NEWSLETTER
Earthquake Safety
NATIONAL SOCIETY FOR EARTHQUAKE TECHNOLOGY-NEPAL (NSET)
NSET
भूकम्प प्रविधि राष्ट्रिय समाज-नेपाल
Issue 10 ◻ May - October 2008 ◻ Kathmandu, Nepal

Students' Summit
for Earthquake Safety- 2008

▲ Participants of the summit posing for a group photograph

As a part of the **School Earthquake Safety Program (SESP)** being implemented by National Society for Earthquake Technology (NSET), the **School Physical Improvement Program**, being implemented by Department of Education (DOE), and as part of the **Disaster Education Program** of Maiko High School, Kobe, Japan the three institutions jointly organized the **Students' Summit for Earthquake Safety-2008** during 14-17 August 2008 at Kharipati, Bhaktapur, Nepal in close collaboration with ActionAid Nepal, Bank of Kathmandu Ltd, Japan International Cooperation Agency (JICA), Save the Children Alliance Nepal, UNICEF, and USAID.

The residential 3-day Summit drew a total of 127 participants including 96 students and 13 teachers from 26 public schools in 13 districts of Nepal, a delegation of 17 Japanese participants including 3 teachers and 10 students from Maiko High School of Kobe and 4 delegates from Support for International Disaster Education (SIDE) – a Japanese NGO created by previous students of Maiko High School.

Campaign theme of the Summit was **"Let's Keep Our Schools Safe from Earthquakes".** Objectives of the Summit were:

1) Raising earthquake awareness of participating schools and institutions by sharing of knowledge and experience among schools of Nepal and between Nepalese schools and Maiko High School of Japan
2) Promote in Nepal international good practices including rich experience of Japan on earthquake safety, especially after the Kobe Earthquake of 1995.
3) Provide a common platform for cultural exchange among school children nationally and internationally and for discussing methods of developing and implementing School Earthquake Preparedness and Evacuation plan.
4) Develop understanding and fraternity among school students of different parts of Nepal and with students from Kobe, Japan.

:: In This Issue

The 3-day Summit program included physical exercises and games, cultural programs, earthquake drills, lectures and discussion on aspects of earthquake and preparedness, and practical exercises on developing School Earthquake Preparedness/ Response Plan.

The Chief Guest of the opening ceremony, Mr. Shankar Prasad Pandey, Secretary, Ministry of Education and Sports, emphasized on the importance of the summit in developing earthquake safety in day to day life of people. Referring to the recent Sichuzen, China Earthquake, he endorsed the advocacy by NSET in making schools safe against natural hazards including earthquakes. He reminded that seven million school students of Nepal constitute 25 % of the total population of the country and referred to the successful collaboration of the different national and international agencies including NSET in the implementation of the governments Safe School Building Program currently underway in Nepal.

Earthquake awareness rally

Participants in the inaugural ceremony of Students' summit 2008

During the rescue training

UN delegate delievering his speech

Representatives of the collaborating institutions referred to the high casualty of school-going children and teachers during recent earthquakes in the region, critically evaluated the programs in Nepal, highlighted the immense potential contribution of the students in achieving earthquake safety in community by carrying the message from schools to family and ultimately to the community. A consensus opinion was the necessity of expanding the outreach of disaster safety message to all households and to all communities of Nepal. The speakers endorsed the efforts made so far in the country and tasked NSET to continue the School Earthquake Safety Program including creative advocacy at policy-makers level.

During the 3-days program the participants happily engaged in all activities. Presence of Japanese students and teachers was extremely motivating.

The Summit ended with a “Bhaktapur Resolution 2008” in which the students, the teachers, the activists committed to work further to ensure 1) all schools to be made earthquake safe, 2) to promote inter-school and international collaboration in school earthquake safety, and 3) proposed to expand the summit outreach to other seismic countries of the Asia.

We, the participants of the **Students' Summit For Earthquake Saftey, 2008**, comprising 127 students and teachers from Nepal and Japan, together with our mentors from NSET, Maiko High School, and SIDE,

Having met for 3-days under the Summit Campaign theme **“Let's Keep Our Schools Safe from Earthquakes”**

Having been inspired by the ongoing **School Earthquake Safety Program** of NSET, **School Physical Improvement Program** of DOE, and the **Disaster Education Program** of Maiko High School, and international efforts made by the Support for International Disaster Education (SIDE), Japan,

Having been inspired by the endorsement of the SUMMIT objectives and program by officials of Ministry of Education and Sports, Nepal, Bank of Kathmandu Ltd, Japan International Cooperation Agency (JICA), Save the Children Alliance Nepal, UNICEF, and USAID, and encouraged to continue our efforts,

Having been encouraged by the focus on Safer Schools by several international initiatives such as Hyogo

During the rescue training

Frameworks of Action 2005-2015, the International Decade for Education for Sustainable Development, and by national disaster risk management strategies of Nepal, Japan and other countries,

Having been enthused by the build-up of friendship, mutual understanding, and confidence on the potentials of making a difference in our countries and the region during Summit,

We the participants collectively resolve, hereby, that WE WILL:

1. assist our parents, teachers, community leaders and government officials to make our schools gradually safer against natural hazards,
2. continuously learn about natural hazards and ways of achieving safety from them by formal and informal education,
3. be involved in making our school buildings strong against natural hazards by our active involvement,
4. assist in developing and implementing school disaster preparedness plan including evacuation drills,
5. listen to the advice of and collaborate with benevolent organizations in the implementation of school disaster reduction programs,
6. advocate for expanding outreach of the summit to other disaster prone countries of the region, and
7. Express our gratitude to the various organizations that supported us through this Summit.

Participants of summit playing disaster coordination game

! 9) :::

! "
$
" "
$! #
% " " & $ " $
& ' (! ") * !
$ "
# # + ")
, $ " - ! . # % "
) * ! # / " 0) 1 2
" 3)4 3 2 $
2 03 21 2 2 " % 2 ! 5
") * ! 6778 &
"

- Srijana Timilsina
Class 8
Saraswati Secondary School
Sudal VDC, Bhaktapur

REGIONAL TRAINING PROGRAM

PEER Courses in the period

The Program for Enhancement of Emergency Response (PEER) implemented by NSET under a cooperative agreement with USAID/OFDA is conducting a number of training events in six countries of the region (India, Bangladesh, Indonesia, Nepal, Philippines and Pakistan) to develop instructors for various emergency responder courses. Following events were organized during May-October 2008.

PEER EVENTS MAY - OCTOBER 2008

Events	Event Level	Date
Bangladesh		
MFR	PFAP	May 4-16
MFR	PFAP	May 19-31
CSSR	PFAP	June 8 - 16
India		
ASAR		Sept 1-6
Nepal		
CSSR	PFAP	May 29-June06
TFI	PFAP	June 9-13
MFRIW	PFAP	June 16-20
CSSRIW	PFAP	June 25-July 01
HOPE Pilot	National	July 28-31
Pakistan		
MFR	National	June 10-22
CSSR	National	June 26-July 04
TFI	PFAP	July 10 – 14
MFRIW	PFAP	July 16 – 20
CSSRIW	PFAP	July 25 -31
Philippines		
HOPE	National	Aug 26-29

PFAP - Partial Funding Assistant Program
CSSR - Collapsed Structure Search and Rescue
MFR - Medical First Responder
HOPE - Hospital Preparedness for Emergency
TFI - Training for Instructor
ASAR - Advanced Search and Rescue
MFRIW - Medical First Responder Instructors Workshop

Students observing poster on earthquake awareness

NSET INTERN

Mr. Ciaran Tadgh Malik a student of Masters in Civil (Structural, Geotechnical and Environmental) Engineering of Cambridge University, England joined NSET as an Intern for a period of three months during August – October 2008. Mr. Mallik was involved in the Earthquake Engineering, Research and Training (EERT) Division of NSET. During his stay, he assisted in preparing the Mason training materials for PP-Band technology of retrofitting. Apart from that he was also involved in other ongoing activities under the EERT division.

Memorandum of Understanding (MOU)

A Memorandum of Understanding (MOU) was signed between National Society for Earthquake Technology (NSET) and Nepal Police on May 15, 2008 to set forth the environment of mutual understandings between the Nepal Police (Government of Nepal, Ministry of Home Affairs) and NSET on the need to implement the PEER program in the best interest of Nepal, and create an environment of mutual cooperation towards successful implementation of Medical First Responder (MFR), Collapsed Structure Search and Rescue (CSSR) and Training For Instructors (TFI) courses. The MOU was duly signed by Mr. Amod Mani Dixit, Executive Director of NSET and DIG Ramesh Chand Thakuri, Training Director, HRD, Nepal Police.

A Memorandum of Understanding (MOU) was signed with Illam Municipality and Panauti Municipality, on June 8 and July 1, 2008 respectively for the implementation of Municipal Disaster Risk Reduction Program(MDRIP) activities in close coordination with those two municipalities.

Another MOU was signed on June 15 2008 with Action Aid Nepal towards school retrofitting in Udayapur and Sunsari districts.

RECENT PROGRAMS OF NSET

Municipal Disaster Risk Reduction Program (MDRIP)

Vulnerability tour at Panauti

In order to improve disaster safety of urban areas of Nepal through participatory risk assessment, capacity building, planning and implementation of disaster risk reduction measures, NSET in close collaboration with UNDP and other Partnering Organizations (POs) is implementing the Municipal Disaster Risk Reduction Program (MDRIP) in Ilam and Panauti municipalities.

The major objectives for implementing the program are to;

- Enhance the capacity of Ilam and Panauti Municipality in Earthquake Risk Reduction and Emergency Response Capabilities.
- Institutionalize Disaster Risk Management Practices in Ilam and Panauti Municipalities of Nepal including consolidation of past achievements for mainstreaming Disaster Risk Reduction into Municipal Development Planning Process.

There are five major activities planned for the project: i) Risk Assessment, ii) Disaster Risk Reduction and Response Master Planning, iii) Implementation of Disaster Risk Reduction Initiatives iv) Capacity Building, and v) Community Education and Awareness. Out of these, the activities carried out so far are as follows;

Project initiation meeting were conducted and MOUs were signed with both Ilam and Panauti Municipalities to facilitate the smooth running of project activities.

The Baseline Survey and Building Inventory required for seismic risk evaluation was also carried out. The seismic risk evaluation of both the cities are being done by using RADIUS tool.

In order to make the community members aware of the existing hazard, risk and vulnerabilities in their community, Disaster Imagination Game (DIG) and Vulnerability Tour were organized in both the municipalities. 28 participants from each municipality comprising of representatives from political parties, teachers, students, businessmen, housewives, local influential persons and professionals actively participated in the DIG and Vulnerability Tour.

A One-day Kick off Meeting and Hazard Mapping Workshop was organized in both the municipalities. The first half of the day was devoted for MDRIP Kick-off Meeting and the afternoon session was assigned for participatory hazard mapping of the entire municipality. The maps thus prepared are now being processed and final hazard/resource maps will be prepared in the near future. The outcome of the preliminary RADIUS application in Ilam and Panauti showed that both the municipality are almost equally vulnerable to earthquake. Two different scenarios were prepared out of which one was based on the 1934 Bihar Nepal Earthquake and the other based on the potential earthquake initiated by a potential fault nearest to the respective municipality.

As part of Disaster Risk Reduction Initiative, a mechanism for effective implementation of Nepal National Building Code has been developed. Ilam Municipality has declared a phase wise implementation of the Nepal National Building Code (NBC) with effect from July 2008. Panauti Municipality has decided to make all the preparations pertaining to implement NBC during this fiscal year so that it can be implemented from July 2009.

Group work during the Kick-off and Hazard Mapping Workshop

Participants of the engineers training

A five-day Basic Technical Training (BTT) Course on Design and Construction of Earthquake Resistant Buildings for engineers was conducted in Ilam from 25 to 29 August 2008. 23 persons actively participated in the training program conducted. The participants comprised of Engineers, Sub Engineers, Assistant Sub Engineers and Architects working within the municipality. The objective of the training was to enhance technical capabilities of the participants and introduce training techniques so that they could effectively transfer the technology to the masons.

Similarly, a five-day Masons Training Program on Construction of Earthquake Resistant Building was organised in Ilam from 1-5 September and from 22-26 September, 2008 at Panauti. The training program was organized with the objective of upgrading the skill of practicing masons in earthquake resistant construction of building.

In order to raise the awareness of the general people, a one-day Awareness Program on Disaster Management and Earthquake Risk Reduction was organized in both municipalities during September 2008.

Risk Mapping Program and Shelter Response Planning

Participants involved in group work during the shelter workshop

The project **'Risk Mapping Program and Shelter Response Planning'** is being jointly implemented by Global Risk Identification Programme (GRIP) of the United Nations Develop-ment Program/Bureau for Crisis Prevention and Recovery (UNDP/BCPR) and UN HABITAT with the involvement of NSET as a technical consultant.

The project aims at application of simplified RADIUS (Risk Assessment tool for Diagnosis of Urban areas against Seismic disasters) methodology to the cities of Kathmandu (Nepal) and Maputo (Mozambique) for effective pre-disaster and post-disaster shelter planning. The projcet also include development of a guide and strategy for addressing shelter needs. This guide will introduce general issues in shelter planning, in relation be utilized to design a guide and training modules to facilitate the quick and effective large-scale implementation of this methodology.

The program activities of GRIP were officially launched in Mozambique as a demonstration country through a Launching Workshop organized on 7-8 May 2008. Mr. Surya Narayan Shrestha, Deputy Executive Director of NSET visited Maputo, the capital city of Mozambique, during May 2008 to start the risk assessment and also to participate in the Launching Workshop. The other activities of the project accomplished so far in Maputo are training of municipal professionals on RADIUS; and preliminary work on earthquake risk assessment of Maputo city using RADIUS.

In line with overall goal and objectives of the project, the activities that have been conducted so far in Kathmandu are:

Identification of stakeholders and understanding with them: A number of key stakeholders (DUDBC, five municipalities, three District Development Committees) have been identified, discussions were made and understanding has been reached with them for shelter response planning and strategy development for Kathmandu Valley focusing on earthquake disasters;

Update of earthquake risk assess-ment for Kathmandu Valley: NSET is currently updating the input parameters such as demographic information, building typologies and building construction trends etc. to get updated earthquake risk assessment data.

Preparation of Draft Shelter Resp-onse Plan and Strategy Paper: Draft report on shelter response plan and strategy for Kathmandu Valley is under preparation. The shelter plan and strategy document will try to utilize the rich experiences of recent disaster response from around the world specifically the experiences from India, Pakistan and Indonesia. Also, it will try to look the immediate shelter response, transitional shelter response and long-term housing reconstruction and rehabilitation into a logical continuum and try to address the inter-linkage between all three phases.

Further, the update of earthquake risk assessment for Kathmandu Valley and the preparation of draft report are completed and a Shelter Response Planning Workshop was organized in Kathmandu. Invitees to this workshop were the members of the Shelter Cluster, shelter related government institutions such as DUDBC and Ministry of Physical Planning and Works, municipalities and DDCs of Kathmandu Valley, UN System, NGOs and INGOs working in Nepal and corporate sector that supplies, manufactures shelter construction materials. The workshop provided inputs on different aspects of shelter response and make decisions on key issues.

Progress Review on "Technical Service for Review and Guidance of Rural Housing Reconstruction Program in Pakistan"

NSET is providing technical support for the reconstruction of earthquake affected areas of Pakistan through UN-HABITAT Pakistan as a technical advisor. Review and progress update visit was carried out in May 2008 to the affected areas where 6,00,000 houses are being reconstructed. Review on the reconstruction quality and progress was done and assistance for remedial measures to the non-compliant construction was provided.

On- the-Job Mason Training through School Earthquake Safety Program

Briefing the masons in the real field

The School Earthquake Safety Program (SESP) of NSET is implemented with maximum participation of the central and local government institutions, school management systems, parents and students. One of the main objective of the program is to develop skilled manpower in earthquake resistant construction at local level. During the process of seismic retrofitting and reconstruction, engineers and technicians of NSET work with local masons illustrating them the details and complete procedures of earthquake-resistant construction techniques. It was observed that the conventional techniques of teaching and instructions to them can not yield the desired quality work, but the perception of masons seemed much higher, given the instructors (Engineers) themselves do the work at first, telling them reasons behind it. This method avoids the improper reasoning and judgments made by masons in the ground of their previous knowledge and level of thinking. However indigenous knowledge and effective techniques gained from their long experiences are duly considered and employed to the best possible.

It makes them work as usual practice, in highest precise level. It is all in the form of on-the-job-training. Besides that, separate training courses about construction are also conducted in form of classes at the respective schools. Although the target group are the craftsmen of the village but everyone interested can join the training.

During the training session the common people show high concerns over the matters that how their own houses are built. Masons pay much effort to know about for and against aspects of their conventional practices, need to adopt new methods, extent of change, solution to problems that the change may bring about and its harmony with seismic retrofitting and reconstruction of school, which they witnessed. It is noteworthy that once trainees are convinced and equipped with seismic resistant techniques, they also asked the methodology to convince and teach others about it.

The training courses follow hierarchical procedure starting from problem identification to the testing of methods learned. The trainings are basically in form of interaction including speeches, photographs display, presentation of slides and drawings in overhead projectors, field visits to places where such methods are being employed. Attention is paid to the level of trainees' knowledge and perception capability while presenting any items during training.

Once weak points of prevailing construction are described and consequences are presented through photographs of past earthquakes, it definitely strikes trainees' mind and so they start to mull over it. Solutions are explored from their side and shaped to standard techniques. All the knowledge and skill are backed by practical real structures in school retrofitting for new construction. Several tests are conducted to support the knowledge in relation to effect of placement of reinforcement bars in beam/slab, quality of work governed by material and workmanship like effect of excess water, effect of curing etc. Based on the experiences gained from the mason training, a Curriculum/Guideline for Mason Training has been prepared. Further, it is seen that new constructions in the settlements surrounding the schools are incorporating seismic-resistant elements, mostly by consulting the SESP masons. A strong replication potential of the program concept, the transfer of technology and hence sustainability of efforts, is thus evident.

Class room training to the masons and general public

Orientation program to the commjnity people

Orientation programs on Earthquake Risk Reduction and Preparedness

June, 2008: An orientation program on earthquake preparedness was conducted for the staff of Norway and Denmark Embassy at Hotel Shangrila, upon request from Danish Embassy.

June, 2008: An Orientation program on earthquake preparedness was conducted for the students of Pathshala School, Baneswor

June, 2008: An orientation program on earthquake preparedness was conducted for the staff of HELVETAS at Hotel Summit

August, 2008: An orientation program on earthquake preparedness was conducted for the students and teachers of Bansbari Madhyamik Vidhyalaya, Maharajgunj

September, 2008: An Orientation program on earthquake preparedness was conducted for the Area Welfare officers of Gorkha Welfare Scheme based at British Camp, Pokhara.

NSET pioneered the School Earthquake Safety Program (SESP) in 1997 as a component of Kathmandu Valley Earthquake Risk Management Project (KVERMP) with the initiative of making schools safer against earthquakes that not only protects school children, but educates communities to protect themselves.

During the earthquake awareness orientation program

The program now is one of the successful ongoing programs of NSET in promoting community participation in all components of program activities and to raise earthquake awareness significantly. The masons trained during the program are now spreading the technology of earthquake-resistant construction in their communities and replicating the technology while constructing new buildings. Thus, the process of replication (replicating the construction methods employed in school building to construct their private houses) would multiply in future to set a new technological culture in construction.

Present Status of the Ongoing Program Activities

NSET has been providing technical assistance to various schools under School Earthquake Safety Program through joint program with different Institutions.

- **SESP with World Bank**

  NSET signed agreement with the World Bank for implementation of **"Developing a Strategy for Improving Seismic Safety of Schools in Nepal"**. The program will be implemented jointly with the Department of Education, Ministry of Education; Government of Nepal. Two Districts, Lamjung and Nawalparasi have been selected for the implementation of pilot projects. The project components are; preparing draft National Strategy on School Safety; preparation of draft curriculum for school education; retrofitting of six school buildings; and training to local mason, teachers, students and community of the selected two districts. The project duration is from August 2008 to July 2010. National Level Steering Committee has been formed during project launching workshop conducted in Kathmandu in September 2008 for providing overall guidance during program implementation.

- **SESP under DRRSP with Action Aid Nepal**

  SESP is being implemented at eight schools of four districts of Nepal in association with Action Aid Nepal under 'Disaster Risk Reduction through School Projects' which is in accordance with the Memorandum of Understanding (MOU) signed among NSET, Action Aid Nepal, Centre for Policy Research and Consultancy (CPReC), Education Network (ED Net) and Disaster Preparedness Network (DPNet) on 17 January 2007 for their involvement as national partners in Disaster Risk Reduction (DRR) through School Project. The program in Makawanpur District is at the final stage of completion and is in progress in Kathmandu, Banke and Rasuwa Districts. The program components are; conducting HFA sensitization workshop; assessment of school buildings; retrofitting/ reconstruction of two schools in each of four districts; training to local masons, teachers, students, disaster management committee members and the parents on disaster safety.

- **SESP with Action Aid under DIPECHO Program**

  SESP is being implemented at two schools; one at Gaighat of Udayapur District and another at Dharan of Sunsari District in association of Action Aid under DIPECHO Program. The program components are; retrofitting/ reconstruction of school in each district; training to local masons, teachers, students, disaster management committee members and the parents on disaster safety. Retrofitting of Laximipur Secondary school of Gaighat and Panchayat Secondary School of Dharan is in progress. The project will be completed in December 2008.

- **SESP with Room to Read**

  SESP has been implemented in Sakala Devi Primary School, Dibyapur of Nawalparasi district since April 2008 in association of Department of Education and Room to Read. New earthquake resistant building is being constructed and series of training programs to masons, students, teachers and parents have been conducted.