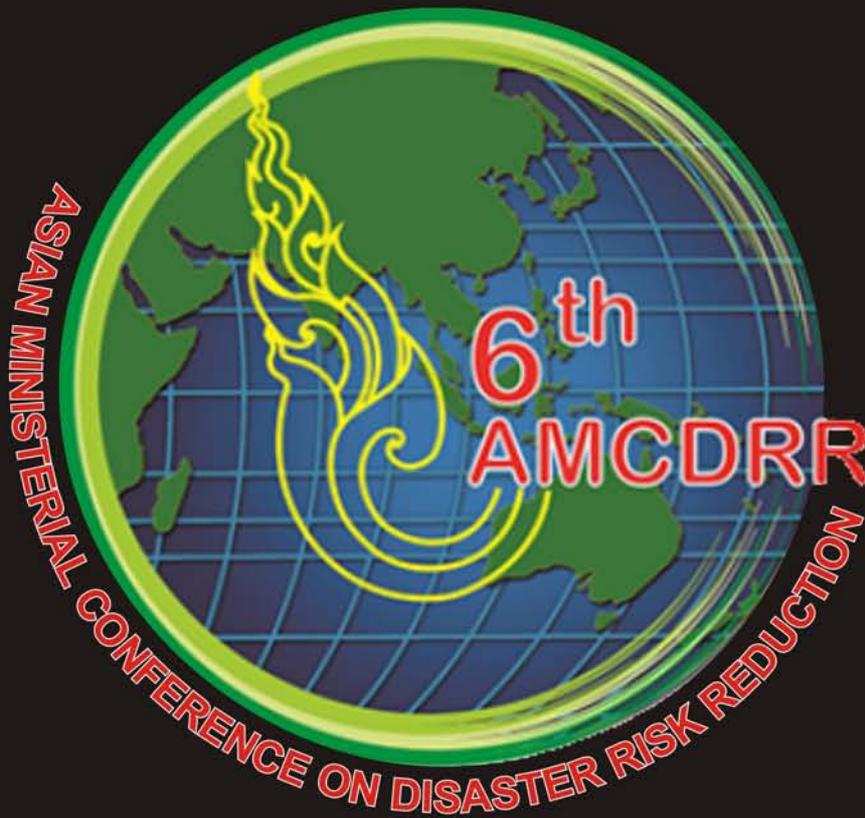


# Preparing for the 6<sup>th</sup> AMCDRR



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*The views expressed in this publication are those of the author.*

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*Advocating Disaster Resilience in South Asia since 2005*



# The 6<sup>th</sup> AMCDRR: Towards a Resilient Asia

Hundreds of leaders and experts from the governments and humanitarian community from Asia and the Pacific are converging at the 6<sup>th</sup> Asia Ministerial Conference on Disaster Risk Reduction (AMCDRR) during 22-26 June in Bangkok. The United Nations International Strategy for Disaster Reduction (UNISDR) in collaboration with the Royal government of Thailand is providing this platform to delegates to dilate upon adopting political commitments and declarations to implement the Hyogo Framework of Action (HFA). Since the HFA is going to complete its phase one next year (2015), the 6<sup>th</sup> biennial AMCDRR will take stock of the state of implementation of HFA until now and will set the scene for next phase, the HFA2.

Keeping this conference in view, the All India Disaster Mitigation Institute (AIDMI) has focused the 112<sup>th</sup> issue of its newsletter Southasiadisasters.net on the key issues being taken up at the 6<sup>th</sup> AMCDRR. The issue carries besides other things two case studies one each from South Asia and South East Asia. From South Asia it carries a case study of floods management in Bangladesh picking evidence from the field and highlights some of the future challenges and disaster risks of Dhaka city. From South East Asia, the

Cambodia case study focuses on post disaster shelter rehabilitation.

Interestingly, quoting a case study of the Uttarkashi cloudburst flash flood, the issue highlights the importance of Geographical Information System (GIS), which provides the humanitarian sector with an opportunity to understand data relating to geographical locations of the areas hit by such disasters and patterns of disasters so that they can be managed well. The GIS can help humanitarian actors carry out risk and hazard assessments and mitigation strategies and all relevant data by using computer hardware and software. It is worth mentioning here that GIS in Disaster Emergency Management covers all the four key components of disaster management: Preparedness, Response, Recovery and Mitigation.

The 112<sup>th</sup> issue quoted the community voices from small and medium entrepreneurs who were hit in 2011 Puri, Odisha floods. "*Timely financial assistance and encouragement to local business is required to make them disaster resilient. This assistance must be based on need. It cannot be same for all,*" said Harasmoni Sahoo, a village vegetable vender. Similar voices were heard from small and medium entrepreneurs from the Cyclone

Haiyan hit central parts of the Philippines.

The 112<sup>th</sup> issue carries an article that talks about Oxfam Minimum Standards for Gender in Emergencies, as the gender equality has always been a crosscutting issue in global humanitarian efforts. Oxfam Minimum Standards for Gender in Emergencies is a tool that addresses four key objectives:

- Promoting gender equity through internal practices
- Gender analysis through the project cycle
- Participation, dignity and empowerment
- Addressing gender based violence (GBV) and prevention of sexual exploitation and abuse.

The issue has more interesting articles that provide a base line understanding of a number of issues around the 6<sup>th</sup> AMCDRR; and I am proud to present this to you. AIDMI deserves appreciation for such a valuable and consistent publication. The newsletter offers many positive stories of resilient communities. But still there are policy and implementation challenges. It's time for leaders to act urgently to make Asia resilient to disasters. ■

- **Cherian Mathews,**

Asia Regional Director, Oxfam GB, Bangkok

## ABOUT THIS ISSUE

The 6<sup>th</sup> Asian Ministerial Conference on Disaster Risk Reduction is scheduled to happen from 22-26 June, 2014. A biennial conference, organized jointly by UNISDR and various Asian Countries, the AMCDRR brings together several stakeholders to exchange ideas, innovations and best practices related with disaster risk management. The theme of this year's conference is *Promoting Investments for Resilient Nations and Communities*.

This issue of *Southasiadisasters.net* tries to highlight pertinent areas of disaster risk management from Asia to prepare for the upcoming conference. The articles in this issue provide an overview of key challenges and best practices in the field of disaster risk reduction from Asia. Voices of local community members on the importance of livelihood support against disasters have also been highlighted with the purpose of making them heard to policy makers and experts. A news section on the major developments around the globe related to disasters of various kinds has also been added.

Rich in content and topical in nature, this issue of *Southasiadisasters.net* is a must-read for all those interested about the recent developments and achievements of DRR in Asia. ■

# The 6<sup>th</sup> AMCDRR

## Asia on the Threshold of HFA2



Bangkok, Thailand  
22-26 June, 2014

The 6<sup>th</sup> Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) will be held from 22-26 June, 2014 in Bangkok, Thailand. Organized by the Royal Government of Thailand in collaboration with UNISDR, this will be the 6<sup>th</sup> edition of the biennial conference. Ever since its inception in 2005, the AMCDRR has provided a platform to governments and various stakeholders for adopting political declarations that attest to Asia's commitment to the implementation of the Hyogo Framework for Action (HFA).

This conference is extremely important because of two reasons. Firstly, it will take stock of the implementation of the HFA and highlight priority actions that need to be taken up to quickly achieve its goals in its final year (HFA expires in 2015). Secondly, this conference will help in consolidating and finalizing 'Asia Pacific Inputs for the HFA2, meant to inform and guide Asian nations in adopting the HFA2 next year in Sendai, Japan at the World Conference on Disaster Risk Reduction (WCDRR). The main theme of the 6<sup>th</sup> AMCDRR is 'Promoting Investments for Resilient Nations and Communities'. The sub-themes include the following:

1. Enhancing resilience at local levels
2. Strengthening public investments for disaster and climate risk management to sustain and protect development gains
3. Public and private partnership for disaster risk reduction

The objectives of this conference include:

1. To generate stronger political commitment and investment of Asian countries for disaster risk

management and sustainable development.

2. To provide regional inputs and encourage commitments of governments and stakeholders for the post-2015 framework for DRR and 3WCDRR
3. To encourage regional strategies and collaborative mechanisms for building resilience at local levels, promoting resilient public investments and for engaging private sector in disaster risk management through public private partnership and
4. To promote sharing of knowledge and experiences to strengthen disaster and climate risk management in the region.

With the aforementioned themes and objectives, the 6<sup>th</sup> AMCDRR expects to achieve the following outcomes:

1. Declaration of commitments by governments and key stakeholders towards minimizing the impact of disasters and the adoption and implementation of the post-2015 framework for DRR.

2. Recommended actions to enhance HFA implementation, addressing the Conference themes and gearing toward reflection on HFA 10-year implementation at 3WCDRR
3. 'Asia Pacific inputs to HFA2', which will be endorsed by the Ministers to be tabled in the 3WCDRR and supported by commitments of stakeholders
4. Strengthened partnerships and sharing of knowledge and sound practices on DRR.

As Asia stands at the threshold of HFA2, the significance of the 6<sup>th</sup> AMCDRR cannot be overstated. The year 2015 will be a watershed as it will determine the direction of the global humanitarian effort. For, along with the HFA2, 2015 will also witness newer instruments related with post-2015 development goals and climate change. The 6<sup>th</sup> AMCDRR conference presents the last important opportunity for Asia to present a strong case for addressing its underlying vulnerabilities to the global humanitarian community. ■

- Kshitij Gupta

### Disasters, Targets and Indicators for Post 2015 Development Agenda: Some Concerns

The post 2015 development agenda must include disaster risk reduction concerns and activities. Without such concerns and activities development remains exposed to disaster risk. The post 2015 development agenda must develop indicators and targets to move ahead and make development safer from disasters.

Engaging with the victim and at risk communities is the first step to start developing targets and indicators for Post 2015 development. Targets should not be drawn from policy alone but also drawn from practice. Targets can not be developed by experts alone and pushed on the communities to achieve reduction in risks. Role of National Authorities in evolving these targets and in fact finding resources to achieve them is important. How will this take place? Low levels of investments in women to reduce risk is an area that urgently needs both, targets and indicators, if the most at risk citizens have to be reached. AIDMI is holding discussions with key authorities to take up this issue in South Asia. ■

- Mihir R. Bhatt

# Impact of Disasters on Micro, Small and Medium Enterprises (MSMEs): Agenda for HFA2

The recent increase in the intensity and frequency of global disasters and their impacts has made it necessary to assess the damages caused from different perspectives. Global data provides incontrovertible evidence of the debilitating impacts of disasters to businesses in terms of their continuity and resurgence. The Global Assessment Report on Disaster Risk Reduction 2013 makes a strong case for taking concerted actions to enhance the resilience of businesses to disasters. The report is replete with data that highlights the vulnerability of businesses to disasters. This report makes a strong case for resilience building of micro, medium and small enterprises (MSMEs) and highlights the following points<sup>1</sup>:



Photo: AIDMI.

Safe MSMEs have the potential to pull people out of poverty.

1. Small and medium enterprises are particularly vulnerable: A single disaster may completely wipe out all or large parts of business capital of such enterprises
2. Insurance is critical to business resilience, particularly for small and medium enterprises

The enhanced vulnerability of businesses to losses resulting from disasters needs to be addressed through concerted actions brought about by the post 2015 framework for disaster risk reduction (HFA2). The HFA2 should accord special attention to micro, small and medium enterprises (MSMEs) in the developing world which due to their reliance on outdated machinery, limited skills and awareness about good business practices coupled with insufficient infrastructure bear a

greater risk of losses from extreme events like disasters. Thus, devising policies to engender practices that ensure the survival of such enterprises ought to be a priority for the HFA2 process.

This article advocates the inclusion of enhancing the resilience of MSMEs to disasters in developing countries like India into the agenda of the HFA2. This article draws heavily on the recommendations of the Global Assessment Report on Disaster Risk Reduction (2013) and All India Disaster Mitigation Institute's (AIDMI) work on MSMEs and livelihood diversification and insurance with UNDP, Concern Worldwide India and Climate Development knowledge Network. UNDP supported research report is coming out as a publication in 2014.

Globally, the economic losses from disasters have topped US \$ 1 trillion since 2000. While over the past 35 years, India has suffered direct losses of US\$30 billion. Such losses are on the rise, US\$9 billion in direct losses were suffered between 1996 and 2000 alone<sup>2</sup>.

All these figures serve as a grim reminder of the urgency of protecting business and MSMEs to the adverse impacts of disasters. The HFA2 can be the right instrument to build the resilience of MSMEs against such adverse impacts.

The All India Disaster Mitigation Institute (AIDMI) has been actively involved in research on MSMEs. Based on its work with MSMEs in the coastal areas of Indian states like Odisha and West Bengal, AIDMI has certain recommendations with

<sup>1</sup> Global Assessment Report on Disaster Risk Reduction, 2013

<sup>2</sup> (Lester and Gurenko 2003).

regard to resilience building of MSMEs in the HFA2. These recommendations include the following<sup>3</sup>:

**i) Improving the Framework for Disaster Preparedness of MSMEs**

The preparedness of MSMEs would ensure that there is minimum disruption of lives and livelihoods in the event of a disaster. This requires intervention to ensure the coverage of MSMEs in disaster management policies, plans and institutional mechanisms, as well integrating disaster risk reduction considerations into MSMEs concerns. These policies and mechanisms need to provide support to MSMEs across all stages of the disaster management cycle. Thus there is a critical need for sustained policy dialogue between different departments and programmes, identifying areas of collaborative effort and mechanisms for supporting the resilience of MSMEs, including in terms of disaster preparedness. For instance, specific interventions can focus on the different MSME clusters (geographical or sectoral) keeping in mind the particular exogenous and endogenous factors.

**ii) Developing and Mainstreaming Impact Assessments for MSMEs in the Event of a Disaster**

It is imperative to address the absence of customised impact assessment tools for understanding disaster impact on MSMEs, especially in the light of increasing evidence of the nature and magnitude of disaster impact on such units and their local economies. There are specific difficulties attached to making assessments with regard to MSMEs which can be taken into

account. The designing of appropriate impact assessment exercises, along with mainstreaming the practice in standard assessment processes is a necessary next step.

**iii) Ensuring Access to Relief and Recovery Assistance for MSMEs**

This would mean ensuring the coverage of MSMEs in relief and recovery assistance programmes, along with capacity building and strengthening the local linkages with such provisions. The capacity of those who support MSMEs – disaster management actors such as government authorities and communities – in responding to disasters and in their general operations, must also be developed. This applies especially to those working at the district/grassroots level. It would also be useful to explore possibilities to build in necessary technical assistance support in terms of essential infrastructure back-up, building access to supply and value chains, as well as other market linkages in the recovery period for MSMEs.

**iv) Encouraging Mitigation Policies as Insurance Coverage and Social Safety Mechanisms**

Given the extreme vulnerabilities of MSMEs in disaster situation, social protection and insurance mechanism need to be encouraged as a matter of public policy. The first step would be to conduct a scoping study for the demand and coverage of social protection for MSMEs who were adversely affected by disasters. It is suggested that the National Disaster Management Authority works out the framework and template for ensuring that MSMEs are protected under District Disaster

Management and Community Disaster Management planning processes. Social welfare and social sector institutions should also assume a leading role in extending social protection coverage to MSMEs.

**v) Knowledge Management**

It remains imperative to systematically identify, document and share lessons from disaster impact on MSMEs given the extent of the disaster impact, the role of MSMEs in the economy as well as the existing and potential role of MSMEs in disaster risk reduction and recovery. This can support effective policy changes, interventions and collaborative learning for the relevant government authorities and development agencies, as well as providing a framework to strengthen the resilience of MSMEs in the face of disaster.

Globally, MSMEs constitute over 90% of total enterprises in most of the economies; have come to be acknowledged as engines of economic growth that generating the highest rates of employment growth and account for a major share of industrial production and exports<sup>4</sup>. India too has vibrant and ever expanding MSME sector which comprises of 30 million units, creating employment of about 70 million, manufacturing more than 6000 products, contributing about 45% to manufacturing output and about 40% of exports, directly and indirectly<sup>5</sup>. By incorporating the exigencies of resilience building of MSMEs in HFA2, these MSMEs can be protected against disasters and can continue to thrive as engines of economic growth that engender entrepreneurship and equitable development. ■ – AIDMI Team

3 India Case Study on Micro, Small and Medium Scale Enterprises (MSMEs) and Disaster, AIDMI and UNDP, November 2013

4 Role of MSMEs, [http://www.msmentor.in/MSME\\_Sector\\_India.asp](http://www.msmentor.in/MSME_Sector_India.asp)

5 Sub- Group on Flow of Private Sector Investments for MSME Sector: Executive Summary, [http://planningcommission.nic.in/aboutus/committee/wg\\_sub\\_pvtsec\\_MSME.pdf](http://planningcommission.nic.in/aboutus/committee/wg_sub_pvtsec_MSME.pdf)

# Capturing Disaster Risk Reduction Voices in Asia

All India Disaster Mitigation Institute (AIDMI) recently published the 110th issue of *southasiadisasters.net*, a milestone of which we are very proud. It is now almost nine years and over 400 organizations, researchers, NGOs, experts and officials from 37 countries have contributed to this newsletter. This achievement was only possible thanks to our readers!

In order to improve the quality of our newsletter and make it more appealing and relevant for our readers we conducted a review and are constantly reviewing *Southasiadisasters.net*. During the last review a ten question survey was used in order to find out about the readers' opinions and views on topics such as Design, Language, size, Reading frequency, quality, relevance, use of knowledge etc. of the newsletter.

We were very happy and proud of the survey outcome which showed that our readers have a very good opinion about the *Southasiadisasters.net* newsletter.

Even though the results put *Southasiadisasters.net* in a satisfying light we synthesized some specific points which could be improved.

The reviewing and improving of our newsletter is an ongoing process and the changes we make will be evaluated by analyzing new feedback from our readers.

The main points we are focusing on in order to improve the quality and attractiveness of our newsletter are of different nature.

The survey showed us that 84% of our readers find the layout of the newsletter very appealing or

somewhat appealing. This is obviously a very satisfying result for us; nevertheless we would like to make to In order to do so we will focus on the graphic content and layout of both of them. Slight layout and font size changes are being made on the website. Furthermore the photographic content and colours of website and newsletter is being discussed and improved according to the review participants' feedback.

An aspect of which we are very happy is that 78 % of our readers already applied the knowledge and lessons published in our newsletter to their specific areas such as training, university teaching and applied fieldwork.

It was realized that readers may find it difficult to download the newsletter from the website; this is why slight programming changes will be made in order to facilitate the access to our publication.

It is important for us that not only the content of *Southasiadisasters.net* is attractive but that also aspects such as the length of the newsletter are appealing for our readers. Happily 93, 5% of the responders found that the length is not too short and not too long but has an adequate length. Due to the fact that the authors of the content of *southasiadisasters.net* come from 37 different countries and that our readers are scattered around the whole world, it is of an essential importance that the language style of the newsletter is easily understandable for everyone, for this reason we constantly try to improve the readability of *Southasiadisasters.net*.

It is of a major importance for us to publish content which is relevant to the field of DRR. Fortunately 97% of the survey participants rated the

content of the newsletter as Very relevant or relevant in terms of DRR a result which is a huge satisfaction for us and our authors scattered around the world.

Our readers and we understand the importance of involving the ones who are directly affected by disasters but who often do not have the possibility to share their knowledge and experience on an extended level.

*Southasiadisasters.net's* main aim is to capture all DRR voices and this is why we will include more contribution from first hand witnesses, disaster and poverty affected people of the communities we work with.

Many of our readers use the *Southasiadisasters.net* newsletter for training which is why received a high demand for articles related to best practises. We will continue publishing useful "best practises" content which can be directly used by our readers for field work and training. Another change which will be made is that there will be a NEWS page in the publication listing and reporting all important disasters worldwide which took place during the period between the publications of the issues. By doing so we want to give our readers the possibility to have an easy and quick way to be informed about what is currently happening in the world.

The satisfaction and feedback is of high value to us. This is why we always appreciate feedback and constructive criticism. Hopefully our ongoing effort to share disaster risk reduction voices will continue to bring its fruits in order to make the present and future generations of vulnerable people more resilient to disasters of any kind. ■ - Ennio V. Picucci

# Beyond Scarcity: The Arsenic Disaster

The UN General Assembly formally recognized the right to water and sanitation by supporting a resolution initiated by Bolivia on 28<sup>th</sup> July, 2010. The resolution 64/292 acknowledges that clean drinking water and sanitation are integral to the realization of all human rights. From being looked upon as a need, decades of debates and discussions have ensured that access to safe and adequate drinking water and sanitation is now recognized as a basic human right. Yet, for the majority of the poor people in the world, specifically in the developing and underdeveloped nations including India, the right to safe and adequate water and sanitation remains an unfulfilled promise. The statistics are staggering. Every year, more than 5 million people die as a result of lack of access to safe drinking water, 84% of whom are children under the age of 14<sup>1</sup>. According to WHO (World Health Organization), each day some 4,000 children die because of dirty water or poor hygiene; diseases transmitted through water or human excrement are the second-leading cause of death among children worldwide. Water scarcity, poor water quality, and inadequate sanitation negatively impact food security, livelihood choices, and educational opportunities for poor families across the developing world<sup>2</sup>.

The UNISDR (United Nations International Strategy for Disaster Reduction) defines a disaster as "serious disruption of the functioning of a community or a society involving widespread human, material, economic or

*environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources"*.

Going by the above definition of a disaster and in light of the aforementioned statistics, it would be accurate to say that contamination of drinking water and the resultant consumption of poor quality water is by all means a disaster of humongous proportions and one of the major and most harmful contaminants in water is Arsenic, which when consumed in large concentrations for long durations of time, leads to Arsenicosis, a chronic illness that produces skin disorders, gangrene, and cancer of the kidneys and bladder. Through the last couple of decades, there has been a drastic increase in concentration and number of areas detected with Arsenic in

drinking water and some experts have said that it could be "the biggest mass poisoning in history".

What is even more disconcerting is that the path that arsenic can take to enter our bodies has gone beyond just consumption of drinking water. Arsenic has leached into the soil and hence become a part of our food chain too, posing a grave danger to the health of affected communities. The Arsenic crisis has therefore, dug its claws hard and deep and is a major disaster staring us in the eye. While there have been numerous programmes and initiatives and millions of dollars worth of funds invested by government and non-government actors in trying to address the issue, the discourse on arsenic has largely remained technocratic without appropriate inclusion of the voice of the community.

There is a crying need for us to view Arsenic contamination as a disaster and come together to address the issue and try to find firmly grounded and long lasting solutions. The Arsenic Knowledge and Action Network is a platform facilitating convergence of experts and other stakeholders in an effort to address issues on ground by supporting coordinated efforts for Arsenic mitigation.

To subscribe to the Arsenic Network Newsletter, please click <http://eepurl.com/NyfN1>. ■

**- Karthik Seshan,**  
Research Associate, Saci WATERS,  
South Asia Consortium for  
Interdisciplinary Water Resources  
Studies, Andhra Pradesh, India

*The UNISDR defines a "Disaster as serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources".*

1 'The Human Right to Water and Sanitation in Emergency Situations: The Legal Framework and a Guide to Advocacy', (UNICEF New York: Global WASH Cluster, 2009).

2 'No Food and Nutrition Security without Water, Sanitation and Hygiene', in *Bonn 2011 Nexus Conference* (Bonn, Germany: 2011).

## A Recipe for Disaster Resilience?

A recent study measured the disaster resilience of communities in North-West Bangladesh. It compared villages supported by the Chars Livelihoods Programme (CLP) with villages who had yet to receive support.

CLP works with extremely poor households living on island chars (riverine islands) in northwestern Bangladesh, and aims to improve the livelihoods of over one million people. The CLP is jointly funded by UKaid through the Department for International Development and Australian Aid through the Department of Foreign Affairs and Trade, sponsored by the Rural Development and Co-operatives Division of the Government of Bangladesh's Ministry of Local Government, Rural Development and Co-operatives, and implemented through Maxwell Stamp Plc. CLP is currently in its second phase, which aims to lift 67,000 households out of poverty by 2016.

CLP does not aim to increase "disaster resilience" per se, but its interventions do prepare households for disasters. There is a great overlap between livelihoods and resilience programmes - both aim to reduce the vulnerability of the poor. For extreme poor households living on the *chars*, CLP provides:

- plinths above the highest known flood level;
- an asset, normally in the form of a cow;
- a social development programme with a variety of training modules including disaster preparedness;
- disaster relief;
- access to microcredit.

The study surveyed 240 char dwellers on aspects of the disaster resilience



A household raised by a CLP plinth.

of their community and themselves. The four main themes of the survey were Governance; Risk Assessment; Knowledge and Education; and Disaster Preparedness and Response. Their answers were scored and key persons were interviewed to understand the findings of the survey.

The study found that, after CLP support, the disaster resilience of communities dramatically improved in all the four themes. Women's disaster resilience became greater than men's, particularly in knowing how to prepare for disasters. With more knowledge in how to respond to disasters, females will play a greater role in the response and will grow in status in the household.

It became clear during the interviews that NGOs and Local Governments each need to play specific roles in building the disaster resilience of communities, as one organisation cannot do it alone. Communities saw CLP plinths as vital for sheltering during floods, which is the most common hazard on the chars.

The study also found that instead of households losing disaster resilience

after the CLP support package ends, disaster resilience sustains and even grows. This may be from spillover effects, for example villages which are in close proximity to those supported by the CLP package may be learning good practices. Men are also learning from the women about disaster resilience and as they learn the whole community's resilience in turn increases.

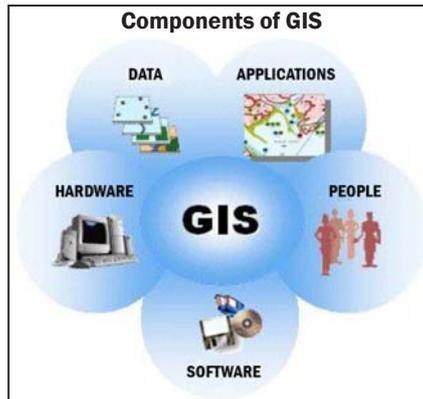
One aspect where there appeared to be a gap was the lack of regular assessment on hazards and vulnerability. In the interviews, respondents said that, as hazards did not change on the *chars*, there was no need for further risk assessments. With climate change, however this is not necessarily true. It is predicted that, as the average global temperature rises, there will be an increase in disaster frequency and magnitude. CLP households that have graduated out of extreme poverty need to know and understand future threats so these shocks and stresses do not cause them to fall back into poverty. ■

– Alex Barrett and Matthew Pritchard, Chars Livelihoods Programme (CLP), Bangladesh

# The Importance of GIS in Disaster and Emergency Management

## *A Case Study of the Uttarkashi Cloudburst Flash Flood*

Geographical Information Systems (GIS) play a highly significant role in all the phases of Disaster and Emergency Management. GIS provide us the opportunity to visualize, question, analyze, interpret, and understand data to reveal relations, patterns and trends for a robust management of disasters and emergencies. The initial task is to reduce the impact of a hazard, which has the potential to convert into a disaster. Through GIS we can carry risk assessment initiate long-term mitigation strategies in an effective manner. Risk mapping, land-use planning and risk analysis through GIS are the activities which we can carry in pre disaster phase. During a disaster/emergency situation we can use GIS based Decision Support System for overall management. The major advantage of the GIS is that we can store all the relevant data and can run SQL (structured query language) queries on it. On one click we are able to locate the nearest hospital, rescue shelter, fire station or police station. The most useful function they may



have is to find alternate routes, safe sites for shelter etc. during disaster situation. For the recovery phase, we can identify the safer places for the reconstruction, damage assessment, temporary shelters and for the allocation of claims, etc.

### What is GIS?

GIS are systems of hardware, software, data and personnel used to efficiently capture, store, update, manipulate, analyze and display all forms of geographically referenced information. GIS have five components that are essential to initiate any GIS operation.

On the night of the 3rd and 4th of August, 2012 in the Uttarkashi district of Uttarakhand, India, there were heavy rains and a cloudburst in the catchment of the tributaries of the Bhagirathi River. This led to a flash flood in Bhagirathi which led the waters of the river to go over the danger level by as much as four meters. The Gangori bridge on Rishikesh - Gangotri NH was washed off together with Tiloth bridge on the Uttarkashi - Lambgaon motor road. Many other pedestrian bridges were also damaged. As many as 100 residential houses were damaged and 250 families were shifted to shelter camps. Around 34 persons including three Fire and Emergency Service personnel were declared dead. Chardham (pilgrimage) yatra was suspended to all four shrines with hundreds of pilgrims being stranded. ITBP and state disaster management forces did the rescue operations. About 200 families were evacuated from low-lying regions of Uttarkashi to higher ground. Nearly 2000 people were affected in the floods. Over 200 families were displaced and arranged

### UTTARKASHI (Uttaranchal)



GIS based map of Uttarkashi.

(Source: compare InfoBase Pvt.Ltd2001-02)



Traffic jam due to damaged and blocked road.

to live in relief camps like bhavans and schools.

### Phases-Wise GIS Role In Disaster/ Emergency Management

In the case of the Uttarkashi Cloudburst Flash Flood, GIS could manage the situation in a more efficient way. Figure 1 will provide a glimpse of the phases-wise use of GIS in disaster or emergency management.

### Phases-Wise Possible GIS Based Solutions

**Mitigation Phase:** It has been observed that most losses either human or economic happened due to residing in the riverbed area. Better land-use planning can be done through GIS to identify the safe places for residential purposes. In addition research and development, building code and other activities can also be done during the mitigation phase.

**Preparedness Phase:** GIS have a significant role in the preparedness phase. To combat such type of events better warning systems can be developed, GIS-based public information systems can be also developed. GIS-based Decision Support Systems can be developed to map all the resources for an effective and on-time response.

**Response Phase:** After the cloudburst, the major road was blocked due to a landslide and in some parts it was even washed away. Here, GIS and Remote Sensing can have a very significant role. During the emergency/disaster phase, the latest satellite images can be taken from space agencies like ISO, and through the GIS software alternate routes can be identified. If there is no such route available, since it is hilly terrain, a fast decision for air way can be taken into consideration for quick relief. Resources can be deployed on time and identified emergency shelters can be visualized through the satellite images for safety purposes. Search and Rescue teams can plan their activities

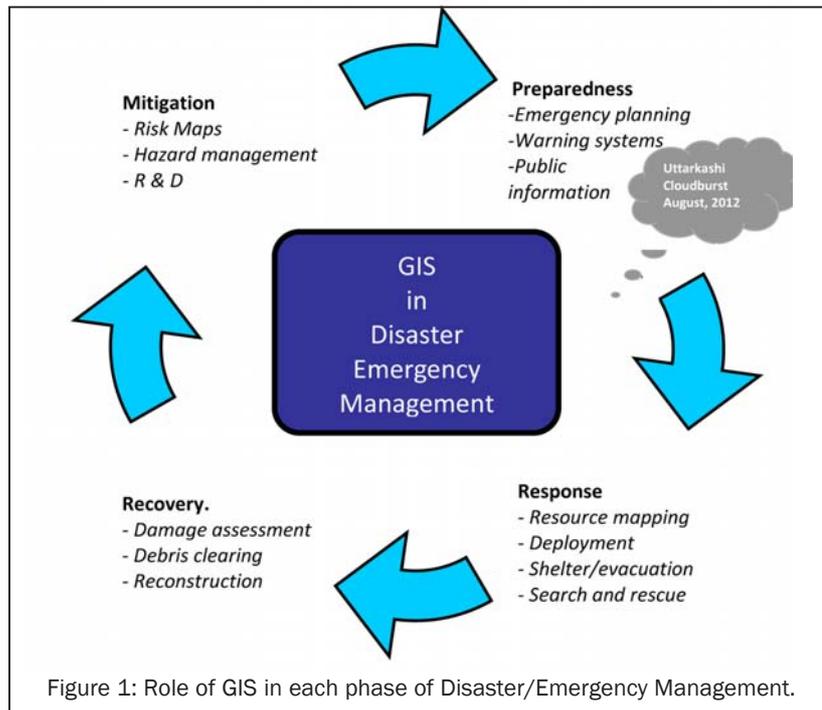


Figure 1: Role of GIS in each phase of Disaster/Emergency Management.

more effectively through the GIS map database and can easily share their latest activities through the WEB GIS applications. Rescue workers can also be tracked through the integration of GPS Applications with the GIS.

**Recovery Phase:** During the recovery phase, a detailed damage assessment and debris cleaning activities can be carried out with the help of GIS. In the second stage, safe reconstruction sites can be mapped for the future reconstruction activities.

### Major Challenges in Case of Cloudbursts and Flash Floods

Flash flood forecasting and warning play an important role in the management of flash floods. However, since cloudburst flash floods are rapid-onset hydrologic events, it is a challenge at times to give accurate and timely forecasts and warning information to users. A combination of high rainfall intensity with rapid and an often very efficient runoff is common to most flash flood events. Therefore, the nature of the rainfall and the anticipated runoff processes are key elements in the forecast process. Ice jam formation on

rivers can also play a role in rapid-onset flash flooding, particularly upstream of the ice jam. An appropriate spatial planning can help to reduce exposures and lessen the magnitude of flash flood hazards. Participatory approaches enable local communities to be aware of flash flood risks and this increases the efficiency of flash flood management, because community and local disaster management organizations have the most important role. ■

- **Abhinav Walia,**

Centre For Disaster Management,  
LBSNAA, Uttarakhand, India

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# Flood Management in Bangladesh: Recent Evidences and Future Challenges

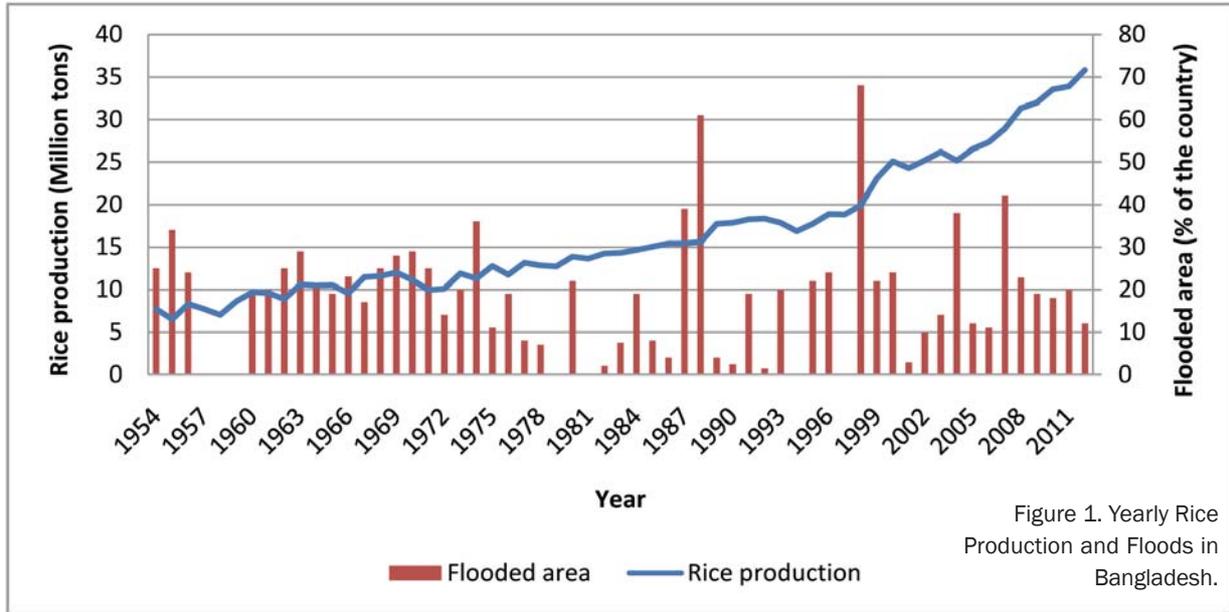


Figure 1. Yearly Rice Production and Floods in Bangladesh.

Unlike other disasters, a flood becomes a disaster only when it crosses a certain level frequently termed as the danger level. A Flood is largely beneficial below that danger level and becomes damaging only after crossing that limit. While the damages can be considerable, the benefits of flood in its aftermath can also be substantial. For example, the figure 1 shows the yearly rice production in Bangladesh along with the extent of flood. It appears that floods have a distinct push effect on rice production as observed after the recent major floods in case of 1988, 1998, 2004 and 2007. The reasons for this increase in rice production after a major flood are improved soil fertilization during the flood, improved soil moisture condition after the flood and increased government effort in supporting farmers thereafter. Other benefits of flood such as rejuvenation of aquatic ecosystem,

flushing of pollutants and groundwater recharge are also well known.

While the agricultural sector benefits following a flood, the damages to infrastructure during a flood can be extensive. The figure 2 shows damages to the economy during major floods. It is seen that damages are increasing becoming disproportionate to the intensity of the floods. While the flood of 1987 and 2004 are similar in magnitude in terms of area inundated, the damage

in 2004 is much higher. Losses are increasing because of increase in stock of infrastructure in the country.

The main challenge for a country like Bangladesh is to evolve a flood management approach which can reduce damages to infrastructure while taking advantage of the benefit of floods to agriculture. The favored option in Bangladesh has been the flood control approach employing embankments along the rivers which has failed to account for this challenge. A newer approach wherein agricultural

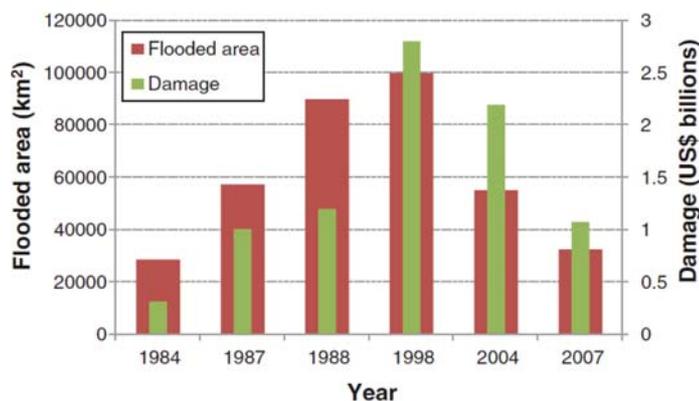


Figure 2. Damages to the Economy during Major Floods.

lands are allowed to be flooded in a controlled manner while flood proofing important infrastructures is therefore gaining traction in the country. ■

– Prof. Rezaur Rahman, Institute of Water and Flood Management, Bangladesh University of Engineering and Technology (BUET) Dhaka, Bangladesh

# Disaster Risks of Dhaka City

**D**haka carries a very long history. The city was founded by the Mughals, back in 1608AD. It is now one of the few mega cities in the world. It has an area of 1,353 sq. km and a massive population of 14 million. Being the capital of Bangladesh, **Dhaka is vulnerable to floods, water logging, fire, building collapse, earthquake, disease epidemics and various forms of pollution.**

The city is surrounded by a network of rivers. So, flooding and water logging, not only due to heavy and erratic rainfall, but also because of its failure of drainage capacity and management, is of utmost likelihood. The drainage capacity is decreasing rapidly due to unauthorized settlements and unlawful occupation of marshlands by land grabbers. After the flood of 1988, the western part of Dhaka City had been protected by embankments and raised roads. In spite of taking protective measures for Dhaka West, catastrophic floods in 1998 and 2004 affected both the protected western part and the unprotected eastern part of the city. Over 50% of the city population, most of which were slum dwellers, was badly affected. Later in 2007, a massive population of over 90,000 had suffered a diarrhea epidemic, caused from and spread through a week long flooding.

The **earthquake disaster risk** index has placed Dhaka among the 20 most vulnerable cities in the world. Geographically Bangladesh is located close to the boundary of two active Plates: the Indian Plate in the West and Eurasian Plate in the East & North. Earthquake of December 2001 with a magnitude of 4.5 and focal depth of 10 km was located very close

to Dhaka. The tremor caused a four-storied building collapse and a number of people got injured - had been a wakeup call for such potential mayhem. Heavy density of building and inhabitants - especially in old part of the city, poor constructions and materials, poor utility services, narrow lanes, shortage of evacuation spaces are the danger factors of the city, related to earthquake risks.

**Fire causes** huge loss of lives and properties every year. Most fire outbreaks are not small accidental households. Big industrial units, particularly garments industry, produce the deadliest of the fires. Fire incidents in Dhaka are increasing at an alarming rate. Since 2006, over 1800 people have been killed, resulting from substandard fire-safety conditions in industrial factories. On November 24, 2012, a fire at the *Tazrin Fashion and Smart Fabrics (two adjacent garments units)* on the periphery of Dhaka left at least 117 dead and 200 injured.

**Incidents of infrastructure collapse are on the rise as well.** Rana Plaza, an eight-storied building, having multiple garments units and market shops, had collapsed on the April 24, 2013. It was the worst industrial disaster in the history of Bangladesh. Over 1,100 garment workers were killed and another over 1,600, were injured.

Dhaka is the hub of country's industrial, administrative, commercial, educational and political activities. High density of population, narrow roads, declining wetlands, a lack of open spaces and parks, traffic congestion, poor access to transportation facilities, increasing environmental degradation, weak governance and coordination among duty bearers, violation of building code and lack of hazard specific preparedness has exposed the city dwellers to major risks of disasters. ■

**- Farid Hasan Ahmed**, Senior Program Officer, Swiss Agency for Development and Cooperation (SDC), Embassy of Switzerland, Dhaka

## Youthful View on Hyogo Framework for Action 2

**H**ow do youth see risk reduction and its future?

I was invited to 2013 Human Security: Humanitarian Perspectives and Responses Conference in Istanbul from October 24 to 27, 2013 and had the most enriching experience to be exposed to humanitarian studies.

During the breaks and often even by missing the session I sought out youth - mostly Kadir Has University students, many Turkish, and even more from other countries say up to 18 in 3 days) to ask what they see as the future of Hyogo Framework for Action 2 (HFA2).

The following four came out as the striking agenda to me:

1. Designing low emission development strategy.
2. Finding many ways to include poor in economic growth.
3. Addressing governance challenge of disaster risk reduction.
4. Defining and shaping open learning around risk and resilience.

Now challenge is up to HFA2 process to include such youthful views from across the world in its formation. ■

**- Mihir R. Bhatt**

# Impact of Tsunami: Lessons on Post-disaster Recovery by Japanese Corporations

On March 11, 2011, a huge Tsunami struck the Tohoku area in Japan, killing more than 15,700 people and leaving more than 4,000 people missing. When we compare the GDP growth in Japan prior to and after the Tsunami, then we find that it plummeted from 4.7% in 2010 to -0.5% in 2011. It was still limping at 1.5% in 2013. However, the growth in Private Consumption, after decreasing from 2.8% in 2010 to 0.3% in 2011, it recovered to 2.0% in 2012. We also have to pay attention about the private Residential investment in Japan, which exhibited a large increase after the disaster.

We also look at the state of Japanese Corporations. The number of cases of bankruptcy of corporations in Japan is decreasing since 2008. The percentage of bankruptcy of all Japanese corporations is almost the same level as it was during the bubble economy era in Japan. And I want you to know is that bankruptcy cases in the area struck by the Tsunami, have also decreased considerably. According to the corporate credit information company's survey, 5,004

corporations were damaged or destroyed by Tsunami. And almost half of them, 2,210 corporations restarted their business four months after the disaster.

The business of the construction firm became good according to special procurements, such as demand of rubble processing and re-construction of a building. All the consumers have to re-buy what was lost. Employment was also secured due to these reasons. This implies that this disaster has also become one business opportunity for Japanese corporations.

Japan recovered quickly after the World War II and developed one of the biggest economies in the world. One of the reasons why the Japanese economy has recovered so fast is that Japanese managers have a keen sense of risk management. They are always preparing for the matters which will happen in the future. If I observe the ratio of retained earnings to total assets of Japanese corporation, the percentage is increasing year by year since 2000. Now the average ratio of

the retained earnings to total assets of SMEs in Japan is more than 25%. If it is a huge capital size corporation, then the average ratio of the retained earnings to total assets is more than 40%. If the corporations have kept a high percentage of Retained Earnings internally, their businesses have stayed secured for long years. Their businesses are secured even if they are faced by an eventuality like the Tsunami. How have the Japanese corporations kept such high retained earnings?

The primary reason for high internal retail earnings in Japanese corporations has been the presence of domestic tolerance share holders. These domestic tolerance shareholders do not request the distribution of the dividend. If Japanese corporations continue to keep this particular type of shareholders then they would continue to provide stability and strength to their businesses even in the face of sudden accidents or disasters like the Tsunami. ■

- Cindy Yoshiko Shirata,  
Professor, University of Tsukuba, Japan



Tsunami is just attacking at Miyagi Pref.  
Photo: by East Japan Earthquake Picture Project



The family are watching the place of their home which was gone by Tsunami attacking.

# Let there be Cyclone, We are Ready!

*Odisha shows the way in Cyclone Preparedness*

"1700 people Sir!" Satya said. "Everybody is fine." Satya had just shown me the equipment of the multi-purpose cyclone shelter in Ganjam District, where Cyclone Phailin made landfall. The equipment had looked exactly the same as what I had been shown during the briefing the day before at the Odisha Disaster Management Agency in Bhubaneswar.

That had surprised me because the shelter where we were was almost ten years old, being one of the first ones to be built after the super cyclone of 1999. "I am the Secretary of the Shelter Management Committee Sir; I am in charge of maintenance." Satya had said when I asked him how come everything looked in such good shape. "I have done this for seven years." He added proudly. I was amazed. It is not often that a field visit highlights a facility that is close to ten years old. Even new facilities rarely look this good...

Satya went on to explain how these shelters are really multi-purpose. They serve as school buildings every day. In the weekends and at night, they are used for community meetings and as wedding halls. That is why the community is looking after the shelter so well. It gets used every day.

But 12 October 2013 was not just any day. It was the day when Cyclone Phailin hit. It was the day when the Government of Odisha managed to evacuate 850,000 people, an incredible number. "What did you do that day?" I asked one of the men with "Search and Rescue" written on the back of his uniform. "I helped elderly people to the shelter sir, they came from everywhere," he said. "How many," I



Photos by Martje van der Heide

asked. "I don't remember sir," he said with a shy smile. "They were too many." People started applauding.

Clearly, this shy young man had made a major contribution that day in October...many of the 1700 people Satya had mentioned earlier had been brought in by him.

When we got up to leave, Satya picked up his megaphone and started chanting. Everybody joined in,



repeating the same slogan with pride. I could not understand the words, so I asked. "Let there be cyclone, we are ready!" translated the Government official who was with me. "That is what they are saying. They are very proud."

Later that day we saw a new shelter under construction and witnessed the handover of two more shelters to communities nearby. They were handed over to the secretary of the shelter management committee in those communities, along with the Headmaster of the village school. The pride and anticipation in their eyes reminded me of Satya each time. They were ready to take their responsibility like he has done for seven years already. When we drove away from the last new shelter to go back to town, I heard the same chanting again.

"Let there be cyclone, we are ready" I thought. What a strange slogan it had seemed at first. Now, it sounded familiar already. That is because in Odisha it is true. They are ready! ■

- Onno Ruhl, Country Director, The World Bank, New Delhi, India

# Post Disaster Shelter Rehabilitation in Cambodia

Shelter rehabilitation after disaster is one of the most expensive and complex humanitarian interventions. It takes time and several complex issues such as tenure security (or lack of), DRR/ CCA to consider in order to "build back better". When disasters strike, aid agencies strive to provide assistance to as many affected families as possible. Yet, they are usually capable to cover small portion of the needs. For example, in Pakistan, following the 2011 floods, the Shelter Cluster planned rehabilitation of only 40% out of 796 862 destroyed houses. By mid January 2012 only 10% of the houses were covered despite considerable donors interest (IASC 2012). This is why, many organisations active in the shelter sector (incl. PIN) try to identify new models that on one hand reduce the costs and on the other improve efficacy.

The average cost estimates in rural Cambodia for basic house reconstruction vary between 400-500 USD - far beyond the financial capacity of the majority of the poor people living in the disaster prone areas. A lack of financial resources is not the only reason why people are unable to (re)build houses that can survive seasonal tropical storms and flooding each year. Rather, evidence from People in Need post-2011 flood assessments confirm that it is in fact lack of skills to build more resilient shelters as the main reason why so much damage to housing is observed.

Mr. Chang Sothea's stilted house in Kampong Chhnang province collapsed during excessive floods in 2011. As most of the people in his village he rebuilt it using recovered



Mr. Pho in his reconstructed and strengthened house.

materials and took a loan of 80 dollars to buy additional ones. Eight months later, in June 2012, due to big storm his house collapsed again, just as another 10 in the village.

However, with little effort and few additional resources that house could easily withstand the storm. First of all, the house had very weak shutters. The strong wind that entered inside the house blew away the roof and the house's structure (lacking cross bracing) leaned completely to one of the sides making it inhabitable.

In 2013, with support from DIPECHO and together with local architects, artisans, academics and students from Cambodian Universities we tried to identify the main failures in construction techniques in Cambodia. Subsequently, in collaboration with four local NGOs in Pursat province, local carpenters and selected families, 35 demonstrative but permanent houses were rehabilitated using simple, inexpensive and verified disaster

proofing construction techniques. During the reconstruction, PIN's artisans trained local builders and community members on selected techniques to improve the strength of houses and their critical parts: foundation, walls, roof, shutters and maintenance.

We also prepared a simple, illustrative manual on how to build stronger and disaster resilient houses to disseminate it at larger scale among local artisans as well as other community members. The first draft was presented to the villagers without extensive experience in construction to check if it is easily understandable. Then, we adapted parts of the manual that were confusing or lacked clarity.

In Pursat province, using the basis of their old house and making additions from their own resources, Mr. Pho and his sons performed the majority of the work themselves. "We fixed the house and made it much stronger. PIN gave us these pillars to use for

the house," he says, "but everything else we bought ourselves." His rotting wooden posts were replaced with solid cement foundations provided by PIN, which would not become damaged if submerged for long periods of time. These were topped with new wooden supports which had been treated against moisture and bugs to prevent these from eating away at the wood. Pho's whole house is now elevated above the ground by over 1.5m, greatly reducing the chances of their home becoming flooded.

This project has been inspired by other similar initiatives in Asia, namely Heritage Foundation's work and approach in Pakistan and "How to build stronger shelter" manual developed in Burma by UN- Habitat.

PIN's primary focus was on the cheapest methods so the poorest could afford them. However, the manual also presents more expensive ideas for gradual upgrade of the house if and when funds become available.

A rigorous evaluation of the applied techniques will be conducted in November 2014 following the flooding season and its results will be presented in the second, revised and extended over new sections version of the manual.

You can download the English and Khmer versions of the manual at preventionweb <http://www.preventionweb.net/english/professional/publications/v.php?id=36322> or contact us directly. ■

- **Piotr Sasin**, Spatial Planner and Country Director, People in Need, Cambodia

## COMMUNITY VOICES

# Voices from Small and Medium Entrepreneurs of Puri, Odisha on 2011 Floods



Timely financial assistance and encouragement to local businesses is required to make them disaster resilient. This assistance must be based on need. It cannot be same for all.

- **Harasmoni Sahoo**, Vegetable Vendor, Balapur village, Puri

Small enterprises are most vulnerable to disasters; The increasing frequency of flood every year coupled with inadequate hardly mitigation measures create a devastating impact on be village economy. The capital should reach to the lowest level, to the end user, to the affected small businesses.

- **Dhirendra Behra**, Grocery Shopkeeper, Balapur village, Puri



Handicrafts area part of the rich cultural heritage of India. However, Limited support offered by the government during disaster leads to a decrease in handicraft production. During disasters people lose their raw materials and therefore it gets difficult to restart production. The handicraft business needs credit and market. The artisan needs social protection; health, education and shelter.

- **Vanmali Maharana**, Carpenter, Balapur village, Puri

Self Help Groups have supported all the members financially as well as psychologically during the worst times. Floods washed away all our assets. This led to a loss of income, my family had limited food, the education of children becomes a burden and small illnesses become a big threat.

- **Renubal Maharana**, Stone Carver, Balapur village, Puri



Proper market or marketing links are required after a flood to promote local businesses. Policies must be prepared or modified to strengthen market links of the affected MSMEs. Relief cannot replace markets for small businesses.

- **Kartik Sahoo**, Farmer and Vegetable Vendor, Balapur village, Puri

Fisheries are based on natural resources. The floods of 2011 adversely. Provision of boat alone is not safe. Nor the fishing net. Access to market, transport, regaining, customers and storage are equally important.

- **Shyam Sundar Behra**, Fishermen, Balapur village, Puri



My village largely depends upon agriculture; but water logging destroys the crops. People are less educated. However, when we talk to each other we find a way ahead to collectively withstand loss and move ahead. Otherwise it is a difficult and lonely road ahead to recovery.

- **Kanthiyabai Bhoi**, Coir worker, Madhuban village, Puri ■  
(with UNDP support)

# Oxfam Minimum Standards for Gender in Emergencies

Gender equality has always been a crosscutting issue in global humanitarian efforts. It is quite evident from the recent humanitarian crisis across the globe that women and children are adversely affected in disaster situations. But the voices of women remain unheard during preparedness. This exclusion of women from decision making is grossly unfair given that they play a variety of important roles in disaster situations. Thus, it is a challenge for all humanitarian actors to address the issue of gender imbalance in disaster risk reduction planning at the global, regional, national and local level.

The need to ensure the rights of women and their participation in decision making at all levels to address their concerns was never so urgent. Gendered access to resources, facilities, services, funds, benefits and decision-making must be the top priority for the global humanitarian community. Many agencies working in humanitarian space have been trying to address this issue with their own capacity but there are very few agencies which have set guidelines on how to promote and assure gender balance in humanitarian planning and response.

**The Oxfam Minimum Standards for Gender in Emergencies**<sup>1</sup> serves as a tool for those working in humanitarian space towards ensuring gender balance in disaster risk reduction and development programs. It is very important to follow and assure the implementation of these standards and guidelines for the organisations working across the humanitarian sector to achieve gender balance. The 16 minimum standards to ensure for gender



Source: www.oxfam.org

balance in emergencies are categorised to address four major agendas –

1. Promoting gender equality through internal practices
2. Gender analysis through the project cycle
3. Participation, dignity and empowerment
4. Addressing the gender based violence and prevention of sexual exploitation (GBV) and abuse (PESA)

OXFAM has also identified key actions to meet the minimum standards. These key actions may be applied in different ways depending on the context and ways of working affiliates/partners. Where to take these actions i.e. during preparedness, response, recovery, transition or during entire project cycle is also specified. The actions listed in the guidelines are useful for organisations in designing project cycle with focus on gender equality, capacity building of staff and other stake holders about addressing the issue in their work, assigning key roles and responsibilities to ensure the implementation of actions, promotion of gender equality in their ongoing and upcoming projects. The minimum standards are given here;

## Oxfam Minimum Standards for Gender in Emergencies

- 1 Allocation of Financial and Human Resources for Gender Equality
- 2 Workplace Policies and Procedures to Promote Gender Equality
- 3 Accountability of Senior Management
- 4 Development of Human Resource Capacity
- 5 Gender Analysis and Contingency Planning
- 6 Sex and Age Disaggregated Data
- 7 Gender Analysis and Program Design
- 8 Gender Analysis, DRR and Long Term Strategic Gender Needs
- 9 Gender Analysis and MEAL (Monitoring, Evaluation, Accountability and Learning)
- 10 Gender Analysis and MEAL-accountability & learning
- 11 Ensuring access and participation for All
- 12 Dignity and Empowerment of Women and Girls

These standards should be referred to throughout the project cycle to inform planning, programme design and implementation, and monitoring, evaluation, accountability and learning. ■

- Kshitij Gupta

1 OXFAM Minimum Standards, November 2013, [www.oxfam.org](http://www.oxfam.org)

# Engaging SAARC for Resilience and Cross Border Facilitation for Rapid Response in Disasters

Oxfam organized and hosted a two-day consultation meeting on "Engaging SAARC for Resilience and Cross Border Facilitation for Rapid Response in Disasters" from 27th to 28th March 2014 in Kathmandu, Nepal. The event was attended by distinguished delegates from SAARC countries; government officials, civil society representatives, media, academics and UN organizations.

The objectives of the consultation meeting were:

- To identify cross border impediments in the way to implement SAARC comprehensive framework on disaster management and SAARC agreement on rapid response to natural disasters and to suggest ways to remove them
- To analyze post Hyogo framework and SAARC commitments towards disaster risk reduction (DRR) and resilience including challenges and opportunities for regional cooperation
- To bring key stakeholders from SAARC governments, civil society, academia and media together to evolve a network for research based advocacy and lobby work to engage with SAARC on disaster management

Oxfam convened this consultation meeting to bring together various stakeholders and facilitated fruitful dialogue with an aim to forge partnership among the SAARC Institutions, the Secretariat and SAARC Disaster Management Centre (SDMC), member governments and civil society organizations from these countries working on disaster management.



2nd Regional Consultation on Engaging SAARC for Resilience and Cross Border Facilitation for Rapid Response in Disasters March 27–28, 2014, Kathmandu, Nepal.

The experts at the consultation meeting said that examples from ASEAN (Association of South East Asian Nations) particularly the lessons learned from the Haiyan (Cyclone that hit central parts of the Philippines in November 2013) response could be drawn upon. They were of the opinion that SAARC can play a pivotal role as regional body to build resilient communities across the borders while working with the member governments and by enhancing space for civil society in the regional level activities undertaken by the SDMC and the SAARC Secretariat.

The working groups composed of delegates and participants then put forward practical solutions and ways forward as follows:

- SAARC agreement on Rapid Response to be ratified by all eight countries
- SAARC regional fund to be created to Implement DRR and to facilitate response mechanism
- Increase capacity of the nations at national level and strengthen the capacity of the regional institutes

- Formation of a SAARC emergency response team using experiences shared from ASEAN to give initial ideas
- Increase capacity of SAARC Disaster Management Center (SDMC) through partnerships with other inter-government organizations and CSOs
- Organize SAARC Humanitarian Policy Forum on the sideline of SAARC
- Summit to discuss and raise issues related to disaster management within the region
- Systematic knowledge sharing mechanisms such as data, guidelines, reports, best practices and case studies among SAARC nations
- Create campaigns (targeting media as well) at regional level to increase awareness on post HFA consultations
- Establish reliable SAARC Early Warning Signal System
- Raise awareness on roles of women in disaster management and resilience as well as providing training to women in DRR activities. ■

– **Shafqat Munir**, Regional Rights in Crisis Coordinator Asia, Oxfam

# The Safer Schools Project, Ayeryawaddy Delta, Myanmar

On May 2, 2008 Cyclone Nargis hit the Ayeryawaddy and Yangon delta areas of Myanmar causing very widespread destruction. 800 000 houses and 4 000 schools were destroyed and damaged. Over the ensuing months huge efforts were made to rebuild damaged infrastructure, and to support the initiatives of the population in rebuilding their homes. But many of the rebuilt structures would not resist another storm.

The Safer Schools project in Myanmar was developed by Development Workshop's (DW) based on DW's very long and successful experience since 1989 to 2014 in Vietnam of promoting the preventive strengthening of houses and schools to resist the effect of typhoons and floods, based on the application of ten key principles of cyclone resistant construction.

After Cyclone Nargis, Save the Children in Myanmar (SCIM) invited DW to develop a programme of safer construction to meet the challenge of assisting people rebuild safely. To develop skills and knowledge about safe storm resistant construction, DW proposed to demonstrate this through a programme of preventive strengthening of existing schools, buildings that had been quickly repaired after Nargis but that were not safe resistant structures. The Safer Schools Project (SSP) was designed by DW and implemented with SCiM field staff trained by DW. By late 2009 the SSP had strengthened 105 schools and trained hundreds of carpenters and masons in the process in the Ayeryawaddy and Yangon delta areas.

For the Safer Schools project, a small technical team was recruited and trained by DW, with a study tour in

Vietnam to see examples of strengthened houses and schools. Back in Myanmar, villages with schools that needed to be partially or comprehensively strengthened were selected with community support. An initial one day theoretical training programme carpenters, masons and village leaders took place in the school. The SSP team explained the ten principles of safe construction, and showed how these principles apply to different construction systems, including masonry walls or timber frame structures, using models and full scale examples. Techniques included strengthening the structure of the schools (putting in diagonal bracing, making good connections at joints between two or more components, for example with metal brackets), and showing how to firmly fix down the roof covering using horizontal bars of the roofing sheets and how to make sure that doors and windows will not be blown away. The next day, the participants surveyed the school to identify its weaknesses and to determine what strengthening work was required. Once the necessary materials arrived



Explaining the ten key principles of storm resistant construction to local builders in the safer schools project.

the local builders began work, with the supervision of a SSP team member (a Myanmar architect or engineer).

To make it easier for school children and the community to see what strengthening work had been done, the team arranged for different strengthening components to be painted in different bright colours, for example, metal brackets were orange, diagonal bracing painted in blue or red. Once strengthened, the project organised an open day for all the children, teaching staff, builders and the community to inspect the work and explain to the public how the school had been made safer. Children in the schools also put on a play written by DW, called the 'stubborn builder', who had to be encouraged to make his house safer to resist floods and storms, and distributed posters to raise awareness of preventive strengthening methods amongst the community.

In order to increase the impact and message about safe construction to the inhabitants, in January 2009 the SSP added the construction of small bamboo frame demonstration structures in the playground of each school, that showed how the principles of safe construction used in the schools (mainly timber frame or brick noggin structures) can equally be applied to the construction and strengthening of homes built with bamboo, poles, thatching and bamboo mat walls. The SSP and the DW ten key points of safe construction in turn influenced the design of additional SCiM education facilities and shelter projects which applied the same principles of safe construction. ■

- John Norton,

President, Development Workshop  
France (DWF), France

## Almost Ten Years after the Asian Tsunami, What Worked?

During the time of the 2004 tsunami, there was no existence of any plans or systems for disaster management at the national or regional levels. There was only village-level coping mechanisms which according to the respective communal entities were flourished by religious and traditional norms and practices.

However after the Tsunami the disaster management system for national to village level was initiated from scratch, with great effort from multi-stakeholder participation. In this process all the stakeholders- UN, international agencies, government, local government, NGOs, civil societies and communities had shared and taught each other to build strong



networks particularly, to bring and mingle indigenous, local, and international knowledge of DRR to establish workable, live disaster risk reduction systems for national level which trickle down and up. Our task

is to imbed this in different strata of societies and governing systems for sustainability and a way forward and to look for new challenges such as Climate Change and so on.... ■

- **Ajith Tennakoon**, Senior Program Adviser, Sevalanka Foundation, Sri Lanka

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### Editorial Advisors:

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Visiting Professor in Disaster Risk Management in Copenhagen, Lund, Kyoto and Oxford Brookes Universities

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International Strategy for Risk Reduction (ISDR) - South Asia, Sri Lanka

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All India Disaster Mitigation Institute, India

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The University Hospital of Columbia and Cornell, New York, USA

#### T. Nanda Kumar

Chairman, National Dairy Development Board (NDDB), Anand, Gujarat, India



### ALL INDIA DISASTER MITIGATION INSTITUTE

411 Sakar Five, Near Natraj Cinema, Ashram Road, Ahmedabad-380 009 India. Tele/Fax: +91-79-2658 2962  
E-mail: [bestteam@aidmi.org](mailto:bestteam@aidmi.org), Website: <http://www.aidmi.org>, [www.southasiadisasters.net](http://www.southasiadisasters.net)