

THEME – PREPAREDNESS & MITIGATION



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MESSAGE

Dear Readers,

It is a privilege for me to take over the charge of Executive Director of National Institute of Disaster Management (NIDM) in the month of June, 2019. Having a background in defence services, my experience from the field will help immensely in my current job to enrich capacity building activities undertaken by NIDM. The lessons learnt from the field can provide insights in reducing vulnerabilities and being better prepared as country. This newsletter gives me a golden platform to connect with all the readers in a meaningful and an engaging manner quickly. It gives me great pleasure to bring to you the quarterly edition (April-June, 2019) of NIDM's newsletter "Tidings". The institute conducted capacity building programmes in varied fields like mainstreaming Disaster Risk Reduction (DRR) in hospitals and education, gender, early warning & communication, Post Disaster Needs Assessment & long term recovery, Incident Response System, Earthquake risk mitigation, School safety, Climate change & DRR etc. Sector specific programmes for Rural Development, Panchyati Raj institutions and Central Public Works Department were also organised. NIDM also organized a consultative workshop on University Network for DRR in collaboration with UNISDR. Our faculty members have shared their views with the readers on the theme of the newsletter in the section "Thematic Views". You will be happy to know that the process of infrastructure development of NIDM campuses being built at Rohini, New Delhi and at Vijayawada, Andhra Pradesh is going smoothly as per schedule. Since its inception, NIDM has been striving relentlessly for accomplishing the ultimate goal of making India a Disaster Risk Resilient (DRR) country. We need your full support and cooperation to carry out this arduous task. The Institute has already undertaken several initiatives for training, research, public awareness and policy support under the broader framework of capacity building during its journey for DRR. We are committed to undertake all activities as per the DM Act 2005. We wish to undertake this journey forward with your support, and best wishes.

Major General Manoj Kumar Bindal, VSM
Executive Director, NIDM

TRAINING PROGRAMMES & Workshops

Consultative Workshop on University Network for Disaster Risk Reduction 5-6 April 2019, New Delhi



In the Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) 2016 in Delhi, Hon'ble Prime Minister highlighted the need to create a network of universities as one of the 10 agenda points put forth by him for disaster risk reduction. In this context, National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India jointly with UNISDR and Keio University, Japan conducted the consultative

workshop on University Network for Disaster Risk Reduction in collaboration with UNISDR on April 5-6, 2019. Many universities, as a key stakeholder group, participated, contributed and drew action points for their disaster management courses, curriculum, teaching methods, teachers and policy advocacy.

The deliberations of the workshop highlighted the need for bringing together various experts to dialogue on the need for a University Network for Disaster Risk Reduction. Apart from the common challenge of employability, the universities stated the challenge of lack of study material and its translation in regional language disconnect between government and academia on the needs of the former, lack of trained faculty and administrative hurdles which academicians face from within the universities to initiate a new course. The members of the workshop opined that the network can; 1) help in bridging the social science and science gap between the institutes and faculty members, 2) exchange of information, knowledge and data among universities 3) help in developing pool of experts, and 4) enhancing multi-disciplinary joint research programs.



Mainstreaming DRR into Panchayati Raj Institutions (PRI) Sector

24-27 April, 2019

NIDM conducted a Training Programme for Master Trainers under Training & Capacity Building Programme of PRI Sector under NCRMP-Component C in collaboration with Gujarat State Disaster Management Authority (GSDMA), Gandhinagar, Gujarat on April 24-27, 2019. 23 officials from four different NGOs identified by GSDMA attended this programme. The course focussed on orientation/ sensitization of the participants about concepts of disaster management, institutional framework in the country, role of Panchayati Raj Institutions in disaster management and process and ingredients of a disaster management plan. The final outcome of the course was draft schedule of the course which participants would deliver in their respective areas.



Integration of Disaster Risk Reduction (DRR) and Climate Change Resilience (CCR) into Rural Development (RD) Policies and Programmes

24-27 April, 2019

Integration of Disaster Risk Reduction (DRR) measures and Climate Change Resilience (CCR) into sectoral and sub-sectoral plans and strategies tend to have large scale implications on the development outcomes and their sustainability over time. Various important sectors including drinking water, sanitation, housing, electrification, transport, employment/livelihoods are equally important for improvement of quality of life of rural masses and have knock on effects on the overall gains of DRR and CCR sensitive development planning. Integration of DRR and climate change adaptation in the development plans and programs is important for sustainable development and resilience building of all the sectors and actors. Further to this, along with emphasis on content related to DM, insight into Systematic Approach to Training (SAT) was also ensured as part of this course. All the sessions were built on the basis of the principles of adult learning. As adults learn more from observation, experience and reflection, the methodology for conducting most of the sessions were based on experiential learning. Keeping these in view, a four days course was customized for the middle-level officers from various line departments dealing with Rural development, Agriculture and other related stakeholders for the State of Gujarat. There were a total of 23 participants for the course representing various departments from different districts of Gujarat.

Disaster Risk Reduction and Resilience

22 - 26 April, 2019



NIDM conducted its first National Training Programme on “Disaster Risk Reduction and Resilience” at New Delhi on 22-26 April, 2019. A total number of 43 officials from 15 different states and UTs attended this programme. (The programme aimed at enhancing the human capacity for quick, effective and credible understanding of the disaster risks, identification of significant role of different stakeholders from various sectors in averting / preventing unfavorable

and adverse conditions leading to disaster situations. It also aimed at providing tools for mitigation and preparedness against potential impending disasters, improving education, training and awareness related to disaster for decision makers, planners, professionals and citizens, discussing an effective national strategy that can be applied at different levels across various sectors for efficient DRR&R and developing workable partnerships and linkages /networks among governance, administration, financial, legal and social Organizations as well as professionals and other stakeholders. The programme involved resource persons like Shri Kamal Kishore, Member NDMA, Shri Anup Karanth from World Bank, Dr. Pavan Kumar Singh, Joint Advisor, NDMA, Mr. Sanjiv Dosajh from All India Radio and faculty members of NIDM. During the programme, discussions were held on DM Act 2005, SFDRR, SDGs, Paris Climate Agreement, Urbanization Agenda and Prime Minister’s 10 Point Agenda on Disaster Risk Reduction besides other aspects of disaster risk reduction and resilience.



Mainstreaming Disaster Risk Reduction (DRR) into Education Sector,

30 April – 2 May, 2019

A training of trainer’s programme on Mainstreaming DRR in Education sector was conducted by NIDM collaboration with Gujarat State Disaster Management Authority (GSDMA) under capacity building programme in National cyclone Risk Mitigation Project (Component - C) from 30 April -2 May, 2019. The aim of the programme was to train the trainers to carry out mainstream Disaster Risk Reduction in schools and contribute towards development of safe schools across the state. A total of 17 participants identified by GSDMA attended the course. The programme aimed at developing the skills of the participants to mainstream DRR into the education sector.

Mainstreaming Disaster Risk Reduction (DRR) into Hospital Disaster Management (DM) Plan, 30 April – 2 May, 2019

Training of Trainers Programme on Hospital Disaster Management Plan from April 30 – May 2, 2019 was organized by the Institute in collaboration with the Gujarat State Disaster Management Authority (GSDMA) at Gandhi Nagar. The aim of the training programme was to facilitate the creation of requisite capacity within the hospital staff to prepare and effectively implement the hospital disaster management plan. The broad methodology adopted during the programme included a variety of training methods like group discussion, demonstration, field visit and group work with presentation by participants. The training programme was primarily designed for people across the humanitarian to development spectrum, who may in some capacity be involved in disaster risk mitigation activities for hospitals at different levels. The programme was also targeted towards administrators and faculty members involved in the safety of hospitals. There were 16 participants representing various districts of the state including the District Project Officers of GSDMA working with different Districts.

Post Disaster Needs Assessment (PDNA) & Long Term Recovery 01-03 May, 2019

NIDM conducted the programme on Post Disaster Needs Assessment (PDNA) at its Southern Campus on May 1-3, 2019 with the objective to sensitize officials about the new PDNA tools to engage them in the process of computing the damage and loss. 81 participants from various line departments such as Revenue, Agriculture, PWD, PHED, Horticulture, (Local self Government) and Education. Participants from the states of Andhra Pradesh, Meghalaya, Kerala, Odisha and Karnataka attended the programme.



Incident Response System (IRS) : Basic & Intermediate

06-10 May, 2019



The Incident Response System or IRS broadly refers to a management system to be used for incidents of various kinds and sizes such as earthquakes, floods, cyclones, landslides etc. or emergencies caused by train accidents, epidemics. The system provides scope to organize various functions, tasks and staffs within the overall response process while emphasizing greater coordination and communication among different organizations involved. IRS as a system

is flexible and adaptable to suit any scale of natural as well as man-made emergency/incidents. To develop capacity of the state government for building disaster response system, NIDM conducted Training of Trainers programme on IRS: basic & intermediate at Institute of Land & Disaster Management (ILDM), Kerala from 6-10 May 2019. This programme was attended by 44 officials from departments of Police, Fire Services, Local Self Government, Education, Revenue and various districts of Kerala. The programme was inaugurated by Hon'ble Minister Revenue, Government of Kerala. During his inaugural lecture, he mentioned that Kerala state had recently faced major floods and is in process of recovery through reconstruction & rehabilitation. He appreciated the response made by various agencies including community during the Kerala floods. He also said that Kerala State will adopt IRS as a response system based on the feedback of the ongoing course.

Early Warning & Communication

13-17 May, 2019



NIDM conducted a National Training Programme on "Early Warning and Communication" at New Delhi on 13-17 May, 2019. A total number of 30 officials from 14 different states and UTs attended this programme.

The programme discussed about the various early warning and communications systems with respects to different disasters and also emphasized on the SOPs on Response

to Disaster Management as well as roles and responsibilities of different stakeholders. A table top exercise has been conducted by the participants for assessing the status of early warning systems in different states. Reputed experts who have involved with the programme included Dr. M. Mohapatra and Dr. Patnaik from IMD, Brig. Ajay Gangwar, Dr. Pavan Kumar Singh and Dr. S.K. Mishra from NDMA,



Dr. Manish Chaturvedi from NIHFV, Shri J. S. Tyagi from Department of Telecommunication, Dr. G. Suresh from National Centre on Seismology, Shri S Lakshminarayanan from Central Water Commission, Dr. Sandeep Baruah from Vigyan Prasar and Shri Rajeev Shukla from All India Radio.

Training workshop on Disaster Management Plan 23 May, 2019

NIDM conducted a National Level Training Workshop on “Disaster Management” in collaboration with the Ministry of Mines, Govt. of India, New Delhi on 23 May, 2019. A total number of 10 officials from National Institute of Rock Mechanics, Geological Survey of India and National Institute of Immunology attended this programme. It aimed :

- To develop better understanding about Disaster Risk Reduction and Resilience (DRR&R),
- To learn about the relevant Act, Policy, Plan, Guidelines and SOPs on Disaster Management in the country,
- To know about the important international agreements and declarations on disaster risk reduction, climate change, urbanization and sustainable development,
- To initiate activities on formulation of disaster management plan for their functional and geographical regimes, and;
- To discuss the collaboration and strengthening mechanisms for effective implementation of disaster management related activities. The programme discussed about the disaster management act 2005 and the template for preparation of disaster management plan by the ministries / departments / organizations.



Climate and Disaster Resilience (for Officials of Dhaka North City Corporation)

20-24 May, 2019



Second in the series, after the first joint course for Bangladesh officials held during 2018-19 at New Delhi, a one week international training workshop on Mainstreaming Disaster Risk Reduction in Changing Climate Scenario at Urban - Local Level was intended for 13-member delegation from Government of Bangladesh (Dhaka North City Corporation), organised by the All India Institute of Local Self Government

(AIILSG), in technical partnership with NIDM, at the Hotel Raintree, Chennai. Participants from Bangladesh included the Members of Disaster Management Committee (Legislators), Councillors, Health & Administrative Officers, Urban planners, meteorologists and Engineers. The course was developed to enhance the capacity of officials for integrating disaster risk reduction in development planning, educating citizens for self-sufficiency and resilience to climate change and disasters in sectors such as urban development, health, agriculture, infrastructure, etc. The resource persons of the programme included Relief commissioner of Tamil Nadu State Dr. K Satyagopal, Mr. S V Michael from UN High Commission of Refugees, Dr H L Mehta – Chairman Indian Red Cross Chennai, Head of IMD-Chennai, Professors from IIT, TISS, Madras Medical College, Madras Institute of Development Studies, NGOs, etc. besides NIDM and Dr Kamlesh Pathak from AIILSG.



Integrating Disaster Management Plan with Gram Panchayati Development Plan

27-31 May, 2019

Village Disaster Management Plan (VDMP) is a document prepared by the community themselves for their own disaster management based on their own Hazard, Vulnerability, Risk, Resource & Capacity analysis, containing village profile supported by maps, emergency response & disaster risk reduction plans, listing out activities & pin pointing responsibility of the VDMC (Village Disaster Management Committee), SHG (Small Household Group), TF - Task Force Members & the community at normal times, before, during & after a disaster in order to save lives, livelihood & property & integrating it into the long term sustainable village developmental plan. All the activities in the emergency response plan are so well planned, practiced, rehearsed & synchronized that they take place simultaneously in clockwork precision with minimum loss of time & orders. Besides this, Panchayats have a significant role to play in effective and efficient implementation of flagship schemes for transformation of rural India. Since, Disaster Risk Reduction (DRR) has been the centre stage for the Sendai Framework (2015-2030) to which India is a signatory, it calls to safeguard not just lives but also critical infrastructure. GPs being the contact point at grass root level, it becomes imperative to integrate DRR measures into the ongoing rural development schemes and programmes. With this aim, a five days programme was organized at GIDM, Gujarat which had 46 participants representing the various important departments at Panchayat levels for the course.

Gender & Disaster Management

27-31 May, 2019

NIDM conducted a Training Programme on “Gender and Disaster Management” in collaboration with Uttarakhand Academy of Administration (UAoA), Nainital from 27-31 May, 2019. The target group for the programme were middle state level functionaries from Departments of Disaster Management, Social Welfare, Women and Child Development, Panchyati Raj, Rural Development and other nodal person dealing with the issue. The programme aimed to sensitize, promote and institutionalize a gender sensitive approach to disaster management. A total of 32 participants from the state of Uttarakhand attended the course.



Earthquake Risk Mitigation

10-14 June, 2019



A training Programme on Earthquake Risk Mitigation and Management for Safe Built Environment from June 10-14, 2019 was organized by the Institute in collaboration with the Himachal Pradesh Institute of Public Administration (HIPA), Shimla.

This programme was primarily designed for people across the humanitarian to development spectrum, who may in some capacity be involved in earthquake

risk mitigation activities at different levels. The programme was useful for architects, engineers, planners, administrators, and faculty involved in teaching and research in area of earthquake risk mitigation.

The broad methodology adopted during the programme was based on presentations and interactive sessions. During the training programme a variety of training methods like group discussion, demonstration, field visit and group work with presentation by participants were used. There were 29 participants representing various departments of the state government.

Climate Change, Hill Area Development and Landslide Management

10-14 June, 2019

NIDM conducted a National Level Training Programme on “Climate Change, Hill Area Development and Landslides Management” in collaboration with the Kerala State Disaster Management Authority Mascot Hotel, Thiruvananthapuram, Kerala on 10-14 June, 2019. A total number of 36 officials from 6 different states attended this programme.

The programme discussed about the landslide problems, emerging threats related change and hill area development without due consideration of the terrain susceptibility and vulnerability of elements at risk. Important resource persons included Professor Cees van Westen from ITC Netherlands, Dr. K. Staygopal, Additional Chief Secretary, Tamil Nadu, Dr. Sekhar L Kuriakose, Member Secretary, Kerala State Disaster Management Authority, Shri R. Sachin and Shri Muralidharan from Geological Survey of India, Dr. Sajin Kumar from Kerala University, Dr. S.S. Porwal (Retd Chief Engineer) from Border Roads Organization and Dr. John Mathai, Scientist from National Centre for Earth Science Studies.

Incident Response System (IRS) : Basic & Intermediate

17-21 June, 2019



Response to any disaster requires involvement of many stakeholders who carry out large number of tasks from search and rescue to management of relief camps. NIDM, in pursuit of being nodal institution for capacity building of States for IRS, conducted a training programme on IRS: Basic & Intermediate at YASHADA, Pune, Maharashtra for the officials of various departments involved in response of Government of Maharashtra. Programme was attended by 27 officials of various departments of Government of Maharashtra. The major outcome of

the programme was draft structure of Incident Response Team at Tehsil level for State of Maharashtra.

Disaster Management (DM) Plan for CPWD Engineers

18-20 June, 2019

A three day training program on “DM plan & facility mapping for the CPWD officials” were held at NIDM. This training, a 3rd in a series, was organised with an aim to target middle level Civil/architect/planners of CPWD, who have been responsible for preparing DM plan for all establishment across the country. In total 26 participants, all nominated from Delhi/NCR thru’ CPWD Head Qr. Nirman Bhavan, New Delhi, had participated. The program envisaged explanation of National DM plan-2016, application/demonstration of latest knowhow/technologies that included facility mapping of built-up areas that helped the participants in the transformation from paper based DM Plan to ONLINE format, display of building information system including Fire emergency devices as per NBC-2016, Rapid Visual Screening of Buildings, use of Augmented/Virtual reality in facility mapping. Finally the participants were practically oriented towards the functional decision making tools based on derived DM plan. At the end of this 3 days program, Er D.K. Garg, CE, CDO, CPWD, desired to have CPWD officials to be involved in making DM plan. Maj Gen Manoj Kumar Bindal, VSM, ED-NIDM expressed his satisfaction over the awareness part of the program. However, he stressed the need for categorical involvement of selected CPWD officials in the making DM plan, in which case NIDM would be a guiding force.

Disaster Management for Indian Defence Accounts Service (IDAS) Officials

24 June, 2019

On the request of National Academy of Defence Financial Management & Regional Training Centre, Government of India, Pune, NIDM had organized one day orientation programme on Disaster Management for the senior officers of the department. The workshop was organized on 24th June 2019 in Pune. 28 officials participated in the workshop. Major Genreal Manoj Kumar Bindal gave the inaugural and valedictory address along with the Director of National Academy Of Defence Financial Management Institute (NADFM), Pune. The programme was received exceptionally well as report was shared by NADFM with NIDM.

Incident Response System (IRS): Basic & Intermediate

25 - 28 June, 2019



IRS as a system is flexible and adaptable to suit any scale of natural as well as man-made emergency/incidents. To develop capacity of the state government for building disaster response system, NIDM conducted Training of Trainers programme on IRS: basic & intermediate at Mahatma Gandhi State Institute of Public Administration, Punjab (MGSIPA) from 25th to 28th June 2019. This programme was attended by 40 officials from departments of Police,

Fire Services, Local Self Government, Education, Revenue and various districts of Punjab State. The programme was inaugurated by Ms. Jaspreet Talwar, IAS, Secretary to the Government of Punjab and Director, MGSIPA. The programme ended with valedictory address by Ms. R. Karthik, Spl. Secretary (Revenue), Government of Punjab.

Training Workshop on Disaster Management

24-28 June, 2019

NIDM conducted a National Level Training Workshop on “Disaster Management” in collaboration with the V.V. Giri National Labour Institute Noida during 24-28 June 2019. A total number of 26 officials attended this programme. The programme aimed at developing better understanding about Disaster Risk Reduction and Resilience (DRR&R), learning about the relevant Act, Policy, Plan, Guidelines and SOPs on Disaster Management in the country, knowing the important international agreements and declarations on disaster risk reduction, climate change, urbanization and sustainable development, initiating activities on formulation of disaster management plan for their functional and geographical regimes and discussion about the collaboration and strengthening mechanisms for effective

implementation of disaster management related activities. The training workshop has been held for the first time in collaboration with V V Giri National Labour Institute, Ministry of Labour & Employment in the field of disaster management. The discussions primarily focused on preparation of disaster management plan by the ministry and also highlighted the issues of livelihood in relation to disasters.



National Programme on Climate Change & Health Sector Resilience

26-28 June, 2019



NIDM (Centre of Excellence on Climate Change) jointly with GIZ Germany and WHO organised a National Programme on “Climate Change & Health Sector Resilience” from 26th-28th June 2019 at Dr. Ambedkar International Centre, New Delhi. The three day programme was organized with a focus on developing an adaptation plan for disaster risks reduction to climate change and building capacity of relevant stakeholders. The workshop highlighted the effects of climate change and extreme events on public health and well being. Dignitaries from across India including members of DST, SDMA Sikkim, NDMA, GIZ and NIDM attended the inaugural session, which was addressed by Ms. Preeti Sudan, the Honourable Secretary-MoHFW. More than 60 participants including senior representatives from departments of Medical Health, Water & Sanitation, AYUSH, Disaster Management Authority, Climate Change Cell and other Central Public Health related Institutions were also present and actively contributed to the discussions. The cross-cutting themes discussed during the programme added to knowledge sharing by drawing lessons from case studies and resilience strategies at various levels and helped in delineating a roadmap for addressing the implications climate change on health. The outcomes of the workshop will be considered for developing the health adaptation plan against climate change induced health impacts.



School Safety Plan and Safety Audits

24-28 June, 2019

A training Programme on School Safety Plan and Safety Audit from June 24-28, 2019 was organized by the Institute in collaboration with the Jammu and Kashmir Institute of Management, Public Administration and Rural Development (J&K IMPARD) at Srinagar. The aim of the training programme was to facilitate the creation of requisite capacity of the stakeholders involved with schools and to prepare and effectively implement the school disaster management plan. This training programme was primarily designed for senior teachers and people who are involved in disaster risk mitigation activities for schools at different levels. The programme was useful for administrators and senior teachers involved in school safety. The broad methodology adopted during the programme was based on presentations and interactive sessions. During the training programme a variety of training methods like group discussion, demonstration, field visit and group work with presentation by participants were used. There were 34 participants (mostly Principals working with the government schools) representing various districts of the state attended the programme. All the participants were well versed with the needs and requirements for disaster management and safety aspects of schools. All of them have shown skills necessary to develop school safety (disaster management) plans.



Other Activities

Working Group Meeting on Finalization of Memorandum of Association (MoA) for University Network for Disaster Risk Reduction 17th June 2019



A Working Group Meeting on Finalization of Memorandum of Association (MoA) for University Network for Disaster Risk Reduction was organized by NIDM, New Delhi on 17th June 2019 at its campus. The main objective was to sensitize the consequence of building on the mapping of DRR curriculum in India, develop a baseline for education and research that outlines the current status of DRR as a discipline in the

country by strengthening engagement of key actors in the field, including the University Grants Commission, All India Council for Technical Education, Ministry of Human Resource Development and the Principal Scientific Adviser. In this meeting Dr. Subir Sen, a representative of Prof. Mahua Mukherjee, IIT Roorkee and Prof. Devesh Walia, NEHU, Shillong and Prof. Janki Andharia, TISS, Mumbai through Tele conferencing, were present. The meeting was addressed jointly by Major General Manoj Kumar Bindal, VSM, Executive Director, NIDM and Shri Sanjeev Kumar Jindal, Joint Secretary, Disaster Management Division, Ministry of Home Affairs, Govt. of India.

The members of Working Group discussed and suggested their comments on every topic of the Memorandum of Association (MoA) in details and finalized the important issue of consolidation of MoA. The meeting was coordinated successfully by Prof. Santosh Kumar, HoDs, GIDRR & DRR, Dr. AD Kaushik and Dr. Ritu Raj, faculty members of NIDM.



The progress of Infrastructure Development of new campus of NIDM at Rohini, New Delhi

DDA had allotted 2.87 hectare of Land at plot no. 15, Block B, Sector 29 Rohini for setting up the campus of NIDM. MHA had sanctioned Rs. 47.7 crore for setting up the campus of NIDM and conveyed the approval to carry out the work through NBCC. The physical progress of the work up to 30.06.2019 is as follows:

- (a) Administrative Block – Structure work completed.
- (b) Hostel Block – Structure work completed.
- (c) Residence Type II, Type III, Type IV & V, Type VI Structure completed.
- (d) Finishing work, Sewerage work, Road work, UG Tank, Electrical Substation and Fire Fighting work etc., in-progress. Approx 80% physical progress has been achieved up to june, 2019.

The Monitoring Committee comprising of Prof. Chandan Ghosh, Dr. A.K Gupta, Dr. Ajendra Walia, and Er. J N Jha from NIDM and Er. Dinesh Kumar, Former-Engineer in Chief and member institute of Engineers, as independent member is monitoring the physical progress as well as quality of the construction of NIDM campus.



The progress of Infrastructure Development of NIDM Southern Campus at Andhra Pradesh

Government of A.P had allotted 10 acre lands at Kondapovalluru Village Gannavaram Mandal Krishna District, Andhra Pradesh for setting up the NIDM Southern Campus. MHA had sanctioned Rs. 36.76 crore for setting up the campus of NIDM and conveyed the approval to carry out the work through NBCC. The physical progress of the work as on date 30.06.2019 is as under:

- (a) Administrative Block – Structure work completed.
- (b) Hostel Block – Structure work completed.
- (c) Residence Type II , Type III, Type IV & V , Type VI Structure completed.
- (d) Finishing work, Sewerage work, Road work, UG Tank, Electrical Substation and Fire Fighting work etc., in-progress. Approx 50% physical progress has been achieved up to June, 2019.

The Joint Inspection Team comprising of Prof Chandan Ghosh and Er. J N Jha from NIDM, Second-in-Commandant from NDRF, Additional GM from NBCC and Prof. P.K Ramarao an independent member from Institution of Engineer is monitoring the physical progress as well as quality of the construction of NIDM campus.



THEMATIC VIEWS

Inclusive DRR : Disaster and Disability

- Dr. Santosh Kumar

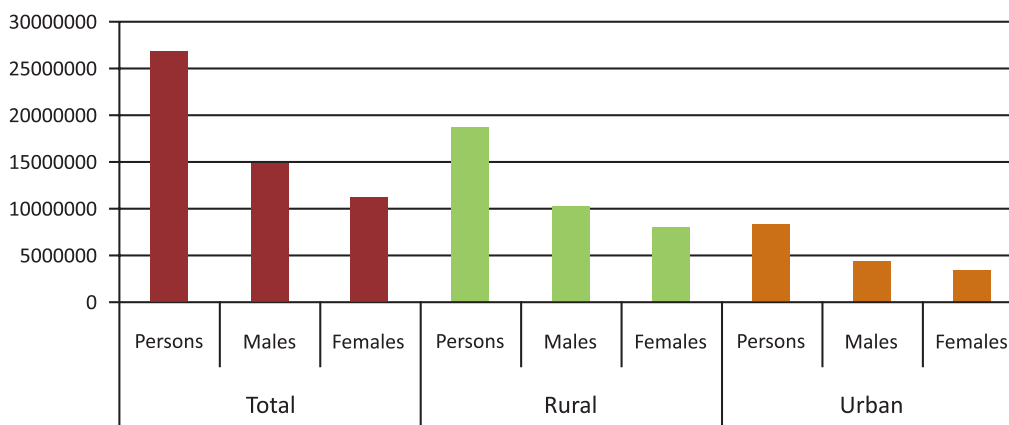
Disasters create differential impact on different people. Poorest of the poor takes the maximum brunt of disaster than the better off because of their level of capacity and resilience. It is said, rather established, that the climate change has made it even worse. Intensity and frequency of disasters of hydro-meteorological disasters (flood, cyclone, drought, heat wave, cold wave etc) have multiplied manifold. Irony of the situation is that those who are contributing least in changing climate/carbon emission are facing the maximum brunt. The rich are blissfully ignorant as what their life styles have made the impact on poor.

Victims of disaster are counted by the governance in two categories i) number of deaths and ii) number of affected people, other than the economic losses. Questions are now being raised whether deaths could have been prevented or not? Now, policy is focusing on minimizing the number of casualties and affected people. Regarding affected people, complexities are much more. If we look at the disaster survivors lives and livelihood, long term recovery –rehabilitation and rebuilding lives related issues, despite of best of intentions and efforts, it seems we have not been able to achieve the desired objectives. There are still some gaps between policy intent and actual position.

Out of many, if I take just one issue of vulnerability of people of disability -both natural disability and for other reasons and disability due to disaster impact (imputation, cervical injury, mental illness, spinal injury, visual and hearing impaired etc) is much higher than others. Vulnerabilities get further multiplied if the affected are women, children and aged citizens. After listening to the victims in person and reviewing of literature, it is obvious that the methodology of risk assessment has to be revisited, as

it has never highlighted this as an issue in specific. Vulnerabilities depend on exposure of risk and capacity to bounce back. People with disability have the 100 percent probability of getting affected in case of disasters. Despite this understanding, interventions designed for risk reduction, capacity building, evacuation, accessibility to facilities, relief camps, sanitation

Fig.3.1: Disabled Population in India - Census 2011



facilities, and design of toilets are not conducive for them to use. Privacy for women with disabilities is not adequately addressed.

As per Census of 2011, In India out of the 121 Cr population, 2.68 Cr persons are 'disabled' which is 2.21% of the total population. Among the disabled population 56% (1.5 Cr) are males and 44% (1.18 Cr) are females. In the total population, the male and female population is 51% and 49% respectively. Majority (69%) of the disabled population resided in rural areas (1.86 Cr disabled persons in rural areas and 0.81 Cr in urban areas). In the case of total population also, 69% are from rural areas while the remaining 31% resided in urban areas. If I may conclude by saying that , Society is not complete, if it continues with so much of inherent biasness and exclusive approach. It reflects on our sensitivity, culture, education, philosophy, governance, maturity and compassion". Disaster risk reduction policy, programmes, and strategies, research & development, capacity building programmes of NIDM and other stakeholders require serious introspection. Impetus on inclusiveness is inevitable and has to be addressed holistically. Band-Aid approach will not take us anywhere.

Disaster Resilient Built Infrastructures

- Dr. Chandan Ghosh

Disaster resilient built-infrastructure refers to the processes, systems, facilities, technologies, networks, assets and services that are essential to the health, safety, security, or economic well-being of every citizen. In India disaster management is a state subject. Efforts towards infrastructure development is continued to focus on the key areas of physical and social infrastructure. The effective functioning of government during any disaster event lies in collaborating with other line departments, stake holders and agencies, and lifeline facility managers to enhance the resiliency against all impending hazards. India, while stepping up public investment in infrastructure, has been actively engaged in involving private sector to meet the growing demand.

India's built-infrastructure is vulnerable to disasters, whether natural (e.g., earthquake, floods, cloud burst, hail storm, lightning) or human-induced or intentional (e.g., terrorism, bomb blast, cyber attacks). Real estate growth in the unorganized sector for the last one decade remains more or less unabated. The existing urban

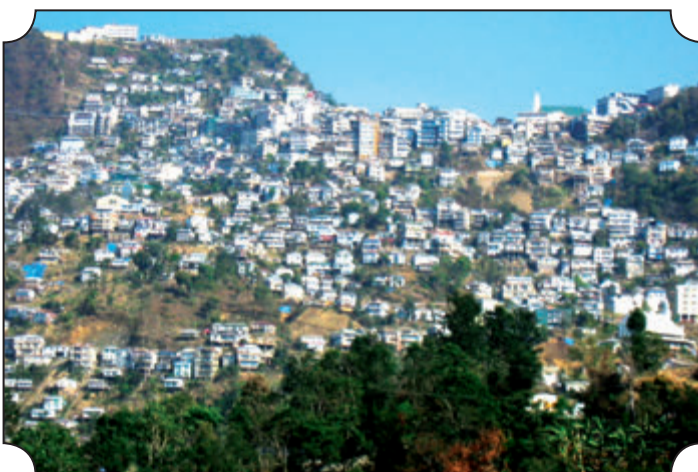


Figure 1: Built-environment and vulnerable structure in Aizawl city, Mizoram, India

infrastructures, particularly in class-I cities in India have the potential to go wrong during future disastrous event. As the rate and severity of disasters increases, so does the possibility that disruption of critical infrastructure could result in widespread effects, cascading across borders and sectors, rapidly escalating from local to national levels and causing loss of life and properties. Fig. 1 depicts how dwellings in the hilly areas in the North Eastern part India awaits for big shock (seismic zone V).

India's software part of physical infrastructure (like telecom, tech services, air and port services) has been performing well. At the same time, the hardware component of the country's physical infrastructure (e.g. road, urban transport, rail, power) has been growing faster now. Even then, development of hardware component of India's physical infrastructure perhaps deserves utmost attention. This also indirectly indicates high investment potentials in roadways, railways, power and the associated components in India.

Primary responsibility for protecting built-infrastructure rests with the private and public sector owners and operators. In many cases, they have already achieved significant progress. National, state and district levels of administration are also working to protect their own critical infrastructure. The interconnected nature of critical infrastructure, however, demands an integrated approach across all levels of government and the private sector. These efforts need to be pulled together into a collaborative approach that will form the basis of an integrated action plan to enhance the resiliency of built-infrastructure across India.

Strengthening the resiliency of critical infrastructure can be described as actions and programs that:

- identify risks to critical infrastructure and interdependencies
- assess and prioritize risks
- take mitigative or protective measures to reduce risks and the potential for disruptions
- conduct exercises to assess measures and identify strengths and areas of improvement
- refine and upgrade critical infrastructure plans in all sectors
- result in swift and more effective response and recovery efforts when disruptions occur.

In order to make built-infrastructures disaster resilient it is recommended that:

1. All state governments and all local bodies (urban & rural), development authorities, special and new town development agencies, etc. need to modify, revise, revamp the Master Plan, existing building byelaws; development control rules (DCR); planning standards; town planning rules; special regulations for fire, structural, health, construction, electric and life safety, in line with the NBC-2016 by suitably adapting it with local variation as may be needed.
2. NBC-2016 to be adopted as the basis for all structural design, fire protection, building and plumbing services, building materials and construction practices (and construction safety) and for proper protection, upkeep & maintenance of water bodies by modifying the departmental construction codes/ specifications/manuals of Govt. construction departments.
3. The strengthening of all building development and regulating agencies with the right level of professional human resources to deal with proactive responses needed with the building professionals and builders.
4. Adequate techno-legal and techno-financial regimes while approving constructions are to be devised, enacted and enforced uniformly so that each individual becomes an agent of change and adopt disaster resilient measures integrating with Country's governance.

Landslides are the widespread and frequent geological hazard in the Himalayan region, Western Ghats and Nilgiri range of India. According to the EMDAT database, the total loss of lives and economic damages were in the tune of 2952 and 4.5million US\$ (1980-2018) respectively in India (Figure 1). In the year 2018, GSI reported 72 landslides in India with the majority of occurrences in state of Kerala (46 landslides occurred during the onset of south-west monsoon) followed by North-East India and North India (Himachal Pradesh, Uttarakhand).

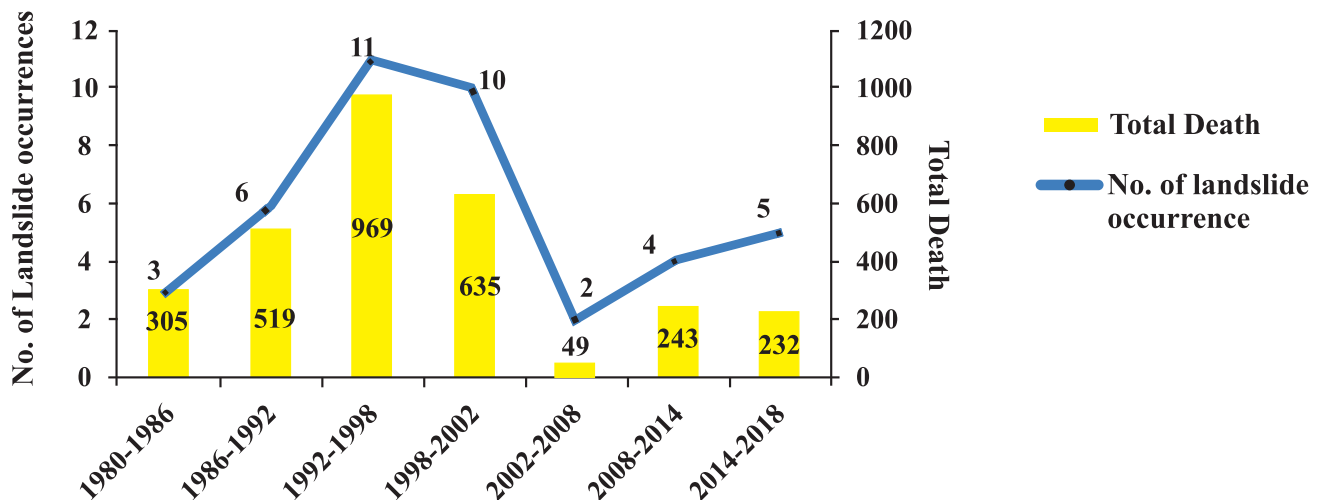


Figure 1: Number of landslide occurrence and total death caused due to landslide in India during 1980–2014 (Data Source EMDAT; Parkash Surya 2011, Kaur et al. 2017 and plotted by Surya Parkash & Harjeet Kaur)

According to the National Crime Records Bureau, people at their young age (14 to below 44 age) become the victim of such hazards (Figure 2).

National Disaster Management Authority (NDMA), National Institute of Disaster Management (NIDM), Geological Survey of India (GSI), CSIR-Central Building Research Institute, CSIR-Central Road Research Institute, Wadia Institute of Himalayan Geology (WIHG), National Remote Sensing Centre (NRSC), and Educational Institutes like IITs and Universities have been involved in studies related to landslide hazard assessment and risk management throughout India. Bureau of Indian Standards (BIS) has published a standard code (BIS 14496-Part II, 1998) for landslide susceptibility zonation on a medium scale (1:50,000), on the basis of expert-based indirect weighting approach. NRSC published Landslide Hazard Zonation Mapping in the Himalayas of Uttaranchal and Himachal Pradesh States using Remote Sensing and GIS Techniques during the year 2001. (BMTPC) has prepared a Landslide Atlas of India (2003) using the available data on landslide inventories with different organizations. The NDMA has released National Guidelines for Management of Landslides and Avalanches in the year 2009 and proposed Action Plan for reducing the landslide incidences and impacts in the country. Department of Science and Technology (DST), Govt. of India, has also prepared the Landslide Hazard Zonation Atlas in 2011 based on studies undertaken in various projects sponsored by the Ministry of Science & Technology.

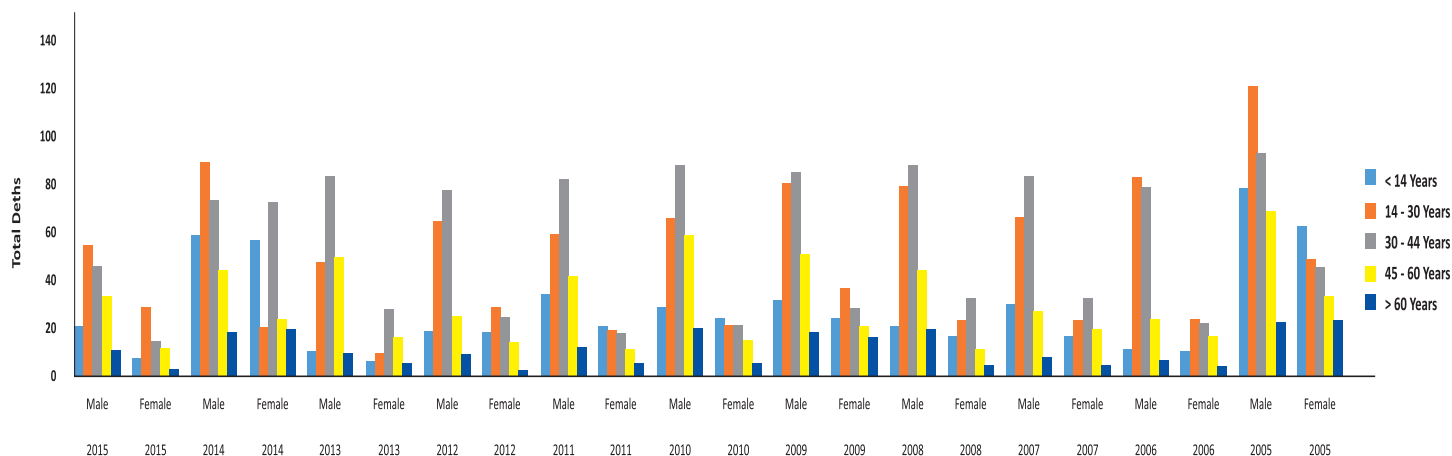


Figure 2: Age and Gender - wise distribution of deaths due to landslides during 2015-2005 (Data Source: National Crime Records Bureau ; plotted by Harjeet Kaur & Surya Parkash)

NIDM published a Training Module on Comprehensive Landslides Risk Management during the year 2012. After June 2013 Kedarnath tragedy, NRSC has programmed its satellites to acquire data over the affected area for Uttarakhand disaster and initial results were uploaded in the NRSC web portal (www.bhuvan.nrsc.gov.in). Research work on landslide has gained attention of many research scientists of India in recent years (Rawat et al. 2012; Lallianthanga et al. 2013; Kaur et al. 2019) and hence increasing the research publication on landslides. Recently NDMA has constituted working groups for preparation of a national strategy for landslides mitigation and is soon likely to publish this document. During the 3rd World Conference on Disaster Risk Reduction (WCDRR) at Sendai, Japan in the year 2015, an initiative on enhancing the understanding about landslides and reducing the related risks has been done through Sendai Landslide Partnerships 2015 – 2025 at the international level, following the Sendai Framework for Disaster Risk Reduction (SFDRR), Sustainable Development Goals (SDGs), New Urban Agenda and Paris Climate Agreement. Subsequently, during the Asia Ministerial Conference on Disaster Risk Reduction (AMCDRR) in the year 2016, Prime Minister of India provided 10 Point Agenda for Disaster Risk Reduction.

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Disaster Risk Reduction (DRR) is an integral part of sustainable inclusive-development. The UN's Global Disaster Risk Assessment Report 2015 estimated India's annual average economic loss to be around \$ 9.8 billion. The High Powered Committee of Govt of India on Disaster Management in its report (2001) envisioned a "Disaster Free India" through the routes of safe and sustainable development that will safeguard and not create risks, as also illustrated through Mitigation & Preparedness (Chapter 5), Culture of prevention, strategic thinking, planning (Chapter 6, 10) stands directly relevant now as well. As globally accepted evaluation of HFA referred its principle "addressing underlying causes of risk & vulnerability" much inadequately addressed, and cuts across all the four priorities of Sendai Framework for DRR (2015-30), viz. –

1. Understanding disaster "risk"
2. Strengthening disaster risk governance to "management disaster risk"
3. Investing in disaster risk reduction for "resilience", and
4. Enhancing disaster preparedness for effective response and to "build back better" in recovery, rehabilitation and reconstruction

India being signatory to the three global strategies, viz. Sendai Framework for DRR, Paris Climate Agreement and SDGs, has to delineate an integrated strategy-cum-mechanism, as the land and people being commonly affected (beneficiary) of such interventions of safety and sustainability together. Over the decade there are reported pilot/localized and sector specific interventions of integrating DRR and climate resilience into development in many countries including India. However, the efforts may be built upon the past ones and taking advantage of the good practices across the world and especially in developing countries, using pathways and approaches of DRR mainstreaming into developmental planning and local actions.

India's National Disaster Management Plan released (2016) by Hon'ble Prime Minister as Chairman of NDMA, draws on the need to address hazard/disaster specific vulnerability and risk dimensions, and the plan further needs to be transformed into an implementable mechanism of factoring multi-hazard safety and sustainability risk mitigation along with climate resilience, into the planning and actions of all the sectors. As recommended by Hon'ble Prime Minister (First in Agenda 10 on Disaster Risk Management) while inaugurating the 7th Asian Ministerial Conference on 3rd November 2016 at New Delhi, sector based mainstreaming of DRR, with 9 agenda points as complimentary (to the first Agenda) implicitly address for priorities of SFDRR, and its integration with Paris Agreement and SDGs. The roadmap for DRR mainstreaming, since critical to a sustainable and safer approach to inclusive growth, need to vouch:

1. Adequate respect to ecosystem services, health systems and livelihood of people;
2. Needs of aged, children, women and differently able people;
3. Welfare of weaker and downtrodden sections of society particularly scheduled casts and tribe

communities, and

4. Engaging corporate/ private sector, industry and reaping the benefits of volunteers, community based, gender or youth based, and local institutions.

Recalling the recommendations of Task Force on Review of Disaster Management Act (Chaired by Dr P K Mishra) in 2013 (8.12, 8.13, 8.14), which spelt the need of paradigm shift in financial strategies, from those based on response-relief to more on safety and mitigation interventions. The enumerated shift more particularly in the light of SFDRR and Prime Minister's Agenda 10 are particularly important in the shift from the plan or non-plan budget distinction towards a more responsible and accountable sector based and department wise planning actions. The objective of mainstreaming DRR, thus, is reducing the expenditures of disaster response and relief, and transforming into investment based risk management approach to harness the co-benefits which may be in form of livelihood support services from ecosystems and landscapes, local entrepreneurship, public health and other socio-economic benefits. Equally important is to adapt an all-disaster approach covering environmental, man-made and technological disaster risks.

Institutional and professional capacity building and evaluation systems would need to be reworked utilizing existing ones with appropriate strengthening and customization. The national framework for DRR Mainstreaming can serve towards a broader "resilience" goal, with two major approaches: (i) Sector cluster approaches for local levels (including district/taluka/tehsil/block or panchayat levels, recognizing inter-relations and coordination needs between various departments and activities, and (ii) Sector based (for key sectors of development) approach for Ministry wise/department wise approaches. A sector based DRR mainstreaming mechanism may be drawn and implemented through an integrated approach with following major pathways:

1. The process of mainstreaming DRR into developmental planning needs to utilize appropriate tools and methodologies (for assessments, planning and decisions, monitoring and evaluation, etc.)
2. Understanding and implementing the Culture of Safety and Prevention (CUSP) Principles, involving identifying and assessing vulnerability and fragilities of key systems and resources sector or sub-sector level (disaster impact assessment /damage, loss and needs – economic, non-economic, environmental and social impacts), and building resilience through improvements in process, design, materials, schedules or practices. CUSP principles primarily entails to:
 - a) Assets, property and resources concerning the sector (or sub-sector/ Ministry/ Department/ agency) are disaster safe / resilient,
 - b) Activities, services and execution (delivery) network of the Sector (or sub-sector/Ministry/ Department/agency) are not jeopardized by effect of a disaster,
 - c) Activities in the sector (or sub-sector/Ministry/Department/agency) are planned prudently and optimally so these do not the incremental effects on disaster risk or vulnerability of land/ infrastructure are proactively minimized. This entails to:
 - (i) Structural: construction/erection/manufacturing, ecological/landscaping or drainage or other interventions, and
 - (ii) Non-structural: land-use, restrictions, information, controls, subsidies, levees or incentives, exploitation/consumption, etc.

- d) Activities and resources of the sector are available to assist in reducing disaster risks, and maintain readiness to help emergency preparedness/response by it or other sectors/departments/agencies in case of a disaster.
 - e) Anticipated budget requirements/allocations need to be integrated into financial components of the developmental activities including in maintenance, retrofitting, substitution, etc. and the optimized financial planning may be undertaken accordingly.
3. These principles may be applied for DRR mainstreaming mechanism through departmental/developmental plans of all related departments, agencies, boards, institutes, establishments, and into the flagship programmes like Swachh Bharat Mission, Smart Cities, Aadarsh Gram Yojana, PM Irrigation Mission, PM Aawas Yojana, Make in India Mission, etc.
 4. Academic and professional expertise hub may be created to plan and assist in technical advisory, assessments and planning/review, research and capacity building for sector based DRR mainstreaming, through institutional consortium at state/zonal level.
 5. Planning and customization of sector based DRR mainstreaming would need to evolve or customize (using experiences of pilots and best practices lessons) and apply approaches of sectoral hazard-risk vulnerability and capacity analysis and prepare-implement/review Disaster Risk Management Plans as part of developmental/working plans for its all departments/agencies or projects.
 6. To ensure DRM principles from planning and design state, it would be appropriate to integrate DRM related assessments into project cycle including EIA, CBA/feasibility study, Planning and Clearance Mechanism, evaluation/review for all major developmental and public funded projects.
 7. Mainstreaming DRM principles and themes into professional development and capacity building including training and research programmes in the sector based institutions (including under concerned Ministries/Departments/PSUs etc.).

Significant pilots and their lessons in mainstreaming DRR into developmental planning at district level in India are available, and the sector cluster level approach may be further promoted to integrate the CUSP principles into developmental plans and activities concerning the department(s) falling under particular sector clusters, and the occupational or livelihood domains of the communities.

Key sectors and their departments may be identified and prioritised (may be based on criticality or resources for livelihood and economic sustenance, infrastructure growth pace and fragilities, or otherwise region wise, for example, in coastal areas, NE states, industrialized states, agriculture based, or tourism economy, etc.) after an expert group plus key stakeholder consultation lessons.

A simple Self-evaluation based Auditing Approach with prudently selected indicators and their benchmarks may be developed to help the concerned sector agency/Ministry understand its position in its own intended objectives/targets of disaster risk management scale, which will be helpful in guiding through the process of continual improvement maintain a good level of motivation and cooperation. Similar tool of self-reporting may be thought of at Panchayats, Urban local bodies, PSU and other establishment's level as well. An effective documentation, lesson learning and experience sharing would be highly useful, and it will also help in better and effective resource planning (including financial).

Earthquakes are considered one of the most destructive natural hazards, which may result in complete destruction of the habitation and loss of large number of human lives. There are examples, at national and international levels, when earthquakes have resulted in destruction of built environment and loss of human lives. Few of the recent earthquakes that had occurred at national level and resulted in destruction and loss of large number of human lives include Latur (M6.3, 1993) and Bhuj (M6.9 2001); similarly, at international level few of the devastating earthquakes include Haiti (M7.0, 2010), Indonesia, earthquake and tsunami, (M9.3, 2004), Sichuan (M7.9, 2008) and Kashmir (Pakistan) earthquake (M7.6, 2005). The common observation about earthquakes is that majority of devastating earthquakes are happening in developing and underdeveloped countries. The earthquakes that are happening in countries like USA, Japan etc., most of the time, are resulting in limited damages to built environment and small number of human lives lost.

The earthquake risk mitigation is posing huge challenge at national level. For mitigating the earthquake risk one has to implement a combination of structural and non-structural measures. The structural measures like construction of earthquake safe built environment by improving construction practices through adoption of appropriate building codes, which has been developed considering the local requirements for earthquake safety. There is IS: 1893-2016: Criteria for Earthquake Resistant Design of Structures, which is the main code for earthquake safe construction. This code has been revised six times and it is divided into five parts to cover earthquake safety requirements of all structures. In addition to building codes, all other provisions necessary for earthquake safety have been incorporated into the NBC. The NBC is available for long and has been revised third time in 2016. In addition, critical infrastructure facilities like hospitals, schools etc. and buildings housing facilities like communication, electricity, water supply, emergency services etc. need to be retrofitted. However, the main challenge faced at national level is the implementation of NBC and other such mechanism for safety of buildings against earthquakes and other disasters. As far seismic retrofitting of buildings is concerned, a limited number of buildings have been retrofitted at national level. Major reasons for non-retrofitting of buildings include lack of awareness among the stakeholders and lack of available expertise at national level.

IS-1893-2016: Criteria for Earthquake

Resistant Design of Structures

Part 1: General provisions and buildings

*Part 2: Liquid retaining tanks — elevated
and ground supported*

Part 3: Bridges and retaining walls

*Part 4: Industrial structures including stack
like structures*

Part 5: Dams and embankments

Similarly, the non-structural measures like improve response capacity, capacity building of all stakeholders, improve post-disaster assessment, communicating risk and mitigation measures to stakeholders and developing appropriate policies at national and state level to mitigate the risk of earthquakes need to be taken up on priority basis. In addition, giving due consideration to risk sensitive land use planning while developing new settlements may result in less devastation caused due to earthquake induced liquefaction. To overcome such phenomenon, there is a need to go for seismic micro-zonation. The seismic micro-zonation provides detailed account of the local soil profile which form the basis for foundation design of the buildings. The seismic micro-zonation maps lead to risk sensitive land use maps of the city, which ultimately results in appropriate site selection for construction of different types of buildings and infrastructure facilities. There are about 30 cities at national level where micro-zonation studies have been taken up with the financial support from Government of India through National Center for Seismology (NCS) under Ministry of Earth Sciences (MoES). However, the major challenge is the use of such maps to incorporate the results of micro-zonation studies into existing land use maps for earthquake safe planning and construction.

In one of the recent earthquakes in Indonesia (Sulawesi earthquake, September 28, 2018, M7.5) there were incidences of liquefaction. Due to liquefaction thousands of houses were submerged into the ground resulting in death to large number of people. Liquefaction is a phenomenon where saturated sandy soil start behaving like a liquid during intense earthquake shaking. This phenomenon generally occur near the water bodies (like rivers, sea coast etc.) where water table is shallow and soil is sandy. During liquefaction increase in pore water pressure sandy soil particle lose contact with each other converting the sandy soil into liquid. Due to loss of bearing capacity of the soil everything located above it start sinking into the ground.

Many developed countries like USA and Japan etc., upto certain extent, have overcome the challenge of earthquake risk mitigation. These countries are able to reduce the earthquake induced damages, by adopting a mix of structural and non-structural measures. There is a need to learn from the experiences of such countries to mitigate the seismic risk at national level in India. In the meantime, to overcome the challenge of earthquake risk at national level in India one has to:

- Stop increasing risk by constructing earthquake safe built environment by adopting appropriate codal provisions while constructing new building after appropriate site selection;
- Decrease the unacceptable risk by retrofitting the existing critical infrastructure facilities; and
- Improving the emergency management capacity to face the earthquakes effectively.

Background

Among the 7.5 billion people inhabiting this world, more than half reside in urban areas. One hundred years ago, 2 out of every 10 people lived in an urban area, which increased to 46.7% by the close of the century. In other words, the world is inexorably turning more urban, with more people living and working in urban areas, exposing themselves to prevailing risks. 8 out of the 10 most populous cities in the world are exposed to seismic risks and most of the 30 Asian mega-cities are coastal, vulnerable to floods, cyclones, tsunamis (UN Habitat, 2010).

India is witnessing rapid urban growth. India's urban population has increased from 25.85 million in 1901 to 377 million in 2011. In terms of urbanisation, the percentage of urban population has gone up from 17% in 1951 to 31.2% in 2011 and is expected to go up to 51% by 2021. Metropolitan cities have grown tremendously during this period and host more than 60% of the urban population.

Dimensions of Urban Risks in India

In a country like India, where 85% of the area is vulnerable to one or more hazards, it goes without saying that most cities also lie over hazardous terrain. A complex risk scenario arising from a combination of overlapping of physical and socio-economic factors like unsafe housing, uncontrolled use of land, high population densities, lack of access of resources and unsafe livelihoods characterize urban areas. Densely populated cities, particularly in Asia, show diversity in land use development, residential and commercial areas are often adjacent, modern buildings juxtapose traditional ones and formal and informal sectors admirably flourish in the same area. While this diversity aids in the dynamic growth of cities, it also creates inequalities in urban areas. In Indian cities, for example, urban inequality lies between 34-38% (UN Habitat, 2010).

Rapid urban transformation combined with a changing climate is fast changing the risk profile of cities. Though long-term changes in trends of losses from disasters are not directly attributed to natural and anthropogenic climate change, it nevertheless adds additional dimensions of risk in an already complex urban system (Jha et al, 2013). While sea level rise and storm surges threaten coastal habitats and infrastructure, excess and intense precipitation causes higher frequency of flooding, urban landslides, road sinking, vector-borne diseases and epidemics, extreme heat and cold wave leads to higher morbidity and mortality, heat island effect, increased energy demand, water and air pollution, thereby adding to the complexity of risk scenario. An adaptive, inclusive, responsive approach to build urban resilience is imperative for risk-sensitive urban development.

Mainstreaming Risk Reduction in Development Processes

Disasters have an intrinsic relationship with development. As urban areas expand unrestrained, more people are liable to suffer from loss of lives, assets and livelihoods. Loss of trade and business impacts the local economy and damage to capital-intensive infrastructure affects national development. Disaster losses exacerbate poverty, affecting the poorest and the most vulnerable the most. If disasters cause loss

of development benefits, risk insensitive development choices result in disasters, on the other end of the spectrum. Lack of proper implementation of zoning regulations and building bye-laws lead to settlements in unsafe areas, which accumulate risk over the years and becomes vulnerable to hazards.

Integration of risk concerns in the development process is the key to a resilient future and safe development. Ensuring a sustainable and safe development process requires DRR mainstreaming in the following:

- i) **Policy and Governance:** India has a well articulated policy on disaster management and policies on urban sectoral issues like housing and habitat, transport, sanitation etc. Linkages between the National Policy on Disaster Management and urban sector policies need to be forged and operationalised for a holistic approach towards resilient cities so that the directions articulated in both are synergised for holistic and sustainable urban development.
- ii) **Plans and Programmes:** A Master Plan, Zonal Plan or a City Development Plan should articulate ways in which future development will reduce the present and emerging risks. Urban sector programmes and missions such as affordable housing, basic infrastructure and services, livelihood support and health should have inbuilt risk reduction components for enhancing city resilience.
- iii) **Budget:** Disaster Risk Reduction mainstreaming should be incentivized through budgetary provisions in the planning stage itself. Interventions that take into account the prevailing risk and attempts to reduce them should be given an incentive in terms of easier disbursement of assistance and easier approval in future projects.
- iv) **Equipment and manpower:** Investing in equipment and trained manpower is necessary for preparedness. Specialized equipment for search and rescue, debris removal and restoration of vital infrastructure is essential. Procurement of equipment and availability of trained manpower to maintain and manage the equipment is imperative. Therefore a process of training of staff and regular mock drills should be customised according to the risk perception and assessment.
- v) **Community participation:** The community should be made a partner in risk mitigation and preparedness measures. For example, incorporating structural stability in building plan of individual/group housing projects may get a tax rebate; retrofitting of old buildings may be subsidized. Community participation should be encouraged so that the residents take a leadership role in building resilience of the city.

Conclusion

The complex nature of urban risks requires a multi-pronged approach of involving all sectors and all stakeholders to ensure mitigation measures. Mainstreaming risk reduction in development process calls for a focus on all stages and participation of all stakeholders. Only when disaster risk reduction is mainstreamed into the development process, will our cities become resilient and embark on a path of sustainable development.

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It is well documented that disasters tend to aggravate pre-existing vulnerabilities due to which women bear the brunt of disasters in a more severe manner. However, the approach towards vulnerabilities of women should not eclipse the valuable contributions made by them in all phases of disaster starting from response and relief to recovery and rehabilitation and even in preparedness and mitigation. The unique skills, knowledge, experiences and insights brought by women can increase the efficacy of our interventions for preparedness and mitigation. By advancing from vulnerability approach towards promoting unique capacities of women, we can develop community resilience and promote gender equality.

The example of recent Kerala Floods of 2018 in which Kudumbashree, which is a poverty eradication and women empowerment programme implemented by the State Poverty Eradication Mission (SPEM), Government of Kerala clearly shows how women played a vital and effective role after the deluge of floods. Kudumbashree is essentially a community network that covers the entire State of Kerala. It consists of a three tier structure with Neighbourhood Groups (NHGs) as primary level units, Area Development Societies (ADS) at the ward level, and Community Development Societies (CDS) at the local government level. It is arguably one of the largest women's networks in the world. While the community network is formed around the central themes of poverty eradication and women empowerment, its main features include democratic leadership, and support structures are formed from the 'Kudumbashree family'. In the recent Kerala floods in 2018, the members of Kudumbashree worked relentlessly towards cleaning flood affected houses and making them habitable after the floods. The members made traditional brooms of coconut leaf midriff to sweep the mud-laden premises of households. They also made cloth bags for supplying relief material to the affected populace. They packed meals and distributed it to affected community in shelters. The members made donations from their salaries. They also provided psychosocial support to the disaster survivors. They started innovative programmes like tailor training in the camps to assist the survivors to get back to their livelihood. The contribution made by the women network of Kudumbashree is exemplary and clearly shows the role of women in mitigating the impacts of disaster. Women's local knowledge and historical perspective on natural resource-based employment is an essential asset to economic planners working at the community level.

The Global Facility for Disaster Reduction and Recovery (GFDRR) and the World Bank joined hands for the Uttarakhand Disaster Recovery Project (UDRP). The project aimed at building over 2000 homes of disaster affected people on the basis of owner driven reconstruction model. The owners could build houses according to their requirements. The men and women were given joint accounts in banks and joint ownership of houses for the purpose of rebuilding their houses. The women participated in entire process of rebuilding their houses from consultations to overseeing the work. The men had migrated to cities in search of work. Female social workers ensured that the voices of women were heard and their inputs were included in the design of houses. The project clearly showed that when women are given adequate opportunity, they can contribute to the process of disaster risk reduction effectively.

India faces almost all types of hazards and invariably community becomes the most affected and also the first responder. Hence their strengthening in terms of awareness about their risks and preparedness to mitigate and respond becomes all the more important. Panchayati Raj institutions (PRIs), with devolution of powers, functions and finances, came up through the 73rd amendment of the constitution in 1992. 29 subjects, assigned to PRIs, which are mostly related to development have been provided in the Eleventh Schedule to the constitution

PRIs are statutory bodies with elected representatives and hence are not only accountable to people but also become a potent force for implementing various disaster preparedness activities at the local level. Due to its proximity to the people and focused approach to developmental activities, PRIs become the most appropriate body from village to the district level for ensuring people's participation in an institutionalized manner. Further the PRIs can also tap the traditional wisdom of the local communities to complement the modern practices in disaster mitigation efforts.

PRIs can easily gear up for following activities of preparedness

- Identifying possible risks of their area and make people aware of the same.
- Easily mobilizing human resource as and when required.
- Developing and sensitizing local level committees for mitigating impact of hazards and assisting external response forces to perform better.
- Conducting risk auditing in their areas.
- Acting as a bridge between community and administration at district and state levels.
- Preparing local level disaster management plans and assigning clear roles to all concerned community committees
- Collection and dissemination of information

Hence there is an imperative need to involve PRIs in entire gamut of activities pertaining to management of disasters and play a pro-active role at grassroots level

Reference:

1. 'Building PRI Capacities for Disaster preparedness and Management – A Training Manual --- A Gol-UNDP publication
2. Role of Panchayati Raj in Disaster Management – Dr. Kamal Taori

The Earth Day came into being on April 22, 1970 with a commitment to build a better world, a world where there shall be no poverty and hunger and resilience towards the harm's from natural and man-made hazards. Further to this, there were many such commitments since environment and climate change got into the development agenda in the 1972 UN Conference on the Human Environment in Stockholm. These commitments were subsequently translated into policies and legislations so as to enable improve people's lives. All these may not mean much if you live in sensitive coastlines prone to different intensity and recurrent cyclones, or floods and under the fear of disappearance due to sea level rise. Such policies may not mean much to many of us who continue to suffer the consequences of intense disasters caused by landslides, earthquakes, or, if you are the farmer from central India who cannot grow anything because of searing drought and intensifying land degradation. We cannot continue with development that degrades the environment and leaves so many behind. We cannot go on seeing a huge percentage of people continuously living in poverty.

187 countries including India are signatory to the Sendai Framework (2015-2030) which is the successor instrument to the Hyogo Framework for Action 2005-2015 that was adopted at the Third United Nations World Conference in Sendai, Japan, 2015. It encouraged the adoption and practice of a number of innovations with strong emphasis on Disaster Risk Reduction (DRR) and enhancing resilience with explicit focus on people, their health and livelihoods. Never has been the challenge to substantially reduce the impact of disasters and to make risk reduction an essential component of developmental policies and programmes been more compelling. This eventually corroborates the need for reiterating measures for preparedness.

The Mother Earth Day and the Sendai Framework

The International Mother Earth Day recognizes a collective responsibility as called for in the 1992 Rio Declaration, to promote harmony with nature and the Earth to achieve a just balance among the economic, social and environmental needs of present and future generations of humanity.

The Sendai Framework notes that disasters are exacerbated by climate change. Increasing in frequency and intensity, disasters significantly impede progress towards sustainable development and disproportionately affecting regions. The times demand big changes. The International Mother Earth Day promotes education and action by empowering everyone with knowledge to inspire action in defense of environmental protection and must integrate hazard resilience measures. Developing themes on this day which revolve around and encourage community preparedness and resilience building can suffice the purpose. Aims of such initiatives can be to emphasize the importance of climate change awareness, environment protection and action as key elements for resilience building.

The world's worry about disasters, more so due to climate change, has aggravated manifold as more than 1.5 billion people were affected by disasters in various ways during the last decade. Women, children and people in vulnerable situations were disproportionately affected. The total economic loss

was more than \$1.3 trillion. In addition, between 2008 and 2012, 144 million people were displaced by disasters. As per a UN report, natural disasters will soon cost the world \$314 billion annually. Therefore, how ready are countries to monitor progress in achieving the global targets of the Sendai Framework for Disaster Risk Reduction and disaster-related targets for the Sustainable Development Goals (SDGs)?

The 'Global Summary Report on Disaster-related Data for Sustainable Development' - produced by UNISDR affirms that Earth observations are fundamental to defining the environmental dimension of the SDGs and the Sendai Framework, to support decision-making and action across government institutions and programmes. Further, with the integration of a number of the key indicators of the Sendai Framework within the global indicator framework of the SDGs, Earth observation-derived monitoring and methodologies could also be explored for Sendai Framework indicators.

While all countries face mortality and economic losses from disasters, in the case of developing countries these are disproportionately higher. In fact, poor countries face increased levels of possible hidden costs and challenges to meet financial and other obligations. India faces huge losses due to climate change-induced disasters, so much so that the expenses on adaptation increased from 2.6 % in 2012 to 6 % of the country's GDP in 2014.

The commitments for the Sendai Framework although, are voluntary but, unless the signing countries adhere to green growth models, most of the goals would remain to be addressed in the same light even after 15 years. Hence, as we observe Mother Earth days, let's together confront the problems before us as we try to build a better future for our children.

References:

Disaster Risk Reduction initiatives in the Caribbean echo 2017's Earth Day theme: April 2017: <http://dipecholac.net/noticias/regional/disaster-risk-reduction-initiatives-in-the-caribbean-echo-2017-earth-day.html>

New report demonstrates how Earth observation data can help to measure the Sendai Framework for DRR. SOURCE: GROUP ON EARTH OBSERVATIONS (GEO)

By Rhea Katsanakis: <https://www.preventionweb.net/news/view/53956>

Sendai Framework for Disaster Risk Reduction: UNISDR: <https://www.unisdr.org/we/coordinate/sendai-framework>

The concept of 'school safety' has developed over the last couple of decades as the threat to the physical and emotional wellbeing of children has become more visible both globally and in the country. "Comprehensive School Safety" has emerged as the leading concept to address the nexus between disaster risk and the need for education and child protection before, during and after emergencies. Under the overall heading of disaster risk reduction and resilience-building it embraces the need to provide 1) safe learning facilities through disaster resilient design, safe construction and safe site location 2) school disaster management through assessments and planning by school disaster management committees, with education continuity and contingency plan and building capacity for effective disaster response 3) risk reduction and resilience education through inclusion of related aspects in formal curriculum, teacher training and staff development as well as extra curriculum and community-based informal education. The concept of school safety has been enlarged recently to include both safety and newly security issues both inside and outside the school. It has been defined as the creation of safe environments for children starting from their homes to their schools and back. This includes safety from large-scale 'natural' hazards of geological/climatic origin, human-made risks, pandemics, violence as well as more frequent and smaller-scale fires, transportation and other related emergencies, and environmental threats that can adversely affect the lives of children.

Although late, in India the subject started gaining high attention post 2001 Kutch Earthquake in Gujarat when 971 students and 31 teachers died due to an earthquake. In addition 1884 school buildings collapsed, 5,950 class rooms were lost, 11,761 school buildings suffered major to minor damages leading to additional 36,584 class rooms becoming unfit for holding school lessons (Ref. GoI, Ministry of Home Affairs: School Safety). Since then quite a few important actions and programmes have been implemented by the Government (national and states) as well as by the various non-governmental organisations across the country. Some of the noteworthy actions are as follows:

- Post-2002 Disaster Management was introduced as a subject in the frontline curriculum of the Central Board of Secondary Education (CBSE) as well as by several State Education Boards.
- During 2003-2008 GOI and UNDP implemented the Disaster Risk Management programme in 17 states across India in which schools safety was an important component.
- The Ministry of Home Affairs produced a handbook on School Safety in 2004.
- In 2005, the Disaster Management Act was passed. The Act envisages developing a Disaster Management Plan for all entities - including schools and all other educational institutes.

- In 2007, the Ahmadabad declaration on School safety was formulated.
- The 2009 Right to Education (RTE) Act prescribes that each child in India must have access to schooling for 200-220 days in a year. This highlights the urgent need to ensure that schools are less vulnerable to disasters/emergencies and better prepared to bounce back and return children to learning as soon as possible.
- In 2011, the National School Safety Programme was launched by the National Disaster Management Authority, covering 22 states in India.
- For this project, NIDM was given the responsibility to train the master trainers. During that financial year NIDM conducted eight (8) training programs for Master trainers and trained more than 204 Master trainers from 22 states. For this purpose, NIDM also developed a “Training Module for Master Trainers on School Safety.” Since then the National Institute of Disaster Management has been conducting To Ts on school safety every year as a part of their annual training calendar.
- In 2016, GOI issued National Guidelines on School Safety. The definition of school safety as per the national guideline is as follows: “The creation of safe environments for children starting from their homes to their schools and back. This includes safety from large-scale ‘natural’ hazards of geological/climatic origin, human-made risks, pandemics, violence as well as more frequent and smaller-scale fires, road accidents and other emergencies, and environmental threats that can adversely affect the lives of children” (National Guideline, School Safety Policy, 2016).

Despite the major achievements and adoption of the safe school agenda by the national and several State governments as well as the other non-governmental actors more needs to be done to sustain, intensify and expand the engagement at national and State level to achieve the two “Ds” of zero deaths and zero days of school lost due to disasters.

In India the susceptibility of schools, children and teachers to natural and human induced hazards still remain very high. While earthquakes and cyclones pose a high risk to the school infrastructures, large numbers of schools are also affected due to annual or unexpected floods making schools and learning opportunities inaccessible for weeks. Droughts, lack of adequate and gender-responsive water and sanitation facilities also result in school drop outs and loss of learning time. Fire hazards are also common in schools. School children are also highly vulnerable to road accidents and other transport related risks like boat capsizing during their journey from home to school and back home.

During any emergency and in post disaster situations, parents and children identify access to education as a priority concern. Past disasters have provided enough evidence on how putting education at the centre of humanitarian response can have a positive impact in helping children and the larger community to heal up their trauma and gain back normalcy.

Also, there is a need to address other day to day vulnerabilities which exists within a school premise

like violence and exclusion. Violence in educational settings is highly prevalent across India. Children experience and witness various forms of violence within and on the way to school. Corporal punishment and other disciplinary violent practices are highly prevalent and widespread in educational settings across India despite legal prohibition. Physical violence, as well as sexual violence, abuse and harassment, are also present in schools. According to a study conducted by the Ministry of Women and Child Development (MWCD) on Child Abuse in 2007, two out of three school going children experienced corporal punishment, and about 53 per cent of children reported having faced one or more forms of sexual abuse. By addressing the issue of violence and protection of child rights an integrated approach could be established towards school safety which will focus on both safety and security of a child.

Lastly, there is a need to make school safety programming more child centred with organic linkages to safe families and safe communities. Schools are more than a place of study. Schools are a valuable local investment of a nation and provide the children the platform and the knowledge through which they can reach out to the broader community of children, parents, teachers, neighbors and local governments. Through school lessons, children can be informed and trained on various essential services like healthcare, child protection, water, sanitation, and nutrition, disaster safety and climate change adaptation. These children in turn can further educate their community and help establish the link between the school and the community thereby ensuring participation of the entire community in better school development planning, community development and effective disaster preparedness and response.

¹MWCD, *Study on Child Abuse: India 2007*, New Delhi, 2007.

Impact of Climate Change on Natural Disasters & DRR in India

- Dr. A D Kaushik

The global warming process is already engaged and we cannot stop it in the near future. Indeed, thermal inertia is protecting us now by retarding the effects of trace gas build-up, but this same inertia will insure continued perturbations for centuries, even after correction becomes efficient. Among the Green House Gases, which are responsible for global warming, Carbon dioxide (CO₂) is currently responsible for over 60% of the “enhanced” Green House Effect, which is responsible for climate change. This gas occurs naturally in the atmosphere, but anthropogenic sources and Human activities i.e. Deforestation or Depletion of natural land resources are adding much more of this gas into the atmosphere. Current emissions amount to over 7 billion tonnes of carbon, or almost 1% of the total mass of carbon dioxide in the atmosphere. Global warming results from an increase in the temperature of the Earth’s lower atmosphere and this may lead to climate changes result from alterations to regional climatic events such as rainfall patterns, evaporation and preventive measures. Climate induced natural disasters (CINDs) like drought; flood and cyclone become serious problems to coastal areas. CINDs are of regular occurrence particularly in coastal areas of Orissa and have become the part of normal life. The changes in climate due to global warming, lead to induce the chances of different types of natural disasters such as Drought, Floods, Cyclones and Forest fire, etc. India is highly vulnerable to climate

change as its economy is heavily reliant on climate-sensitive sectors like agriculture and forestry and its low-lying densely populated coastline is threatened by a potential rise in sea level. It appears that progress in climatology and in the development of numerical models not only enables scientists to relate extreme weather events such as floods and droughts, with climate variations, but they can give some insight to climate change scenarios due to global warming such as sea level rise and changes in frequency, strength and geographical distribution of extreme events. These results should be of great help in taking the right measures and in building up the adapted policies. Climate Change is having an impact on India as well. These changes may include decrease in crop productivity, water availability, increase in vector borne diseases, extreme weather events like floods, cyclones and droughts and changes in perception patterns. In order to Sendai framework, the preparedness of the country to deal with climate change, at present, the following activities in view of DRR, are being undertaken: Capacity building at appropriate levels for taking Climate Change considerations in Social, Economic and Developmental Planning; Impact assessment including impacts on Food and Water Resources, Eco-system and Bio-diversity, Human Settlements and Human Health; Promotion of Scientific and Technological Research and Systematic Observation with a view to furthering understanding of Climate Change; Education, Training and Public Awareness; Enhancement of International Cooperation in pursuance of the objectives of the United Nations Framework Convention on Climate Change (UNFCCC).

India figures among the top ten contributors to greenhouse gas emissions. However, current per capita gross emissions in India are only one-sixth of the world's average. India is highly vulnerable to climate change as its economy is heavily reliant on climate-sensitive sectors like agriculture and forestry and its low-lying densely populated coastline is threatened by a potential rise in sea level. Undoubtedly, the Clean Development Mechanism (CDM) created under Kyoto Protocol (1997) to the UNFCCC, is important for India as it allows developed countries to not only use Certified Emissions Reduction (CER) credits from project activities in developing countries but also assists developing countries in achieving their sustainable development objectives w.r.t. DRR.

TRAINING PROGRAMME ORGANIZED IN MONTH of April- JUNE, 2019

S.No.	Name of Program	Venue	Dates	Faculty	No of Participants
1.	Consultative Workshop on University Network for Disaster Risk Reduction	NIDM, New Delhi	5-6 April, 2019	Santosh Kumar Shekher Chaturvedi	81
2.	Mainstreaming DRR into PRI Sector	GSDMA, Gujarat	24-27 April, 2019	Shekher Chaturvedi	23
3.	Integration of DRR and CCA into Rural Development Policies and Programmers	GSDMA, Gujarat	24-27 April, 2019	Sushma Guleria	23
4.	Disaster Risk Reduction and Resilience	NIDM, New Delhi	22-26 April, 2019	Surya Parkash	44
5.	Mainstreaming DRR into Education Sector	GSDMA, Gujarat	30 April–2 May, 2019	Ajinder Walia	17
6.	Mainstreaming DRR into Hospital DM Plan	GSDMA, Gujarat	30 April–2 May, 2019	Amir Ali Khan	16
7.	Post Disaster Needs Assessment (PDNA) & Long Term Recovery	NIDM, Southern Campus	1 – 3 May, 2019	Santosh Kumar Shekher Chaturvedi	80
8.	IRS: Basic & Intermediate	ILDMA, Kerala	6–10 May, 2019	Shekher Chaturvedi	44
9.	Early Warning & Communication	NIDM, New Delhi	13–17 May, 2019	Surya Parkash	30
10.	Training Workshop on Disaster Management	Ministry of Mines, Delhi	23 May, 2019	Surya Parkash	10
11.	Climate and Disaster Resilience (for Officials of N. Dhaka Corpn)	AIILSG (Chennai)	20-24 May, 2019	Anil Kumar Gupta	14
12.	Integrating Disaster Management Plan with Gram Panchayat Plans	GIDM & NIRD, Hyderabad	27-31 May, 2019	Sushma Guleria	46

S.No.	Name of Program	Venue	Dates	Faculty	No of Participants
13.	Gender and DM	ATI Nainital	27-31 May, 2019	Ajinder Walia	32
14.	Earthquake Risk Mitigation	HIPA, Shimla	10–14 June, 2019	Amir Ali Khan	29
15.	Climate Change, Hill Area Development and Landslides Management	Kerala	10-14 June, 2019	Surya Parkash	36
16.	IRS: Basic & Intermediate	YASHADA, Pune	17-21 June, 2019	Shekher Chaturvedi	24
17.	DM plan for CPWD Engineers	NIDM, New Delhi	18-20 June, 2019	Chandan Ghosh	26
18.	Disaster Management for IDAS Officials	NAFM & RTC, Pune	24 June, 2019	Santosh Kumar	45
19.	Training workshop on Disaster Management	Ministry of Labour & Employment /VVGNLI	24-28 June, 2019	Surya Parkash	26
20.	School Safety Plan and Safety Audits	J&K SDMA, J&K	24–28 June, 2019	Amir Ali Khan	34
21.	IRS : Basic & Intermediate	MGSIPA, Punjab	25-28 June, 2019	Shekher Chaturvedi	34
22.	Climate Change and Health Sector Resilience	NIDM, New Delhi	26–28 June, 2019	Anil Kumar Gupta	35



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We welcome comments / responses / articles from readers of our Newsletter

NIDM Newsletter – 4/2019 (April - June)

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