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India Accelerates in Building Resilience

Photo: AIDMI.

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Advocating Disaster Resilience in South Asia since 2005

About this issue

Over the past decade, India has taken considerable measures in building disaster resilience. It now boasts of a National Disaster Management Plan (NDMP) that is totally aligned with the targets and priorities of the Sendai Framework. Additionally, India is also extending cooperation to regional neighbors as well other countries in reducing disaster and climate risks. Several agreements with various countries on a variety of risk reduction activities have been signed by India recently. All these activities highlight the fact that India is accelerating its efforts to build disaster resilience.

This issue of *Southasiadisasters.net* is titled "India Accelerates in Building Resilience" and tries to capture the various efforts in the form of international cooperation undertaken by India to foster resilience regionally and globally. For instance, India's efforts to leverage cooperation with countries like Russia and Bangladesh to pursue risk reduction outcomes are meticulously documented in this issue. Similarly, positive regional developments like the endorsement of the Disaster Management Bill in Nepal have also been highlighted in this issue.

This issue also covers the all-important role played by social sciences in identifying underlying risks and then evolving strategies to mitigate them. A historical perspective of the erstwhile city of Madras (now Chennai) is also presented here to depict how improper urban planning in modern times can lead to widespread distress during extreme weather events like the Chennai Floods of 2015. Topical in theme and broad in scope, this issue is a must read for all interested in India's efforts in fostering disaster resilience. ■

– Kshitij Gupta

INTRODUCTION

India Accelerates in Building Resilience

This issue of Southasiadisasters.net highlights how India is taking great strides to build resilience against disasters at the national and international level.

For example, India offered a credit line worth US $ 45 billion to fund infrastructure, health, and education in Bangladesh. All these sectors are exposed to disaster risk and improving the infrastructure can help in building the resilience of the citizens of Bangladesh.

Similarly, India and Russia have committed themselves to collaborative federalism in building disaster resilience.

Nepal recently endorsed Disaster Risk Reduction and Management (DRRM) Bill to address disaster risk holistically. Inspired by India's National Disaster Management Plan (NDMP), this bill proposes the establishment of a separate disaster management fund at the central level and a National Disaster Risk Reduction Centre (NDRRC).

Social sciences have an important role to play in disaster risk reduction (DRR). Apart from measuring the vulnerability quotient of at risk communities, social sciences also help in integrating knowledge from various disciplines to reduce underlying risks, in bridging the gap between policy and practice of disaster response and in addressing the dearth of data and evidence on disasters. India is taking steps to accelerate this aspect and Jawaharlal Nehru University (JNU) in Delhi has received financial support to enhance role of social sciences in DRR.

A historic view on rains in Chennai discusses the recurrent phenomena of excessive rains that Chennai experienced in 2015. It also compares the urban planning systems of Chennai in earlier times and in modern days to conclude that the modern day systems are not attuned to the DRR needs of the city. Such historical lessons can be incorporated in Hundred Smart Cities Programme to make it more risk sensitive.

The example of the city of Amadora in Portugal is also cited in this issue. After joining the UNISDR Making Cities Resilient Campaign in 2010, Amadora has made tremendous efforts to reduce disaster risk for its citizens. India is learning from Amadora in various urban efforts.

Planning and preparedness for nuclear disasters at every level is of utmost important in India where nuclear power is increasingly seen as a clean, economically viable and safe source of energy. India is improving the monitoring and oversight of these nuclear power plants.

Due to its inherent characteristic of bringing people together, social media can be easily used for the purposes of disaster preparedness. This was recently reaffirmed at the "India Disaster Response Summit", jointly organised by the National Disaster Management Authority (NDMA) and Facebook where the importance of online platforms for effective communication and coordination during disasters was highlighted. India is taking the necessary steps to leverage such digital platforms for building disaster resilience. ■

– AIDMI Team

Delhi–Dhaka Cooperation in Risk Reduction

The implementation of Asia Regional Plan (ARP) for disaster risk reduction is dependent on regional cooperation in Asia. In the region of South Asia, Delhi and Dhaka are most likely to move ahead on this risk reduction path.

During the recent visit of India's Finance Minister to Bangladesh, both the countries signed a credit line agreement worth US$4.5 billion to fund infrastructure, health, and education sectors in Bangladesh.

At the November 2016 Asian Ministerial Conference on Disaster Risk Reduction in Delhi both the countries stood out in their positive efforts to reduce risks that their citizens face. The exhaustive breadth of Delhi and Dhaka's initiatives are not amenable easy summation.

Over 17 development projects have been identified for implementation under the credit line. And this development investment offers an opportunity to reduce disaster risk and build regional resilience.

According to Finance Minister of Bangladesh, his team has identified roads, railways and bridges as the most important sectors for utilizing the credit line. Such investment is exposed to disaster risk of floods and cyclones. However, ongoing work on climate change uncertainty and transformation by Indian and Norwegian researchers under the Institute of Development Studies of UK and IIT Mumbai shows that such investments offer an opportunity for transformation.

Of the US$4.5 billion credit deal, US$1b will be spent on the infrastructure development of facilities of Rooppur Nuclear Power Plant. The plant will offer energy security to Bangladesh's economic growth plans and will need protection from flood and cyclone damage.

India will be providing credit for upgrading 245km highways — Benapole-Jessore-Narail-Bhanga (135km); Ramgarh-Baruerhat (35km); and Mainamati-Brahmanbaria-Sarail (75km) — considering transit and transshipment facilities and the operation of key Chittagong and Mongla ports. Transportation is becoming a key disaster risk reduction areas. The investment will generate rapid economic activities and would need protection from repeated floods and cyclones.

At least three of the projects involve the development of economic zones, a priority for the Bangladesh government, as it aims to ramp up private sector investment in its plans for rapid economic growth.

Of the total credit, about US$500 million will be used for setting up new economic zones for Indian and other investors, according to the Bangladesh Economic Zones Authority. Spreading risk awareness among the investors is a standard practice suggested by Sendai Framework for Disaster Risk Reduction signed by both, India and Bangladesh. Several of these zones are exposed to cyclones and floods and mitigation measures will help reduce the risks and build the resilience of the economic activities in these zones.

Over US$100 million will be provided for building a dedicated economic zone spanning 1,005 acres in Mirsarai area of Chittagong.

The health sector is critical to Bangladesh's rapid economic growth. Public health and hygiene are far better covered with risk protection. High end specialty hospitals are yet to be available to many in Bangladesh. Heat action plans, hospital safety audits, will protect this investment. Some of the faith based organisations and International Federation of Red Cross and Red Crescent movements have developed workable models to make health facilities safe from disaster risk.

Another US$100 million may be used for developing a special economic zone at Payra or Moheshkhali area, and US$300 million may be allocated for developing infrastructure in the key economic zones. A large number of workers will be exposed to flood and cyclone risks in these zones and disaster risk awareness training and capacity of the workers will save lives and protect livelihoods in these areas.

Basic education and safer schools are relatively well covered in rural and urban areas in Bangladesh. What is needed is integration of Child Centered Disaster Risk Reduction, Child Protection, Education, and School Environment into one actionable School Safety Plan in each of the schools in Bangladesh. On September 28, 2017 National Disaster Management Authority of India at its formation day celebration has pin pointed safer schools as a key to local disaster risk reduction.

Since 2010, this is the third big credit line which Delhi has committed to Dhaka for regional cooperation.

International Strategy for Disaster Reduction chief Robert Glasser in Cancun, Mexico Global Platform has called for far more deliberate measures to protect development investments from disaster and climate risks. The efforts of Delhi and Dhaka traverse themes, leap effortlessly from mock drill scenario to spontaneous response by most if not all, as envisaged the Asia Regional Plan. ■

– AIDMI Team

India–Russia Coordinated Action on DRR

India and Russia are collaborating more closely on various safety and security issues. This trend has recently included addressing disaster risk. The National Disaster Management Plan (NDMP) of India states that coordinated action among nations through the response and preparedness phases is central to the risk reduction process. In the coming years, India and Russia are planning on such coordinated action.

The Asian Regional Plan (ARP), as accepted at Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) in Delhi, November 2016 also gives emphasis to such international cooperation in reducing disaster risks in Asia. ARP aims at effectively implementing Sendai Framework and represents the risk reduction priorities of Asian governments and stakeholders. The AMCDRR and ARP both underline the principles of shared responsibility and shared commitments towards the implementation of the Sendai Framework.

India and Russia first held joint talks on collaboration for catastrophe administration in 2010. A federal approach was deemed to be a strength. Since then, Russia has agreed to work with India to set up the National Crisis Management Centre (NCMC) in Delhi to handle disaster and other emergency situations in the country. This was agreed during a meeting between Home Minister Rajnath Singh and Russian Minister for Emergency Situations, Vladimir Puchkov in Moscow on 28th November, 2017. Russia's Ministry of Emergency Situations, popularly known as EMERCON will participate in the formation of the NCMC in India.

According to the agreement, India's proposed NCMC will rely on a system similar to OKISON, which is Russia's complex system of monitoring and reporting alerts. Such a system is most suited for India's federal government set up.

India has long been committed to what Home Minister Rajnath Singh referred to at Sendai as "Collaborative Federalism" in implementing all disaster risk reduction plans. In concrete terms, "Collaborative Federalism" means the decentralization of response powers to the states, and transfer of financial resources, which will help the states fulfill their disaster related obligations. Moreover, it also implies the advancement of loans (in disaster situations) as a "productive principle", and deployment of armed forces (in emergencies) in the states. The NCMC will improve this collaborative federalism by improving inter-state and centre-state coordination.

EMERCOM's participation in setting up India's NCMC is especially significant. EMERCOM, established in January 1994 by the then President of Russia, Boris Yelstin, is an example of strong federal coordination for minimizing the adverse impacts of disasters and emergencies. It builds on the work of Russian Rescue Corps and addresses safety and security concerns effectively.

The two countries have also agreed to a program of training of experts and sharing of each other's best practices in the field of disaster risk reduction. A joint exercise may be conducted towards the end of 2018 or early 2019.

India's home minister and Nikolai Patrushev, secretary, Security Council of Russian Federation met in the last week of November to discuss the shared ways in which disaster risk and external threat overlap; and how can these be addressed simultaneously in a national response. During the meeting, the two sides reiterated their assurance to additionally reinforce their participation in disaster safety and the segments of security, including counter-terrorism.

Information is the key to unified and coordinated response to disaster risk and security concerns. Both India and Russia reviewed the implementation of the agreement on information security signed in October 2016.

Both sides value the progressing participation and exchange visits between the two National Security Councils of India and Russia.

In the coming years, Russia and India will continue to find ways to enhance the risk reduction and resilience building efforts especially related to Federative structure. Article 263 of the Constitution of India, encourages the states of India to coordinate and collaborate on various challenges.

Most importantly, India is aiming to achieve the outcomes of the Sendai Framework through its National Disaster Management Plan (NDMP). A risk reduction partnership with Russia will help India to implement the NDMP much more efficiently. Disaster resilience and preparedness achieved through such a partnership will help India in achieving greater economic prosperity and stability to emerge as a regional and global leader. ■ **– Kshitij Gupta,** AIDMI

Nepal Endorses Disaster Risk Reduction Bill

The Himalayan nation of Nepal is famous for its scenic beauty, adventure sports and friendly people. However, it is also exposed to multiple hazards like earthquakes, floods, landslides, fires, heat waves, cold waves, lightning, windstorms, hailstorms, droughts, epidemics and so on due to its variable geo-climatic conditions, young geology, unplanned settlements, deforestation, environmental degradation and increasing population. The 2015 Nepal Earthquake which claimed over 10,000 lives and caused economic damages amounting to US$ 7 Billion is a testament to the country's enhanced vulnerability to disaster risk.

As a nation that is frequently ravaged by disasters, governance of disasters in Nepal was primarily fell under the ambit of the National Calamity Relief Act of 1982. However, it did not cover the broader spectrum of hazard mitigation and disaster risk management or the categorization of the diversified disasters which the country is exposed to. Therefore, there was an urgent need for a new legal framework that would holistically address disaster risk in Nepal.

Reducing disaster risks in Nepal is important to India. And building resilience in India is important to Nepal. When India and Nepal reduce risks the region is safer.

– Mihir R. Bhatt

The endorsement of the **Disaster Risk Reduction and Management (DRRM) bill by Nepal's parliament** addresses this need. The DRRM bill represents the culmination of a decade's worth of efforts by various development and humanitarian actors. This piece of legislation will institutionalize disaster risk reduction as well as mobilise local resources.

This bill also proposes setting up a **Disaster Risk Reduction and Management Council,** which will have ministers for finance; supplies; agriculture; home affairs; physical infrastructure and transport; women, children and social welfare; defence; forest and soil conservation; education; urban development; irrigation; information and communications; and federal affairs and local development as the members.

Photo: AIDMI.

The bill also talks about formation of a separate **disaster management fund** at the central level and a National Disaster Risk Reduction and Management Centre (NDRRMC). The NDRRMC would further help in building resilience at the local and provincial levels by declaring an area disaster hit and facilitating the formation of disaster management committees.

It is worth noting that the DRRM bill can be leveraged to broaden the scope of DRR activities in the country. For instance, the theme of school safety and protection of children affected by disasters can be more easily planned and executed. Other allied themes such a nutrition, human mobility (both social and physical) as well as biodiversity protection can also be addressed through the medium of this bill. "Gender" is the key and essential factor of disaster risk reduction. It can also be included as DRR activities in the DRRM bill.

There is an increasing body of scientific evidence that holds climate change responsible for exacerbating the frequency and severity of extreme weather events. These extreme weather events often trigger large scale disasters in countries like Nepal due to the poor infrastructure and low access to basic services. **The DRRM bill will also help in addressing the risk of such extreme weather events.**

The devastation wreaked by the 2015 Nepal Earthquake, stirred an entire country into concerted action for disaster resilience. Since then, Nepal has been making a steady recovery which is observed in an overall improvement of various human development outcomes. The DRRM bill is another expression of the changing landscape of risk reduction in the serene Himalayan nation. ■

– AIDMI Team

Potential Areas of Using Social Science To Reduce Disaster Risks In India

A disaster is primarily a social event that triggers multiple physical, emotional and communal responses. As disasters directly impact lives, livelihoods, and lifeline services at a place, they point towards a gap in the on-going socio-economic development, processes, and policies. In such a scenario the role of social science in minimizing disaster risks is not only pertinent but also vital. India is one of the most disaster-prone countries in the world. While the social scientists have played an essential role in understanding the local vulnerability and responses to different disasters, the scope of social science goes beyond the assessment of loss and recovery. Some of the basic needs of Disaster Risk Reduction (DRR) in India, where social science can make a positive contribution are as follows:

1. **Integrating knowledge:** Disasters have been conventionally studied in a few specific fields. Subjects such as demography, anthropology, geography, urban studies, economics, and sociology have elaborated various dimensions of disaster risks in their respective ways. However, a greater understanding of the vulnerability and impacts has done a little to reduce disaster risks (White et al., 2001). Hence, there is a need to look beyond a subject's domain. Disaster studies are inherently interdisciplinary. Here, as the focus community is that of human beings, social science is better positioned to integrate knowledge from different disciplines to suggest socially acceptable solutions for DRR.

2. **Linking policies with practices:** There are recurrent spatial and temporal discontinuities in disaster response that often go unnoticed. Little evidence exists to suggest whether communities in India have become more equipped to face any disaster. Besides, inadequate attention has been paid to fluctuating risks and changing social perceptions in policies. There is also a need for the long-term assessments of varying risks and evolving practices across the country to inform decision-making. The crevice between policies and practices is neither because of the absence of communication nor can be attributed to inadequate physical infrastructure but due to various processes, which are mostly social, such as trust, past experiences, learning, cultural context and so on (Khan, 2017). Social science thus could play an essential role in bridging this gap.
3. **Addressing data gaps:** Disasters not only damage settlements and structures but also cause loss of data. Despite having several advancements in the field of information and technology in India, there is a dearth of organized data for disasters at the local, national and international scale. Social science could play an essential role in retrieving data and collecting evidence from the authenticated sources (Aitsi-Selmi et al., 2015). Further, there are numerous case studies lying unused in libraries that can be synthesized for more informed policies and their implementation.

Overall, there is a need for an enhanced engagement of social scientists in the integration and implementation of the knowledge, policies and practices of DRR in India. ■

– Shabana Khan, World Social Science Fellow, ISSC
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Rains in Chennai, 2017: A Historic View

Chepauk Palace Madras, 1890.

On 1st & 2nd November 2017, Chennai received 183 mm of rainfall within 24 hours making it the second highest rainfall received in this decade. Prior to this, on 1st and 2nd December, 2015, Chennai received 539 mm within 24 hours that was highest in the last century. These record breaking readings on the rain gauge are a mere numerical representation that hardly conveys the consequent devastating impact of these inundating rains. Most of these peaks were achieved during periods of almost unceasing rains that flooded Chennai to the point of bringing it to a halting grind. In 2015, some of its most vital infrastructure was submerged under floodwater, particularly its airport. The air force and armed forces had to be mobilised in order to conduct rescue operations and set up a parallel flying base. There were 259 deaths and massive evacuations had to be carried out. All public institutions including schools had to be shut down. The resulting loss in business and other sectors was incalculable. Though the usual humdrum that accompanies any calamity has died down, several studies and reports that emerged when the disaster was unfolding have maintained a steady momentum. These studies and reports have essentially addressed the question of unprecedented and increased flooding resulting from a familiar climatic phenomenon of high rainfall.

Torrential rainfall in the months of November and December in Chennai has been a familiar historic phenomenon. It began to be articulated in meteorological terms since the days of the British. Chennai received remarkably high quantity of rainfall and consequent flooding in 1969, 1976, 1985, 1996, 1998, 2005 and the record breaking 2015.

The British in course of expanding their control over the subcontinent found Madras to have fewer climate alternations. They built its municipal areas in the central portion of the elevated area where the level of the land was such as to not obstruct drainage. However, as early as 1886, W W Hunter observed that neighbouring areas of the township were thickly populated and would offer severe obstruction to drainage. River Coum was the prime outlet for excessive rainfall along with two other small channels flowing between Cooum river and Saint Thome Church.

Additionally, there was the Buckingham Canal, the construction of which began in 1806. It was funded by Basil Cochrane. In 1837, the canal was taken over by the Madras Presidency and extended further. During 1877 and 1878, Madras suffered a terrible famine and

construction work of this canal was then offered as relief. It is in this phase of construction that the canal linked Adyar and Cooum rivers and was now 253 miles long. It was then named Buckingham Canal. This was essentially built thinking of river transport. However, the canal additionally provided the service of drainage to the city.

Over the course of the last century, Adyar, Cooum and the Buckingham canal has been providing effective drainage for excessive rain water. Secondly, the estuarine ecology of the city including its wetlands and marshlands has been absorbing seasonal high rainfall. Many reports and studies after 2015 have been reporting the breakdown of this ecosystem.

Waste generating from rapid and unfettered urbanisation and industrial establishments have reduced the carrying capacity of the rivers. Secondly, encroachments on the banks of the rivers and the estuarine spaces have led to these waterways shrinking. The CAG report of 2013 and 2014 demonstrated that the civic body of Chennai was not able to coordinate between different departments for storm water drain project under JNNURM scheme that was supposed to provide a diversion channel from Buckingham Canal for effective drainage. Further, the plan was dropped citing cost of land acquisition of Rs 100 crores. What 2015 rains and floods did to Chennai is for everyone to see.

In a historical comparison, it is unfortunate to see that Madras fared better than Chennai in terms of urban planning. The British were acutely aware of the climatic and topographical situation of this space. Their urban planning which was also fuelled by motive of profit bore in mind the critical need of effective drainage of the city. In the current situation, there are well drawn out recommendations and proposals that can mitigate and revive effective drainage of Chennai. The government on one hand promoting the modern agenda of urban growth and development cannot shrink away from the equally modern idea of making such development sustainable. It cannot hide behind the argument of rains and floods as natural phenomenon and indulge in a spectacle of aid and relief work for narrow political and electoral dividends. ■

– **Subir Dey,** PhD (JNU), Assistant Professor (Ad hoc), Department of History, Indraprastha College for Women, University of Delhi

INTERNATIONAL COOPERATION FOR DRR

Amadora Local Campaign — Making Cities Resilient

Amadora is a satellite city of Lisbon located in the northwest of the Lisbon metropolitan area. Composing an area of only 23.77 square km, Amadora Municipality is one of Portugal's smallest municipalities; however, with 7,343 inhabitants per km, has the highest population density of any municipality in Portugal.

Over the last 20 years Amadora's major disaster risks have been flash floods (urban area), urban fires, industrial fires, landslides, storms (fallen trees, damaged buildings, infrastructure, etc.) and road accidents. As a highly urbanised territory, Amadora faces a number of challenges including a growing urban population and increased density, the decline of ecosystems due to human activities, and the adverse effects of climate change. In August 2010, Amadora joined the UNISDR Making Cities Resilient

Campaign, developed to support local-level leadership address the challenges of rapid global urbanisation.

After joining the campaign Amadora's Mayor created a multidisciplinary team to develop an approach to increase engagement and information sharing among different stakeholders, including the community, in disaster risk reduction issues. To ensure local authorities and the population understand the risks facing Amadora and to facilitate developing and sharing local information on disaster losses, hazards and risks including who is exposed and who is vulnerable, the team identified two key priorities:

(1) Risk, hazard and vulnerability assessment to be taken into account in the urban planning process and political decision-making; and
(2) Information, training and awareness to reduce the number of disasters.

All inputs provided by stakeholders are converted into outputs available to the population. For example, some of the stakeholders (rescue and emergency) provide data that are organized by the team into risk assessment and/or the municipal emergency plan, weather warning system and/or contingency municipal plans. Others lend their facilities to campaign events. In nine years since joining the campaign, the Amadora achieved a number of important results:

- Stakeholders network (input/ output relationship);
- Information and Awareness Program for DRR;
- Management tools of prevention and emergency planning;

- Interaction between urban and emergency procedures/ planning;
- Early warning system;
- DRR publications;
- Investments in maintain critical infrastructures;
- Social networks (where citizens are encouraged to participate);
- Cost-benefit analysis;
- Regular exercises/drills;
- Senior Academy Project\Red Cross Youth Project;

The Amadora campaign is implementing a program that includes a wide spectrum of stakeholder engagement activities, including activities in schools, child-care centers, aged-care facilities, homes for the disabled and extensive use of social and digital media. With the support of the municipality's Education and Social Department, the campaign team developed workshops to inform various age groups, especially the most vulnerable (children and the elderly), about the procedures for adequate prevention. On average, the team present more than 100 sessions per year for the school community (children) and about 30 sessions for the elderly population.

Nine years after Amadora has joined the UNISDR initiative, important steps have been taken to reduce the disaster risk at a local level. We are pleased that Amadora's has been a pioneer in the implementation of the UNISDR campaign in Portugal. Our main goal was to ensure the mobilization and participation of the various community stakeholders' (actors / partners) on the definition of strategies for disaster risk reduction (planning and awareness).

Based on half a decade of sharing synergies between different sectors of the community and the national and international projection of the county, within this campaign, we highlight:

- Amadora was designated a Role Model City in May 2016;
- Representative of Working Group 3 (Resilient Cities) of the Subcommittee on the National Platform for Disaster Risk Reduction of the National Civil Protection Authority (www.pnrrc.pt);
- One member of the interdisciplinary team was the National Promoter of the International Campaign "Building Resilient Cities".

The next campaign steps will include more community stakeholders and promote the development of a set of good practices that allow us to resist, adapt and recover from a disaster. ■

– **Luis Carvalho,** Civil Protection Chief, Municipal Commander, Amadora, Portugal

Unlikely Nuclear Disaster: Likely Preparedness Planning

In the popular perception, nuclear disaster seems unlikely in India. And all the care that can be taken is taken by the authorities and scientists. But should that stop the citizens of India from thinking ahead for our need for preparedness planning for an unlikely nuclear disaster?

Though the National Disaster Management Plan (NDMP) of India, first ever national plan that is in compliance with global Sendai Framework, highlights the nuclear disaster, in fact the spirit of the plan does, indeed, call for adding value to each safety and security measure enlisted.

In fact a nuclear disaster is not a local or regional event but, in fact, a national security challenge. Therefore, the wider the preparedness for possible response, the safer the citizens of India will be.

What may be a good next step is developing policies and managing processes for nuclear disasters. National Disaster Management Authority (NDMA) of India has developed National Disaster Management Guidelines for Management of Nuclear and Radiological Emergencies in February 2009 under the Chairmanship of Shri B. Bhattacharji.

One way to initiate such preparedness planning is to develop an "area based" approach as was recently discussed at Urban Humanitarian Response Symposium organized by Royal Institute of British Architects (RIBA) in UK. Though urban is a recent focus, the idea of an area based approach is not new. UNDP has promoted this approach for years, including for tsunami recovery in Sri Lanka in 2005 to 2007. In India, since 1989 Ministry of Agriculture, Department of Rural Development, Government of India has taken up Area Development Programmes for the Eighth Five Year Plan (1992-1997). What is needed is a thoughtful transplant of the approach from the development sector to the disaster risk reduction sector.

For the existing safety procedures and security rules for nuclear disaster, what will be useful is third-party safety and preparedness verification and security compliance that is regular and action oriented. This is not to say that similar efforts have not been taken up at the nuclear sites in India. What will add value is a broader base for such actions and preparedness.

In fact such preparedness also needs to factor in the possible impact on changing climate and ways to reduce impact of nuclear disaster on India's climate. There are hardly any global studies on the impact of nuclear disasters on environment to draw lessons for action in India.

The role of media in facilitating such preparedness processes is central. The media needs to deepen the trust of Indian citizens in India's multi-cultural democracy and what is now polyphonic media. Trust—as one of the most trusted journalist in India, Mrinal Pande has recently said in Ahmedabad—springs out of "fruitful two way communication" on nuclear preparedness planning.

A concept which may be especially useful for India to explore for an unlikely nuclear disaster is "Cooperative Preparedness". Such cooperation, across authorities, levels, and states may seem to be a new federalist activity but at Sendai in Japan, Home Minister of India Shri Rajnath Sinhjee has called for "Collaborative Federalism" for disaster risk reduction as a foundation for India's development activities.

The support of over 122 states to the Treaty on Prohibition of Nuclear Weapons is a reality. May be time has come for India to lead many of these nations in planning preparedness for a nuclear disaster.

It will be very unfortunate to let economic growth achieved with nuclear establishments—total 22 nuclear reactors in operations in 8 nuclear power plants having a total installed capacity of 6780 MW—to be lost by a nuclear disaster in India.

The Department of Atomic Energy (DAE), nodal agency for radiological emergency in India, runs Crisis Management Group (CMG) since 1987 and each site has context specific plans under jurisdiction of local District Administration.

Homi Bhabha and Vikram Sarabhai, leaders of India's nuclear development, will only be too happy to see India take such preparedness initiatives at district level.

The Chernobyl nuclear disaster of 1986 is not too far in time to be forgotten by Indian citizens. ■

– AIDMI Team

Facebook Steps up Efforts for Disaster Response in India

Honorable Minister of State Kiren Rijiju provides the opening address at the Disaster Response Summit 2017.

Since the mid-1990s, India has been the third most-affected country by natural disasters. According to the UN, over 50mn people were affected this year, of which over 35mn were affected by floods. Such disasters cause unimaginable economic losses (estimated to be $10bn in 2015) which can be debilitating for any developing economy. The challenge only seems bigger when coupled with the estimated frequency of natural disasters in the future. At this crucial moment, two aspects have emerged in favour of India that promise to make this daunting task more manageable.

First, India has taken big strides in making disaster mitigation a top priority. This year, the country earned praise from the UN after it became the first and only country to present a national plan and local strategy at the UN 2017 Disaster Risk Reduction (UNISDR) event in Cancun, Mexico.

Rijiju was inaugurating the 'India Disaster Response Summit', organised jointly by the National Disaster Management Authority (NDMA) and Facebook, today on how best to leverage social media platforms to "prepare, respond and recover" for, during and after a disaster.

Second, India's mobile internet-driven digital economy is already demonstrating how millions of citizens can connect on online communities to collaborate while responding to a crisis. Our online community activated 'Safety Check' for the Mumbai floods earlier this year, where thousands of people offered and received help within a few hours and it was especially useful for commuters stranded at offices.

This is just one example where online platforms can be useful – for communication and coordination. For both the government and humanitarian agencies to respond, it is important to get the right information early, to send emergency messaging to citizens

1 https://newsroom.fb.com/news/2017/09/a-new-center-for-crisis-response-on-facebook/

affected, and to leverage technology to do this efficiently. Over the years, Facebook has developed a number of crisis response tools, based on what we've learned from our community. We have made this available[1] in a new centre on Facebook where people can find more information about recent crises and access our crisis response tools – including Safety Check, Community Help and Fundraisers to support crisis recovery.

Platforms can also be beneficial in harnessing data deployed for social good. In partnership with India's National Disaster Management Authority (NDMA), we will make Facebook's Disaster Maps available for humanitarian organisations. These maps employ aggregated, de-identified Facebook data to help organizations address the critical gap in information they often face when responding to natural disasters.

In line with our mission of building safer communities, we co-hosted the first Disaster Response Summit with NDMA in November and brought together key government, humanitarian organisations, and non-profits. Hon'ble Minister of State, Kiren Rijiju recognized these efforts as a "quantum leap for disaster management". We showcased our disaster response tools, ran training sessions on effectively using the platform, and helped spark important conversations in the ecosystem. We also announced our support for the creation of NDMA's Disaster Information Volunteer (ASK-DIV) program, which will establish a network of volunteers in Assam and Uttarakhand to provide real-time, first-hand information on disasters in their local communities.

Since the summit, we have started working closely with the National Disaster Response Force (NDRF) as well, ensuring their community awareness programmes reach as many people as possible. This collaboration with the entire disaster management ecosystem has been a positive experience for us, and we hope to continue innovating and harnessing technology, to help build safer communities, now and for future generations. ■

– Gautam Kamath, Public Policy Manager - India, South Asia & Central Asia, Facebaook

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