

Implementing Cancun Agenda in South Asia



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ABOUT THIS ISSUE

It has been two years since 187 countries around the world adopted the Sendai Framework for Disaster Risk Reduction (SFDRR) as the principal instrument to pursue the imperative of resilience for countries, communities, individuals and businesses. The two years since the adoption of SFDRR have been anything but uneventful. The occurrence of disasters like the Nepal Earthquake (April 2015), Chennai Floods (Nov-Dec 2015), the 2016 drought in India all highlight the need to keep a track on the progress of SFDRR for achieving its purpose. Therefore, it is critical to take stock of how well SFDRR has been implemented across all levels.

The Global Platform for Disaster Risk Reduction (GPDRR) 2017 was held on 22nd-26th May, 2017 at Cancun, Mexico to analyze the progress of the implementation of SFDRR. This issue of *southasiadisasters.net* focuses on the 'Implementing Cancun Agenda in South Asia' and highlights the important concerns which the Global Platform should address to achieve resilience outcomes. The chief themes highlighted in this issue include the need for good subnational plans, a renewed focus on cities in terms of resilient housing and extreme weather events, leveraging of technology to help the marginalized and use and challenges of localized planning in achieving the mandate of SFDRR.

As the 6th edition of this important platform, GPDRR 2017 can pave the way for a stronger and more sustainable movement to reduce disaster risk worldwide that leads to increased responsibility for strengthening resilience to disasters. ■

- Kshitij Gupta, AIDMI

INTRODUCTION

Implementing Cancun Agenda in South Asia

What will it take to implement the Cancun agenda in South Asia?

Perhaps the most important requirement in the region are subnational roadmaps for Disaster Risk Reduction (DRR) implementation. In this regard, the state of Bihar in India has offered a way ahead that is systematic and system wide. Other subnational authorities in South Asia wide can learn from this process that was supported by UNICEF, argues Shri Vyasji from Bihar in this issue.

Secondly, local agencies in South Asia need to play a more central role to implement and innovate the outcomes of the Cancun agenda. Focus must be on local capacities, partnerships, participation, coordination, and visibility, as suggest by Koenraad Van Bradant from Global Mentoring Initiative, Switzerland.

Thirdly, local planning predicated on local knowledge and context needs to be leveraged for the implementation of the Cancun agenda. For instance, the recovery effort in Nepal offers a prime example of what can be done in a dynamic political situation in the aftermath of a disaster. Dr. Govind, Member National Planning Commission, Government of Nepal gives an excellent list of concepts that have worked for Nepal so far.

Fourthly, any approach or strategy for DRR in South Asia needs to factor in drought as one of the greatest threats in the region affecting the livelihoods of millions among the rural poor and adversely affecting nutrition outcomes for women and children. Dr. Pandey from Bihar argues for an alternative paradigm for drought management in South Asia.

Fifthly, the use of digital tools to serve the most poor and marginalized communities in South Asia is indispensable to achieving the mandate of the Cancun agenda. Marco Ferrario and Swati Janu offer a way to promote digital tools for risk reduction.

But the above mentioned strategies cannot be successful if they are not covered with risk transfer measures such as crop insurance, argues Dr. David M. Dror with examples. This is the sixth item for implementation of Cancun agenda in South Asia. As an architect, David Smith, suggests a new and a more risk sensitive role for architects in the region. For, without risk sensitive architects we will continue to build unsafe homes and settlements in South Asia.

Sangita Goswami, as a citizen, draws our attention to the increasing impact of heatwaves on citizens and cities and the eighth item on agenda is heatwave action planning in South Asian cities.

However, we should not rush to make a standard list of items to implement as there cannot be a universal minimum standard for cities or citizens, suggests Joohee Haleem. Bhaswar Banerjee suggests pre-crisis market mapping to reduce disaster risks in cities of South Asia.

And ninth, Gerald Potutan argues that we must go back to Build Back Better concept with more energy and concentration as this remains an area where far more can be done. And in this light South Asia Disaster Report (SADR) 2016 by Duryog Nivaran featured in the end comes handy.

The Cancun Agenda offers many doors to enter into its local, concrete implementation. ■

- Mihir R. Bhatt

DRR Roadmap of Bihar: Global Learning Opportunities



First Bihar Conference on Disaster Risk Reduction (BCDRR), Bihar.

The year 2015 emerged as a landmark year for furthering the resilience agenda globally. The third World Conference on Disaster Risk Reduction (3rd WCDRR) was held in March, 2015 in Sendai, Japan. The conference was attended by high level delegations from 187 countries including the Indian delegation led by Union Home Minister. The conference deliberated on the post-2015 agenda for DRR and adopted the Sendai Framework for Disaster Risk Reduction (SFDRR) building upon the experiences gained in implementation of International Framework for Action for the International Decade for Natural Disaster Reduction (1989), Yokohama Strategy for a Safer World (1994), the International Strategy for Disaster Reduction (1999) and Hyogo Framework for Action (2005). The SFDRR is a comprehensive 15 year (2015-2030) framework with 7 Global targets and 4 priority areas.

Taking lessons from past experiences, the SFDRR stresses the need for "enhanced work to reduce exposure and vulnerability, thus preventing the creation of new disaster risks and accountability for disaster risk creation are needed at all levels." It exhorts that "more dedicated action needs to be focused on tackling underlying disaster risk drivers, such as the consequences of poverty and inequality, climate change and variability, unplanned and rapid urbanization, poor land management and compounding factors such as demographic change, weak institutional arrangements, non-risk informed policies, lack of regulation and incentives for private disaster risk reduction investment, complex supply chains and limited availability of technology."

The 7 targets set out in the SFDRR chiefly focus on the reduction of disaster mortality, reduction in the number of affected people, reduction of direct disaster economic losses

and damages to critical infrastructure and basic services. Targets also speak about enhancement of global cooperation to developing countries in tackling disaster situations, national and local DRR strategies by countries and increased availability of and access to multi-hazard early warning systems. The priority areas are: understanding disaster risks, strengthening disaster risk governance to manage disaster risk, investing in DRR for resilience and enhancing disaster preparedness for effective response and to build back better in recovery, rehabilitation and reconstruction.

Taking forward the targets and priorities outlined under SFDRR, the State Government of Bihar decided to develop a 15 year DRR Roadmap in the specific context of the State which is a multi-hazard prone. The 28 out of 38 districts in Bihar are flood prone, whole of the State falls

under seismic zones V, IV and III, droughts have of late become regular phenomena and during summer season the country side suffers heavily because of fire incidents. In addition, the State suffers on account of cyclonic storm, high speed winds, cold and heat waves, lightening, boat accidents, road/rail accidents and drowning incidents. It is a common knowledge that in disaster situations the State Governments are the responders and accountable and the Central Government extends cooperation as and when necessary. Hence, the State took the initiative of working out DRR strategy in the local context without waiting for any strategy at the national level.

Accordingly, the First Bihar Conference on DRR (1st BCDRR) was organized by State's Disaster Management Department on 13-14 May, 2015 in Patna which was inaugurated by Chief Minister, Bihar. The mood of the conference received a boost by announcement of CM Bihar who declared that "disaster affected persons have first right over the Government treasury". The conference saw the presence of senior national and State level officials including NDMA/ BSDMA members, CSOs, PRI representatives, experts, community members including children from the most

disaster prone districts and district officials. This was the first organized attempt to prepare a DRR Roadmap by an Indian State after 3rd WCDRR to apply the SFDRR into practice. The BCDRR was conceptualized and organized around 18 themes drawn from the SFDRR, wherein the targets and priority areas agreed between 187 countries including India in the SFDRR were interpreted and contextualized in accordance with local disaster situations and strategies needed to tackle them. A total of 84 panelists and 550 participants animatedly discussed the issues and specific actions that needed to inform Bihar's DRR Roadmap in 18 thematic sessions. The contextualization process accounted for:

- Vulnerability of the State to multi-hazards
- Progress made towards DRR in the State
- New and emerging disaster risks the State is facing/ may face in future due to climate change, and
- The priorities and aspirations of the people and Government of Bihar.

At the end of the conference a Patna Declaration was unveiled by the Minister of Disaster Management Department Reiterating Government's resolve to work

towards a Resilient Bihar. The input which emerged in the conference was one of the primary sources for formulation of the Roadmap. A drafting committee comprising of State level officials, BSDMA, UN agencies and other CSOs began the work of drafting through an intense participatory and consultative process. The emerging draft was shared with stakeholders and all inputs received were duly considered by the drafting committee. The revised draft was shared with experts, officials and stakeholders in a Validation Workshop held on 8-9 January, 2016 and after final revision the Bihar DRR Road map, 2015-2030 was finally approved by the State Cabinet on 28 April, 2016.

Bihar DRR Roadmap has been guided by 15 fundamental principles and rests on 5 pillars. The guiding principles include primacy of rights of at-risk people and communities, participation of and action by at-risk communities, risk realization, polycentric governance, partnerships, coherence and consistency across policies, programs and plans, resilience in development, inclusive DRR, right to safe and secure environment, culture of preparedness and build back better. The pillars are: Resilient Villages, Resilient Livelihoods, Resilient Basic Services, Resilient Critical Infrastructure and Resilient Cities.

The SFDRR sets 7 global targets but the Bihar DRR Roadmap has adopted 4 targets as a local level strategy contextualized for the State to meet the objective of creating a disaster Resilient Bihar. The targets are:

1. Reduction of lives lost due to natural disasters by 75% of the baseline level by the year 2030
2. Substantial reduction in the lives lost due to transportation related disasters (viz. rail, road,



Validation Workshop on Disaster Risk Reduction Road Map (2015-30), Bihar.

- boat capsizing) over baseline level by the year 2030
3. Reducing the number of people affected by disasters to 50% of the baseline level by the year 2030, and
 4. Reduction in the economic losses caused by disasters by 50% of the baseline level by the year 2030.

The activities to be undertaken under the Roadmap have been clearly assigned to 27 Government Departments and agencies. For every activity the nodal and supporting department/agency has been identified with a definite time line. The time lines are short, intermediate and long term each of 5 years duration. The roles, responsibilities and activities assigned to these 27 Government departments and agencies have been woven around the 5 aforesaid pillars. Realizing the challenges ahead in creation of a Resilient Bihar, the Roadmap envisages enabling policy architecture, implementation arrangements, robust monitoring and evaluation mechanism and budgetary provisions.

The Roadmap sets out actions to be undertaken at the State, District, City and village levels by various agencies and Government Departments. It envisages great roles for BSDMA and District Disaster Management Authorities (DDMAs) and tasks the DDMAs to prepare Village Disaster Management Plans (VDMPs). It also tasks Urban Local Bodies to prepare City Disaster Management Plans. Though the DM Act stops at preparing DM plans at district level, the Bihar Roadmaps takes one step further up to preparation of DM plans at city and village level. It also realizes that capacity constraint may hamper the implementation, hence capacity building of the implementation agencies have also been envisaged.

The States interested to carry forward the SFDRR framework can learn few points from the Bihar Roadmap. It is suggested that States may consider the following:

- States are accountable for Disaster Risk Reduction and Management in their respective States.

- Hence local strategies for DRR as envisaged under SFDRR should be framed by the State Governments and percolated down to the village level.
- Contextualization of SFDRR to address specific issues of the State
- Roadmap formulation process which is best if it is participatory involving multi-stakeholder consultation
- City and Villages bear the brunt of disasters, hence DM plans at these levels would greatly help in DRR
- Roles and responsibilities assigned to every Government Department and agency should be unambiguously spelt out in the Roadmap, and
- Enabling policy environment, implementation arrangements, budgetary provisions and monitoring mechanism should be clearly spelt out in the Roadmap. ■

- Vyas Ji, IAS (Retd),
Vice Chairman,
Bihar State Disaster Management
Authority, Bihar

NEW PERSPECTIVES

LOCALISATION: Where Are the National Actors in the Debate?

The 'humanitarian system' says it wants to change. There is a sense that it is no longer 'fit for purpose'. Since the World Humanitarian Summit, 'localisation' has come up as one of the key pillars of that change. The default mode for crisis management should become one that relies on national and local capacities ('nationally owned' and 'nationally led'), only supplemented by international action if and for as long as needed.

What, however, does this mean in practice? So far, we can see six major areas of change emerging

- **Funding:** More direct and better quality funding to local actors: The commitment at the World Humanitarian Summit is to increase 'as directly as possible' funding to national actors from less than 1% today to 25% by 2020. National actors also demand better quality funding: longer term, more flexible, and covering core costs;

- **Capacities:** More effective support for stronger local and national capacities and less undermining of those capacities e.g. by hiring away the more qualified local staff;
- **Partnerships:** More genuine, 'partnerships' and less sub-contracting relationships;
- **A 'participation revolution':** Fuller and more influential involvement of disaster and crisis-affected people in what

and how relief is being provided to them.

- **National actors in coordination mechanisms:** Stronger and more influential participation in coordination mechanisms such as the 'cluster' arrangements;
- **Visibility:** Greater recognition and visibility for the efforts, roles, innovations and achievements of local actors;

In principle, this should be excellent news for the thousands of national and local actors that work on preparedness, early warning, response and recovery from disasters and conflict in so many countries around the world.

In practice, turning the 'localisation agenda' into a - different - reality, will be a deeply political struggle: Will the 'humanitarian industry' that has arisen over the past 30 years, be able to fairly radically transform itself, from within? At stake are significant amounts of money, but also the prominent visibility, operational roles and strong influence over decision-making of multilateral, bilateral and non-governmental international relief agencies.

Some of the dynamics that may turn the 'localisation agenda' into another modest improvement of the global system 'as is', rather than a radical change, are already becoming visible:

- More funding to national and local actors 'as directly as possible', justifies the continuation of 'funding-mediaries', the current discussion suggests that it should mean no more than one intermediary. But leaves open the question who decides what is 'possible'?



- After decades of public monies having been invested in 'capacity-strengthening' of national and local actors, we can see here an opportunity for another wave of such funding. Has all the previous investment then be ineffective, and if so, why, and what would be different now?
- 'Localisation' may not be possible or advisable in conflict-situations, because it is more difficult for national/local actors to adhere to the humanitarian principles of neutrality, impartiality and independence.
- 'Who is local' or 'how local are you': Some international agencies may claim that if their offices are registered in country, they count as 'local', or that the national member of their international federation or alliance is 'local'. More direct funding to such entities would count as progress towards the 'localisation' objective. 'Home-grown' actors, with no formal international connection, will not necessarily be able to access more funding on better terms;

The fundamental issue is between a technical or a political interpretation of 'localisation'. A technical interpretation puts the emphasis on 'proximity' to the crisis-area. If international agencies and their decision-making can 'decentralise', then localisation will have been achieved. The political interpretation sees it as a 'shifting the power', from international to national actors.

Problematically, the discussions and working groups on different aspects of 'localisation' are currently all concentrated in Western capitals like Geneva, New York and London. There is very little participation and input from 'national' actors. The international actors all point at NEAR as the platform that may convey their perspectives and demands with regard to 'localisation'. But NEAR at the moment is not in a position to do so. National actors need to make this their agenda, and drive and shape it from their point of view. ■

- **Koenraad Van Brabant,**

Independent consultant, Navigation 360 organisation, and a senior adviser to the Global Mentoring Initiative, Switzerland

Planning and Recovery in Nepal: Key Local Concepts

Immediately after the devastating Earthquake of a 7.6 magnitude hit Nepal on 25th April 2015, Government of Nepal, through its cabinet decision, entrusted National Planning Commission (NPC) to take the lead in the preparation Post Disaster Needs Assessment (PDNA) report. NPC, as a lead, mobilized the financial and technical resources of and sought inputs from the government agencies, development partners, national professional organizations, I(NGOs), parliamentarians and the community organizations of the affected geographical areas to produce a widely accepted single PDNA report, that later generated more than four billion US \$ from the bilateral and multilateral development partners. NPC also prepared the institutional framework of National Reconstruction Authority (NRA) and formulated National Reconstruction Policy. Currently, NRA is in driving seat and implementing reconstruction and recovery programs. The beneficiary survey during the initial months of NRA ascertained the death, injury and damage related data as follows- Death 8790, Injured 22300, Complete damaged house 0.8 Million, Partial damage 0.2 Million, School building 7923, Health institutions 1100, and Archaeological heritage 700.

With the above short background information, let me outline some of the key concepts that have guided the national planning and recovery in Nepal.

i. Taking lessons from the other earthquake hit countries, Nepal

prepared its PDNA and reconstruction policy by itself. Because this only could adequately address the national need and give freedom to plan as per the national interest.

ii. Nepal is very committed to pursue "Plan centrally but implement collectively" meaning all the participating institutions can work independently but under the national framework and guidance. This could only serve the national goal of build back better and no one affected is left behind.

iii. Reconstruction should also be taken as an opportunity to enhance national capacity to build modern Nepal. Reconstruction should empower, therefore, communities to take control of their recovery, facilitated through the Owner Driven Reconstruction approach. Local labor, materials and earthquake resistant technologies will be used for reconstruction. Reconstruction should apply "integrated safer settlement" principles. Reconstruction should become a vehicle for building long-term community resilience. The practice of reconstruction should be expanded to other parts of the country to make Nepal earthquake resilient.

iv. Reconstruction should address the specific needs of the diverse communities and settlements. Local people should get first

priority in employment opportunities. The affected families should receive uniform assistance by standard. The resettlement would be a last choice. If people are resettled, they should be provided with livelihood opportunities.

v. Reconstruction should strengthen the local economy by providing an opportunity for the poor to upgrade their overall living and economic conditions. Reconstruction should follow sustainable and environmentally sound processes.

These concepts are being translated into action through various programs and directives. However, the NRA is facing challenges in every step but moving ahead overcoming them over time. This has slowed down the process. Mistrust among the major political parties and frequent changes in the government leading to frequent turnover of key staff in and even leadership of NRA has further negatively impacted the progress in reconstruction. NRA, though envisaged very powerful and independent in planning and implementation of reconstruction, has not been able to perform in practice as mandated. This has resulted in slow progress. The slow progress, however, does not mean that the concepts guiding the reconstruction were wrong. The need is to enforce what is envisaged in a coordinated and effective way ■

- Dr. Govind Nepal,
Member, National Planning
Commission, Government of Nepal

Drought Policy in India: An Alternative Paradigm

"The Problem is not lack of Resources or Capability, but the lack of will"

– Bal Gangadhar Tilak

Water dynamics play an important role in human life. The water dynamics depends on two aspects, namely, availability of and access to water. It may happen that in the absence of proper technology, the available water cannot be utilized. There is also a possibility that the water accessibility may not be similarly distributed among households in a particular place or region. Therefore, not only is the availability of water, but access to it is also important. Availability of water is more important than the access to water, because water use technology depends on human intervention, but the availability of water totally depends entirely on nature. And, nature has its own mechanism through which she controls the availability of water across the world.

Drought and flood are two phenomena which seriously affect the availability of water at any place. Nowadays, world and the countries like India are facing serious challenges related to drought. The phenomenon of climate change has made this challenge even more severe. To tackle the challenge of drought, the government has started various initiatives. Overall, one can find that drought policy in India has shifted from drought mitigation strategies towards drought management strategies in post-1987 era.

The Government has adopted a multi targeting approach to manage the droughts in India, including dry land region programme, reviving the traditional water harvesting techniques and water use systems, integrated farming system,

employment generation programs (MNREGA), ensuring supply of drinking water and entitlement for food as part of the PDS system, extension of irrigation facilities and encouraging micro-irrigation e.g. drip and sprinkler irrigation, improved forecasting techniques, etc. But the Marathwada crisis attracted the attention on how the field of water management is still inadequate in dealing with extreme weather events such as insufficient rainfall. In spite of increased investment on water management, the situation has not improved much. One cannot ignore the fact that the low community participation and corruption have made this task unbearable and unachievable (ex. Case of Maharashtra).

The Supreme Court on 11th May 2016 raised serious question on the present drought management policies in India and in the states, and directed the government to abandon the existing system and evolve a transparent, rules-based framework. The court also directed the Union government to set up a National Disaster Mitigation Fund within three months. The court asked the Centre to use modern technology for early determination of drought and take into account humanitarian factors such as migration, suicides and the plight of women and children while formulating policies.

Here, the challenge lies in deciding on a course of action to be taken by the government to make India a drought resilient country. Region specific (such as agro-ecological specific) ground water use and control policy considering optimal

balance between the use of water in agriculture and non-agricultural activities should be developed in the case of India. A region-wise ground water recharge policy should be developed under effective and modern monitoring network.

Global warming fuelled rising temperatures have led to an increase in the exploitation of resources. The Fourteenth finance commission recommendations have already tried to incorporate this issue; tree plantation at war footing should be done in India to reduce the impact of rise in temperatures. The inclusion of farmers inside the umbrella of financial services such as insurance and banking is also a necessary prerequisite for reducing the burden on those farmers who entirely depend upon nature.

Finally, an accurate and precise forecasting of rainfall using modern technology can minimise the risks associated with drought and reduces loss of lives, livelihood and assets.

The above points give an idea that while formulating short, medium and long term drought management plan, three pillars including, prevention, preparedness and mitigation measures should be considered. Climate and resource centric sensitisation measures should be taken by the government, including climate and resource centric practices in the syllabus of school education. This may reduce the expenditure on control mechanism. ■

– Aviral Pandey,

Assistant Professor, A N Sinha
Institute of Social Studies, Patna,
Bihar, India

Risk Reduction in Informal Housing within Cities through Digital Tools

Since the earthquake in Nepal last year, an oft repeated observation has been that 'earthquakes don't kill, buildings do.' A large part of the cities in global South today are made of self-built incremental housing which, while providing affordable housing to millions, suffer from poor construction quality and lack seismic safety. These low-income settlements are the most vulnerable to natural hazards such as earthquakes or climate change induced stresses. Their socio-economic status drastically deteriorates their resilience, without any safety net. In India, more than 38 cities with over half a million inhabitants fall in seismic zones II to V, V being the highest (UNDP, 2002). Mapping DRR requires the facilitation of safe and good quality construction to be able to build the resilience of weaker community's pre-disaster.

At mHS CITY LAB, we have identified the main reasons behind poor structures as the lack of access to construction technical expertise and lack of monitoring mechanisms.

While the improvements in land titling and financial inclusion have enabled low-income households to invest in permanent structures, the quality remains hazardous in absence of technical knowledge. In 2009, with the support of the Michael & Susan Dell Foundation, a technical service was offered with a loan by BASIX, a partner MFI. It involved mHS providing door-to-door construction drawings & site supervision at a nominal fee of 3.5% of loan. The pilot successfully demonstrated that the users valued technical assistance, if given access. For mHS, the high cost of R&D and delivery of professional expertise

was prohibitive to scaling up. We decided to overcome this by leveraging technology in parallel with the government's current initiative 'Digital India' aimed at a digital transformation of the country. India had over 1 billion mobile users in 2016 (1 in 5 using smartphones), with the cost of android devices projected at only 20 USD by 2020. Internet access is becoming more affordable with stronger 3G & 4G networks reaching the main cities, making mobile internet platforms the core of our project.

We have been looking at ways of bridging the socio-economic divide between poor communities and technical assistance through the medium of digital platforms such as mobile apps and a network of E-kiosks at local NGO centres within informal settlements. We envision a series of digital tools to create awareness on best construction practices and provide low-income communities access to design and technical assistance. The first service we have prototyped and are testing as a pilot in partnership with Saath Charitable Trust at Ahmedabad is a cost estimate calculator. The tool will provide practical information to guide users in pre-construction phase and track their finances linked to stages of construction. Based on six simple user inputs: location, type and size of plot, number of floors, sanitation configuration and quality of finishing, the responsive service will generate detailed information of material quantities, costs, required labor and project timelines. It will also communicate 10 key messages that we have identified on main construction mistakes to avoid in order to improve the quality and safety of structures.

A house is the most valuable asset, especially in lower income communities. Investing in safe structures, thus, should be key in building financial stability of households. After the setback to the Microfinance industry in India in 2011, today there is renewed interest in serving the untapped market of low-income housing by the Micro Finance Institutions (MFI) and Housing Finance Companies(HFC). With a growth of 60% in just the last year (PTI, 2016), they can be key stakeholders in ensuring a better quality of construction for DRR by providing access to financial assistance. At the same time, access to construction and monitoring knowledge, through easy to use tools, could greatly facilitate the loan evaluation, monitoring and disbursement processes of MFIs. Material suppliers such as cement companies are other stakeholders that need to be involved to achieve impact at scale to be able to dramatically improve the incremental construction ecosystem in Indian cities. ■

- Marco Ferrario and Swati Janu,
mHS City Lab, New Delhi

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Crop Insurance for Better Uptake

Improved correlation between Losses and Payouts in Index Insurance, and Quantifying the cost of Climate Change

The livelihood of most people in developing and emerging countries depends on rain-fed agriculture. Insufficient rainfall occasions lower crop yields and/or increased irrigation costs. Not only insufficient rainfall, but also too much and untimely rainfall can lead to high losses. Other weather events such as high temperature, frost, strong winds, hailstorms etc. add to farmers' risk.

Traditional crop insurance failed due to many reasons: cumbersome and expensive loss assessments, and an incentive for farmers to accept payouts rather than trying to mitigate losses (so-called moral hazard). This led to the development of parametric insurance, in which proxies correlated with farm losses trigger compensation. In the *area-yield* approach crop losses are estimated by comparing area-averages of crop yields of previous seasons with the insured season. This insurance fails when historical yield data are unavailable or yield estimates are inaccurate due to monitoring constraints.

Weather index insurance describes the relationships between crop output and weather parameters. However, insufficient density of weather stations, poor index design and neglecting reasons for loss other than weather related led to basis risk (namely a mismatch between losses and payouts) and farmers' dislike of such crop insurance.



While the introduction of parametric/index insurance has resolved some challenges on the supply side, voluntary uptake by farmers has remained low even with high subsidies to premiums. Moreover, many farmers insured only when obliged to use insurance as collateral for moneylenders when they took institutional loans for agricultural inputs.

Remedying this situation requires a different approach to engagement with farmers and *an improved design of the index* to reduce basis risk. In the RES-RISK project (implemented by MIA and BASIX with funding by Swiss Agency for Development and Cooperation SDC), we developed a peer-to-peer farmer-centric approach which implicated the community in package design, awareness creation, community mobilization, enrolment and claim disbursement.

We call our new index CCC or *Climate Cost of Cultivation*. CCC takes account of several climatic variables (rather than only rainfall) and non-climatic parameters (e.g. soil type, topography, tillage operations). CCC is based on algorithms to quantify the added cost to farmers of the estimated combined impact of climate change on (i) insufficient rain leading to additional irrigation costs; (ii) excess water leading to drainage costs (as a proxy to crop loss) and (iii) high temperatures leading to yield loss.

The first novelty of CCC is that it considers *soil moisture* at root level as the major indicator for plant growth taking into account multiple *climatic parameters* as well as relevant *non-climatic parameters*. The second novelty of CCC is that it quantifies the estimated share of the risk to farmers due to climatic changes over

1 Jangle N, Mehra M, Dror DM (2016). Climate Cost of Cultivation: a method to quantify the added cost to farmers of climate-change, illustrated in rural India. *The Geneva Papers on Risk and Insurance*. 41, 280-306. doi:10.1057/gpp.2016.6.

time. This quantum makes it possible to implement the principle of "polluter-pays", whereby farmers that did not pollute the atmosphere should not pay for the consequences.

The efficiency of CCC has been examined by comparing it to Typical Index Insurance (TII) as implemented for winter wheat in Bihar, and both indices to wheat yield and cost of

cultivation data published by the Government of India. The correlation of CCC payouts with actual yield losses is improved by a factor of ~3.8 over TII results (74.1%, compared to 19.6%) reducing basis risk significantly. The CCC index could be applied to other crops, seasons and locations with suitable calibration of data.

MIA's CCC index has been awarded the 2016 Shin Research Excellence Award by the International Insurance Society and The Geneva Association¹; it has also received the "Best Paper Award" at the 20th Asian Actuarial Conference (November 2016). ■ - **Dr. David M. Dror**, Chairman, Micro Insurance Academy and Exec Chairman, Social Re Consultancy

BUILDING BACK BETTER

Increasing Resilience through Build Back Better

Experiences and lessons on disaster recovery suggest that impacted communities can further increase resilience if they are prepared and better equipped to build back better.¹ By knowing the risk, communities can be better prepared by taking actions to strengthen recovery capacity and decision-making effectiveness prior to the onset of disaster. Based on the case studies, which are compiled at the International Recovery Platform (www.recoveryplatform.org), regardless of the type of disaster, recovery challenges generally pertain to policies and strategies, institutional arrangements, financing mechanisms, and implementation/management of recovery process.² In addressing these challenges, IRP offers the following guidance for countries and communities to prepare to build back better, as anchored in Priority Four of the Sendai Framework for Disaster Risk Reduction:

- Develop an all-stakeholder, national-level disaster recovery framework (DRF)

- Enable and foster pre-disaster recovery planning (PDRP) efforts among all stakeholders
- Institutionalize formal and inclusive processes and systems to effectively assess post-disaster damages and needs to formulate broad recovery strategies
- Institute or strengthen policies, laws, and programs that promote, guide, and support build back better in both the public and private sectors, at various levels.

The DRF provides the structure and context required by active stakeholders in recovery planning and operations. PDRP, especially if supported by pre-event research and agreements, helps identify and address functional requirements and resource needs. Effective assessments of damages and needs along with policies and laws to promote recovery – whether through the provision of human, financial, or other resources, or by promoting

and mandating risk-aware, climate-adaptive, and development-focused recovery goals – help facilitate community resilience through build back better.

In view of this, the common areas for capacity strengthening to facilitate build back better include information gathering, governance, coordination, funding, human resources, communication, policy and legal frameworks, service delivery, and monitoring and evaluation. In many countries, this means strengthening of recovery-focused relationships, establishing planning and coordination mechanisms, introducing a recovery funding mechanism, and instituting effective information and communication systems. IRP offers specific guidance, based on global case studies, in all these areas. ■

- **Gerald Potutan**,
International Recovery Platform
Secretariat, Japan

1 Build back better is defined as "the use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment" based on the report of the open-ended inter-governmental expert working group on indicators and terminology relating to disaster risk reduction, December 1, 2016.

2 See *Guide to Developing Disaster Recovery Frameworks*, <https://www.gfdrr.org/sites/gfdrr/files/publication/DRF-Guide.pdf>.

Urban Disaster Risk Reduction in Humanitarian Response

Today the world's urban population stands at about 3.9 billion with over 1 billion residing in informal settlements. Half of the world's estimated 10.5 million refugees and at least 13 million IDPs were thought to be in urban areas (2012). Majority of the world's urban population resides in secondary cities or downtown areas of any big cities which are more vulnerable to disaster due to poor infrastructure, finance and governance. Urban contexts are complex and challenging and in disasters the situation becomes more complicated. In recent past, humanitarian responses like the Kashmir flood of 2014 (Srinagar) and Tamilnadu flood (Chennai city) of 2015, Oxfam India experienced many of such challenges.

In 2014, Kashmir faced the worst floods of the century where the Capital city Srinagar was impacted heavily. Due to the poor preparedness and limited experience of such intensity disaster, the government machinery collapsed and most critical lifesaving infrastructures like hospitals, markets, etc. were adversely affected. Many hospitals in Srinagar city remained non-functional even after the water receded because of the damage to main water supply system. The urban colonies become inaccessible due the deposition of heavy sludge carried by the flood water. A rapid assessment in Srinagar city suggested immediate restoration of water supply system in important hospitals and debris cleaning work in some low-lying pockets of the city. Therefore, the public health engineering work in Srinagar urban areas were focused on restoring water supply systems in hospitals as an emergency measure so that they were able to function immediately & provide



lifesaving support to urban community. Oxfam's water system rehabilitation work in Lal Dew Hospital included repair and restoration of damaged plate settlers. In addition, 26 other water systems that were rehabilitated in public institutions including hospitals.

In 2015, during the Chennai floods the complexity was similar to Srinagar but the local administration was more active and was prepared to address the initial lifesaving humanitarian assistance to the flood affected community but there were critical needs observed in terms of food security and livelihood restoration in the slum areas of Chennai city. There was major effect on the wage, income and earnings of the informal sector. The cash based household economy of the slum community and rapid restoration of the urban market directed Oxfam to do cash intervention targeting the most vulnerable.

Therefore, urban disasters are very dynamic in nature and typical relief intervention and risk reduction

measures may not be entirely effective. Based on the learning from previous emergency responses, Oxfam India is focussing more on market based interventions and cash transfer initiatives in urban settings. From the Kashmir response, we learnt the importance of developing urban focused assessment methodologies, hazard vulnerability and capacity assessments of important lifesaving infrastructures and need of contingency planning and Standard Operating Procedures (SOP) for the key government service providers. Recently in Tamil Nadu, Oxfam conducted a Pre-Crisis Market Mapping and analysis (PCEMMA) selecting Rice and Sanitary Pads as critical products and outcome suggested the cash/voucher intervention as response options instead of aid delivery wherever local markets are functional. This is recognized as important to ensure the principle of 'DO-NO-HARM'. Maximum usage of ICT in urban setting is also important to increase efficiency and ensure high level of accountability towards vulnerable community. ■ - Bhaswar Banerjee,

Oxfam India

Why there can be no Universal Minimum Standards for Cities!

Cities today face unprecedented and historic challenges not only in playing their traditional roles as places of 'opportunity' and 'possibility' but more critically, in having to take on the unaccustomed role of becoming places of 'refuge' and 'shelter' for mass displacements of people fleeing the aftermath of conflicts, natural disasters, and environmental catastrophes.

This is a role that cities with their inherent complexities and multiple challenges have struggled to take on, given the already myriad and disparate demands on their resources, services and absorption capacities. Cities have traditionally been magnets for rural-urban migration, for people seeking to improve their lives and livelihoods through access to better economic opportunities, but these migration numbers stand in stark contrast to the sheer scale and volume of the numbers of crisis-affected people now relocating to cities in search of safety and security.

Even more worryingly, cities today are a growing locus for urban conventional and guerrilla warfare as we have seen in Syria and Iraq. These new realities have created challenges for humanitarian and urban development practitioners alike to find contextually-appropriate and inclusive approaches, both for expanding and improving urban services and infrastructure to meet the needs of the displaced and the dispossessed within a volatile and fast-changing urban arena while at the same time, to maintain and enhance the resilience of over-stretched complex urban systems and processes.

The search for best practices and appropriate standards has so far, failed to fully capture the integrated, inter-linking nature of urban systems of production, consumption, service delivery and governance, and the overlapping and hugely diverse identities, cultures, needs, and opportunities to be found in a city, each demanding equal rights of use and access.

Therefore, the notion of applying universal standards and benchmarks to meeting both humanitarian and urban development needs in the urban context seems somewhat futile. However, what can be taken as an **irrevocable universal standard** is the need to strictly uphold rights-based approaches: the right to (safe and nutritious) food, to adequate shelter, clean water and sanitation, to basic education and health, and to information, amongst other things. Every citizen of a city, whether a long-term resident or newly arrived, has the right to make efforts to meet these needs in order

Vulnerability and capacity assessment (VCA) frameworks can be used to identify and assess a wide range of risks and hazards, capacities and capabilities faced by urban dwellers, and through an inclusive and participatory process, to better understand the coping and survival strategies used by multiple stakeholders to mitigate, respond to and recover from shocks and crises.

to survive. For practitioners to address these multiple, sometimes conflicting needs in ways that are equitable, inclusive, appropriate and resilient there is a dire need to improve our understanding of local urban realities. Vulnerability and capacity assessment (VCA) frameworks can be used to identify and assess a wide range of risks and hazards, capacities and capabilities (ranging from economic, political, socio-cultural, physical assets, to social networks etc.) faced by urban dwellers, and through an inclusive and participatory process, to better understand the coping and survival strategies used by multiple stakeholders to mitigate, respond to and recover from shocks and crises. While most of these tools have their origins in disaster risk reduction and community-based disaster risk management activities in rural settings, in their examination of the different factors of vulnerability and risk faced by a specific community or household, they can offer useful pointers for conducting a similar exercise in specific crisis-affected locations in the urban context using 'locally contextualized' versions of these tools.

The urban 'condition' or the urban 'paradigm', as we have known it, needs some serious rethinking. The use of multi-disciplinary, context-specific and 'localized' perspectives to truly understand the changing nature of the urban 'arena' has become imperative, especially as the urban 'arena' is where most of the present-day's humanitarian crises are being enacted. ■

- Joohi Haleem,

Humanitarian and development practitioner specialized in livelihoods and urban development, Brussels

Heatwave in Jabalpur: A View

A Heat wave¹ is defined in terms of intense heat, scorching temperature during the afternoon, average maximum temperature soaring above 40°C–42°C and without any sight of immediate relief.

The city of Jabalpur² situated in the central Indian State of Madhya Pradesh, with a humid subtropical climate, experiences maximum temperature crossing 45°C mostly during the month of May resulting in severe heatwave like condition. Due to climate change and rapid urbanization, the pattern has been changing slowly and steadily in the past couple of years; with the early onset of summer in the month of March and temperature maintaining a steady rise³. The situation needs a thorough review and pre-emptive measures have to be taken to save the lives of people as well as the animals. It becomes extremely difficult to survive during this prolonged heatwave situation.

Although the city of Jabalpur has been brought under the Smart City Project⁴, the city continues to grapple with the problem of a falling water table⁵, lack of access to civil water supply and people's excessive dependence on individual boring water pumps. There are many

instances of irregular water supplies prevailing in the city outskirts where people get the local water supply in the interval of 3–4 days.

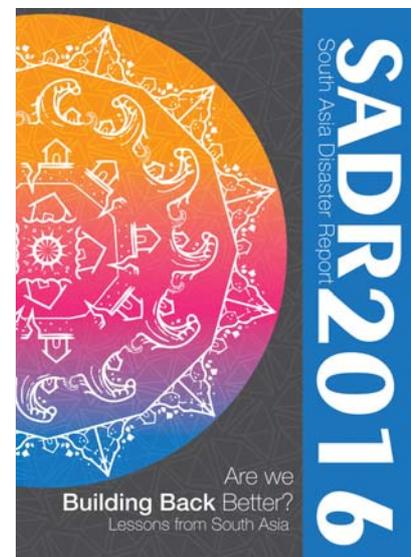
The issue of heatwave can not be addressed in silos, as we have seen multiple factors operating simultaneously that need a multipronged approach. The city needs a carefully crafted heatwave action plan⁶ taking cues from the cities of Ahmedabad⁷, Bhubaneswar, Hazaribagh⁸ etc.

An early warning system as a Disaster Risk Reduction (DRR) mechanism should be in place focusing on information dissemination on a real time basis, the information should be in the local language with the last mile connectivity and active community participation. People need to be apprised of the dangers of heatwave such as heat stroke, heat cramps and heat exhaustion along with the preventive measures like avoiding going out in the afternoon, having plenty of water and keeping the oral rehydration solution handy.

The city needs a collective effort in terms of planning for the resources, execution of the projects such as The Smart City, where the District Administration works in tandem

with the people, hospitals, schools, colleges, industries, informal sectors and the civil society organizations in a cohesive manner, with a citizen centric approach where the primary goal lies in the welfare of people living in every strata of the society. ■

– Sangita Goswami



SADR 2016

Are We Building Back Better

This edition of the SADR concentrates on Build Back Better (BBB) and continues a Duryog Nivaran tradition of promoting new and alternative disaster management measures to improve resilience of vulnerable communities. It speaks of initiatives by citizens, the state and development practitioners in South Asian countries who have led the way in improving actions for rehabilitation and recovery in South Asia.

For more information: <http://www.duryognivaran.org/>

1 <http://www.ndma.gov.in/en/media-public-awareness/disaster/natural-disaster/heat-wave.html>

2 <https://en.wikipedia.org/wiki/Jabalpur>

3 <http://www.hindustantimes.com/india-news/worst-of-heatwave-yet-to-come-be-prepared-for-scorching-heat-from-april-to-june/story-uNRZtGWWw6m2HTV9aO8sL.html>

4 <https://www.mygov.in/group-issue/smart-city-jabalpur-peoples-participation/>

5 <http://www.indiaenvironmentportal.org.in/content/15005/water-crisis-a-case-study-of-jabalpur/>

6 <http://www.ndma.gov.in/images/guidelines/guidelines-heat-wave.pdf>

7 <http://www.thehindu.com/sci-tech/health/how-ahmedabad-beat-the-heat/article17759591.ece>

8 <http://hazaribag.nic.in/Revenue/Disaster/Heat%20Wave%20Action%20Plan.pdf>

The Role of Architects in Building Urban Disaster Resilience



Urban complexity and state of reconstruction six years after the earthquake, Port-au-Prince, Haiti.

Due to the vulnerability of low-income neighbourhoods to natural hazards as well as the complexity to build back better after a disaster, there has been increasing support for the inclusion of built environment expertise in humanitarian action¹. This paper explores the role of architects for enhancing urban disaster resilience². It argues for experienced architects' abilities to address built environment vulnerability in

aiming for quality, to build on local capacity throughout design and construction processes and to support change in humanitarian practice.

Addressing built Environment Vulnerability

Firstly, architects are professionals aiming for overall quality in the built environment and as a result contribute to addressing vulnerability. Ensuring building

quality is difficult and requires sufficient understanding in many domains. That multidisciplinary knowledge and experience architects have acquired underlie their capacity to develop lasting solutions and manage construction projects efficiently. Additionally, their competencies allow them to assess buildings in relation to their environment and exposed hazards, seek spatial functionality, use local materials and labour, and monitor

1 Sanderson, D., Kayden, J., Leis, J. (eds) 2016. *Urban Disaster Resilience: New Dimensions from International Practice in the Built Environment*, New York, Routledge.

2 For definitions and a case for resilience, see: *IFRC 2016. World Disasters Report 2016: Resilience: saving lives today, investing for tomorrow*, Geneva, International Federation of Red Cross and Red Crescent Societies.

3 Lee, J. Y. 2014. *Framing Disaster Research as "Wicked" Design Problems*. PhD in Architecture, University of Auckland.

costs³. They also involve users and collaborate with stakeholders, such as city officials, engineers and contractors, at the right stages of the building process. They plan, document, consult and communicate effectively to maintain constructive co-operation throughout the project and sustain incremental progress in achieving quality. In other words, as generalists and as project managers, they contribute to enhancing the robustness of the built environment.

Building on Local Capacity

Secondly, most architects are not solitary designers and facilitate discussions to seek best solutions. As it remains a significant part of the academic curriculum, non-experienced architects may over-focus on the final product design at the expense of other social and economic dimensions because being strangers to such complexity. However, such approach fades as architects develop experience working in interdisciplinary teams and with clients or users. Nonetheless, they have also learned

in schools and in practice how to communicate ideas with drawings and models, to listen to critiques and to constantly improve projects. These aptitudes are useful when collaborating with residents and stakeholders in imagining the best possible answers. That degree of spatial and material representation permits finding responses that are socially accepted and culturally appropriate, serve multiple purposes, and acknowledge and strengthen local capacities to repair, build, maintain and upgrade their environment. As facilitators and as communicators, architects ensure that solutions fulfil and build on existing needs and capacities and avoid inappropriate quick fixes.

Supporting Change in Humanitarian Practice

Finally, architects may improve humanitarian approaches to better respond to the needs in urban contexts. To illustrate, existing humanitarian frameworks and timeframes tend to favour short-term projects and the use of imported

building materials over long-term sustainability and strengthening the local construction industry. Hence, architects may advocate for adapting humanitarian operational systems to better suit design and construction processes that address vulnerability and support existing capacities. Moreover, building on the humanitarian sector's progress towards using cash and involving the private sector, experienced architects may contribute to bringing rigour and accountability that such approaches require in the built environment sector. As in usual architectural practice, this includes budgeting, contracting external stakeholders, developing strategic plans and keeping an overview of internal capacities. It is when acting as experienced professionals in construction processes, as facilitators in multidisciplinary teams, and as advocates for change that architects may play a role in humanitarian contexts and contribute to building urban resilience. ■

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