

MINUTES OF REVIEW MEETING ON STAKEHOLDER CONSULTATION PROCESS REPORT (2nd DELIVERABLE) OF 'HYDRO-METEOROLOGICAL RESILIENT ACTION PLAN (HmRAP)' HELD ON 18.01.2021 AT 3:00 PM THROUGH VC IN OPS ROOM, NDMA BHAWAN, NEW DELHI.

A review meeting on Stakeholder Consultation Process Report (2nd Deliverable) of the study 'Hydro-meteorological Resilient Action Plan (HmRAP)' was held through VC under the Chairmanship of Sh. R K Ganta, JS (Admin) & Project Director (In-Charge), NCRMP, NDMA on 18th January, 2021 at 3:00 PM in Ops. Room, NDMA, New Delhi. The meeting was attended by officials from NDMA and the World Bank, PD (NCRMP-SPIU) of project States, nominated City Nodal Officers, Experts and Consultant (M/s RoyalHaskoningDHV JV). List of Participants is attached at **Annexure-I**.

2. The meeting started with a welcome note from the JS (Admin) & Project Director (In-Charge), NCRMP, NDMA. A presentation was made by the Consultant Team on overall Stakeholder Consultation Process under HmRAP, and different aspects of the Stakeholder Consultation Process were deliberated.

3. Prof. A K Gosain, IIT Delhi sought clarity on the kind of resilience action plan and the final outcome envisaged out of HmRAP study. The consultant's Team Leader (Dr. Chari) confirmed that the HmRAP will also include an investment matrix, implementation framework and performance audit. The Team Leader further explained that the resilience action plan would be area based (ward level) and of three-time horizons (i.e., short-term plan, medium-term plan and long-term plan).

Citing status of drainage system in the country, Prof. Gosain further asked for clarification on process/method of drainage system analysis under the study. The Team Leader apprised that the model will identify hotspots (area prone to flood), and to analyze the adequacy of storm drainage network two actions will be taken into account: (i) Topographic/infrastructure survey, and (ii) secondary data available for the project Cities. Prof. Gosain advised for careful examination of the secondary data which may be different from the ground reality. Dr. Chari informed that the past rainfall event data and consequent water logging scenarios will be used to alternatively assess current storm water carrying capacity. Satellite based rainfall estimates will be utilized for filling gaps in city level rainfall observations. Prof. Gosain further advised that integration of HmRAP with ongoing National/State schemes/programmes is crucial. Mr. Anup Karanth, Sr. DRM Specialist & TTL, The World Bank suggested that consultations with

National and State level institutions would be needed for integration of ongoing schemes/programmes with the HmRAP. He also re-iterated to bring in more clarity in the report about the integration and convergence of efforts being made by a large number of parallel urban programme.

The CNO, Kochi requested for LiDAR survey for Kochi city. Dy. Project Director, NCRMP, NDMA clarified that as per the provision of the contract, DTM/DEM of the study area will be prepared through survey using Total Station and DGPS, with 30 cm vertical resolution having minimum 95% accuracy level within the area covered.

The JS (Admn.)&PD (NCRMP), NDMA suggested for study of micro level climate change caused by local level factors. He appreciated the suggestions from the World Bank, and Prof. Gosain for future actions in the project.

4. After deliberation involving views/suggestions of participants, the following actions were agreed to:

- i. The resilience action plan would be area based (ward level) and hazard specific document.
- ii. Hotspots and engagement strands towards building urban resilience to be identified.
- iii. More clarity to be brought out in the report about the integration and convergence of efforts being made by a large number of parallel urban programmes.
- iv. Consultant to identify five top priority entry points. Appendix A1.3 captures key status of the cities on the resilience opportunities and this can be used to either rank or establish and arrive at what are the top five areas to move into or deepen the engagement.
- v. Consultant to prepare city specific resilience action plan against all hazards and also to identify hydromet hazards viz, Urban Heat Island, Lightning/thunderstorm, Air pollution and carryout modelling on these hazards & prescribe/suggest various mitigation measures.
- vi. With regard to Master Plan, climate sensitive planning tools and activities need to be identified to incorporate innovative concepts of urban flood management. Governance mechanism/regulatory aspects towards protection of threatened ecosystems need to be further explored.
- vii. Community and institutional Resilience is important. Several models exist today in India. Surat Climate Change Trust (SCCT) is a good example which brings in Surat

Municipal Corporation (SMC), Industry partners, Local institutions. The governance structure for resilience can be included as part of the Resilience Action Plan.

- viii. Emergency Management, Urban Housing (Adaptation and Mitigation), Urban Health, Urban and Peri-urban livelihood activities should be included as an additional priority services as during the hazardous event there is a huge amount of disruption and people don't have jobs for couple of years which has to be considered.
- ix. Ecological assets and relevant stakeholders to be brought into the discussion.
- x. The hydromet disaster inventory at the city level should also specify name of cyclones along with Month & Year of their occurrence as well as severity level.
- xi. The preparation year of Hazard Risk Vulnerability Assessment Atlas of Gujarat and the formation year of Vayu cyclone to be rectified at Page no. 251 of the report.
- xii. Micro level climate change caused by local level factors need to be studied.
- xiii. It is also appropriate to address and prioritize issues/hazards pertaining to water logging- health, minimize loss from lightning events etc. Water logging should also be harmonized with solid waste management.
- xiv. Consultant to get the validation done from the appropriate authority in respective cities in respect of cross section of all existing drainage systems.
- xv. Consultant to carry out further stakeholder consultation with Ministry of Environment, Forest and Climate Change (MoEF&CC) and Ministry of Urban Development (MoUD).
- xvi. The consultant to incorporate above mentioned observations/action points in the Stakeholder Consultation Process Report, and the duly revised report to be submitted at the earliest.

5. Meeting ended with thanks to the chair and all the participants.



(Mehul Padharia)
Project Coordinator, HmRAP
NCRMP, NDMA

Annexure-I

Sl. No.	Name of Officials with Designation	Organization
1	Mr R K Ganta	Project Director- NCRMP, NDMA
2	Mr Samir Kumar	Deputy Project Director, NCRMP, NDMA
3	Dr Sanjay Sharma	Environment Specialist, NCRMP, NDMA
4	Mr Mehul Padharia	Technical Specialist, NCRMP, NDMA
5	Mr Vijay Sharma	IT Manager, NCRMP, NDMA
6	Mr Ajay Katuri	Vulnerability Specialist, NCRMP, NDMA
7	Mr Dattatray Bhadakawad	Deputy Collector Office, Ratnagiri
8	Mr Anup Karanth	The World Bank
9	Ms Afsana Perween	DDC, Ernakulam
10	Mr M P Hudedagaddi SE	ERD, Panaji
11	Mr Himalaya Roy	Chief Engineer, SPIU, West Bengal
12	Mr Shumitabha Mukherjee	Superintending Engineer, SPIU, West Bengal
13	Mr Akshy Sridhar	Mangalore
14	Collector Office	Porbandar
15	Project Manager NCRMP – II	Ratnagiri
16	Dr A K Gosain	IIT, Delhi
17	Mr Srinivasan Thiruvengadachar	Team Leader, RHDHV
18	Mr Raman Kumar	Project Manager, HmRAP, RHDHV