



NATIONAL DISASTER MANAGEMENT AUTHORITY
Ministry of Home Affairs, Govt. of India
NATIONAL CYCLONE RISK MITIGATION PROJECT
(NCRMP)

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Date: 12th February, 2019

Sub.: Minutes of Meeting of Review Committee held on 28.01.2019 to review progress on 2nd Deliverable of project "Development of Web-DCRA & DSS Tool for Cyclone and associated impacts" under NCRMP (Ph. II) – reg.

The undersigned is directed to forward herewith Minutes of the Review Committee Meeting held on 28th January, 2019 at NDMA, New Delhi to review progress on 2nd Deliverable of project "Development of Web-DCRA & DSS Tool for Cyclone and associated impacts, including Storm surge and Inland flooding" under NCRMP (Phase II).

(Geetanjali)

Project Manager, NCRMP

Copy to:

1. The Chief Hydrographer to the Govt. of India, National Hydrographic Office, 107-A, Rajpur Road Post Box No. 75, Dehradun – 248001 (Uttarakhand).
2. Dr. M. Mohapatra, Scientist 'G' & Head (RSMC), India Meteorological Department, Mausam Bhawan, Lodi Road, New Delhi – 110003
3. Dr. T.M. Balakrishnan Nair, Scientist 'F' & Head (ISG), INCOIS, Ocean Valley, Pragathi Nagar (BO), Near ALEAP, Nizampet (SO), Opp. JNTU Road, Hyderabad – 500090 (Telangana)
4. Dr. PVN Rao, Scientist 'H' & Dy. Director, NRSC, ISRO, CRF Colony, Balanagar, Hyderabad – 500042 (Telangana)
5. Sh. Anup Karanth, TTL, NCRMP-II, The World Bank, The Hindustan Times House, 18-20, Kasturba Gandhi Marg, New Delhi - 110001
6. The Commissioner, Disaster Management and Ex-officio Secretary to Government of Andhra Pradesh, Genius JR Towers, D.No. 21/2B, Opp. Kunchanapalle Sub-Way NH-5, Kunchanapalle (V), Tadepalli (M), Guntur District, Andhra Pradesh – 522501.
7. Managing Director, OSDMA and Project Director (NCRMP), Govt. of Odisha, Rajeev Bhawan, Bhubaneshwar, Odisha.
8. The Principal Secretary, Deptt. of Revenue & Disaster Management, Govt. of Kerala, Government Secretariat, Thiruvananthapuram, Kerala – 695001.
9. The Principal Secretary, Deptt. of Revenue & Disaster Management, Govt. of Karnataka, Bhoomi and UPOR, Room No. 627, First Gate, 6th Floor, MS Building, Bangalore, Karnataka – 560001.
10. The Chief Executive Officer, Gujarat State Disaster Management Authority (GSDMA), Block No. 11, 5th Floor, Udyog Bhawan, Sector-11, Gandhi Nagar, Gujarat – 382011.
11. The Secretary, Revenue & Disaster Management, Govt. of Goa, Secretariat, Porvorim, Goa – 403521.

12. The Addl. Chief Secretary, Relief & Rehabilitation, Revenue & Forest Deptt., Govt. of Maharashtra, 14th Floor, New Administrative Building, Opp. Mantralay, Mumbai, Maharashtra – 400032.
13. The Principal Secretary & Relief Commissioner, Disaster Management Department, Govt. of West Bengal, "NABANA", West Bengal Secretariat, Howrah – 711102.
14. The Secretary, Revenue Deptt., Govt. of Tamil Nadu, Secretariat, Chennai, Tamil Nadu – 600009.
15. Spl. Secretary (Revenue) & Disaster Management, Govt. of Puducherry, "Saram", Revenue Building Complex, Puducherry – 605013.
16. The Director (DM), UT of Andaman & Nicobar Islands, Link Road, Goal Ghar, Port Blair, Andaman & Nicobar – 744101.
17. The Director (DM), Govt. of Daman & Diu, Ground Floor, Secretariat, Fort Area, Moti Daman,, Daman (UT) – 396220.
18. The CEO (DM), Collectorate, UT of Lakshadweep, Kavaratti – 682555.
19. Team Leader, M/s RMSI Pvt. Ltd., A-8, Sector 16, Noida-201301.

MINUTES OF THE MEETING TO REVIEW PROGRESS ON 2ND DELIVERABLE OF PROJECT "DEVELOPMENT OF WEB-DCRA & DSS TOOL FOR CYCLONE & ASSOCIATED IMPACTS" UNDER NCRMP (PH. II) HELD ON 28.01.2019 AT 3:00 PM in OPS. ROOM, NDMA BHAWAN, NDMA, NEW DELHI.

The meeting to review progress on 2nd Deliverable of the project "Development of "Web based Dynamic Composite Risk Atlas (Web-DCRA) and Decision Support System (DSS) Tool" for Cyclone & associated impacts" under NCRMP (Ph. II) was held on 28th January, 2019 at 3 PM under the Chairmanship of Dr. Pradeep Kumar, Addl. Secretary & Project Director, NDMA, New Delhi. The meeting was attended by Review Committee Members, and Officials from NDMA, Coastal States/UTs, M/s RMSI and M/s AMS. List of participants is attached as **Annexure-I**.

2. The meeting started with a welcome note from the Addl. Secretary & Project Director, NDMA. A detailed presentation was made by RMSI Team on overall progress achieved so far in development of Web-DCRA & DSS Tool, with special reference to the 2nd Deliverable of the project, i.e., development of Probabilistic Risk Assessment Map. The presentation highlighted key project objectives with overall approach being adopted for generating Probabilistic Hazard & Risk Maps, present status of the project with revised timeline for Deliverables, requirements and availability of datasets including storm surge and flood model parameters, exposure database and cyclone tracks, methodology for flood modelling (Hydrologic & Hydraulic) and real-time cyclone impact forecasting as an early warning system, and key features of Web-DCRA & DSS Tool under phase II. It was intimated by the Consultant (RMSI) that entire back-end process for Storm Surge model and Hydrologic & Hydraulic models being used under the study has been fully automated and total 6448 Stochastic Events have been generated. The RMSI Team also affirmed relevant changes being considered in order to enhance accuracy of the model as suggested by Dr. Mohapatra during the meeting held at IMD on 18.12.2018.

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

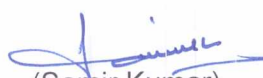
- i. Survey of India (Sol) shall be approached for High-resolution DEM/DTM.
- ii. INCOIS, Hyderabad shall be approached for High Performance Computing (HPC) facility to be utilized to run the model.
- iii. INCOIS to share output of ADCIRC model (Storm Surge model) coupled with Wave model through web-service on real-time basis.
- iv. Best Scenarios generated from the Storm Surge models of IMD, INCOIS and IIT Delhi shall be used as input for inundation modelling.
- v. Satellite Rainfall Gauge database of recent 10 years to be used for validation of hydrological model, and Flood Model of NCCR (National Centre for Coastal Research), Chennai also to be referred.
- vi. 1965 onwards available data on cyclonic wind speed, rainfall, storm surge, etc. to be used for model validation.
- vii. Creation of 3-D infographic maps to be attempted in the application.
- viii. Model should be compatible with multi-model inputs from different source- creating the gateway for output of various models from different source.

- ix. After finalization of User Interface (UI), all potential Early Warning Dissemination System (EWDS) and Common Alert Protocol (CAP), including data/information from IMD & INCOIS to be integrated with the Web-DCRA & DSS Tool.
- x. Letters to be sent to the Chief Secretaries of participating States/UTs seeking support for requisite exposure database, including relevant information on FLCs (Fish Landing Centres) and Dam/Reservoir data to be added in the exposure database.
- xi. Reservoir/ Dam generated flood to be integrated for real-time flood forecasting. Dam Controlling Authorities of participating coastal states/UTs to be approached by RMSI in coordination with the concerned States/UTs for reservoir/ dam related relevant information/data. Authority Letter introducing RMSI in this regard will be sent to the Chief Secretaries/Principal Secretaries in-charge of Disaster Management Division in the States/UTs.
- xii. M/s RMSI to provide Information/data extracted from Web-CRA on Cyclone Risk Mitigation Infrastructure (CRMI) under NCRMP.
- xiii. Next meeting of the Review Committee to be held in February, 2019
- xiv. Updated Exposure database required for the study shall be provided by the participating coastal States/UTs.

5. Revised timeline for balance Deliverables under the study are tabulated below:

Sl. No.	Deliverables (balance)	Timeline w.r.t. signing of contract	Revised Timeline
1	Development of probabilistic risk assessment Maps/products for Cyclonic wind, storm surge and rainfall induced flooding and demonstrate them through interactive map viewer	July, 2018	31 st March, 2019
2	Development of Alpha version of Web-DCRA, Updated Web-CRA, Offline Exposure Management and DCRA App. (Mobile App.), Demonstration and Presentation to key stakeholders and Draft Technical User Guide	September, 2018	15 th April, 2019
3	Demonstration of Beta version of Web-DCRA, DCRA App., Updated Web-CRA, and Offline Exposure Management for User Acceptance Test	November, 2018	30 th April, 2019
4	Fully Operational Web-DCRA, Updated Web-CRA, Offline Exposure Management and Mobile APP, and Closure Report	November, 2018	31 st May, 2019
5	Experimental Phase	December, 2019	May-December, 2019
6	Training Workshops and Capacity Building activities	December, 2019	June-November, 2019

The meeting ended with thanks to the Chair and all the participants.


 (Samir Kumar)
 Dy. Project Director
 NCRMP, NDMA

Annexure-I

MINUTES OF THE MEETING TO REVIEW PROGRESS ON 2ND DELIVERABLE OF PROJECT "DEVELOPMENT OF WEB-DCRA & DSS TOOL FOR CYCLONE & ASSOCIATED IMPACTS" UNDER NCRMP (PH. II) HELD ON 28.01.2019 AT 3:00 PM in OPS. ROOM, NDMA BHAWAN, NDMA, NEW DELHI.

Sl. No.	Name of Officials with Designation	Organisation	E-mail address/ Mobile No.
1	Dr. Pradeep Kumar, Addl. Secretary & Project Director	NDMA, New Delhi	aspd.ncrmp@gov.in
2	Dr. M. Mohapatra, Scientist 'G' & Head (Services)	IMD, New Delhi	mohapatraimd@gmail.com Mob.: 9868623475
3	Sh. Samir Kumar, Dy. Project Director, NCRMP	NDMA, New Delhi	dpd.ncrmp@gov.in
4	Sh. Deepak Singh, Task Team Leader (NCRMP I) & Sr. Disaster Risk Management Specialist	The World Bank, New Delhi	dsingh2@worldbank.org Mob.: 8826200992
5	Sh. Anup Karanth, Task Team Leader (NCRMP II) & Sr. Disaster Risk Management Specialist	The World Bank, New Delhi	akaranth@worldbank.org Mob.: 9818060343
6	Ms. Geetanjali, Project Manager, NCRMP	NDMA, New Delhi	pm.ncrmp@gov.in 9810639937
7	Gp. Capt. (R) Chandra Shekhar, Procurement Specialist, NCRMP	NDMA, New Delhi	procspl.ncrmp@ndma.gov.in
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12	Sreeharsha K. L., MIS Specialist	NCRMP, Karnataka	harshklmysore@gmail.com
13	Sh. Lokesh Kumar D.	NCRMP, Karnataka	lokeshkumar.78@gmail.com
14	Sh. Pushpendra Johari, Team leader	M/s RMSI Pvt. Ltd., Noida	pushpendra.johari@rmsi.com Mob.: 9910222513
15	Dr. Sushil Jain, Dy. Team Leader	M/s RMSI Pvt. Ltd., Noida	sushil.gupta@rmsi.com Mob.: 8826100332
16	Dr. Indu Jain, Asst. Vice President, R&I	M/s RMSI Pvt. Ltd., Noida	indu.jain@rmsi.com Mob.: 9910328310
17	Sh. Rajesh Mahana, Sr. Technical Specialist	M/s RMSI Pvt. Ltd., Noida	rajesh.mahana@rmsi.com Mob.: 9953051435

Sl. No.	Name of Officials with Designation	Organisation	E-mail address/ Mobile No.
18	Sh. Rajneesh Kumar, IT Expert	M/s RMSI Pvt. Ltd., Noida	rajesh.kumar@rmsi.com Mob.: 9716483988
19	Sh. Krishn Kant Sharma	M/s AMS Pvt. Ltd., New Delhi	krishn@amsindia.org Mob.: 7698063329
20	Ms. Sanjana Sarkar	M/s AMS Pvt. Ltd., New Delhi	sanjana@amsindia.org Mob.: 9873934587