

MINUTES OF REVIEW & MONITORING COMMITTEE MEETING ON INCEPTION REPORT (1ST DELIVERABLE) OF STUDY "DESIGNING NATIONAL SEISMIC RISK MITIGATION PROGRAMME (NSRMP)" HELD ON 24.09.2019 AT 3:00 PM in OPS. ROOM, NDMA BHAWAN, NDMA, NEW DELHI.

The Review & Monitoring Committee meeting to appraise Inception Report (First Deliverable) of the study "*Designing National Seismic Risk Mitigation Programme (NSRMP)*" was held on 24th September, 2019 at 3 PM under the Chairmanship of Dr. Pradeep Kumar, Addl. Secretary & Project Director, NDMA. The meeting was attended by Members of the Committee, Officials from NDMA and M/s DDF-AKDN JV (Consultant). List of participants is attached at Annexure-I.

2. The meeting started with a welcome note from the Addl. Secretary & Project Director, NDMA, followed by a brief introduction by the participants. A presentation was made by the DDF-AKDN JV Team on Inception Report of NSRMP study. The presentation started with an overview of the study, including key objectives & deliverables, and working modalities. An interactive discussion was held on overall approach/methodology to be adopted for activities pertaining to four different components of the study to be undertaken in 8 seismic prone States, viz.;

- Component A – Earthquake Early Warning Dissemination System (EEWDS) & Enhancing Emergency Response Capacity.
- Component B – Multi-hazard Risk Mitigation of Infrastructure: Retrofitting of Critical and Lifeline Buildings, Retrofitting and/or Constructing Critical Links on Evacuation Routes, and Constructing Technology Demonstration Units.
- Component C – Technical Assistance to Improve Disaster Risk Management.
- Component D – Project Management, Monitoring, and Implementation Support

Requirements of data/information specific to Component- A, B, & C, with highlights on PMU/States interventions were also discussed briefly.

3. It was suggested by the Committee to include other adjoining States in design methodology for Earthquake Early Warning Dissemination System to complete the array. In this context, it was clarified that States other than the present project States will be taken up for implementation in subsequent phases. The need of research to include Depth and Magnitude both as criteria for designing Earthquake Early Warning System was stressed upon. Approach for designing Decision Making System was discussed and it was suggested that latest software/algorithm should be employed for decision making in CMS, based on best practices. The pan India implementation of Common Alerting Protocol (CAP) was

brought into discussion in context of Emergency Alerting and Public Warning and the Consultant was suggested to design CAP compliant Earthquake Early Warning Dissemination System. The Consultant was suggested to review the existing Shake Maps and further should be used in the design of EEWDS. The Consultant was also suggested to ensure Seismic Data Storage of recorded ground motions for future use within new design system.

The committee opined that this project is of national importance and should be used as tool for sensitization and capacity building of relevant stakeholders. It should be linked to training and knowledge upgradation, targeting engineers, architects, masons and other stakeholders. All public infrastructure retrofitting should be treated as showcasing the mitigation technology. The programme should make provision for the same. The criteria for selection of buildings/ Infrastructure for the retrofitting, various building categories and their importance were discussed. The committee suggested to consider inclusion of court complexes and Prison/ Jails in the identified categories.

4. After deliberation involving views/suggestions of participants, following decisions were taken:

Component A:

- i. Earthquake Early Warning Dissemination System (EEWDS) will be designed in such a way that all Seismic Zones be covered in continuum. The Consultant will work out and finalize location of Sensors (Regional EEWDS) also for the neighbouring States.
- ii. Both Depth and Magnitude of Earthquake should be criteria for designing EEWDS.
- iii. Latest software/algorithm should be employed for decision making in CMS, based on global best practices.
- iv. EWDS to be designed Common Alerting Protocol (CAP) compliant for Emergency Alerting and Public Warning.
- v. Shake Maps to be integrated with EEWDS.
- vi. Ensure Seismic Data Storage of recorded strong ground motions for future use within new design system.
- vii. Seismic Micro-Zonation being carried out by NCS, MoES shall be mentioned in proper context in the Inception Report.

Component B:

- viii. List of Buildings/Infrastructures proposed for retrofitting should be exhaustive to work out decisive number of Buildings/Infrastructures to be retrofitted under the project.
- ix. Depending on allocation of resources, atleast one Link Bridge and ATC Tower on evacuation route should be considered for retrofitting.

- x. Budget/Resource Allocation will be done at later stage only after finalizing list of buildings/infrastructures from project States. Project States will provide the list of buildings/infrastructures requiring retrofitting.
- xi. Court complexes and Prison/ Jails to be included in the identified categories of buildings for the retrofitting.
- xii. Age of buildings shall be one of the criteria for selection of building for retrofitting.

Component C:

- xiii. It is observed that at present, there is no robust techno-legal regime in rural areas and, therefore, it should be incorporated in the design.
- xiv. The consultant is required to give suggestions on draft bill of NCPE. The existing comments already given by NDMA will be reviewed by the Consultant. The consultant should refer to existing NDMA resource material.

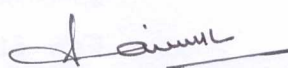
Component D:

- xv. Kick-Off Workshop primarily aiming to finalize buildings/infrastructures for retrofitting will be conducted in each project States, with participation from PMU, NDMA, and feedback from the Workshops will be suitably incorporated in the Project Scoping Report. The Consultant will coordinate with nodal officers and finalize the dates for the workshop in each States at the earliest, under intimation to the PMU, NDMA.
- xvi. A set of Seven Forms for requisite data/information has been handed over to the State Nodal Officers. The Consultant will e-mail the same Forms to Nodal Officers of project States by 25th September, 2019. The duly completed Forms will be handed over to the Consultant by the Nodal Officers during the Kick-Off Workshop.

Miscellaneous

- xvii. The Committee decided to have representative from NIC and DoT in the Review & Monitoring Committee.
- xviii. SPIU need not to be established at this stage of NSRMP. Nodal Officers for NSRMP have been nominated by States. Accordingly working modalities given in the report should be modified. SPIU, State should be replaced by Nodal Officer, State.
- xix. The Consultant will deploy one Local Assistant State Coordinator in addition to the State Coordinator for better liaisoning with the State Authority. State Coordinator, Local Assistant State Coordinator, and Structural Engineering Specialist should be specified for each State.
- xx. Few States have determined liquefaction potential. This may be captured in Executive Summary of Inception Report.

- xxi. States that have undertaken multi-hazard risk assessment studies have granular risk information for seismic and associated hazards. This may be brought out /highlighted in Chapter 2.
 - xxii. Under Section 1.3 - Aims & Objectives of Project: "Risk reduction strategy -----, required for proposing potential financing from multilateral institutions particularly the World Bank". The underlined part may be deleted.
 - xxiii. Housing risk information may be brought out from the Vulnerability Atlas and the same to be presented for project States.
 - xxiv. The State has undertaken a detailed Multi-hazard Risk Assessment study. The vulnerability of the built environment has also been analysed. The seismic hazard and other related hazard information can be obtained from HPSDMA and included in hazard profile of Himachal Pradesh State.
 - xxv. State of Uttarakhand has one of the most advanced risk assessment studies undertaken under the project titled Uttarakhand Disaster Recovery Project. The results of Seismic Hazards assessment and vulnerability assessment of the buildings and infrastructure can be brought into hazard profile section.
 - xxvi. Views from NCS, IISc Bangalore, NGRI Hyderabad, other than IIT Gandhinagar and ISR, Gandhinagar, Gujarat on future research on Earthquake Risk Mitigation will also be crucial at this stage of NSRMP. The same should be incorporated in Section A 1.2.9 Research and Advancements for Future in the report.
 - xxvii. For enhancing Emergency Response Capacity, emphasis has to be given for Heavy S&R/ Collapse S&R Operations; Shoring of dangerous structures; Community ER teams. It should be incorporated in Section A.2. Component A-2: Enhancing Emergency Response Capacity.
 - xxviii. Translation of key/summary Environmental & Social document will be done in vernacular.
 - xxix. Fortnightly/Monthly progress report to be submitted to PMU (NCRMP) by the Consultant.
 - xxx. Revised Inception Report incorporating all the decisions to be submitted the Consultant at the earliest.
5. The meeting ended with thanks to the Chair and all the participants.


(Samir Kumar)
Dy. Project Director
NCRMP, NDMA

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