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ACRONYMS

|  |  |
| --- | --- |
| **Abbreviation** | **Full Form** |
| AAR | After Action Report |
| AHA | ASEAN Co-coordinating Centre for Humanitarian Assistance on disaster management |
| ASDMA  CAG | [Assam State Disaster Management Authority](http://www.asdma.gov.in/dmp.html)  Comptroller and auditor general |
| CDP  CMO | Capacity Development Program  Chief Medical Officer |
| CRPF | [Central Reserve Police Force](http://www.crpfindia.co.in/) |
| CRS | Central Recording Station |
| CSIR | Council of Scientific and Industrial Research |
| DAVP | Directorate of Advertising and Visual publicity |
| DDMA | District Disaster Management Authority |
| DEoC | District Emergency Operation Centers |
| DEOC | District Emergency Operation system |
| DM | Disaster Management |
| DM&R | Disaster Management and Research |
| DSS | Disaster Support Services |
| DTS | Direct Trainer Skill (DTS) |
| ECS | Electronic Clearing System |
| EoCs | Emergency Operation Centre (EoCs) |
| ESF | Emergency Support Functions |
| FYP | Financial Year Plan |
| HPC | High Performance Computing |
| HQ | Head quarter |
| IIPA | Indian Institute of Public Administration |
| IRS | Incident Response System |
| IRT | Incident Response Team |
| ITBP | Indo-Tibetan Border Police Force |
| MMEX | Mega Mock Exercise |
| MSDA | Meghalaya State Disaster Authority |
| MSK Scale | Medvedev–Sponheuer–Karnik scale |
| NBC | National Building Code |
| NDMA | National Disaster management Authority |
| NDRF | National Disaster Response Force |
| NE | North East |
| NEDFI | North Eastern Development Finance Corporation |
| NEIST | North East Institute of Science and Technology |
| NEWSN | North Eats Wide Seismic Network |
| NGO | Non-Government Organizations |
| NIDM | National Institute of Disaster Management |
| NIPCCD | National Institute of Public Cooperation and Child Development, |
| NIRD | National Institute of Rural Development |
| PMC  PMU | Project Monitoring Committee  Project Management Unit |
| RVS  RCC | Rapid Visual Screening  Reinforced Cement Concrete |
| SAARC | South Asian Association for Regional Association |
| SAR | Search and Rescue |
| SCOs | State Coordinating Officer |
| SDMA | State Disaster Management Authority |
| SDRF | State Disaster Response Force |
| SEOC | State Emergency Operation Centers |
| SoPs | Standard Operating Procedures |
| SIPARD | State Institute of Public Administration and Rural Development |
| SWOT | Strength Weakness Opportunities ad Threats |
| TTX | Table Top Exercise |
| UC | Utilization Certificate |

EXECUTIVE SUMMARY

National Disaster Management Authority (NDMA), Ministry of Home Affairs, Government of India has entrusted , Indian Institute of Public Administration (IIPA) to evaluate the project on Evaluation of **“M 8.7 Shillong 1897 Earthquake Scenario: NE Multi State Preparedness Campaign Project”** conducted by CSIR-NEIST, Jorhat in collaboration with NDMA. The evaluation of the project has been carried out for three main activities *viz*. generating awareness, through rapid visual survey (RVS) trainings, mass casualty management in schools and hospitals and capacity building of various stakeholders including State and district Level Nodal Officers from State Governments, Public Sector Organizations and all related line departments of all the eight states. Lastly, the assessment of the multi-state earthquake disaster preparedness and to evolve the coordinated evaluation of SDMAs and NDMA.

The main objective of this comprehensive evaluation was to revisit the experiences for bringing about improvement in designing and implementing earthquake scenario project activities and conduct similar mega mock exercise in other seismically active regions of the country.

To meet the evaluation objectives, the primary and secondary data collection techniques were adopted. The primary data collection comprised of interaction with stakeholders, *on-site* data collection from CSIR-NEIST, few SDMA’s and NDMA through visits, series of interviews with stakeholders to assess their level of understanding. Google forms were sent to the stakeholders to receive their feedback. Consultative meetings were held at Assam Disaster Management Authority (ASDMA) and Sikkim State Disaster Management Authority (SSDMA), Agartala and Manipur. Few brainstorming sessions were also held with Earthquake experts. Discussions and deliberations were also held with the concerned officers of NDMA. Secondary data includes detailed project report, supporting annexures submitted by CSIR-NEIST to NDMA, District and state Disaster management Plan documents, financial transaction documents of eight project study states. The evaluation criteria were developed based on both primary and secondary data sources. Analysis of responses acted as enablers to understand the impact of earthquake and its preparedness. This analysis also helped to identify gaps in the formulation of the strategy for disaster preparedness.

**Findings**

Based on both the primary and secondary data certain recommendations and suggestions are made. The findings of the project are summarized below:

**Unique Initiative**: The project was very unique initiative undertaken in the country at a multi-state level.

**Well Timed:** The project is very timely catering to a seismically dynamic North-East Region with the ever increasing population and the haphazard growth and development.

**Well- Synced participation of Nodal agencies and line departments**: The success of the project was largely due to active participation of the SDMA, DDMA, various line departments, schools, civil defense organizations, hospitals, media houses and various other stakeholders.

**Need to re-visit DMPs**: The states and districts need to revisit their Disaster Management plans in the light of new development. Due care should be taken to incorporate IRS.

**Launch of functional EoCs**: EoCs both at state and district levels must be set up, to have a better response system.

**Establishment of “stand-alone disaster network”:** A stand-alone disaster network should be launched which shall be the foundation and lifeline in disaster situations.

**Provisions for State Response Plan**. In the follow up, the project states may be requested to identify lessons learned and prepare a separate “*State Response Plan*”.

**Value addition of the Study:** The capacity building should have been two –pronged, one, capacitate NEIST to disseminate scientific research to functional aspects in the state and the second prong should have been SDMA/NDMA to use scientific knowledge in their response mechanism.

**Emphasis on Micro- Zonation**: Micro-zonation of potential area of the state *viz*. the state capitals, economic zones etc. should be taken up as this would provide the basis for site-specific risk analysis, which can assist in the mitigation of damages caused by [earthquake](https://en.wikipedia.org/wiki/Earthquake) and it would assist in its preparedness.

**Strengths of Mega Mock Exercises:** Mega Mock Exercises were mostly appreciated by most of the states. It was a great opportunity for the states to understand response status and improve coordination.

**Efficiency of CDP trainings**

CDP trainings were very efficient in enhancing their knowledge about Emergency Response Plan (ERP) and Standard Operation Procedures (SoPs). It was also observed that gaps do exist in manpower and equipment procurement.

**Role of Print media**

Print Media helped in generating awareness amongst the public. On the contrary TV and Radio were not able to pronounce relative results, the shortcoming should be further analyzed.

**Enforcement of strict implementation of Building Code and RVS training:** National Building Code (NBC) should be enforced which would help in regulation. Adequate number of young engineers’ form each district must be trained under RVS program conducted by NDMA.

**Relevance of RVS training:** 47% of the respondents found the RVS training extremely relevant for the overall development in the present scenario as well as in the future.

**Impact of School Sensitization Workshop**: 59% of the respondents felt that the school sensitization workshop has provided information and knowledge to a great extent. Whereas 53% acknowledged the inculcation of habit of earthquake safety through school sensitization programs.

**Hospital Management Exercises**: The evacuation plans must be more specific laying stress upon the identification of area which would support the people after mass evacuation.

**Well-structured Hospital Contingency Plan**: The hospital contingency and medical plan should be tested and validated by conducting mock exercises regularly.

**Dedicated disaster communication network:** A dedicated disaster communication network should be in place which would lead to a faster disaster related communication without hampering police communication network.

**Need of Special DM module for Police Personnel**: There is a need for a special module on DM for police personnel. Well-equipped SDRFs must be raised in the North-East States with immediate effect

**Shortage of DM Equipment**: The line department with special reference to fire department has acute shortage of fire-fighting equipment. It is also recommended that SAR team comprising of the civil defense and volunteers should be formulated capacitating the team members to handle the DM equipment

**Few changes in logistics:** Few changes in logistics can work wonders for e.g.; control room and Incident Response Team should be placed in well-equipped control room. IRT should be alerted through dedicated communication system rather that the cellular phones.

**Regularization of release of installments’ of grant released:** Due to the re-appropriation offunds under ODMP**,** study team on interaction found that there was some delay in the release of grants.

**Graduated Incremental Benefits**: It is observed that incremental benefits graduated in Mega Mock Drill from 2014 to 2015 IRS model used for the first time. All props used for the various activities were stacked in an organized manner with a color coding scheme for quick response.

**Recommendations and Way Forward**

The activities carried out in the course of project duration of 22 months are evolved on *real time* basis and most of them were very significant such as Capacity Development Programs, Mass Media Campaigns, Rapid Visual Surveys, School Children Sensitization, Table Top Exercise and Mega Mock Exercise. By and large the project was very successful as it looped in all major stakeholders, nevertheless there are a few gaps which should be plugged-in future ventures.

The IIPA team in its interaction with the project investigation team at CSIR-NEIST and NDMA found that there were a few gaps mentioned below:

**Grooming states as potential ambassadors**

It is beyond doubt that NDMA has conducted the Mega Mock Exercises successfully. It is to be further emphasized that there should be involvement of states in conducting the Mega Mock Exercises. This would facilitate in grooming the states making them more informed on the management of financial and administrative aspects. Thus paving way for the states to pose as potential ambassadors.

**Sharing and disseminating scientific knowledge generated by CSIR-NEIST**: It is found that the host institute being a premier expert in earthquake scenario generation, should strengthen the SDMAs by sharing and disseminating its scientific findings. This sharing would eventually help in making states better equipped. Similarly flyers, primers and pamphlets should be produced by CSIR-NEIST which would strengthen the SDMAs.

**Institutional understanding between NDMA and CSIR- NEIST:** The release of funds was a constraint .The closing of Police modernization scheme led to unattended residual liabilities under the ODMP. As a result the timely release of funds were hampered.

**Overspending of funds by few states:** On discussion it was found that there was overspending of funds which over shot the earmarked allocated funds for the pre-preparatory activities which led to issues in settling the finances. Some states such as Tripura are yet to submit the expenditure statement of the funds utilized. It was observed by IIPA’s study team on discussion with the project investigator that states of Meghalaya, Assam, Sikkim were very cooperative whereas Tripura, Nagaland and Arunachal Pradesh had an indolent attitude.

**Handholding and Sustainability efforts**: The project has generated a lot of mass awareness and sensitization. Several new programs such as “*Gyan Jyoti”* program an initiative of Assam Government, and “Science Motivation Programme”, a CSIR initiative have been started as an inspiration from this mega project. It was observed that the different line departments work in a well-coordinated manner. The star example is Sikkim state to quote for its routine and well-coordinated mock drills.

**Regular re-visits of Disaster management Plans**: It was observed that there was an urgent need for trained police personnel in Disaster Management. Disaster Management Plans are obsolete and there is need to revisit them and remove the redundancy.

**Inventorization of Resources** The inventory of resources was also a major issue as it was not incomplete in most cases. Resource/inventories mapping. IRS guidelines should also be a part and parcel of the plans.

**Provisioning for Procurement of updated DM Equipment**: There is a lack of Disaster Management equipment with different line departments.

**Trained Manpower:** There should be proper training of the manpower to operate the disaster management equipment.

**Ease of availability of Building Code**: The building codes must be available in public domain. ULBs should be looped while generating Census report which should also incorporate building roof walls, number of storey as this will equip in better understanding of the vulnerability.

**Need for RVS of strategic buildings**: The stakeholders opinioned that. RVS of all critical life line buildings followed by other government and private buildings should be taken up as an urgent step.

**Wider outreach of Scientific Findings**: State governments and related agencies must make the relevant date accessible to the teams engaged in developing such hypothetical scenarios. The project would be extremely beneficial in generating awareness amongst the stakeholders about an earthquake of high magnitude in all the eight NE states. The loss to life and property can be minimized by incorporating the knowledge developed in this project in the relevant disaster management prepared plans of the states. All major stakeholder groups, leaders and policy makers, engineers and architects, disaster management professionals, and people at large will benefit from the knowledge developed during the project.

The outputs from the project will be useful for NDMA, NIDM, several Committees working on earthquake mitigation, architects and engineers, insurance agencies, people involved in land use planning, and in various aspects of public and financial policies dealing with multi state earthquake disaster preparedness and emergency planning and management.