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AAPDA SAMVAAD

FIRST **INDIA-JAPAN** WORKSHOP ON
DISASTER RISK REDUCTION



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Workshop on DRR in SAARC region

A two-day workshop on Disaster Risk Reduction (DRR) in SAARC (South Asia Association of Regional Cooperation) region was held on April 26-27, 2018 at Kutch in Gujarat. The workshop, organised by SAARC Disaster Management Centre - Interim Unit (SDMC-IU), aimed to assess the needs of the South Asia region as a whole and to chalk out the strategy for monitoring the process of the implementation of the Sendai Framework in the SAARC Member States.

SAARC is a regional organisation comprising Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. It is one of the most disaster prone regions of the world with countries in the region sharing similar risks and challenges.

This workshop served as a platform for sharing initiatives and best practices on all aspects of DRR. It was also a step towards a collective regional approach to support Member States in their efforts to build community resilience and reduce disaster risks and impacts.



Lt. Gen. N. C. Marwah (Retd.) and Shri Kamal Kishore, Members, NDMA, participated in the workshop.

Earthquake Mock Exercise in North East

NDMA conducted a mock exercise on earthquake preparedness in three North Eastern States - Tripura, Nagaland, Mizoram - on April 26, 2018. The exercise, which was held in collaboration with the respective State Disaster Management Authorities (SDMAs), helped participating agencies and stakeholders in evaluating the effectiveness of their disaster response plans.

The exercise simulated the 1897 Shillong earthquake measuring 8.7 on the Richter Scale, which had devastated the entire Shillong plateau and affected the whole of northeast.

The simulation exercise was conducted simultaneously in all districts across the three States at select locations, including hospitals, shopping malls, schools and high-rise residential buildings, to



assess and improve the administration's capacity in mobilising resources and reaching out to the affected communities swiftly.

In the run-up to the exercise, orientation-cum-coordination conferences and table top exercises were held at the State Capitals for working out the detailed modalities and preparations required for the mock exercise.

"Mock exercises improve coordination among various agencies, which is the key to a successful post-disaster response," said Lt. Gen. N. C. Marwah (Retd.), Member, NDMA.

This exercise is significant as the participating States fall under seismic vulnerability zone V.

Video conference on Heat Wave preparedness

NDMA on May 11, 2018 conducted a review meeting of 17 heat wave-prone States to ensure effective preparedness and mitigation measures.

In the meeting conducted through video conference, Shri R. K. Jain, Member, NDMA, requested the States to run awareness campaigns in local languages to educate people about the simple ways of mitigating the impact of heat waves.

Shri Jain also asked the States to work on developing thresholds at local levels and ensure wider dissemination of early warnings.

A detailed review of the preparedness of the States in terms of having Heat Action Plans up to the district level, providing shelters, drinking water, rescheduling work timings to avoid peak heat impact for labourers, medical treatment, etc. was carried out.



NDMA underlined the importance of training all stakeholders to build local capacities and ensure better response in an emergency.

NDMA is also running an all-out #BeatTheHeatIndia campaign on social media to create mass awareness.

Preparedness for thunderstorms

NDMA conducted a series of meetings to review the situation caused due to recent incidents of thunderstorms, lightning and squall in various parts of the country, for better early warning and preparedness in future for such events.



Assessing the damage and destruction caused by these incidents, NDMA discussed ways to reduce the impact of such events in future. The Authority asked the States to share a report on the relief measures taken by them.

These meetings resulted in improvement of early warning and preparedness measures.

IMD now shares localised and specific warnings with the States, which are widely disseminated using various modes of communication such as mass SMSes, radio, Television and social media.

NDMA has shared simple Do's and Don'ts and short videos for thunderstorms and lightning with all the stakeholders. These Do's and Don'ts as well as the videos have been converted by the States into their local languages and are being used for creating greater public awareness.

Concerned State governments, representatives from Ministry of Home Affairs (MHA), National Disaster Response Force (NDRF), India Meteorological Department (IMD), Central Water Commission (CWC), Doordarshan and All India Radio participated in these meetings.



Training programme for CBRN emergencies

NDMA conducted a five-day training programme from April 23 to 27 at the LokNayak Jayaprakash Airport in Patna, Bihar, to enhance the preparedness of Airport Emergency Handlers (AEHs) to respond to CBRN emergencies at the airports.

CBRN emergencies pertain to threats emanating due to Chemical, Biological, Radiological and Nuclear material.

The training programme was conducted in collaboration with the Airports Authority of India (AAI) and Institute of Nuclear Medicine & Allied Sciences (INMAS).

The programme also trained airport emergency handlers in providing medical first aid and initial psycho-social support.

A total of 200 personnel were trained on various aspects of CBRN emergencies. This includes sensitization of 150 working level staff in a half day module.

During the training, NDMA jointly with the National Disaster Response Force (NDRF) also conducted its first-ever full-scale Biological Management Emergency Exercise, which was based on a suspected Ebola outbreak scenario.

Central Ministries to prepare DMPs

NDMA conducted a meeting with Central Ministries and Departments on May 4, 2018 to review the preparation of their Disaster Management Plans (DMPs).

Highlighting the relevant provisions of the Disaster Management Act 2005 on the role and responsibilities of Central Ministries/Departments, Shri R. K. Jain, Member, NDMA, said that DMPs have a twin purpose of reducing existing risks and preventing creation of new or additional risks.

NDMA asked all the Ministries and Departments to evolve their DMPs in line with international agreements signed by India in 2015 – Sendai Framework for Disaster Risk Reduction (SFDRR), Sustainable Development Goals (SDGs) and COP 21 Paris Agreement. These DMPs will also be based on identified roles and responsibilities with affixed accountability as mentioned in the National Disaster Management Plan (NDMP).

FIRST INDIA-JAPAN WORKSHOP ON DISASTER RISK REDUCTION



On 18th March 2018, India and Japan took another step forward towards ensuring a more safer world. Both are two of the most disaster prone countries in the world.

Japan is situated along the Pacific Ring of Fire and is highly susceptible to earthquakes. Given its long history of devastating earthquakes, Japan has a very high level of community awareness. Its technological know-how, especially in the area of earthquake risk reduction, is among the most advanced in the world.



India is rapidly urbanising and a massive investment in the infrastructure sector is imminent. As nearly 59% of India's landmass is prone to moderate to severe earthquakes, it will not only save lives in the event of an earthquake but also make for great economic sense that this investment is made earthquake resilient.

While Japan has a rich experience in dealing with devastating earthquakes, India too has time and again shown strong commitment towards ensuring Disaster Risk Reduction (DRR).

India was one of the first to create a National Disaster Management Plan based on the Sendai

Framework for Disaster Risk Reduction (SFDRR). The Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) held in New Delhi in November 2016, saw the adoption of the 'Asia Regional Plan for Implementation of the Sendai Framework'. During the same, India showed strong commitment towards building resilience with Prime Minister Narendra Modi announcing ten-point agenda, the first point of which, focuses on "working towards disaster resilient infrastructure to ensure that all development projects - airports, roads, canals, hospitals, schools, bridges – are built

Technical sessions

- i) *Disaster Management Policy Framework*
- ii) *Risk Assessment*
- iii) *Disaster Resilient Infrastructure*
- iv) *Early Warning System*
- v) *Preparedness/Response at sub-national level*
- vi) *Approaches by private sector*

to appropriate standards and contribute to the resilience of communities they seek to serve." He also emphasized the need of working "...with other partner countries and stakeholders to build a coalition or centre for promoting disaster resilient infrastructure in the region..."

India is destined to see huge infrastructure projects in the coming years. An estimate suggests that India needs about \$1.5 trillion investment in the infrastructure sector in the coming 10 years. While this sounds exciting, the challenge lies in building infrastructure that is sustainable and resilient enough to handle extreme weather events.

Various international agreements have also reiterated the importance and long-term benefits of investing in resilient infrastructure. The SFDRR (2015-2030), which is the first major agreement of the post-2015 development agenda, identifies investing in DRR for resilience and to build back better in reconstruction as priorities for action towards reducing disaster risks. Similarly, Goal 9 of the Sustainable Development Goals (SDGs) recognizes disaster resilient infrastructure as a crucial driver of economic growth and development.

The first two-day India-Japan Workshop on Disaster Risk Reduction presented an opportunity to explore as to how Japan invests in making its infrastructure resilient to present and future disaster risks. It also helped understanding recent advancements in Japan in the area of earthquake detection and early warning systems and adapts them to India's context.

Setting the stage for concretization of the activities envisaged under the collaboration on DRR that has existed between India and Japan over a long time, the workshop brought together the best technical know-how from both the countries, with particular focus on earthquake detection and early warning and identified possible areas of cooperation with Japan in the field of DRR.

Speaking on the occasion, the Minister of State for Home Affairs, Shri Kiren Rijju, recollected the seven global targets prescribed in the SFDRR and emphasized that these targets cannot be achieved without the active involvement of all stakeholders. "It thus calls for a shift from stand-alone disaster / risk management, to a more holistic risk resilient development practice", he said.

Mr. Mamoru Maekawa, Vice Minister for Policy Coordination in the Cabinet Office, Japan underscored that India and Japan will work together to realize the outcome of the workshop for achieving disaster risk reduction. He invited experts from India to visit Japan and enhance our close partnership in the area.

The workshop facilitated knowledge exchange on good practices, lessons learnt and latest technological advancements in the area of disaster risk management.

Around 120 delegates from governments of both countries, educational institutes, specialized disaster management agencies, the private sector and civil society organizations participated in the workshop.

Who said what?

"[This workshop] marks the beginning of formal implementation of the initiatives agreed under the Memorandum of Cooperation signed between the two countries on Disaster Risk Reduction in September 2017.... disaster risk management can no longer remain isolated from the overall strategy of sustainable development".

- Dr. Rajiv Kumar, Vice Chairman, NITI Aayog

"I am thankful to Japan for sharing their recent advancements in the area of earthquake detection and earthquake early warning systems and supporting India's endeavour to making its infrastructure resilient to present and future disasters."

- Shri Kiren Rijju, Minister of State for Home Affairs

"India and Japan will work together to realize the outcome of the workshop for achieving disaster risk reduction."

- Mr. Mamoru Maekawa, Vice Minister for Policy Coordination in the Cabinet Office, Japan

"Japan has shown consistent global leadership in this area ... In line with Prime Minister's announcement during AMCDRR 2016, India too is working towards a global coalition on DRI. I compliment Japan for active cooperation on this initiative as well"

- Dr. P. K. Mishra, Additional Principal Secretary to the Prime Minister of India

"The workshop will help to learn from the experience of Japan in earthquake safety and early warning system."

- Shri. R. K. Jain, Member (NDMA)

Work on India's DRR database begins



India is one of the most disaster-prone countries in the world. Given its size and diversity, it is vulnerable to over 30 different types of disasters, including cyclones, floods and earthquakes. These disasters result in loss of lives and livelihoods, besides causing significant damage to infrastructure and disruption of critical services. These socio-economic losses undo years of growth and development, especially affecting the most vulnerable and marginalised populations.

According to United Nations International Strategy for Disaster Reduction (UNISDR), India is the fourth most disaster-hit country in the world after China, the United States and Philippines with 167 disasters between 2005 and 2014. In 2015 and 2016, more than 1,100 deaths were reported from across the country due to disasters, according to an international report. Millions of people were affected and the economic losses were estimated to be over US \$ 4.4 billion.

India often refers to global databases and snapshots of disaster events for reporting disaster losses. However, these databases work under various limitations and are not able to produce

accurate analyses. To plug these gaps and make suitable policy interventions, the need to develop a uniform, integrated and credible national-level disaster database with locally obtained and validated data was being strongly felt for some time now. Some other Asian countries such as Sri Lanka and Indonesia have already developed their own national loss and damage database.

- ✓ *To help track India's risks and progress towards resilience*
- ✓ *To capture losses of properties and lives due to disasters*
- ✓ *To aid suitable policy interventions to reduce disaster risks*
- ✓ *To help make targeted investments in infra, other areas*

Moreover, the Sendai Framework for Disaster Risk Reduction, (SFDRR) requires signatory countries to report on disaster risk indicators. In fact, UNISDR recently launched the Sendai Framework Monitor, an online "tool to help countries develop disaster risk reduction strategies,

make risk-informed policy decisions and allocate resources to prevent new disaster risks." Having adopted the SFDRR, it was imperative for India to work towards building a national disaster database.

In its efforts to improve India's mechanisms for assessing and tracking risks and progress towards resilience, National Disaster Management Authority (NDMA) conducted its first national workshop on the creation of a disaster database. The two-day workshop (May 2-3, 2018) was held in collaboration with United Nations International Children's Emergency Fund (UNICEF), United Nations Development Programme (UNDP) and UNISDR.

The workshop brought together various stakeholders, including representatives of concerned Central Ministries and Departments, State Governments, UN agencies, Administrative Training Institutes (ATIs), Disaster Management



Institutes and Universities, on a platform to develop consensus on disasters, thresholds and develop standardised templates for data collection, updation and validation to ensure accuracy and quality.

This database will also be a step forward towards implementing the Prime Minister's 10-point agenda to address disaster risks, outlined during the Asian Ministerial Conference on DRR (AMCDRR) in November, 2016.

A significant feature of this database would be its real-time and dynamic nature. State Governments will report and feed disaggregated data into this dynamic platform. For example, the data on affected population would give details such as age, gender, income class and vulnerability profiles. Similarly, economic losses would be calculated in a sector-wise manner. "We will try and provide data that's as disaggregated as possible, by space and gender," said Kamal Kishore, Member,



NDMA.

Such a comprehensive database will enable complex analyses and interoperability - its ability to interact with all available and relevant datasets, such as hazard, risk and vulnerability maps, education and health information data, and other available datasets. This will, in turn, help governments make targeted investments in infrastructure and other relevant areas to strengthen

India is vulnerable to over 30 different types of disasters, including cyclones, floods and earthquakes, which affect growth and development

preparedness against disaster events in the future.

"For a large country like India, aggregated data collected at the State level is not as useful. It has to go down further to district and, preferably, block levels," added Shri Kishore.

A Steering Group will be formed to oversee the setting up of the database, and guiding trainings and capacity building for operating, maintaining, updating and using the database. The Group will also identify pilot States and draw a road map for implementation of the project. NDMA aims to set up this database by 2020. •



Dr. Mahesh Tandon on Earthquakes



Nearly 59 per cent of India's landmass is prone to moderate to severe earthquakes. And they strike without warning. Needless to say then that we need to stay prepared to deal with them. *Aapda Samvaad* spoke with Dr. Mahesh Tandon, a guest professor at IIT Gandhinagar and an expert in Structural Engineering.



Q. What is an earthquake? What causes earthquakes?

A. The outer crust of the earth consists of several tectonic plates which are not stationary. The boundaries of adjacent plates, also called “fault lines” can slip with respect to each other. A sudden slip can result in the release of an enormous amount of strain energy thereby causing severe ground shaking, which is felt as an “inter-plate” earthquake. Apart from the movements at the boundaries, the tectonic plates themselves may split or rupture and cause an “intra-plate” earthquake.

An earthquake lasts for about 10 to 30 seconds. However, aftershocks can keep occurring thereafter.

Q. Which parts of India are prone to earthquakes?

A. The most earthquake-prone areas are in the north along the 2,400 km long Himalayan belt, the north eastern States and parts of Gujarat. Also, the south east coast is prone to the effects of seismic sea waves (tsunamis).

Q. Do many smaller quakes prevent a bigger one?

A. Every earthquake releases some amount of strain energy, which is built over time. Bigger the earthquake, more the energy released. If small earthquakes keep occurring, it is good in a way because the energy build up is less.

Q. What number on the Richter Scale spells danger?

A. The energy released by an earthquake is represented by a number on the Richter Scale and is an indication of its potentially damaging effects. For every unit increase in the Richter Scale number, the energy released is increased 30 times. An earthquake measuring 5 represents a “moderate” shaking and some damage can take place. Magnitude of 6 to 7 is a “strong” earthquake, 7 to 8 a “major” earthquake while the one above magnitude 8 would be a “great” earthquake.

Q. Is it possible to predict an earthquake? What advances have been made in the field of earthquake early warning systems?

A. The question of “when” will an earthquake occur has not yet been answered. Research in this area is ongoing.

However, considerable progress has been made on earthquake early warning systems.

Earthquake effects radiate as seismic waves in all directions from its focus through the soil/rock substratum. The speed of travel of waves can vary between 2 to 8 km/sec, of which the slower ones (S-waves and R-waves) are the most damaging while the faster ones (P-waves) are less so.

The early warning systems exploit the difference of speed of travel of the S-waves and R-waves compared to that of the P-waves to enable taking advance action. With sophisticated instrumentation, the P-waves can be detected seconds before the more destructive waves strike in full force and the system can give out voice/audio alert messages which are triggered immediately at pre-set values of earthquake intensity. Seismic 'switches', which can shut off valves of gas pipelines, elevators of tall buildings and trip the movement of trains, are already in use.

Q: Can we reduce the damaging effects of an earthquake?

A. We cannot prevent earthquakes from occurring. However, we can mitigate their effects considerably by identifying possible direct hazards as well as indirect effects such as landslides, building safer structures by following codes of practice and dissemination of knowledge about earthquake safety.

Q. What precautions should be taken after an earthquake?

A. In the post-earthquake scenario, the protection of life and property takes center stage. The National Disaster Management Authority (NDMA) is the apex body mandated to lay down the policies, plans and guidelines for disaster management to ensure timely and effective response to disasters, including earthquakes.

Since the effects may cover large areas, satellite imagery, aerial survey and remote sensing can be used for quick assessment of the extent and distribution of damages. Indian Space Research Organisation (ISRO) satellites have opened up the possibilities of such an assessment which were not available at the time of the 7.9 magnitude Bhuj earthquake in 2001.

The long-term response includes relief and rehabilitation measures as well as education, training and capacity building.

Q. How should earthquake resistant houses be built? Also, can already standing structures be made earthquake resilient? How?

A. Earthquake resistant houses can be built by following codes and guidelines published by the Bureau of Indian Standards (BIS) for different types of buildings.

For already constructed buildings, it is first necessary to carry out an assessment survey by an accredited structural engineer. Thereafter, a scheme of retrofitting is evolved taking into consideration the building size, shortfalls in earthquake resistant features, materials of construction and cost. The BIS has published two very useful and simple guidelines with regard to existing buildings, namely,

- Seismic evaluation, repair and strengthening of masonry buildings - Guidelines
- Seismic evaluation, repair and strengthening of existing reinforced concrete buildings - Guidelines

Apart from strengthening measures, preliminary evaluation and Rapid Visual Screening (RVS) are also included as part of these Guidelines.

Modern techniques include the use of materials like fibre-reinforced polymers (FRP) which can be implemented with less difficulty and disturbance compared to the conventional methods like concrete jacketing, adding steel plates and reinforcements, etc. •

What will you do ? when lightning strikes ?

When you are Indoors



Unplug all electrical equipment before the storm arrives.
Don't use corded telephones

Stay away from window and doors and stay off verandas



Don't touch plumbing and metal pipes.
Do not use running water

When you are Outdoors



Don't take shelter near/under trees.
Spread out; don't stand in a crowd

Get inside a home, building. Stay
away from structures with tin roofs/ metal sheeting



Don't use metallic objects; stay away from
power/telephone lines

Get out of water - pools, lakes, small boats on water bodies



If caught under open sky, crouch.
Don't lie down or place your hands on the ground

Stay put if you are inside a car/bus/covered vehicle



What to do after a Lightning Strikes



Administer CPR (Cardio Pulmonary Resuscitation),
if needed. Seek medical attention immediately.



**Be Smart
Be Prepared !**



National Disaster Management Authority
Government of India

