to People

- ▶ Lack of horizontal link amongst NDMA, line agencies and Scientific community is one of the challenging area in disaster management system and needs due attentions.
- ▶ The link between S & T and community and their problems is a matter of discussion need to be highlighted.
- ▶ Academia and industry linkage program needs Government interventions.
- ▶ To properly address innovations, research, industries and community, the HEC has established a liaison office ORIC (Office of Research Innovation and Commercialization) in all private and public sector universities and degree awarding institutions.
- ▶ Looking to the importance of S&T in DRR, the government has taken good initiative such as establishment of well-equipped emergency response centers in few cities i.e. Rescue 1122.
- ▶ To improve forecasting and early warning system, the government is launching advanced weather RADAR(s) at unserved locations to forecast the extreme weather events and disseminate early warning to the community.

# Pakistan: Science Link to People

- ▶ Link between indigenous local knowledge and scientific development is missing. Proper dissemination of scientific data to local community is at initial stage.
- ▶ Comprehensive data availability and access to, is either challenging or limited. In order to increase data accessibility open access web based system would be the most appropriate solution.
- ▶ MHVRA assessment and mapping is part of NDMP and need to be developed on scientific knowledge. The disaster management authorities should ensure availability of community level maps.
- ▶ The disaster management authorities and academia are organizing disaster management exhibitions and expo to disseminate disaster knowledge amongst the citizens.
- ▶ The existing organizations should regularly organize MOC and evacuation drill.

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# Pakistan: Lessons / issues

- ▶ After 2005 Kashmir earthquake, a paradigm shift has been noted from reactive to proactive one.
- ▶ Frequent disasters are an eye-opener for the general public, organizations and academia and created curiosity in DRR and disaster education.
- ▶ In follow-up, disaster management Legislations and organizations were established
- ▶ National Disaster Management Plan (2012-2022) was developed.
- ▶ Every year Monsoon contingency plans are prepared.
- ▶ The tag organizations issue alerts and disseminates early warning to the masses.
- ▶ There is a dedicated financial resource mechanism for disaster mitigation, preparedness and response.
- ▶ Development of new building codes, legislative coverage and its infusion in reconstruction and recovery process.
- ▶ A radical shift has been noted towards multi-disciplinary, multi-hazards and cross-cutting disaster risk management approaches



- ▶ **SFDRR 4 PRIORITIES FOR ACTION:** The need of immediate emphasis, and how this can be done?
- ▶ **Priority 1: Understanding disaster risk**  
**Priority 2: Strengthening disaster risk governance to manage disaster risk**  
**Priority 3: Investing in disaster risk reduction for resilience**
- ▶ **Priority 4: Enhancing disaster preparedness for effective response, and to “Build Back Better”**
  - ▶ Establishment of new met stations in unserved area
  - ▶ Establishment weather forecasting RADARs to strengthen early warning system
  - ▶ Establishment of fully equip Emergency Response Centers at district level
  - ▶ Multi-hazard risk assessment and mapping
  - ▶ Implementation of building codes, enforcement of land use zoning and regulations
  - ▶ establishment of DDMA and preparation of DDMP

Thank you