

PROCEEDING OF ONE DAY WORKSHOP ON UPDATION OF STATE DISASTER MANAGEMENT PLAN (SDMP) – WITH SPECIAL EMPHASIS ON MANAGEMENT OF URBAN FLOODING

Venue: Conference Hall No.-I, Pragna Bhawan, Agartala, Tripura

Date & Time: 23 August 2019 from 10:00 am to 6:00 pm

Background:

The State Disaster Management Plan (SDMP) was prepared during 2016. By 2019, there have been several changes have evolved, the state has learnt lessons from disasters (floods, earthquake, cyclones, thunderstorms, landslides, lightning, fire etc) and Government of India has also published various guidelines on disaster management. Secondly, there have been commitments relating to disaster management from national and international platforms that need to be adhered to such as, Sendai Framework, Sustainable Development Goals, World Congress on Disaster Management, Prime Minister's Ten Agenda points on Disaster Management as well our Government's Vision document on disaster management. The state level workshop was organized for a consultation on incorporation of new components in the SDMP.

Target participants:

Total 291 officials attended from SDMA, all line departments, all districts, all sub-divisions, all TSR Bns, Police, Fire Services, AMC, MC, NPs, NDRF, CTI, SIPARD, PRTI, Army, Assam Rifles, BSF, CRPF, Tripura University, NIT, MBBU, ICAFI, IRCS, NYKS, NSS, NCC, ONGC, OTPC, GAIL, NEEPCO, CWC, IMD, AAI, GSI, DD, AIR, NGOs.

Guests and Resource Persons attended the workshop:

1. Shri N.C. Debbarma, Hon'ble Revenue Minister, Government of Tripura – Chief Guest and Inaugurator
2. Shri Rajiv Singh, DGP, Tripura – Guest of Honour
3. Shri Kiran Gitte, Special Secretary, UDD, Government of Tripura – Guest of Honour and Resource Person
4. Prof. Chandan Ghosh, NIDM, Government of India – Guest of Honour and Resource Person
5. Shri P.L.N. Raju, Director, NESAC, Government of India – Guest of Honour and Resource Person
6. Shri Anil Chouhan, Dy. Commandant, 1st Bn, NDRF – Resource Person
7. Shri Anshuman Shukla, IIT Roorkee – Resource Person
8. Shri Sanjeeb Jindal, Ashtech Buildpro India Pvt Ltd, Delhi – Resource Person
9. Shri Barun Kumar Sahu, Principal Secretary, Revenue, Government of Tripura – Host

The workshop arranged in three parts i.e. a. Exhibition, b. Inaugural session and c. Technical sessions. The program schedule of the workshop is at **Annexure-I**.

Exhibition:

The exhibition of disaster management equipment and materials inaugurated by Hon'ble Revenue Minister at 10.30am. Along with the other guests the Chief Guest visited all

exhibition stalls, interacted with the officials and praised the efforts made by the organisers and exhibitors. Following organisations exhibited their equipments and materials:

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| 1. NDRF, Gokulnagar | - | Critical and life saving equipments |
| 2. Central Training Institute, Gokulnagar- | | Improvised equipments and training aids |
| 3. TSR Bn | - | Critical and life saving equipments |
| 4. SDM, Sadar | - | Critical and life saving equipments |
| 5. State EOC | - | IEC materials and satellite phone |
| 6. HAM Radio Club, Agartala | - | HAM Radio sets |
| 7. Ashtech Buildpro India Pvt Ltd, Delhi | - | AAC Blocks (Eco friendly substitute of red bricks) |

Inaugural session:

The inaugural session started at 10.45am with the felicitation to the guests and lighting of lamp. Welcome address delivered by Shri Barun Kumar Sahu, Principal Secretary, Revenue Department, Government of Tripura followed by the speeches of Prof. Chandan Ghosh, NIDM and Shri P.L.N. Raju, Director, NESAC. In the welcome address, the Principal Secretary, Revenue highlighted on the status of disaster management in the State, need of updation of SDMP. The presidential address delivered by the Chief Guest and Inaugurator of the programme Shri N.C. Debbarma, Honble Revenue Minister, Government of Tripura. The Chief Guest highlighted the vulnerability of Tripura for floods, earthquake and other natural hazards as well as he explained how Agartala city was badly affected during 1926 floods. Entire Agartala city was badly affected. At that time administration took about 20 years for recovering the documents and files which were damaged due to floods. He advised to take up adequate awareness among the people, effective preparedness and planning measures for impending disasters in the State.

Distribution of emergency kits to Aapda Mitra volunteers:

Emergency kits containing flood rescue and personal protecting equipments distributed to the selected 10 (ten) 'Aapda Mitra' volunteers by the Chief Guest and the dignitaries present in the inaugural session.

Technical sessions:

The technical sessions started with the deliberation on "urban flooding of Agartala city" and its management by Shri Kiran Gitte, Special Secretary, Urban Development, Government of Tripura. He stressed on flood history of Agartala city, different vulnerable pockets where flood occurs most of the time, drainage system (both natural and human made), human causes for flood vulnerability and measures to be taken for management of floods. Key points in his deliberation are as follows:

- Geographic location of Agartala city is like a saucer. Inundation of flood water in the city is inevitable. Particularly, Banamalipur is the most vulnerable area for floods.
- Howrah river acts as natural drainage and Katakhal is the human made drainage for flood water. Now, these river embankments and courses are being encroached by people illegally. In turn, more people in the city are affecting during the floods. Also, drainage of flood water takes long time.
- Unplanned constructions in low lying areas and drains add more vulnerability to floods.

- People are obstructing the drains through illegal constructions and dumping garbage in the drains which cause more sufferings during floods.
- Adequate sensitization, community preparedness and their involvement for flood management is highly needed.
- AMC installed 12 pumps in most vulnerable areas for pumping out flood water.
- AMC has disaster management plan but it needs to be updated and made functional.
- Urban Development Department welcomes any suggestions and comments for better flood management in Agartala city and other urban areas.

Dr. Sarat Kumar Das, SPO, Disaster Management presented on the 'overview of the workshop specific to updation of SDMP'. Key points of his presentation are as follows:

- Objective of preparation of SDMP is to save lives and properties during any disaster situations through effective preparedness, mitigation, prevention and response activities.
- It is a legal mandate as per DM Act, 2005 and the responsibility of the State Executive Committee for preparation and updation of SDMP.
- Tripura state is highly vulnerable to earthquakes, floods and other natural as well as human induced disasters.
- State government has taken up several disaster management activities as per the mandate, guidelines and decisions of government.
- The first SDMP prepared during 2016. By 2019 there are many new components have come up which needs updation.
- Sendai framework, sustainable development goals, world congress on disaster management, Prime Minister's ten agenda points on disaster management as well as the state government's vision on disaster management are the components which required to be incorporated in the SDMP.
- Cross cutting components such as climate change adaptation, IRS, GIS and RS, mass media, gender, rights of persons with disability, dead body management, emergency health management and lessons learnt from the last disasters should also be added.
- Hazard specific mitigation, strengthening disaster risk governance, build back better, risk transfer are the added content to the SDMP.
- Further, consultation may be required after drafting the SDMP.

Prof. Chandan Ghosh, NIDM, Government of India as well as the Member of TDMA presented on low cost and convenient mitigation strategy for earthquakes, floods, landslides by using local available materials. The key of his presentation is as follows:

- 'Khas Khas'/'Kush'/'Vertiver' grass can be planted in landslide, river bank erosion and flood prone areas for hazard mitigation and prevention purposes. This grass has long root, can grow any places and locally available. This grass may be cultivated in a large scale with a mission mode project for landslide mitigation and flood mitigation purposes.
- Locally available bamboo variety which have long root can be used for flood and landslide mitigation purposes.
- Community ponds, small water bodies can be created for watershed management towards better livelihood and flood protection purposes.
- Low cost poly-propylene sheets can be used for storing water anywhere for future use.

- Low cost fire fighting ball can be used for extinguishing fire at source without human intervention.
- Research and development may be carried out for testing of building constructions using shake tables.
- Disaster risk reduction measures should be integrated with livelihood activities at the community level.
- IT applications should be used for decision support system during disaster response, early warning mechanism, post disaster need assessment and monitoring purposes.
- Low cost building materials, alternate and local available materials can be used for building constructions.
- Only trained masons, artisans should be used for construction purposes.

Shri Anil Chouhan, Deputy Commandant and Shri Santosh Singh, Assistant Commandant of NDRF 1 Bn Guwahati made a joint presentation on “Flood mitigation and response – role of NDRF” where in they emphasised on following:

- About NDRF, its formation, establishment and operations.
- Introduction to floods, causes, early warning and planning.
- Flood management best practices in China and Japan.
- Remedial approach, preparedness and mitigation.
- Recent flood operations in Tripura.

Shri Anshuman Shukla, IIT Roorkee made a presentation on dynamic disaster management plan for Agartala city. He stressed on digital integrated platform-based disaster management plan with facility of data base integration at multi-level platform, which is supported on web & app-based IT system that can be used as précised decision support system in pre and post disaster scenarios. Presentation focused on the live demo of city disaster management plan of Agartala city which incorporated real time information (*demo data based*). Key highlights are:

- GIS based data integration.
- City resource map.
- Critical Infrastructure inventory.
- Digital integration of SOP, DM plan template.
- Multi-level login for data privacy.
- Real time resource tracking.
- Real time alert service.
- Multi-level DM plan integration from state to building level.
- Past disaster catalogue facility.

Integrated disaster management plan with real time data-based management is must needed platform which integrate with IT technology can connect different level of stakeholders easily and efficiently. It can act like a key for future disaster management scenario of state.

Shri Sandeep Jindal, Managing Director, Ashtech Buildpro India Pvt. Ltd. made an audio-visual presentation on Aerated Autoclaved Concrete Blocks which is eco friendly, economical, disaster resistant and substitute of red bricks. The key points of the presentation;

- The product has high strength and light weight which is convenient to use.
- It is sound proof, has property of fire resistant and thermal insulation and superior durability.

- It is easy to work on it of any size, has termite insulation
- It increases carpet area, saves steel, mortar, foundation cost, maintenance cost and help in rapid construction that leads to saves labour costs.
- AAC blocks have versatile use for all kinds of geographic locations.
- It's a product recognized at national and international levels for its quality which is created wealth from waste (as made from fly ash)

Shri Dilip Saha, Director, Indian Meteorological Centre, Agartala made a brief deliberation on role of IMD in disaster management and planning. The key points of his deliberation is as follows:

- IMD is the nodal agency for providing early warning for hydro-meteorological disasters.
- Agartala IMD centre has Doppler radar that cover 500 km radius areas for weather monitoring.
- Presently, the centre provides daily weather forecasting, now-casts, weather bulletin upto one week, monsoon forecasting, rainfall reports to the state and district administrations in Tripura.
- IMD also started giving lightning early forecasting at national and regional level.
- The centre is planning to give tourist weather reports.

Shri P.L.N. Raju, Director, NESAC, Shillong presented on "use of space technology for effective disaster management planning and sharing best practices". NESAC being a nodal space agency of ISRO for North East State, the centre has mandate to support the state governments on need based space applications including disaster management. The centre has taken up various projects on disaster management such as flood early warning system, lightning early warning system, landslide early warning system. Key points of his presentation are as follows:

- Indian space programme – various services to the nation.
- Role of space technology for disaster management and decentralized planning.
- North East District Resource Planning – creation of several resource layers.
- North East spatial data repository – for governance application and geoportals.
- ISRO disaster management support system – hazard based risk and vulnerability mapping, reliable communication system and capacity building.
- Thunderstorm nowcasting for NE region and landslide hazard zonation mapping.
- Flood early warning system – five major rivers in Tripura are covered.
- Forest fire management and nigh lighting monitoring.
- UAV applications for disaster management.

Open discussion:

After the technical sessions, the open floor discussion was carried out. Following discussions taken place:

- Disaster risk reduction should focus on gender perspective and right of persons with disability. The disaster management plans at all level should incorporate these subjects by lying down specific actions such as awareness generation, training and capacity building, provision for priority rescue to the affected women and persons with disability and provision of specialized equipment for the persons with disability in their life safety.

- A clarification sought from the Director, NESAC that is there any application through which one can review the history of a location? In response it was clarified that through ISRO program like National Database for Emergency Management (NDEM), specific programme may be done before hand so that periodically the location maps can be captured and history can be compared.

Summing up:

Dr. Sarat Kumar Das summed up the workshop with following action plan for updation of SDMP:

- All the views from invited guests, resource persons, participants should be compiled and examined for incorporation in the SDMP or to be taken up separately as mitigation, prevention, preparedness and response activities.
- Reference documents such as Sendai Framework for Disaster Risk Reduction, SDG, PM's ten-point agenda, AMCDRR, NDMA guidelines, decisions of Hon'ble Supreme Court on disaster management, School Safety Policy, Hospital Safety Policy should be reviewed and necessary actions should be incorporated in the SDMP or taken up as separate action.
- Ministry of Finance, Government of India instructions such as use of 25% flexi funds should be prioritized through SDMP and advice to the line departments.
- Minimum standard of relief should be a part of disaster response in the SDMP.
- Disaster specific action should be reflected in the SDMP.
- The draft of SDMP updation may be done through multiple sitting of key line departments and agencies.
- NDRF, Army and CPMF establishments should be coordinated periodically by involving them in various disaster management programmes such as mock exercises, periodic meetings and consultations.
- Strong database should be developed for trained persons in the state and their mobilization plan.
- Activation of Incident Response System (IRS) and constitution of State Disaster Response Force (SDRF) should be focused in the SDMP.
- Initially dynamic disaster management plan for Agartala city may be taken up.
- Alternate communication system like HAM radio setup should be taken up and used both normal as well as disaster situations.
- Disaster management best practices, indigenous practices should be explored, documented and practiced.
- Extensive awareness and capacity building should be planned up and monitored.
- Climate change should be integral part of the SDMP. The ST&E Department should be looped for the purpose.
- Cross cutting subject such as gender perspective, rights of persons with disability, mainstreaming DRR in developments should be given more importance in SDMP.
- Public sector and other external humanitarian agencies should be coordinated for effective disaster management planning and execution of activities.
- The final draft may be submitted before the State Executive Committee for approval of TDMA, publication and distribution thereof.

It has been observed that the entire workshop is successful with expected outcomes, active participation of all stakeholders.

Valediction:

Shri L.T. Darlong, Additional Secretary, Revenue and Director, Relief, Rehabilitation and Disaster Management, Government of Tripura offered vote of thanks to all guests, resource persons, participants, media and organisers for arranging a successful workshop.

Annexure-I**Program Schedule**

Time	Contents	Facilitator/ Resource Person
10:00-10:30 hrs	Registration	Revenue Department
10.30-10.45 hrs	Inauguration of exhibition (in front of Hall No – III)	Revenue Department
10:45-11:45 hrs	<u>Inaugural session</u> 1. Felicitation to guests and lighting of lamp 2. Welcome Address by Shri Bauru Kumar Sahu, Principal Secretary, Revenue, Govt. of Tripura 3. Speech by Guest of Honour Shri P.L.N. Raju, Director, NESAC, Govt of India 4. Speech by Guest of Honour, Prof. Chandan Ghosh, NIDM, Govt. of India 5. Distribution of emergency kits to 10 (ten) Aapda Mitra volunteers by the Chief Guest 6. Speech by the Chief Guest and Inaugurator Shri Shri N.C. Debbarma, Hon'ble Revenue Minister, Govt. of Tripura	Revenue Department
11.45-12.00 hrs	Tea break	
11:45-14:00 hrs	<u>Technical session – I</u> - Urban flooding of Agartala City - Overview of the workshop - Effective disaster mitigation and preparedness planning - Flood management and response	Shri Kiran Gitte, Special Secretary, UDD, Govt of Tripura Dr. Sarat Kumar Das, SPO-DM, Govt of Tripura Prof. Chandan Ghosh, NIDM, Govt of India Shri Anil Chouhan, Dy Commandant, NDRF
14:00-14:45 hrs	Lunch break	
14:45-16:00 hrs	<u>Technical session-II</u> - Development of dynamic disaster management plan - Use of AAC blocks for disaster mitigation	Shri Anshuman Shukla, IIT, Roorkee Shri Sandeep Jindal, MD-AB India Pvt Ltd

16:00-17:30 hrs	<u>Technical session-III</u> - Role of IMD for effective disaster management - Use of space technology for effective disaster management planning and sharing of best practices	Shri Dillip Saha, Director, IMD Agartala Shri P.L.N. Raju, Director, NESAC
17:30-18:00 hrs	Open house discussion (Questions & Answers) Summing up Vote of thanks	All participants Dr Sarat Kumar Das, SPO Shri L.T. Darlong, Additional Secretary & Director, RR&DM, Govt of Tripura