First SFDRR Aligned
National Disaster Management Plan

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INTRODUCTION

India's National Disaster Management Plan: Clear on Risk Transfer and Insurance

The innovation is a small business disaster microinsurance program to enhance recovery of local markets that play a critical role in providing goods and services to disaster affected populations in urban settings.

Prime Minister Shri Narendra Modi released the National Disaster Management Plan (NDMP) on June 1, 2016. This is the first ever national plan prepared in the country. And it is the first national plan to align with SFDRR. The NDMP aims to make India disaster resilient and significantly reduce the loss of lives and assets.

It is based on the four priorities of SFDRR.[1] The NDMP of India is covering all the phases of disaster management and with detail roles and responsibilities allocated to all levels of the government. The integration of disaster management with development planning is also aimed in the NDMP to push the agenda of mainstreaming DRR with national development. The NDMP is an important step towards taking risk transfer and insurance agenda at a higher level of commitment and improvement from current stage, which is crucial to make India disaster resilient and directly reducing loss of assets.

As of now Government of India is acting as a self-insurer for the purpose of maintaining relief funds. These funds are monitored by the Ministry of Home Affairs (MHA) in consultation with the Ministry of Finance. The amount committed for SDRF is invested by the Union in government securities. MHA has issued guidelines in consultation with the Ministry of Finance for the maintenance and encashment of the securities as and when required. However, need for projects or risk transfer instruments by private agencies is also acknowledged by the Government. The corresponding policy changes and fund requirement are to be deliberated in detail in consultation with the IRDA, insurance sector and other stakeholders.[2] Thus, the risk transfer and insurance mechanism that targeting is poor and vulnerable populations needs to work out next step. 'Planning process is more important than making plans', said by Shri Kamal Kishore, Member, NDMA, when he launched the plan.

Role of private sector such as insurance companies for 'risk informed investments in recovery efforts' is highlighted in the NDMP. However, from the field reality point-of-view, a long journey is ahead to reach risk informed investments. needed to make.

A recent initiative of the Government of India for promoting life insurance coverage through microinsurance products (name of the products) is well received by the Indian citizen. Based on the progress, Government and insurance companies should play a more pro-active role in motivating citizens in vulnerable areas to take non-life insurance cover. This could

1   Press Information Bureao, Government of India, http://pib.nic.in/newsite/PrintRelease.aspx?relid=145840.
2   National Disaster Management Plan, Government of India www.ndma.gov.in.

be done through suitably designed insurance policies for poor and vulnerable populations that cover non-life components, if required, with part funding from government. NDMA could play a major role in this area for pooling the risk of poor and vulnerable populations, including small and informal business operators. This type of protection will support the building back better approach and positive financial behavior of citizens who are contributing over GDP - 55% from the informal sector.

AIDMI with support from Stanford University and HIF, are sharing results from a pilot research project on how such mechanism can be created by the stakeholders in implementing NDMP.

Authorities should take insurance as a means of funding disaster related expenditures and as a tool to speed up the recovery. The role of insurance in financing disaster management for poor and vulnerable citizens needs to further evaluation. The sub-national (state) structure can be taken to target the vulnerable citizens in coastal areas (e.g. Tamil Nadu, Andhra Pradesh, Odisha that frequently affected by cyclone and/

Photo: AIDMI.

or floods), hilly areas (e.g. Uttarakhand, Himachal Pradesh, Sikkim), flood plains (e.g. Assam, Gujarat, Bihar, Uttar Pradesh, West Bengal). This requires leadership of sub-national authorities for bigger sub-national pilots with insurance and reinsurance companies to explore potential socioeconomic protection mechanisms for non-life component coverage. Mandatory property insurance solutions in respect of property tax payers living in high hazardous areas (against earthquake and cyclone and floods) can be a good beginning for risk transfer and insurance.

Microinsurance reaches a very small population of low-income groups,

particularly from informal sectors such as small businesses. The obstacles include, regulatory systems, the insufficient understanding of the instruments, difficulties of estimating risks (particularly in light of climate change), interest of insurance companies to reach out to poor and vulnerable populations. Much can be learned from the field pilots, which puts people's wants at the center of the design and implementation process. The innovation is in the last stage of finalizing the insurance product; and designing the evaluation, which will result into a tool kit with the knowledge product from the project. ∎

– Mihir R. Bhatt with
AIDMI Team

Voluntary Action after Disaster

Voluntary organisations are intrinsic to the disaster management set up in any country. The crucial role that they play in engendering disaster preparedness and mitigation, and in providing post-disaster relief and rehabilitation is well–known.

In a disaster prone country like India, grass roots voluntary organisations and community based volunteers are especially valuable stakeholders. They are usually the first responders

in any disaster situation and since they are well integrated into local communities, they can reach areas and populations that the government might have limited access to. They are also essential for ensuring that the most vulnerable sections such as women and children receive immediate and adequate attention.

Another very important, but perhaps lesser discussed role that voluntary organisations can perform in the aftermath of a disaster is that of

aiding in the process of long term recovery. Disasters lead to the complete breakdown of the social, economic and political fabric of the affected region and it often takes months of concerted efforts to rebuild these structures and bring peoples' lives back on track. Once the initial coordinated, almost frenzied interventions from the concerned authorities, international organisations and external volunteers subside, local organisations become the focal point of community building and rehabilitation.

These Local Voluntary Bodies perform Two Vital Functions: first, they ensure that people do not become dependent on external aid in the long run; by kick–starting the local economy once a certain level of infrastructure restoration has been achieved. Additionally, they try to restore routine social activities and establish support networks in order to provide people with a sense of normalcy. A study done in the wake of Hurricane Katrina observed that NGOs were 'instrumental contributors' to human recovery in the months following the disaster, by fostering physical and mental well–being and countering the effects of post–traumatic stress.

Inspite of their critical contributions, voluntary organisations in India face a number of problems when it comes to extending humanitarian assistance.

(1) **Insufficient Funds:** Grass roots organisations are often unable to secure sufficient funds to carry out their work. Out of the immediate pool of resources created in the event of a disaster, most of the funding goes either to international organisations or to government agencies and it is rare for these resources to get converted into sustainable funding for local organisations.

(2) **Lack of Human Resources:** Voluntary organisations have to grapple with a dearth of trained volunteers at the local level. Furthermore, many external volunteers also lack the necessary training and end up doing more harm than good despite their noble intentions. One seasoned international aid worker observed that after the Haiti earthquake, many of the volunteers that showed up lacked the skills and coordination to have any impact. Instead, they ended up slowing down aid efforts and putting pressure on resources.

(3) **Restrictions on Working Abroad:** Indian voluntary organisations have a wealth of experience of working on complex disaster related issues. However, they are often restricted from carrying out relief operations abroad by regulatory laws. After the recent earthquake in Nepal, NGOs did receive a circular from the Central Board of Direct Taxes (CBDT) allowing for their applications to be fast tracked, but this directive came almost five days after the earthquake leading to loss of precious response time.

For an effective Disaster Management Strategy, it is imperative that these issues be addressed and voluntary organisations be provided with an enabling environment to meet the challenges of increasingly frequent and intense disasters. ■

– Divita Shandilya,
Documentation and Research Officer,
Voluntary Action Network India
(VANI), New Delhi

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Locating Health in Smart Cities

The Prime Minister of India, Shri Narendra Modi launched the Smart Cities Mission with AMRUT (Atal Mission for Rejuvenation and Urban Transformation) and Housing for All (Urban) on 25th June, 2015 (PIB, GoI, 2015).

At the outset it is important to bear in mind that there are many definitions of a smart city but a widely used is *A city can be defined as 'smart' when investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic development and a high quality of life, with a wise management of natural resources, through participatory action and engagement* (Caragliu and Nijkamp, 2009).

The core elements of a smart city in the Indian context have been identified as (smartcity.gov.in, 2015):
• Sanitation
• Adequate water supply
• Solid waste management
• Assured electricity supply
• Sustainable environment
• Health and education
• Efficient urban mobility and public transport
• Affordable housing, especially for the poor
• Robust IT connectivity and digitalization
• Good governance, especially e-Governance and citizen participation
• Safety and security of citizens, particularly women, children and the elderly.

Although health has been explicitly identified in the last element, it is part of every element in implicit terms. According to World Health Organization estimates, environmental factors such as water and solid waste are responsible for at least one-fourth of the burden of disease (who.int, 2009). Efficient urban mobility and public transport as well as the broad term of sustainable environment can be correlated with the twin challenges of air pollution and climate change and that our cities are facing. In fact, Surat in Gujarat has taken the pioneering step of establishing the Urban Health and Climate Resilience Centre (UHCRC), the first in the country. Thus it is once again showing the way to tackle the new urban health crisis after successfully recovering from the plague epidemic in the 90s.

Locating health in other aspects of the plan could prove to be a little more difficult for the uninitiated but all the same these linkages do exist. Affordable housing, especially for the poor is a case in point. In 2008, the highly regarded Robert Wood Johnson Foundation in the United States brought out a document summarizing the evidence in the United States context (commissionhealth.org, 2008). Although not directly applicable in the Indian context, there are clear parallels in terms of thermal stress,

> *Locating health in other aspects of the plan could prove to be a little more difficult for the uninitiated but all the same these linkages do exist.*

air pollution and infectious disease outcomes. Similarly assured electricity supply is essential to the functioning of healthcare facilities. Our entire child health program for example hinges on the success of the cold-chain for vaccines which need a minimum of 8 hours of uninterrupted electricity supply (nccvmtc.org, 2010).

The safety and security of citizens, particularly vulnerable sections like women, children and elderly is paramount from a societal perspective. This is needed both at home and outside. From a public health perspective, acts of violence have to be prevented. However what is to be noted is that according to the latest Institute for Health Metrics and Evaluation, United States the data clearly indicates that in terms of years of life lost self-harm ranks as 8th and road–traffic accidents as 9th (healthdata.org, 2015). Thus it is essential that the smart city plan locates these components within safety and security of citizens.

The benefits of IT connectivity and good governance are pervasive across sectors including heath, thus need no further discussion.

In conclusion, health can be located in every aspect of the smart city core elements; it just requires some smart thinking! Inter–sectoral action for health is the need of the day. ■

– Dr. Nitish Dogra,
Sector Adviser (Health & Nutrition),
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New Delhi

Resilience in Flood Management through Technology

Introduction

India is one of the most flood affected nations in the world. It accounts for one fifth of global deaths due to floods. Among all the disasters that occur in India, floods are the most commonly occurring natural disasters. According to National Flood Commission about 40 million hectares of land area is prone to flood in the country.

Flood destruction has always brought miseries to numerous people, especially in rural areas. Outbreak of serious epidemics, specially malaria and cholera, scarcity of water, drastic effect on agricultural produce, heavy losses in household, private and public properties and infrastructure are the results of floods. Recent floods in J&K, Uttarakhand, Assam, HP and now in Chennai have raised questions about the way we prepare ourselves to pre–empt or fight floods.

Holistic and Integrated Approach

Integrated Decision makers must adopt holistic approaches, plan and initiate actions to break the event–disaster cycle. Integrated flood forecasting, warning and response system in all phases of disaster with timely response will pay huge dividends.

Indigenous and locally developed technologies and methods which have limited potential and applicability are mostly employed. Hence, modern technologies and methods must be applied properly to efficiently tackle the challenges emerging from floods.

Networking of Agencies

To derive maximum benefits of technologies and methods available, all agencies involved must be networked and perform as a well coordinated organization.

Alteau flood barrier in action blocking a road.

Technologies Available

A number of advanced technologies and equipment available worldwide could be useful in building up flood resilience and mitigation. Some of them are enumerated in the subsequent paragraphs.

1. **ICST (Information, Communication and Space Technology):** Provides critical solutions in early warning, dissemination and evaluation of information, quick processing and analysis, information integration and analysis, disaster mapping and scenario simulation, hazard assessment and monitoring, disaster trend forecasting, vulnerability assessment, emergency response decision support, planning of disaster response, reduction and relief, disaster loss, monitoring of recovery and reconstruction and finally rehabilitation during almost all phases of flood disaster management.

    a. Information Technology:
        i.   Observatory stations
        ii. Satellite
        iii. Research results
        iv. Training contents
        v.   Reports and news

    b. **Communication Technology:**
        i.   Data transfer from observatory stations
        ii. Data exchange
        iii. Exchange of information and experience
        iv. Training and video conferencing
        v.   Tele control

    c. **Space Technology:**
        i.   Remote sensing
        ii.   GIS
        iii. GPS
        iv.   Satellite navigation system/ Satellite communication
        v.   TV, radio broadcasting
        vi.   Telephone and FAX
        vii. Cellular phones
        viii. Internet and email

2. **Permanent Fixtures:** These products are designed to stop water from entering through existing openings (doors, windows, airbricks, vents and pipes or even the walls) in households, public and private utilities.

    a. Auto barriers:
        i.   Self activating flood barrier
        ii. Self closing flood barrier
        iii. Auto roller shutter
    b. Flood alarm systems
    c. Permanent barrier walls with

demountable gates / concealed gates / swing gates

3. **Temporary Resistance:** These measures are aimed at keeping floodwater out of a building by putting in place devices that block doors, windows, airbricks, vents and pipes. In order to be protected, these products will need to be installed before flood water arrives.
a. Barriers for doors /windows / garages
    i. Flood Ark barriers
    ii. Flood Angel Defender and Sentinel barriers
    iii. Flood barriers floodgate
    Iv. Flood guards panels
    v. Hydro guard barrier
b. Covers / barriers for appliance vents /airbricks / pet–flaps
c. Modern versions of sandbags
    i. Flood sax
    ii. Absorbeez
    iii. Aqua–sac
d. Free standing barriers for larger areas (eg driveways)

4. **Resilience:** These measures are aimed at allowing a building to flood. Interiors are constructed of materials that are not damaged by water. These resilience measures are designed to reduce the amount of damage caused when water enters a building
a. Water compatible internal walls
b. Water compatible flooring
c. Water compatible kitchen and bathroom fittings

5. **Community solutions**: Where a particularly large property or a number of homes are involved, there are a number of potential solutions available, in both the temporary and permanent categories.
a. Telemetry / mass notification & warning systems
b. Landscaped floodwalls
c. Free standing barriers
d. Demountable barriers (ground works required)

6. **Tiger Dams:** Tiger Dam is completely reusable, and creates an impervious barrier for miles, in any shape (circles, 90 degrees turns etc.). It is stackable, from 19 inches to 32 ft. in height. It uses water filled bladder technology, when deployed properly, this system may be able to divert up to 100% of floodwaters. It can be assembled within minutes using floodwaters or any water source and with minimal man power and no heavy equipment.

7. **Aqua Barrier System:** This is of modular design, ensuring easy and rapid deployment, is portable, employs a linkage system that is unique in that it forms a watertight seal when in contact with water. The product is re-usable and could be stored in anticipation for future flooding. The flexibility of the product ensures its effective use in a variety of flooding situations.

8. **Conclusion:** Only few the technologies and products have been highlighted above. There are a large variety of technology and products available. Actual deployment of these will depend on a number of factors: finances, layout of the town, ground conditions, drainage system, built up areas, flood lakes etc. Therefore, integrated and holistic approach will be the cornerstone for fighting floods successfully. ■

– Amarjeet Singh,
Adviser Business Development, Tojo Vikas International Pvt Ltd., New Delhi

Example picture of Tiger Dams set up around an office building.

Caring after Crisis: Meeting the Needs of the Caregivers

The daily needs of millions of sick, elderly and disabled people are provided for by unpaid family caregivers. Caregivers are a highly vulnerable group and experience ill health, social stigma and reduced earning ability. Many local, national and international NGOs support the sick, elderly and disabled. However, few recognise the vital role their caregivers play. Due to caring responsibilities, caregivers cannot access mainstream development activities or local government programmes. Caregivers are denied basic human rights through lack of recognition and support, leading to invisibility and exclusion. Many are tied to the house, unable to attend work or school or even socialize. Many families lose two incomes – that of the affected person and that of the caregiver who has given up work to care – and are living in extreme poverty. Their contributions go unrecognised, unsupported and unpaid by policy makers or government.

Services that can support caregivers include support groups; counselling; improved awareness amongst doctors, teachers and employers; access to respite; and opportunities to earn whilst still continuing to care. Where these provisions have been made, caregivers have seen improvements in their emotional and physical resilience, increases in household income and enhanced capacity to care.

At times of humanitarian crisis, the issues and struggles communities typically face are amplified, and joined by a host of new challenges brought about by the disaster itself. A sudden onset disaster, like the recent floods in Chennai, finds families having to immediately adapt to a crisis situation. The needs of the vulnerable – the sick, disabled, very young and very old – are paramount. Relief efforts get underway and those individuals are prioritised for food, shelter and medical care. It is critical though that the relief agencies also seek out the caregivers to ensure their voice is heard and they are adequately supported.

Caregivers provide the bulk of physical and emotional support to the vulnerable, and will know the best way to meet their needs. At a time of humanitarian crisis, care needs can increase, especially in the case of those with mental health needs or mobility issues. In addition, the disaster itself may have caused illness or disability to some individuals and so there will be family members who have unexpectedly become caregivers and are new to that role. Relief providers must listen to caregivers in order to provide the most appropriate interventions to the most vulnerable members of society. Caregivers must be involved in planning the immediate and then longer term solutions needed to enable communities to recover. The contribution of the caregivers must not be overlooked.

Critically though, NGOs and government agencies providing relief and recovery assistance must not forget the specific needs of caregivers. Caregivers will adapt to meet the needs of the cared-for person. In so doing, they will neglect their own needs and may spiral downwards into social isolation and physical or mental ill-health themselves. If this continues unchecked, caregivers can end up unable to continue their caring role and in need of care themselves.

As part of their role, relief workers need to actively seek out caregivers and encourage them to identify their own needs, not just those of the cared-for person. NGO and government staff will be in a position to link caregivers with others in a similar situation for mutual support. Medical professionals can ensure the physical and mental health needs of caregivers are not neglected. As the community recovers, NGOs can ensure caregivers and their families are included in recovery and rehabilitation schemes such as those aimed at re-establishing livelihoods. If enshrined in best practice, these simple but vital steps following a humanitarian crisis will ensure that family caregivers, the providers of critical health and social care to countless sick, disabled and elderly individuals, are not left invisible but are supported to regain their natural resilience and continue their caring role. ■

Caregivers provide the bulk of physical and emotional support to the vulnerable, and will know the best way to meet their needs.

– Anil Patil,
Founder and Executive Director, Carers Worldwide, Hertfordshire, UK

Photo Essay of Visit to Tamil Nadu after Tsunami

During a March 2005 trip to India, I had the opportunity to see the All India Disaster Mitigation Institute (AIDMI) at work. The institute is supported in part by the Unitarian Universalist Service Committee (UUSC), of which I am a member.

Mudaliarkuppam, a village of 150 to 200 families just north of Puducherry, had been devastated by the tsunami two months earlier. Eighteen villagers died and most of their homes, boats, and fishing nets were destroyed. The AIDMI staff showed me the damage and described the progress of reconstruction. Broken fishing boats, tangled nets, and remnants of household goods and personal belongings littered the abandoned area. Topless palm trees silhouetted against the bright blue sky testified to the force of the waves.

AIDMI staff made damage assessments and provided for immediate survival needs during the first few days of continuous cleanup with "cash for work". They worked with Mudaliarkuppam's panchayat to determine ongoing needs for long-term recovery. These elected community leaders decided one of the first things needed was a rebuilt road to the next village. A sample temporary thatch house was built to estimate the cost of materials to provide housing for every family. Houses constructed by their owners are best because the owners know what they want or need. The new village site had plenty of space, so many families added additional living areas as they individualized their new homes.

When it was time to purchase new kitchen supplies, the AIDMI staff asked the all-male panchayat who would be most knowledgeable to make these choices. Several women were suggested as experts to pick the best cooking pots. Everyone who wanted to be involved was given a job. A ten-year-old girl with excellent English skills became the clerk for AIDMI, keeping track of work hours and compensation paid.

I witnessed AIDMI's empowerment of the villagers and their movement toward long-term, sustainable development with the rebuilding of employment opportunities. Because the villagers' traditional jobs, which depended on the sea, were no longer possible, AIDMI had brought in local artisans to teach the women new marketable skills. Some were running a new machine that twisted hemp fibers from coconuts into long ropes. Several others were perfecting the dyeing process for candles. A third group was making incense from local materials.

The men described their previous lives as fishermen and said it had taken several weeks to face the devastation and redevelop the desire to work again. Every day without a job made them feel" lazy and uncomfortable." They said they now had hope for their future and by next year there would be no men in the village during the day because they would all be at work in their boats providing for their families.

The villagers of Mudaliarkuppam used the time during my visit to relax and celebrate their recovery progress. They prepared a delicious traditional meal served on banana leaves. They were eager to share their stories of recovery and wanted to express their thankfulness to AIDMI and UUSC.

On the ride back to the hotel, I passed several bleak refugeetent camps sponsored by other NGOs. Now I could really appreciate the excellent work AIDMI and UUSC were doing and I felt proud and honored to witness their contribution to the tsunami relief work in India. ■

– Barbara Weber,
Retired Licensed Clinical Social Worker
from near Philadelphia, PA, USA

IMI and Disaster Risk Reduction: A Meeting Report

The Integrated Mountain Initiative (IMI) was founded in 2011 as a response to the need for a common platform where diverse stakeholders working on mountain issues pertinent to the Indian mountain states could come together to engage in an informed debate on identified themes, with the objective of informing and influencing policy formulation in respect of the mountain region.

IMI convened the fourth edition of its annual Meet of the Mountain States (MoMS 2015) in New Delhi on 11 December 2015, on the occasion of International Mountain Day. The Meet was organized at the Vishwa Yuvak Kendra, Chanakyapuri. The Meet followed upon the successful conclusion of the 4th Sustainable Mountain Development Summit (SMDS–IV), which was organised by the Sustainable Development Forum Arunachal Pradesh (SDFA) under the aegis of the Integrated Mountain Initiative (IMI) at Itanagar, from October 7th – 9th, 2015.

The central theme of the Summit was Disaster Risk Reduction (DRR), which is particularly crucial for the mountains which face increasingly frequent large and small–scale disasters such as earthquakes, flash–floods, and landslides. Natural disasters result in loss of lives, and set back the economy of the region by destroying assets, interrupting school education and livelihoods. At the conclusion of the Summit, three short–term action agendas were identified, amongst other medium and long–term ones. These were:

- Achieve 100% coverage of District Disaster Management Plans across all districts of Indian mountain states
- Develop capacity: One model District Disaster Management Authority per mountain state
- Structural & Non–Structural Retrofitting of one building for every State.

To follow up the recommendations made during the Summit, MoMS 2015 was held in the format of a workshop with a view to formulate an action plan for implementation of the short-term resolutions by September, 2016. The Meet was attended by Lt Gen N.C. Marwah and Dr Kamal Kishore, Members of the National Disaster Management Authority, as well as representatives from the National Disaster Response Force, the State and Disaster Management Authorities from Sikkim, Uttarakhand, and Himachal Pradesh. Grassroots organizations working on disasters on the ground, All India Disaster Mitigation Institute, Delhi and Save the Hills, Kalimpong participated.

The participants formed themselves into three groups and deliberated upon an implementation plan for each of the DRR recommendations. The groups also identified the implementing bodies, liaison mechanism, resources required, and timelines to achieve the stated outcomes. The Chief Guest, Mr Kiren Rijiju, Hon'ble Minister of State for Home Affairs, recently declared the Champion of DRR for the Asia–Pacific region by the United Nations, gave an address espousing his concern about disasters and offering his full support for mitigation and preparedness measures. He also released the Summit Report from SMDS–IV.

Representatives of the three groups presented their implementation plans before the gathering. Following this, Mr. P.D. Rai Member of Parliament (Lok Sabha) Sikkim updated the gathering about his participation at the UNFCC COP 21 in Paris, particularly the keen interest in supporting measures for disaster risk reduction in mountain states shown by Margareta Walhstrom, Special Representative of the Secretary–General of the UN for Disaster Risk Reduction. The Meet ended with a Vote of Thanks by Mr P.D. Rai ■

– Mridula Paul, Programme Director, Integrated Mountain Initiative

Child Centered DRR–An Approach Addressing Lives, Rights and Needs of Children

"The plain fact is that the planet does not need more successful people. But it does desperately need more peacemakers, healers, restorers, storytellers, and lovers of every kind. It needs people who live well in their places. It needs people of moral courage willing to join the fight to make the world habitable and humane. And these qualities have little to do with success as we have defined it."

The above quote from David W. Orr, focuses the attention on the significance of the community based and child centered measures as the key area of intervention towards a new development perspective for mainstreaming Disaster Risk Reduction (DRR).

DRR entails the systematic practices and efforts of reducing the vulnerability and exposure to hazards of people and property by strengthening resilience, judicious use of natural resources, improvising early warning systems and preparedness for adverse events. Child Centered DRR adds a significant dimension to disaster management initiatives and envisages the active participation of children in the whole process of disaster risk reduction.

As a matter of fact, humans cannot prevent natural hazards but can mitigate the risk of occurrence of disasters which often follow natural hazards. UNISDR (the United Nation office for Disaster Risk Reduction) believes that there is no such thing as "natural disasters", there are only "natural hazards". It implies that the severity of a disaster depends upon the extent of impact the hazard has on the environment and society. This is in turn directly linked with our choices, including 'what is taught in our schools to our children'.

Children are considered to be a most 'vulnerable' population, owing to their age, sex, and also their dependency which results to their risk of exploitation, neglect, abuse, violence, etc. Children's lives, rights and needs get affected in high proportions by disasters. Children's reactions to crisis may differ, but they are as much affected as of adults. Disasters affect the normal functioning and growth of a child and obstruct their healthy physical, psychological and overall personality development, as they highly disrupt the sense of well being by destroying usual expected and regular life routines of children. Children's sense of what happened is often not realistic due to their inability to practically comprehend the totality of the situation and their limited capacities to process information.

Child Centered Disaster Risk Reduction (CCDRR) – a form of protection and welfare system for children can provide them with realisation of their Right to Protection and the Right to Development. It can help in mitigating the risks of exploitation, abuse, violence, trafficking, etc., along with prevention from any kind of physical, psychological and emotional disabilities which is generally a resultant of unpreparedness of any calamity. For CCDRR, we need to accept that children are as much affected by any disaster as the adults are and can participate in DRR measures as much as adults can. Albeit their involvement in DRR may differ from that of adults, they are a crucial stakeholder in disaster management.

Child survival, child protection and child development are vital aspects of a child's life, which influences the child's experiences for lifetime along with the opportunity for optimum growth and development. These entails the fundamental rights of child to being born and live in an environment which is safe and nondiscriminatory, safe guarding them from all type of exploitation, abuse, violence, etc. and emphasise on life cycle of child which cover early childhood care, right to education, health and nutrition, etc.

Very recently, the Hyogo Framework for Action (2005–2015) and Millennium Development Goals have come to an end, and are replaced by the Sendai Framework for DRR (2015–2030) and Sustainable Development Goals; which have prioritized and emphasized the focus on DRR and Resilience through the goals of Risk Reduction, Risk Prevention and Strengthening Resilience, which is serving as the most significant and major post 2015 agenda of sustainable development.

For the accomplishment of these goals, mainstreaming of CCDRR interventions across various sectors like education, health, livelihood, governance, environment, food security, etc. is the need of the hour to support the agenda of sustainable development, leveraging the rights of children, democratic and participatory development and human empowerment. CCDRR practices and efforts, not only contribute in building a culture of safety and resilience by preventing and minimizing the impacts of disasters; but also in the long term, it empowers children to form responsive behaviors and make wise choices and decisions that reorients communities and societies towards realisation and adoption of practices that builds resilience and capacity to manage risks and enhance sustainability.

As it is rightly said that, we do not inherit the earth from our ancestors, but we borrow it from our children. Here institutions like schools are critical to engage with children and educational functionaries to work on CCDRR. This can certainly contribute to the realisation of a range of rights, particularly focusing on children - right to life, right to safety, right to education, right to health and also on their right to participation. This, although no where gets directly articulated with regard to disasters or as human rights, but are indeed the most significant aspect and objective of DRR and for the achievement of sustainable developmental goals.

Children learning from environment at Public School, Uttarkashi (Uttarkhand).

CCDRR, especially in disaster prone areas, creates opportunities for children at local levels to participate in DRR measures in schools and communities, to make their voice heard and express views on the matters which affect their lives; to seek, receive and exchange knowledge and information on vulnerability, hazards, climate change and risk reduction. Thus, also realising children's right to information and freedom of expression along with the right to participation. CCDRR specifically address the children's' rights by aiming towards securing safer communities and reducing the disaster risks that may affect their lives; by engaging children in learning new knowledge and skills, with scientific information and life skills; by developing awareness and respect for the natural environment; and by also promoting behavior change in support of environmental protection, better hygiene, prevention of diseases and accidents. Most prominently it minimizes the disruption of schooling or education of children during disaster events by endowing them with safer learning spaces. ■

– **Apoorva Patel,** Assistant Professor of Social Work, Gujarat National Law University, Gandhinagar *and*
Vipul Nakum, AIDMI

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