

Earthquake Safety



NATIONAL SOCIETY FOR EARTHQUAKE TECHNOLOGY-NEPAL

भूकम्प प्रविधि
राष्ट्रिय समाज-नेपाल

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Test on non-engineered masonry building

'Pull Down Test'

to test the vulnerability of buildings to earthquakes

Most of the casualties in the past earthquakes have occurred due to collapse of non-engineered masonry buildings (buildings constructed using brick masonry). Such non-engineered masonry buildings are widely available in Nepal and the region. Knowing the seismic risk of such widely available masonry buildings in Nepal and the region and to identify possible improvement measures, a Pull Down Test of an existing building was performed in Nepal as a part of the Regional Program of Earthquake Risk Reduction and Recovery Preparedness Program (ERRRPP) supported by Asian Disaster Reduction Center (ADRC), Japan. NSET provided the technical assistance needed for the pull down exercise. The purpose of the test is to investigate and compare seismic resilience of retrofitted and non retrofitted buildings. The test provides further opportunity to review and analyze retrofitting methods for masonry building which are the most common types of buildings in Nepal.

The first "Pull-Down Test" of an existing non-retrofitted building was conducted on 15th October in Kathmandu, Nepal. In this test, a 40-year-old building was pulled on until it fell down. Many participants from the GoN, UN, ERRRPP, INGOs, NGOs, NSET and local communities, representatives from various media observed the experiment enthusiastically. As the intensity was carefully increased, the cracks in the wall of the house grew larger until the

structure finally collapsed. This event made the participants keenly aware of how vulnerable existing buildings would be in a major earthquake.

The second "Pull-Down Test" of the retrofitted building was conducted on 2-3 November to confirm the effectiveness of the jacketing method of retrofitting as compared with non-retrofitted buildings, based on the results of the first pull-down test.

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Earthquake Safety Day 2010

The 12th edition to mark with gala events

"Enhance Community Safety, Reduce Earthquake Risks Construct Safe Schools, Hospitals and the Settlements"

The 12th edition of Earthquake Safety Day is going to be celebrated nationwide with series of gala events during January 16, 2010 and around. Government of Nepal had decided in 1999 to observe this day annually in commemoration of the most devastating tremor that quaked on 15th of January 1934 (i.e. 2nd Magh 1990 as per Bikram Sambat calendar) in Nepal-Bihar region. The preparation works are now at top gear. Preparatory meeting of Earthquake Safety Day National Committee held on December 15, 2009 under chairmanship of Honorable Minister Mr. Bhim Bahadur Rawal, Ministry of Home Affairs has affirmed national programs of this celebration.

Earthquake Memorial Meeting - 16 Jan, 2010, Bhugol Park, Kathmandu

National Meeting - 16 Jan 2010, Jawalakhel, Lalitpur

Earthquake Safety Exhibition - 16-19 Jan, 2010, Jawalakhel, Lalitpur

Earthquake Safety Walkathon - 23 Jan, 2010, Bhugol Park, Kathmandu

National Symposium - 13-14 Jan, 2010, Yak Palace, Pulchowk, Lalitpur

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Mr. Amod Mani Dixit honored with prestigious Disaster Mitigation Award-2009



Mr. Dixit receiving Disaster Mitigation Award

Mr. Amod Mani Dixit, Executive Director of National Society for Earthquake Technology -Nepal (NSET) has been honored with prestigious Disaster Mitigation Award – 2009 by National Institute of Disaster Management (NIDM), an undertaking of Ministry of Home Affairs, Government of India. NIDM mentioned officially that Mr. Dixit has been selected for this award in view of his outstanding contributions for education, training and awareness for earthquake risk mitigation in South Asian Region. Mr. Dixit got honored with this award in a very august presence of more than 2000 distinguished scientists and personalities from various agencies including Gen. N.C.Vij, Vice-chairman of National Disaster Management Authority (NDMA), India; Ms. Margareta Wahlstorm, UN Assistant Secretary General and Special representative for Disaster Risk Reduction and Mr. G.K. Pillai, Union Home Secretary; Lt Gen (Retd) Farooq Ahmad Khan Chairman, NDMA-Pakistan, Mr. Farhad Uddin Director General, Disaster Management Bureau-Bangladesh, Dr. Abdul Matin, General Director of Afghanistan National Disaster Management Authority (ANDMA)

in a very auspicious occasion of inaugural session of Second India Disaster Management Congress, on Wednesday Nov 4, 2009 at Vigyan Bhawan, New Delhi.

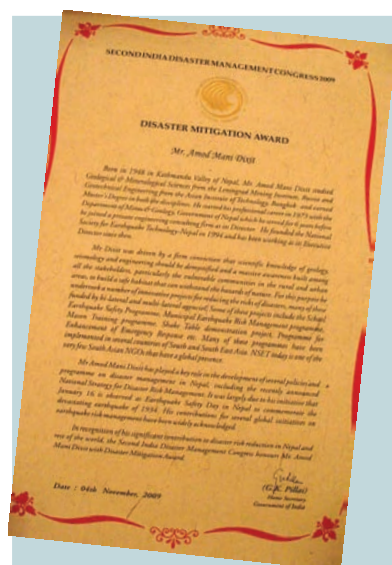
NIDM had instituted Disaster Mitigation Award, which was given to two distinguished persons during the First India Disaster Management Congress in November 2006, Dr. A.S. Arya, Professor Emeritus, IIT Roorkee from India and Professor Muhammad Yunus, the Noble Laureate and the Founder of Grameen Bank from Bangladesh for their outstanding contributions for reducing disaster risk in South Asia.

ACHIEVEMENTS

- Mr Amod Mani Dixit, Executive Director of NSET has been proposed/selected as a member of the Scientific Board of GEM Foundation, The Global Earthquake Model Project. Due to his extensive relevant experience in this field and especially in less developed countries, Mr. Amod Dixit was chosen as an ideal candidate for this position.

The “GEM Foundation” has been established at the EU Centre Foundation, in Pavia, Italy. The main purpose of the GEM Foundation is to establish an independent, uniform standard for calculating and communicating earthquake hazard and risk, and also to be a critical instrument to support decisions and actions to reduce earthquake losses worldwide.

The Scientific Board (SB) is the core body of GEM made up of six international experts selected by the Governing Board, with proven expertise on GEM Foundation-



Certificate of Disaster Mitigation Award

related scientific fields (hazard, vulnerability, risk, and socioeconomic losses), experience on running large collaborative efforts, wide-ranging international connections, demonstrated capacity to secure significant contributions of data and work.

- Mr. Amod Mani Dixit has been appointed as the member of the Results Management Council of GFDRR- Global Facility for Disaster Reduction & Recovery for the period 2010 – 2011. GFDRR is a partnership of the ISDR system to support the implementation of the Hyogo Framework for Action (HFA). The GFDRR is managed by the World Bank on behalf of the participating donor partners and other partnering stakeholders. The Results Management Council of GFDRR provides technical oversight to all GFDRR operations, its relevance, quality and impact.

CONFERENCE / WORKSHOPS

(February - April 2008)

| Month / Year | Conference/ Workshops | Venue | Participation |
|--------------|--|--------------------------|--------------------------------------|
| September | ADRRN Board Meeting on 14 Sept 2009 in Bangkok | Bangkok, Thailand | Mr.AmodM. Dixit |
| September | Project Working Group Meeting and Workshops of Risk Sensitive Land Use planning for Kathmandu Metropolitan City, Facilitate KMC-NSET team during the meeting and workshops 15-19 Sept 2009 | Makati City, Philippines | Mr.Surya Narayan Shrestha |
| September | Socio-Economic Impact brainstorming meeting organized by GEM Foundation in Paris , Sept 16, 2009 | Paris, France | Mr.Amod M. Dixit |
| October | SAARC Regional Workshop on Earthquake Risk Management in Islamabad on 8-9 October 2009 | Islamabad, Pakistan | Mr.Amod M. Dixit |
| October | "DRH Consortium International Workshop" toward implementation of Science for Disaster Risk Reduction at Kyoto University, Kyoto, Japan, 10-16 Oct 2009 | Kyoto, Japan | Mr.Amod M. Dixit |
| October | ADRRN Annual General Meeting (26-30 Oct 2009) | Dhaka, Bangladesh | Mr.Amod M. Dixit, Mr. Khadga Sen Oli |
| November | 36th World Hospital Congress on 10-12 November 2009 | Rio de Janeiro, Brazil | Mr. Amod M. Dixit |
| November | Workshop/retreat validating and reviewing of earthquake risk assessment and contingency planning on 6-7 Nov, 2009 under Earthquake and Tsunami Preparedness Component of CDMP, ADPC | Dhaka, Bangladesh | Mr. Ramesh Guragain |

Comparative Risk Assessment (CRA) in Humla District

NSET conducted Comparative Risk Assessment (CRA) in Humla District, the north-western part of Karnali Zone of Nepal as per the contract made on 26 August 2009 between NSET and Mission East (ME) Nepal with the main objective to identify and map the areas/villages more at risk of multiple hazards.

Under the project, a team composed of Natural Hazard and Risk Assessment experts, geologists, community motivators and Participatory Vulnerability Assessment (PVA) experts from NSET visited the selected villages to conduct the community meetings in each village during August-September 2009 and received the information in the form of questionnaire and social maps. The team closely assessed the existing hazards, vulnerabilities and potential risks.



Community Participatory Vulnerability Capacity Assessment

Out of 27 VDCs of Humla, the current study covered only 6 VDCs containing 31 villages to conduct risk assessment to identify the hazards more likely to occur with the biggest impact on the community's or individual's assets. It was observed that the capacity of the local people to cope with disaster risk was very low due to low level of preparedness and ineffectiveness of awareness campaigns. So, an effective awareness campaign (leading towards preparedness) would be the crucial very first step for the disaster risk reduction process in the region. Unless the potential victims are aware, the risk will remain the same even after the implementation of several risk mitigation programs.

For giving continuity to the project, the first of the foreseen series of workshop on "Review of Disaster Management in Humla District" was organized in Simikot by KIRDARC and Mission East with technical assistance from NSET. The major activities of the workshop were:

- Sharing of the Disaster Scenario and existing Disaster Management System in Nepal including the provisions of local level DM in the Local



Community Participatory Vulnerability Capacity Mapping

Governance Act, and updated information on the newly endorsed National Strategy on Disaster Management by the Government of Nepal.

- Sharing of the findings of Comparative Risk Assessment conducted by NSET in collaboration with Mission East in August 2009.
- Reviewing the existing Disaster Management System in Humla with special focus to current status of Disaster Response, Preparedness and Mitigation Activities in Humla.

Disaster Risk Reduction Initiatives in Kathmandu Metropolitan city (KMC)



KMC Executive Mr. Ganesh Rai Addressing the workshop

Earthquakes and Megacity Initiatives (EMI), National Society for Earthquake Technology -Nepal (NSET) and Kathmandu Metropolitan City (KMC) have jointly implemented the cross-cutting capacity development project since 2005. During the period, different trainings and workshops have been conducted for understanding the risk, risk reduction measures and further building up the capacity of the communities.

With the funding support from German Committee for Disaster Risk reduction (DKKV) and technical support from EMI and NSET, KMC has been preparing the Kathmandu Risk Sensitive Land Use Plan and Emergency Operation Plan which aims to mainstream disaster risk reduction in the development strategies and legislations of KMC through development of a risk-

sensitive land-use plan, advocacy campaigns, policy formulation, inter-institutional coordination and strengthening of local institutions. Another initiative is the Kathmandu Emergency Management that aims to enhance the institutional capacities of the city government of Kathmandu in emergency and disaster management and integrates it with the National Strategy for Disaster Risk Management.

A workshop was held in Shree Meeting hall at NSET on 14 Dec. 2009 to present draft final report to the concerned stakeholders on Emergency Management System and Risk Sensitive Land Use Planning for Kathmandu Metropolitan city. The comments and suggestions gathered will be incorporated in the plans being finalized and KMC will take it further for the implementation of the plan.

PEER 3 Regional Planning Meeting

NSET conducts PEER Country Planning Meetings in Bangladesh, Indonesia, Philippines and Nepal

NSET conducted PEER Country Planning Meetings in four of the six project countries for PEER Stage 3 (2009-2014), Objective 3. NSET, in collaboration with PEER nodal agencies/respective governments in each of the beneficiary country, organized and completed country meetings in Bangladesh, Indonesia, Philippines and Nepal. The Country Planning Meeting served as a platform to officially launch PEER Stage 3 in above mentioned countries. Below are the specific objectives and some details of the meeting:

- Promote smooth transition from Stage 2 to Stage 3;
- Share information on PEER Stage 3;
- Explain roles of implementing parties and beneficiary countries in this stage;
- Determine national strategic directions on training of emergency responders and assist countries in development of a roadmap for enhanced emergency preparedness for effective response.
- The first CPM was held in Bangladesh on October 26-27, 2009 at the Disaster Management Bureau in Dhaka and was attended by implementing partners for all three program objectives, namely: Ministry of Food and Disaster Management, Disaster Management Bureau, Fire Service and Civil Defense, Ministry of Health, Bangladesh Red Cross Society, National Institute of Preventive and Social Medicine, Dhaka City Corporation. USAID Mission in Bangladesh was represented by Ms. Jo Lesser-Oltheten, Director, Office of Food, Disaster and Humanitarian Assistance.
- The Country Planning meeting in Indonesia was held on December 2-3, 2009 at Jakarta, Indonesia and was attended by implementing partners, namely: National Disaster Management Agency (BNPB), Ambulan 118, Indonesia Fire Services, Badan SAR National (BASARNAS), Palang Merah Indonesia (PMI, A member of International Federation of Red Cross and Red Crescent Society),



The Honorable Secretary Mkhlesur Rahman, Secretary, MOFDM, joined NSET, ADPC, USAID Bangladesh and PEER country partners during Country Planning Meeting (CPM), October 26, 2009, Dhaka.



L-R: Mr. Aloysius Rego (ADPC), Mr. Yusak Oppusunggu (USAID Indonesia), Mr. Amod Mani Dixit (NSET), and Professor (Dr.) Aryono Puspongoro (Ambulan 118) graced the Opening Program of PEER Country Planning Meeting, December 2, 2009, Jakarta.



PEER Objective 3 partnering organizations in the Philippines, namely, Bureau of Fire Protection, Fire National Training Institute and Amity Public Safety Academy participated in the Country Planning Meeting, December 7-8, 2009, Quezon City. Office of Civil Defense-National Disaster Coordinating Council (PEER nodal agency in the Philippines) was the host meeting venue for the two-day CPM.



Joint Secretary Shankar Prasad Koirala, Ministry of Home Affairs (PEER nodal agency in Nepal) graced the PEER Country Planning Meeting, December 18, 2009, Kathmandu. PEER partnering organizations in Nepal were also represented in the CPM.

and International Medical Corps. USAID Mission in Indonesia was represented by Mr. Yusak Oppusunggu, Program Specialist.

- The Country Planning Meeting in Philippines was conducted on December 7-8, 2009 at the National Disaster Management Center, Quezon City, Philippines and was attended by implementing partners namely: Office of Civil Defense, Bureau of Fire Protection, Fire National Training Institute, Amity Public Safety Academy. USAID Mission in Philippines was represented by Mr. Aaron Stern, Mission Disaster Relief Officer, USAID.

- The Country Planning Meeting in Nepal was held on December 18, 2009 at NSET Building, Bhainsepati, Lalitpur and was attended by implementing partners namely: Ministry of Home Affairs, Nepal Police, Nepal Army, Armed Police Force, Nepal Red Cross Society

The National Society for Earthquake Technology - Nepal and Asian Disaster Preparedness Center (PEER implementing partner for PEER Objectives 1 and 2) are closely coordinating implementation of PEER program.

Schools Safer Against Earthquake

School Earthquake Safety Program (SESP) pioneered in 1997 is one of the successful ongoing programs of NSET in promoting community participation in all process of program implementation and to raise awareness on earthquake safety with the view of making schools safer against earthquakes that not only protects school children, but educates communities to protect themselves. The program has been implemented through multi-stakeholders collaboration at different districts through the funding support from different donors and Government authorities.

Developing a Strategy for Improving Seismic Safety of Schools in Nepal

The program has been implemented through the funding support from the World Bank/ GFDRR which is aimed to be completed in July 2010. The program is being implemented jointly with the Department of Education and District Education Offices. Lamjung and Nawalparasi districts have been selected for the implementation of pilot projects

schools 3 school of each district)

- Training to teachers, students, parents and masons
- Community DRR activities
- Preparing emergency preparedness/ response plans of schools and conducting drills
- Develop draft school curricula incorporating disaster safety for grade 8 to 9



Production of alternative building materials

School, of Nawalparasi and Bagishwori Secondary School, Shanti Higher Secondary School, Marsyangdi Lower Secondary School of Lamjung district.



Orientation for students

Monitoring and supervision visit to the project sites:

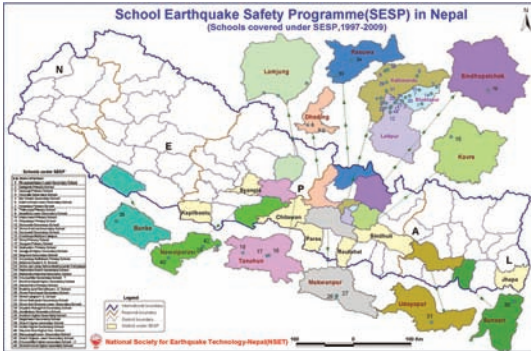
Program monitoring and supervision visit was done jointly by the Department of Education, the World Bank and NSET team in November 2009. The team carried out site inspection, progress review, and discussion with the students, teachers and the community and received feedback about the impression of the people on program implementation mechanism and expected outcome. The schools involved were; Kalika Higher Secondary School, Daunne Devi Higher Secondary School, and Shanti Srijana Lower Secondary



Retrofitting in progress

Emergency Evacuation and response exercise/drill at Daunne Devi Higher Secondary School

NSET provided technical assistance for preparing the emergency plan of the school and for conducting drill. Emergency evacuation and response drill at the school was conducted on 20 November 2009. The drill was supervised by NSET and observed by officials from Department of Education, District Education Office, the World Bank and NSET.



SESP program coverage

under the program. The main components of the program are-

- Develop draft Strategy for improving seismic safety of schools in Nepal
- Implement pilot project at two districts of Nepal(Lamjung and Nawalparasi)
 - Resource center level workshops for head masters at both of the districts
 - Survey of public school buildings of two districts
 - Assess earthquake vulnerability and damage grade of school buildings at different level of shaking
 - Implement seismic safety improvement activities (retrofit/ reconstruct) in 6



Students participating in Earthquake Preparedness Drill program



ORIENTATION PROGRAMS

Earthquake Orientation

September 2009: An Orientation program on earthquake preparedness was conducted for the students and teachers of Mount Kailash Boarding School, Kapan, Kathmandu. The



Students participating in Earthquake Preparedness Drill program

orientation program was followed by an earthquake preparedness drill at the school premise.

October 2009: An Orientation program on earthquake preparedness was conducted for the Engineering Students of Kantipur Engineering College in October 2009.

A. Major Projects Lead by EERT Team in the Period of Sept 2009 till date

- Seismic Vulnerability Assessment and retrofit design of Buildings
 - Development of different training manuals and guidelines
- #### B. Major Activities Completed/ Implemented during the Period
- Both qualitative and quantitative seismic vulnerability assessment and retrofit design of buildings possessed by various organizations that include the buildings of British Embassy and



Microtremor Equipment during field visit in Building assessment

American Embassy in Nepal with implementation of seismic strengthening in two of the residences of British Embassy Properties.

- Preparation of inception report on development of Training Manual on "Earthquake Resistant Design of Buildings/ Nepal National Building Code and its implementation".
- Detail qualitative structural and non-structural assessment of Bheri Zonal Hospital at Nepalgunj which includes interaction with hospital staffs and orientation
- Microtremor test of historical buildings in collaboration with Tokyo University and Institute of Engineering, Nepal.
- Numerical modeling and simulation of the masonry building for Pull Down Test.

NSDRM Promulgated

The first National Strategy for Disaster Risk Management in Nepal (NSDRMN) was approved by the cabinet on October 11, 2009. This valuable and much awaited document was prepared under leadership of Ministry of Home Affairs with



financial support from European Commission's Humanitarian Aid Department & UNDP and technical support of National Society for Earthquake Technology (NSET).

ACTIVITIES/NSET BRIEFS

With the technical assistance from National Society for Earthquake Technology-Nepal (NSET), Standards and Quality Control Authority (SQCA), Bhutan has formulated a pilot project on seismic strengthening of reinforced concrete framed building in Thimpu. The first reinforced concrete framed building being retrofitted is the three storied residential apartment building owned jointly by two sisters Ms. Laden Pema and Thinley Ohm which is situated in Chang Lam, Thimpu.



Bhutan, the owner, contractor and representative from NSET.

During October 2009 NSET professional Mr. Bijay Upadhyay visited Thimpu for providing the technical input as it would be most appropriate at the stage of initiating the retrofitting works in the first floor. The ongoing process during the second trip (09-16 Oct 09) was found to be



Retrofitting work in progress
Inset: Building to be retrofitted

The actual implementation of the project was initiated by a meeting at SQCA on 13 April 2009. The meeting was attended by SQCA, Senior officials, an engineer from Bank of

satisfactory. The optimum technical input required from NSET has been delivered and the SQCA team can now very well continue the remaining works. The confidence level of the team involved in the retrofitting works from SQCA as well as the professionals from the Contractor and those directly involved in the construction have been well built up.

Technical Advisory group meeting

Mr. Surya Narayan Shrestha, Deputy Executive Director, NSET participated in the Technical Advisory group meeting of Center for Research on Epidemiology of disasters-CRED (Global Disaster Database Initiative). He delivered presentation on DesInventar Database of Nepal and met with UNDP/BCPR/ GRIP team at New York, USA during 23-30 October 2009.

Other Activities

NSET professional Mr. Ranjan Dhungel, participated in the Training on 'Bio Engineering Methods for Landslide Hazard Mitigation, organized by SAARC Disaster Management Center during 6-12 September 2009 at Khowpa Engineering College, Bhaktapur.

NSET Professional Mr. Ganesh Jimée and Mr. Suresh Chaudhary participated in the "Seminar on International GIS Day 2009" organized by Nepal GIS Society on 18 November 2009 at Women Development Training Center, Jwalakhel. Mr. Jimée made presentation on 'Use of GIS for Earthquake Risk Assessment' on behalf of NSET.

Awas Karyaniti" presentation & discussion program organized by Department of Urban Development and Building Construction (DUDBC) and UNHabitat at Hotel Himalaya, Lalitpur on 11 November 2009.

ISDR Day 2009 Celebration

ISDR Day 2009 has been marked in Nepal with series of programs such as symposium, awareness rallies, exhibition etc. The day is celebrated on every second Wednesday of October worldwide.

A new Disaster Risk Reduction (DRR) initiatives known as flagship program for Nepal was handed over to the Ministry of Home Affairs by Ms. Margareta Wahlstrom, the Assistant Secretary General for DRR and the Special Representative of the UN Secretary General for implementation

of the HFA, during the symposium organized by the UN Systems in Nepal on 14 October to mark the International Day for Disaster Reduction.

On 13 October, a national symposium on DRR in Nepal was held in coordination of DPNet Nepal. Under Secretary of MOHA Mr. Thir B. G.C. focused on policy initiatives on DRR in Nepal whereas NSET DED Mr. Surya Narayan Shrestha made an extensive presentation on Global, Regional and National Initiatives on DRR. Testimonies of affected people were another major component of the event. At the end, a 9-point Declaration on DRR in Nepal was formulated and announced. The declaration has been submitted to President, Government of Nepal and Legislative Parliament.

Nepal holds Cabinet meeting at Mount Everest

Stunt at 17,192 feet meant to highlight climate change's impact on glaciers

In the picture, there seem Nepal's Prime Minister Madhav Kumar Nepal, center, and members of the cabinet raise hands in favor of a document to highlight the negative impacts of global warming on Mount Everest during a special cabinet meeting at Kalapatthar in Nepal, on 4 Dec 2009. Nepal's top politicians strapped on oxygen tanks and held a Cabinet meeting amid the frigid, thin air of Mount Everest to highlight the danger global warming poses to glaciers, ahead of international climate change talks in COP15.

The government billed the stunt as the world's highest Cabinet meeting. The ministers posed for pictures, signed a commitment to tighten environmental regulations and

expand the nation's protected areas, and then quickly flew away.

"The Everest declaration was a message to the world to minimize the negative impact of climate change on Mount Everest and other Himalayan mountains," Prime Minister Madhav Kumar Nepal later said.

A jumbo team from Nepal led by Prime Minister participated series of events on 15th United Nations Climate Change Conference (COP15) held at Bella Center in Copenhagen from the 7th to the 18th of December, 2009. The two-week long world conference has come with an accord that has significant elements, but that is not legally binding.

The key points of the accord include



Cabinet Meeting at Kalapatthar, Mount Everest

the objective to keep the maximum temperature rise to below 2 degrees Celsius; the commitment to list developed country emission reduction targets and mitigation action by developing countries for 2020; USD 30 billion short-term funding for immediate action till 2012 and USD 100 billion annually by 2020 in long-term financing, as well as mechanisms to support technology transfer and forestry.

The challenge now is to turn what is agreed into something that is legally binding in Mexico one year from now.

Source: www.msnbc.com and others agencies

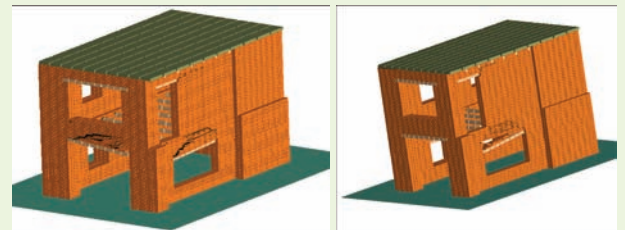
Continues 'Pull Down Test' ...

The non-retrofitted building used in the first pull down test completely collapsed at an intensity of 13.1 tons, of the pulldown loading as compared with the estimated 18.22 ton of the loading, whereas the retrofitted building used in the second test did not even crack when the intensity was raised to as high as 26.3 tons.

From the performed Pull Down Test, it was clearly demonstrated that the earthquake resistance of a building

can be strengthened by applying the proposed retrofitting method (jacketing method, steel wire mesh plus mortar coating). The capacity of the existing buildings can be increased up to desired value with proper designing with galvanised wiremesh plastering retrofit option. The cost per sqft of the plinth area comes out to around 3.92\$ which is also resonable and less than the

conventional retrofitting like steel rebar jacketing of 50mm thick.



Crack pattern due to push over loading at the level of ground floor roof for building model with extra opening. Assumed shear strength = 5.4 t/m2 (minimum)

Continues 'Earthquake Safety Day 2010' ...

Management sub-committee coordinated by Lalitpur Sub-Metropolitan City and Publicity Sub-committee coordinated by DUDBC have been formulated including different authorities & institutions. As the member secretary of National Committee and also two sub-committees, NSET has been working together-with various stakeholders for all the preparation works to compose the events exuberantly purposeful. The main slogan for this year's celebration has been conceptualized and spelled as:

"Enhance Community Safety, Reduce Earthquake Risks Construct Safe Schools, Hospitals and the Settlements"

On 16th January 2010, Earthquake Memorial Meeting will take place at Earthquake Monument "Bhugol Park", New Road, Kathmandu; and then National Meeting and Earthquake Safety Exhibition will be held at Jawalakhel locally hosted by Lalitpur Sub-Metropolitan City. Rt.

Honorable Prime Minister Mr. Madhav Kumar Nepal has kindly consented to address the meeting and inaugurate the exhibition that continues till 19th January 2010. The numerous programs are set nationwide to put at core the aim to pay considerable attention to the issue of natural hazards specifically focused on earthquake safety considerations and get privileged with enhanced values of awareness to DRR, commitment and implementation (of disaster preparedness), the key lessons learnt from the disaster response in Nepal, and also to revisit year-long initiatives and efforts paid on DRR.

Key activities are comprised of: Earthquake Memorial Meeting, One minute silence to honor those deceased by the past earthquakes; Earthquake Awareness Rally, Radio Message from the Honourable Home Minister on ESD, Nationwide "Duck, Cover and Hold" Exercise, Eloquence contest on "Role of Students in Earthquake Preparedness", Earthquake Safety Exhibition; Full Scale Model Demonstration of Eq. Res. Components in a Building, First Aid Demonstration, Shake Table Demonstration, National Symposium on "Experiences on Disaster Risk Reduction", Intera-



Preparatory meeting at NSET

ction Program on Radios and Televisions, Masons Training on Earthquake Resistant Building Construction, Earthquake Safe School Building Handover Program; Earthquake Safety Walkathon, District Level ESD Programs by DDRC at all 75 Districts; ESD Programs at 25 Division Offices of DUDBC, Municipality Level ESD Programs by 58 Municipalities, Sensitization Workshop on "Issue of Safer Inhabitation and Rational Implementation of NBC in Nepalese Cities" Hetauda Municipality, Franking the Commemorative Envelope to mark the 12th Earthquake Safety Day by Rt. Honorable Prime Minister Mr. Madhav Kumar Nepal; National Drill on "Duck, Cover and Hold"; National Program on Human Chain to show commitment on Earthquake Preparedness and many others.



ESD National committee meeting chaired by Honorable Minister Mr. Bhim Bahadur Rawal, MOHA/GoN

QUAKE MONITOR (International)

| Year | Magnitude | Location | Remark |
|----------|-----------|----------------------------------|--|
| 02/09/09 | 7 | Java, Indonesia | At least 72 people killed, many injured and severe damage in western Java. |
| 12/09/09 | 6.3 | Offshore Carabobo, Venezuela | No reports of damage or casualties |
| 21/09/09 | 6.1 | Bhutan | At least eleven people killed and dozens injured in Mongar and Tashigang due to collapsed buildings |
| 29/09/09 | 8.1 | Samoa Islands Region | At least 149 people killed in Samoa, 34 people in American Samoa and nine people killed and four injured on Niuaotuputu, Tonga |
| 30/09/09 | 7.6 | Southern Sumatra, Indonesia | At least 1100 people were killed, 2181 were injured, more than 2650 buildings have been damaged in the area |
| 01/10/09 | 6.6 | Southern Sumatra, Indonesia | Dozens of houses collapsed |
| 04/10/09 | 6.6 | Moro Gulf, Mindanao, Philippines | No reports of damage or casualties |
| 07/10/09 | 6.8 | Celebes Sea | No reports of damage or casualties |
| 07/10/09 | 7.6 | Vanuatu | No reports of damage or casualties |
| 07/10/09 | 7.8 | Santa Cruz Island | No reports of damage or casualties |
| 08/10/09 | 6.6 | Santa Cruz Island | No reports of damage or casualties |
| 16/10/09 | 6.1 | Sunda Strait, Indonesia | No reports of damage or casualties |
| 29/10/09 | 6.2 | Hindu Kush Region, Afghanistan | No reports of damage or casualties |
| 30/10/09 | 6.8 | Ryukyu Islands, Japan | No reports of damage or casualties |
| 08/11/09 | 6.6 | Sumbawa Region, Indonesia | No reports of damage or casualties |
| 09/11/09 | 7.2 | Fiji | No reports of damage or casualties |
| 13/11/09 | 6.5 | Offshore Tarapaca, Chile | No reports of damage or casualties |
| 17/11/09 | 6.6 | Queen Charlotte Islands Region | No reports of damage or casualties |
| 24/11/09 | 6.8 | Tonga | No reports of damage or casualties |
| 19/12/09 | 6.4 | Taiwan | 14 people injured in Hualien |

Source: USGS

VISITORS NOTE



Prof. Dr. Krasae Chanawongse
Chairman, ADPC,
Bangkok
September 10 2009

I am very happy to come back to Nepal to pay a country call on Priministral and high ranking officials of the Ministry of Home Affairs on behalf of ADPC. The most important of this visit is to have the opportunity to learn about the progress and development of NSET under the leadership of Mr. Amod Mani Dixit who has been working hard continuously with good attitude, belief, commitment, dream and energetic manner.

Congratulation – I give you great admiration Amod Mani Dixit.

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
Capital FM (FM 92.4) at 8.00 AM, Every Morning

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

Kalyan Bista

Administrative Director

National Society for Earthquake Technology – Nepal (NSET)



Mr. Kalyan Bista, Administrative Director of NSET has joined this institution in July 2003 as Administrative Manager. Since then, he has been taking responsibilities of overall administrative, logistics as well as contractual issues of NSET.

Mr. Bista has over 20 years of experience in financial and administrative aspects of project management in forestry, energy efficiency, health, and disaster management sectors.

He has experience in working in various projects funded by USAID, DFID, The World Bank and UNDP. Before joining NSET, Mr. Bista was serving as Country Manager and Training Coordinator for USAID's South Asia Regional Initiative for Energy Training Program implemented by US based Academy for Educational Development (AED) in six South Asian countries. One of the recipient of Management Excellence Award from AED, Mr. Bista had coordinated SARI/Energy training program in Bangladesh, Nepal and Sri Lanka. He had also worked for International Resources Group (IRG)/USA for Institute of Forestry Project as well as Energy Efficiency Project, both in Nepal. He had got training from the University of Philippines at Los Banos (UPLB) on "Managing the Administrative Aspect of Forestry Education". He had also made a study/observation tour to Yale University/USA, Virginia Tech University/USA, Asian Institute of Technology/Thailand and Kesetsart University/Thailand.

While working with NSET, he had served as Project Coordinator for "Developing National Strategy for Disaster Risk Management in Nepal" project implemented by NSET with financial support from UNDP/Nepal. Likewise, he had assisted NSET team in the study of Ex-ante and Ex-posts investment in Disaster Risk Reduction in Nepal, a research project funded by the GFDRR/The World Bank.

Besides, he had greatly assisted the NSET team in terms of coordination and logistics management to hold the workshop and Annual Meeting of Asian Disaster Reduction and Response Network (ADRRN) in Nepal, International Conference on Earthquake Risk Management in Pakistan, and NSET/Program for Enhancement of Emergency Response (PEER) training courses in Indonesia. Mr. Bista had also participated, on behalf of NSET, at the ADRRN/GOLFRE Asia Regional Learning Workshop on 'Disaster Risk Reduction: Learning from Tsunami Experience' in Malaysia.

Mr. Bista holds the MBA degree from Tribhuvan University and perusing Post Graduate Diploma in Disaster Management form Indira Gandhi National Open University.

He is a life member of NSET as well as Management Association of Nepal (MAN).

FOR MORE INFORMATION ON

Earthquakes and NSET's efforts towards earthquake risk reduction log on to www.nset.org.np



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