

## An Effort towards Making HOSPITALS SAFE FROM DISASTERS



A step towards hospital safety: Bheri Zonal Hospital

Hospitals would be among the first institutions to be affected after a disaster, natural or human-induced. Because of the heavy demand placed on their services at the time of disaster, hospitals need to be prepared to handle overwhelming huge workloads.

Hundreds of hospitals and health facilities are destroyed or damaged every year by disasters caused by natural hazards such as earthquakes, landslides and floods. Millions of people are left without emergency care during and after disasters when hospitals and health facilities fail to function.

In this regard, "Hospitals Safe from Disasters" is a global campaign launched, by the Secretariat of the International Strategy for Disaster Reduction (UN/ISDR) and the World Health Organization (WHO), with support from the Global Facility for Disaster Reduction and Recovery (GFDRR) of the World Bank to ensure that health facilities and services continue to function smoothly in the aftermath of a disaster.

The price we pay for the failure of hospitals or health facilities due to

disasters is too high. In comparison, the cost of making hospitals safe from disasters is minuscule. Disaster damage to health systems results in huge economic losses, deals devastating blows to development goals, and shakes social confidence. Making hospitals and health facilities safe from disasters is not only an economic requirement, but also a social, moral and ethical necessity.

Nepal, though a seismic country, earthquake resistant standards have not been effectively applied for hospital facilities. Moreover, seismic vulnerability assessment of 19 major hospitals in Nepal conducted by National Society for Earthquake Technology-Nepal (NSET) in

cooperation with Ministry of Health (MOH), Nepal and World Health Organization (WHO) in 2001-2004 has shown that about 80% of the hospitals will be out of function if there is major earthquake.

Major damage to non-structural components and lack of organized system and personnel to respond to disaster within a health system results in serious casualties, severe functional impairment and major economic losses, even when structural damage is not significant. Further, how hospital personnel are organized to respond in disaster situations is central to functionality of hospital during and after a disaster. Therefore, implementations of functional, non-structural and structural improvement works are required to make hospitals functional during and after disasters.

In this context a project was formulated to conduct a detail vulnerability assessment of structural and non-structural safety of Bheri Zonal Hospital in early 2010. The project was implemented by NSET with funding support from European Commission's Humanitarian Aid Department (ECHO) through Action-Aid Nepal (AAN) under DIPECHO V together with Bheri Zonal Hospital (BZH).

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### National Workshop on Hospital Earthquake Safety

#### Implementing Earthquake Vulnerability Reduction Programs in Hospitals in Nepal

As the lead organization for supporting the Government of Nepal in the implementation of Flagship 1, Hospital Component, of the five priority actions under the international consortium, ADB organized a national workshop on Hospital Earthquake Safety on 23 December, 2010, in collaboration with the Ministry of Health and Population (MOHP) and World Health Organization (WHO). Mr. Amod Mani Dixit, Executive Director of NSET was commissioned as Consultant to help organize and facilitate the workshop with assistance from Mr. Ramesh Guragain, as a Facilitator.

The major objectives of the workshop were to : 1) Raise awareness of Health-



Groupwork during the hospital safety workshop

related key institutions on the need for disaster risk reduction (DRR) in Hospitals; 2) Provide/collect inputs to develop a comprehensive program strategy; 3) Convince and invite all national and international stakeholders for co-funding.

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Program for Enhancement of Emergency Response (PEER) Activities



Trainees in practical works during CSSR course

Program for Enhancement of Emergency Response (PEER) Countries Strengthen Emergency Response Capacities and Institutionalization Process

NSET continues to assist the six-beneficiary countries (Bangladesh, India, Indonesia, Nepal, Pakistan, Philippines) in PEER Stage 3 by implementing Medical First Responder (MFR) and Collapsed Structure Search and Rescue (CSSR) courses under PEER Partial Funding

Assistance Program (PFAP). Under PFAP scheme, NSET in collaboration with partnering governments or institutions co-share financial and in-kind course requirements. The program is moving towards the direction of institutionalization from the support of respective governments.

Since the start of PEER Stage 3 in 2009, NSET organized 17 PFAP events in the region. Below are some of the events conducted in PEER countries:

**Nepal**

CSSR Course was organized during October 26 to November 3, 2010. Nepal is a PEER beneficiary country since 1998 and has produced its national cadre of qualified MFR instructors facilitating in-country and regional MFR courses. Nepal has a total number of 169 MFR graduates and 133 CSSR graduates.

**Philippines**

The Fire National Training Institute (FNTI), in Laguna, completed series of PEER courses during the current program period, which are Medical First Responder Instructors Workshop (MFRIW, October 4-8, 2010), CSSR Refresher Course (October 12-15, 2010) and CSSRIW on October 20-26, 2010. Another set of PEER instructor development courses were completed at APSA, namely, TFI (November 8-12, 2010), MFRIW (November 15-19, 2010) and CSSRIW (November 24-30, 2010). FNTI is the government's training center for the country's firefighters and APSA is a non-government organization that offers emergency response trainings for interested groups and individuals. Philippines has 263 MFR graduates, 208 CSSR graduates; 130 MFRIW graduates and 97 CSSRIW graduates.

**PEER Impact - Bangladesh**

On June 1, 2010, a four-storey building in Begunbari, Dhaka, collapsed and fell over a slum area, trapping a number of victims. \*MFR and \*\*CSSR trained personnel from Fire Service and Civil Defence (FSCD) were immediately deployed to site and were able to rescue 6 live victims and recovered 25 dead bodies from the collapsed structure. Apart from firefighting, FSCD is also tasked for rescue activities.

FSCD is PEER partnering institute for the implementation of MFR and CSSR courses in Bangladesh. FSCD acknowledged the impact of PEER in upgrading the skills of its responders since the institution's induction in the

program in 2003. Until date, FSCD has 145 MFR and 120 CSSR graduates; of these, there are 34 MFR and CSSR instructors. With the rich experience of FSCD's senior PEER instructors, they are also actively involved in the government's initiative to train 62,000 community urban volunteers all over Bangladesh. FSCD also contributes in the advocacy of response preparedness by training the trainers from other response organizations such as the country's Armed Forces Division, Police, Ansar, Bangladesh National Cadet Corps, Rover Scouts and Border Guards Bangladesh. FSCD continues to take pride in its skilled responders doing excellent work in rescue and recovery operations, as well as in preparedness activities.



PEER graduates performing rescue operation

\*MFR: Medical First Responder  
\*\*CSSR: Collapsed Structure Search and Rescue

Continues 'National Workshop on ...'



Guests on opening ceremony of the National Workshop on Hospital Earthquake Safety

Participants to the workshop included high level officials and senior representatives from the Ministries of Health and Population, Physical

Planning and Works, Education, Home Affairs, Local Development, and the departments; representatives of embassies, bilateral aid agencies, UN System, National and International Non Government Organizations, Academia, Engineering Association and Private Sectors etc.

The proposed program seeks to target about 60 hospitals (13 Government, 45 Private) with more than 50 beds including two blood banks of Kathmandu Valley for seismic retrofitting. Main activities of the program include: a) detail vulnerability assessment, b) Emergency Preparedness Planning, c) Non-Structural Mitigation, d) Detail

Design and implementation of Seismic Retrofitting and, e) Awareness and Capacity Building. The project is envisaged to be implemented in 5 years with an estimate cost of USD 20.4 million.



Mr. Dixit briefing the groups during the workshop

## Schools Safer Against Earthquake

## School Earthquake Safety Program in Schools of Kathmandu Valley

NSET in collaboration with UNICEF is implementing the School Earthquake Safety Program in Schools of Kathmandu Valley in order to enhance the capacity of



Mr. Upadhyay sharing his views during the workshop

school teachers and students on emergency preparedness at schools through raising awareness among students, teachers and staff members of the selected schools on the earthquake risk; need and measures to mitigate the risk; and importance of preparedness activities.

To achieve the above mentioned objectives various activities were carried out such as;

## Workshop of Trained Teachers

2 sets of 2 days workshop for school teachers of all the three districts of Kathmandu Valley who are already trained on school earthquake preparedness have been completed. The first workshop was conducted during 28-29 November and 2nd was conducted during 2-3 December 2010 at TITI Bhaktapur. Total of 127 participants took part in the workshop out of which 76 were teachers, 33 resource



Participants involved in group exercise during workshop

persons and 17 technical persons from the three District Education Offices. The majority of the participants were the trained teachers including some teachers who were not already trained but actively involved on school safety activities were also included in the workshop. The resource persons and technical staffs of all the three District Education Offices were also included in the workshop since they need to be sensitized on school preparedness and will be responsible in monitoring the school activities in future. The workshops were conducted in consultation with UNICEF, District Education Office of Kathmandu, Lalitpur and Bhaktapur.

## Earthquake Preparedness Activities in Schools

A total of 21 schools, 7 schools from each district have been selected for preparing emergency plans, orientation on earthquake preparedness, drill procedure and conducting evacuation drill.

## Orientation to teachers and students

Orientation to students and teachers on

Earthquake preparedness and evacuation drill is being carried out in 21 selected schools. Orientation in seven schools has been completed and it is being continued in remaining schools.

## Technical assistance for selected schools

The schools are being provided technical assistance for preparing emergency preparedness and response plans. Till now emergency plans of four schools have been completed. Similarly assistance is being provided for the preparation of minimum required first aid items for the of drill exercise, establishment of signage of emergency evacuation plan, conduct earthquake safety drill, preparation of safe circulation and evacuation environment in selected classrooms (rearrange sitting plans and rectify desks and benches) and rectification of seating arrangements.



Students performing earthquake safety drill

## EARTHQUAKE ENGINEERING RESEARCH &amp; TRAINING DIVISION (EERT) ACTIVITIES

## Seismic Vulnerability Assessment of buildings

Seismic vulnerability assessment of buildings of various organizations that include the buildings of American Embassy, National Democratic Institution (NDI), Delegation of the European Union to Nepal were carried out.

## Development of Training Manual for multi hazard evaluation of buildings

Training Manual on multi hazard risk

assessment of school buildings was prepared in November under the contract agreement between NSET and UNESCO, Islamabad. The hazards include earthquakes, floods and high windstorms.

## Supervision of retrofit work at British Embassy

British Embassy Nepal is implementing seismic retrofitting of three building structures i.e. House no 5, 7 and 8 which is being supervised full time by NSET professional.

## Implementation of Non-structural mitigation and disaster preparedness training in Bheri Zonal Hospital, Nepalgunj

Non-structural mitigation of the hospital buildings was implemented and emergency response plan was prepared for Bheri Zonal Hospital, Nepalgunj as per the contract agreement between NSET and Action Aid, Nepal. Similarly, training to hospital staffs and drill was conducted as part of the disaster preparedness.

## NSET PARTICIPATION

NSET professional Mr. Gopi Krishna Basyal participated in the 'National Training on Establishing National Disaster Observatory (NDO) and Disaster Inventory/Information Management System (DIMS) in Armenia' held in Yerevan, Armenia as a resource person during 24- 26 November 2010. The training was organized by MoES, UNDP Armenia and GRIP/BCPR.

NSET professionals participated in the National Workshop "Mainstreaming DRR into Development" organized by Practical Action at Hotel Shangri-La on 10 November 2010.

NSET professional Mr. Ganesh Jimjee delivered presentation on "Key Issues on DRR and WASH" in a WASH (Water Sanitation and Hygiene) forum on "WASH Roles on Disaster Risk Reduction in context of Nepal: Key Issues, organized by Paschim Paaila" an informal youth network on 28 December 2010 at ENPHO hall, Baneshwar.

## OTHER ACTIVITIES

### Emergency Shelter Cluster

The Shelter Cluster works collaboratively on activities to address preparedness issues as prioritized by the country level clusters. The Emergency Shelter Cluster was formally activated in Nepal following the Koshi Floods in 2008. IFRC agreed to permanently lead the Shelter Cluster in Nepal, provided the required funding is secured. The role of cluster lead is taken in close coordination with the Nepal Red Cross Society (NRCS) (The National Counterpart), The Department of Urban Development and Building Construction (DUDBC) (the government's technical line agency) and UNHABITAT (the shelter focal point for recovery under UNDP lead recovery network). NSET is one of 31 members of the Shelter Cluster.



During the Shelter Cluster Meeting

The purpose of the Emergency Shelter Cluster is to ensure an effective and timely response to emergency shelter and non food items (NFI) needs during natural disasters in Nepal through systematic coordinated operational planning, response and monitoring. The objectives of Emergency Shelter Cluster are:

- To establish and maintain adequate

capacity and predictable leadership in the emergency shelter and NFI sector for managing a humanitarian response.

- To have an effective emergency shelter and NFI contingency plan in place and implemented by all partners.
- To meet the gaps and priorities for emergency shelter and NFI in Nepal.
- To ensure effective partnerships and coordination between government, UN, Red Cross and non –UN agencies (I/NGOs, donors, etc.)

### Priority activities for 2011

- Update membership lists and contact details for the Emergency Shelter Cluster.
- Conduct monthly/bi-monthly Cluster meetings on a rotational hosting basis, including as a minimum IFRC, NRCS, DUDBC, and UNHABITAT.
- Through a consultative process, update the current emergency shelter and NFI Contingency plan, including the finalization of standard emergency shelter models, emergency shelter kits and NFI kits.
- Conduct at least one simulation exercise to test the emergency shelter and NFI Contingency plan.
- Engage with the Coordination and Camp Management Cluster on site identification and shelter planning for post earthquake IDP camps in Kathmandu Valley.
- Conduct a mapping exercise with cluster members and other sectoral partners to identify existing stocks and capacities and identify gaps/needs for

prepositioning stock at national and district level.

- Undertake at least two district or regional level emergency shelter trainings to further develop the capacities of shelter cluster members.
- Through a consultative process, develop and adapt Emergency Shelter Guidelines and Practitioners Manual for emergency shelter and NFI for use by cluster members.
- Organize a joint World Habitat Day event with cluster members to advocate to key stakeholders on key emergency shelter issues/ priorities and resource gaps.

Regular meetings have been taking place involving key Shelter Cluster Members. The Shelter Cluster Members specifically NRCS, NSET, HABITAT for HUMANITY, UNHABITAT had hosted a series of Shelter Cluster meeting on 2nd and 25 November, 22nd December of 2010 and 31 January of 2011. From now on shelter cluster meeting will be held on a monthly basis and will take place on last Wednesday of the month at 2:00 - 3.30 pm unless otherwise indicated.

### Expected outcomes for 2011

- Emergency Shelter and NFI Contingency Planning and coordination mechanisms will be strengthened and better understood by cluster members.
- Capacities of cluster members to respond to emergency shelter and NFI needs will be strengthened.
- Additional resources for emergency shelter in Nepal will be secured.

## ORIENTATION PROGRAMS

### Earthquake Orientation

October 2010: An orientation program on earthquake preparedness was conducted for Communication Directorate Trainees of Nepal Police at the Nepal Police Headquarter, Naxal. Altogether 32 participants attended the training program.

October 2010: An orientation program on earthquake preparedness was conducted for the staff of Terre des homes (TDH Nepal) at the TDH office premise, Lalitpur. The orientation was followed by an evacuation drill.

November 2010: An orientation program on earthquake preparedness was conducted for the staff of Family Health International (FHI-Nepal) at the FHI office premise, Baluwatar. The orientation was followed by an evacuation drill.

### ADRRN AGM 2010 elects new Board

from Caritas Manila and Prof. Quazi Quamruzzaman from Dhaka Community Hospital (DCH) as Board Members.

ADRRN, a network consists of 34 national NGOs from 16 countries across the Asia-Pacific region stands as a strong voice of Asian Civil Society on Disaster issues! The network has dream of "Safe community environments and disaster resilient societies" and approach this dream by promoting coordination and collaboration among NGOs and other stakeholders for effective and efficient disaster reduction and response in the Asia-Pacific region.



Newly elected Board Members of ADRRN

## Views from the Frontline (VFL 2011)



During the Interaction meeting on VFL

NSET is to continue to serve as the National Coordinating Organization (NCO) for carrying out the action research project "Views from the Frontline 2011" (VFL 2011), in Nepal.

The 'Views from the Frontline' project, initiated in 2009, was designed to support the implementation of the Hyogo Framework for Action (HFA) by establishing a global infrastructure to measure progress at the local level. The initial phase of the project was a highly effective collaborative action. It gathered responses from over 7000 respondents in 48 countries, and made a major impact at

the Global Platform for Disaster Risk Reduction in June 2009. Nepal was also involved in the project and NSET served as the National Coordinator for Nepal and as well the Regional Coordinator-South/Southeast Asia.

The next phase of the programme: 'Views from the Frontline 2011' (VFL 2011) builds on this; based on a thorough learning review of the initial phase and with an extended network of participating countries. The focus of VFL 2011 is local governance, as this is critical to effective implementation of policy and provision of resources; leading to the HFA achieving real impact on the ground, where people who are at risk live, eat and work. This time the target is to cover 10 Geographical locations and around 80 countries for the assessment.

Nepal is one of the participating countries and NSET will conduct the assessment in Nepal as the National Coordinating Organization (NCO). Apart from being the NCO, NSET will also execute the role of Regional Coordinating Organization (RCO) for South Asia.

In this regard, an Interaction Meeting on "Views from the Frontline" Project (VFL

2011) was conducted on Thursday, November 25, 2010 at NSET Office Building, Bhainsepati, Lalitpur to discuss on the review process of VFL 2011 and other details of the survey.

Since it will be a national level survey and the result will showcase the overall picture of the progress of HFA implementation in Nepal, it was agreed in the meeting to form a National Advisory Committee (NAC) which will provide overall guidance to the project. The NAC members will act as 'ambassadors' for the VFL.

As discussed in the meeting in order to capture the views of the frontliner's throughout the country, Participating Organizations (POs) working at the community level from the four different sectors will be selected and trained to implement the survey process effectively.

- Further, as a Regional Coordinator, NSET professional Mr. Bijay K. Upadhyay conducted meeting/workshop on Views from the Frontline Project 2011 for the representatives of National Coordinating Organization and Participating Organizations of Sri Lanka and Maldives during 12-14 December and 16-18 December, 2010 respectively.

## National Network of Women for Community Resilience

NSET professionals Ms. Bhubaneswari Parajuli and Ms. Nisha Shrestha participated in the 2nd quarterly meeting on National Network of Women for Community Resilience held in Bharatpur, during 28-30 December 2010. NSET is one of the executive members of the network along with Lumanti Support Group for Shelter (Secretariat and Overall Coordinator), Himalayan Grassroots Women's Natural Resources Management Association (HIMWANTI), Nepal Mahila Ekta Samaj, Disaster Management Committee of Butwal, Buddhajyoti Baal Udhyan Lower Secondary School and Cooperative Network of Nepal.

The National Network was formed

informally during the South Asian Grassroots Women Meeting held in Nepal on February 2010 consisting of representatives from seven different organizations. The network was formed in order to enhance the knowledge of grassroots women on disaster risk reduction and its preparedness; to scale up an initiation of community on disaster resilient issues through the mobilization of grassroots women and to build the leadership of grassroots women on disaster resilience.

Further follow-up works were carried out to formalize/channelize the network and in this regard second quarterly meeting was conducted in Bharatpur to discuss among the members how to take forward

and strengthen the network.

This network has its own significance to mobilize women of different sectors in different issues and experiences of these will add strength to build resilient community in their own respected areas. Besides that Huairou Commission and GROOTS International has extended their support to reach out this resilient campaign in most risk/vulnerable communities of Nepal with small initiation of Community Disaster Resilient Fund (CDRF) by engaging grassroots women leaders of Nepal. With this fund Network has moved forward with some of the key actions to contribute in building resilient community in Nepal.

## CONFERENCE / WORKSHOPS

(October-December 2010)

Month / Year	Conference/ Workshops	Venue	Participation
October	Kick-off meeting of ERASMUS Mundus Project, 18-19 October 2010	Rome, Italy	Mr. Amod Dixit
November	South Asian and South East Asian Regional Workshop for NCOs and RCOs of Views from the Frontline 2011, 2-3 November, 2010	Phnom Penh, Cambodia	Mr. Bijay K. Upadhyay, Ms Nisha Shrestha
December	Global Earthquake Model (GEM) Progress Meeting Hazard and Risk Plenary Meeting, 1-3, December 2010	Singapore	Mr. Amod Dixit
December	ADRRN Annual General Meeting, 8-10 December 2010	Yogyakarta, Indonesia	Mr. Amod Dixit, Mr. Khadga Sen Oli

Continues An effort towards ...



Siren being installed on hospital premise



Hospital staff being oriented on hospital response planning

The overall objective of the project was to strengthen the mass casualty management system in Bheri Zonal Hospital leading towards prompt and better performance of the hospital after a disaster for an effective, efficient and inclusive response.

Bheri Zonal Hospital (BZH) is located in Nepalgunj, Banke district. Banke district which lies on the mid western region is mainly the Terai plains and remains one of the vulnerable areas due to flood, fire and epidemics, in addition to very high seismic hazard. Bheri Zonal Hospital is providing services to more than 100,000 people of the mid and far western region of Nepal per year. It is the only largest government hospital in these regions. The hospital has been serving both the mid-western and far-western regions and has the regional responsibility to provide uninterrupted health services during emergencies.



Earthquake resistant pump house

Despite of the critical role of the hospital in disasters, hospitals in Nepal are not prepared to respond such situation for various reasons. The Bheri Zonal Hospital is no exception.

Based on the assessment report, preparation of comprehensive emergency response plan of the hospital and implementation of key activities to support the plan together with non-structural mitigations was chosen by the hospital management in consultation with Action Aid and NSET.

While preparing the plan, the issue of accessibility was brought by Handicap international (HI), as the people with disabilities and those with reduced mobility, pregnant women, sick people, children and elderly people are more vulnerable to natural



Trolley being hooked on a wall as a part of non-structural mitigation

disasters. So it was agreed to work in collaboration with Handicap International (HI), to include the accessibility issues as far as possible during the preparation of the emergency response plan as well as during implementation of activities to support the plan.

The project broadly covered and focused on awareness, capacity building, and making the hospital safer and enabling to cope with the disaster. It is a pilot project developed by actors who have gathered their respective expertise to design and build a replicable model that can be used by Governmental and Non-governmental actors in their hospital safety-related activities and also, to advocate for a higher level of hospital safety in the country as per the first Flagship Program for Disaster Risk Management in Nepal.

Various activities were implemented to achieve the goal of Hospital preparedness for emergencies such as;

- Structural / Non-Structural Vulnerability Assessment of the Hospital
- Orientation and interaction program on disaster preparedness planning for hospital
- Implementation of non structural mitigation measures
- Preparation of Disaster Response Plan of the Hospital for functionality after the disaster
- Preparation of Spatial Plan of the hospital for emergency response
- Renaissance survey of the Bheri Zonal Hospital (BZH) complex
- Design and cost estimate of the recommended activities to support the plan including implementation of the priority works such as -
  - Construction of two exit gates, putting the sirens in four locations of the hospital complex, putting shade for generator, demolishing and building of three pump houses including one new,
  - putting two channel gates, clearing and planting of grass in the garden area to maintain as a lawn for allocating patients, making



Hospital equipment being fixed as a part of non-structural mitigation

and fixing of sign boards for quarters and main entrance gates of the hospital were implemented. Life line facilities like generator and pump house were constructed by incorporating the earthquake resistant elements so that they can function in the aftermath of a disaster.

### Training and Hospital Disaster Preparedness Drill at the Bheri Zonal Hospital

Development of hospital disaster response plan is not an end in itself. It is imperative to test the plan and drill is a good way to test the plan. Drill is based on possible real-life scenarios in order to improve emergency management. It is an Operations-based Exercise that validates plans, policies, agreements and procedures, clarify roles and responsibilities and identify resource gaps in an operational environment

In this context, orientation training and the drill program was developed as a continuing effort to help Bheri Zonal Hospital undertake effective and efficient drills specifically for emergency preparedness and response with funding support from ECHO through Action-Aid Nepal under DIPECHO V and technical support from NSET. The ultimate goal of the Training and Drill Program was to increase the capacity of the hospital in handling the mass casualty incident in Bheri Zonal Hospital for an effective, efficient and inclusive response after a disaster.

The orientation training to the hospital staff and other stakeholders was conducted on November 25 -26, 2010 in three shifts so that all 175 staff of the hospital could manage to attend at least one of the shifts. The orientation training was followed by a Hospital Disaster Preparedness Drill at the Bheri Zonal Hospital on November 30, 2010. Despite being the first drill, it was a good learning experience for all who were directly and indirectly involved.

As preparedness planning is an ongoing process and disaster response plan is a living document it was felt that this was just the beginning. Drills need to be conducted on a regular basis for the plan to be reviewed and updated regularly.



Participating in the debriefing session



During the Disaster Preparedness Drill at BZH

## Disaster Reduction Hyperbase

Disaster Reduction Hyperbase-Asian Application (DRH-Asia) is a facility disseminating disaster reduction technology and knowledge. It has been designed for potential use by policy makers, community leaders, practitioners, and motivated researchers who wish to make access to appropriate technical know-how's that can help them establish practical disaster management plans.

The DRH offers open and interactive access and participation. Its major components consist of DRH Database

(Find technologies), DRH Forum (Propose a technology; Discuss technologies), and DRH Links (DRH partners). It also provides DRH Project (DRH Project activities) allowing access to all records of the DRH Project (Phase I: April 2005-March 2006, Phase II: July 2006-March 2009 / major sponsor: MEXT).

While DRH-Asia is focused on Asian context, it is ready to accommodate contributions from other regions to enhance cross-regional collaboration.

The DRH was developed in an effort for implementation of the Hyogo Framework for Actions 2005-2015 adopted at WCDR (World Conference on Disaster Reduction 2005), specifically as a component of "Portfolio for disaster reduction" proposed by the government of Japan. NIED served as a lead institution in close collaboration with UN-ISDR, MEXT, CAO, KU, BNU, NSET, SEEDS, IIEES, ADRC, and other institutions constituting an active multilateral team.

## NEPAL: Haiti wake-up call for earthquake preparedness

KATHMANDU, 2010 (IRIN) - Experts in Nepal have expressed concern over levels of earthquake preparedness after the recent disaster in Haiti.

"I beg Nepal not to wait for that terrifying moment. The more preparations we make now, the more Nepalis will survive and the faster Nepal will recover," John Galetzka, a field geologist at the California Institute of Technology, told IRIN.

According to experts, the main source of seismic activity in Nepal is the subduction of the Indian plate under the Tibetan plate or Himalayas.

"The more I read about what happened in Haiti, the more concerned I become," Wendy Cue, head of the UN Office for the Coordination of Humanitarian Affairs (OCHA) in Kathmandu, said.

Should an earthquake of similar magnitude or worse strike Nepal, the outcome could be much worse.

"Nepal has and will have another earthquake in the future that is similar in magnitude to the recent Chilean earthquake - magnitude 8.8. This size of earthquake will not just double or triple the size of the magnitude 7.0 Haiti earthquake in terms of energy release, but [be] thousands of times larger," Galetzka, who has worked extensively in the region as well as in South America, warned.

Over 16 major earthquakes have struck Nepal since 1223, the last occurring in 1998, according to the prepared by the government of Nepal and the Disaster Preparedness Network-Nepal (DPNET).

In 1934, an 8.3 magnitude quake killed over 8,500 people in Kathmandu Valley.

"Today, an earthquake of such magnitude could be catastrophic," Amod Dixit, an expert on earthquake preparedness and director of the National Society for Expert Technology (NSET), a major local civic group involved in earthquake disaster education and seismic risk reduction projects, said.

### Damage scenario

According to a 2002 damage scenario by Japan International Cooperation Agency (JICA) with Nepal's Ministry of Home Affairs, a 7.5 magnitude quake in Kathmandu would result in at least 40,000 deaths and almost 100,000 injuries.

Dozens of bridges linking the city could be knocked out, while much of the city's health infrastructure would be destroyed.

The Haiti disaster has increased significant awareness in Nepal on earthquakes and we hope that it will scale up action so that we won't have a potential Haiti here. About 95 percent of water pipes could be damaged, and 40 percent of electricity lines and all electric substations destroyed.

But the scenario was based on an estimated population of 1.5 million. Government estimates suggest the population has nearly doubled since then.

According to NSET and GeoHazards International (GHI), a US-based NGO which has conducted several surveys and research on earthquake risks in the country, a magnitude 7.5 or 8.0 quake today would kill more than 100,000 people, leave 500,000 injured and make 1.5 million homeless.

### Airport risk

If Tribhuvan International, the country's only international airport, were badly damaged, a quake-affected Kathmandu could well be cut off from immediate international assistance.

Experts from the UN, international agencies, NGOs and the government are particularly worried about this, as it could make any response in this largely mountainous, landlocked nation slow, if not almost impossible. While Haiti's Port-au-Prince has an active port, most assistance to Nepal would need to be brought in by air.

### Disaster Management Act

"The Haiti disaster has increased



Haiti earthquake devastation

significant awareness in Nepal on earthquakes and we hope that it will scale up action so that we won't have a potential Haiti here," OCHA's Cue said.

"Haiti's tragedy has given us a wake-up call to act now," Home Ministry official said.

The government is speeding up approval of the Disaster Management Act, which will for the first time address preparedness, mitigation, response and recovery strategies at national level, and will soon replace the weak 1992 policy that was focused primarily on post-disaster response, he said.

"We will soon be strictly enforcing building codes and advancing our preparedness programmes as we are under immense pressure from all sides - especially after Haiti's earthquake," he added.

Several ministries - including roads, local development, health, education, physical planning and law - are also now joining hands with the Home Ministry to work on earthquake preparedness for the first time.

*Excerpt from IRIN, the humanitarian news and analysis, a service of the UN Office for the Coordination of Humanitarian Affairs*

### Visitors Note:

*A wonderful, inspiring visit with great visionaries- I look forward to watching your good work for Nepal unfold and finding ways to support these important efforts. The Red Cross/ Red Crescent is happy for this partnership!!*

**Nan Buzard**  
American Red Cross, Washington DC, USA

### QUAKE MONITOR (International)

Year	Magnitude	Location	Remark
21/10/10	6.7	Gulf of California	No reports of damage or casualties
25/10/10	7.7	Kepulauan Mentawai Region, Indonesia	At least 340 people killed and 330 missing from the earthquake and tsunami with maximum height of 7 meters. Felt (III) at Bukittinggi and Padang, Sumatra. Also felt at Bengkulu. Felt (II) in Singapore. Felt at Bangkok, Thailand.
03/11/10	5.3	Serbia	Two people killed and several injured at Kraljevo
30/11/10	6.8	Bonin Islands, Japan Region	Felt (IV) at Yokohama and Zushi and (III) at Ayase and Yokosuka, Honshu. Also felt at Tokyo.
02/12/10	6.7	New Britain Region, Papua New Guinea	No reports of damage or casualties
08/12/10	6.5	South Sandwich Islands Region	No reports of damage or casualties

Source: USGS

### FOR TIPS ON EARTHQUAKE RISK MITIGATION TUNE IN TO...

Radio Sagarmatha (FM 102.4) at 7.30 PM, Tuesday  
Radio Annapurna (FM 91.8) at 7.30 AM, Wednesday

### WATCH ...

Nepal Television every Saturday 8:25 am  
"Bhukampa Bishesh" section on Janachaso Program

Think about making your home  
**Earthquake-Resistant**

Attend our House Owners  
Consultation Program  
"Every Friday: 2-5pm"

**FRIDAY FREE  
EARTHQUAKE CLINIC**

at NSET Office

### PROFILE

### Mr. Narayan Prasad Marasini

Civil Engineer

National Society for Earthquake  
Technology-Nepal (NSET)



Mr. Narayan Prasad Marasini is Civil Engineer by profession and has been working with NSET since February 2006 for Community Based Disaster Risk Management program (CBDRMP). CBDRMP includes a host of community-based program for empowering local communities to enhance their capacities in earthquake/ disaster risk reduction and planning for emergency response. Hence, his responsibilities at NSET include community mobilization, coordination with local authorities at district/village levels, developing partnerships with local clubs, volunteers, and senior citizens. He has good experience in project management and resource mobilization as he was involved in several construction projects in Nepal with private sectors as program coordinator for more than five years before joining NSET in February 2006.

Mr. Marasini holds a Bachelors Degree in Civil Engineering from the Institute of engineering pulchowk campus under the Tribhuvan University. He has attended several national / international training programs on Disaster Risk Management. He has a rich work experience in Nepal, Iran and Pakistan. He has implemented several projects as the team leader and/or deputy Team Leader. Recently, he led a joint team of NSET and Nepal Red Cross Society to implement a program on Disaster Preparedness for Safer Schools in Nepal (DPSS – Nepal) in collaboration with the American Red Cross. He was a team member from NSET commissioned to assist the Earthquake Reconstruction and Rehabilitation Authority (ERRA) of Pakistan for capacity building for earthquake resistant rural reconstruction – a job that required him to serve as an Instructor for training a wide target groups from engineers and architects to masons and petty contractors and house-owners in aspects of earthquake-resistant construction. Similarly, he was the team member from NSET in Iran where NSET had provided technical assistance to Asian Disaster Preparedness Centre (ADPC)/Thailand to implement the UNDP-Government of Iran Joint National Program for Strengthening Capacities for Disaster Risk Management. The goal of the program was the reduction of disaster vulnerability and prevention of loss of lives and damages to properties human settlements, infrastructure, and critical facilities in the Islamic Republic of Iran.

Mr. Marasini was awarded research and action grants under the prevention consortium which was a World Bank funded innovative action-oriented projects for disaster risk reduction. He did the research on "Study on Existing Practice and Improvements in Concrete Block Wall Construction" within rural and Urban areas of Nepal and completed the task between January 2008 and December 2009. This study focused mainly on the quality production of masonry construction materials.

Mr. Marasini is the member of several professional engineering associations.

### FOR MORE INFORMATION ON

Earthquakes and NSET's efforts towards earthquake risk reduction, log on to [www.nset.org.np](http://www.nset.org.np)



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