

# **National Society for Earthquake Technology-Nepal (NSET)**

## **Organization Profile**

## **1. BACKGROUND**

The **National Society for Earthquake Technology – Nepal (NSET)** is a multidisciplinary professional society registered with the Government of Nepal as a Non-Government Organization in 1994. NSET is a non-profit organization whose main focus is on Earthquake Risk Management (ERM). Membership of the Society comprises professional engineers, architects, scientists and others seriously interested in earthquake phenomena or in the reduction of the effects of earthquakes.

NSET Management Committee consists of five elected members, two nominated members and the immediate past president - a total of eight members. The elected members elect the President and the General Secretary. The Management Committee under the guidance of the President monitors the NSET programs and provides policy level guidance.

## **2. VISION**

Earthquake Safe Communities in Nepal by 2020

## **3. MISSION**

To assist all communities in Nepal to become earthquake safer by developing and implementing organized approaches to managing and minimizing earthquake risks

## **4. OBJECTIVES**

NSET has a three-pronged strategic objective:

- To sensitize, educate and facilitate all institutions to undertake organized approaches to managing and minimizing earthquake risk by transferring information, technical knowledge and skills, and helping them to mobilize resources for the purpose.
- To advocate for favorable and supportive policies, legal mechanisms, increased investments and a unified and effective national earthquake response mechanism and a system of incentives and disincentives to enable communities to become earthquake safe.
- To build a strong, well resourced and credible institution that will be the national focal point for earthquake risk management actions, a facilitator and coordinator in the network of earthquake disaster management, and a source of all available information on the subject.

## **5. Major activities of the Society**

- Establish contacts between different government and non-governmental agencies in Nepal, who are working in the field of seismic safety, provide assistance to them and seek help from such agencies in integrated planning.
- Develop co-operation with other professional national/international societies and work in close association and coordination towards improving seismic safety, improving professional standards, discipline and ethics.
- Facilitate studies, undertake researches and actions in earthquake technology including geology, geophysics, seismology, earthquake engineering, architecture, civil

engineering, urban planning, water resources engineering, earthquake hazard preparedness and disaster management etc.,

- Publish NSET Newsletter, memos and other publicity materials and distribute them with an aim to bring to the knowledge of the members of the society and other professionals the earthquake technology available worldwide,
- Organize scientific meetings, seminars, training programs etc.,
- Develop international linkages with similar non-governmental agencies for an effective flow of information and serve as a nodal point in the international network for seismic safety,
- Represent Nepal, subject to the approval by Nepal Government, in the national/international arena regarding earthquake technology,
- Provide advice and assistance to the national educational institutions in the development and upgrading of the curricula to cover earthquake/ disaster preparedness and response,
- Work in coordination with other national disaster reduction institutions in the development, upgrading and implementation of earthquake hazard reduction programs for the country,
- Provide advice and assistance to the governmental, non-governmental and other agencies in matters of earthquake safety and planning
- Raise funds for undertaking various activities for the achievement of the Society's objectives,
- Undertake other activities, compatible with the Society's objectives as and when required

## **6. CURRENT AND RECENTLY COMPLETED PROJECTS/ PROGRAMS**

### **6.1. Thimpu Valley Earthquake Risk Management Project**

A contractual agreement between Standards & Quality Control Authority, Ministry of Works and Human Settlement, Royal Government of Bhutan and NSET has been made for NSET to provide short-term technical advice for the follow-up to the Thimpu Valley Earthquake Risk Management Program in Thimpu, Bhutan. NSET will conduct structural and non-structural seismic vulnerability assessment of buildings, identify retrofitting options, develop the standard guidelines, and provide training to engineers as part of the project.

### **6.2 Up-streaming Community Based Approaches for Promoting Safer Building Construction in Lorestan, Iran**

An Institutional Contract between UNDP/Iran and NSET has been made to implement the program in Iran. The overall objective is for up-streaming community based approaches for promoting safer building construction specifically a)to discuss on community-based approaches for promoting safer building construction and explore potentials of the use of such approaches in Iran, b)to select/localize/customize different available tools and developing new tools for promoting safer building construction through mobilizing community and capacity development of end users, c)to discuss on possible modes of

implementation and the role of different stakeholders, and d) to identify the related policies for supporting these activities and to suggest for favorable policy if felt necessary by the stakeholders.

### **6.3 Program for Strengthening Capacities for Disaster Risk Management in Iran**

NSET has been providing technical assistance to Asian Disaster Preparedness Center (ADPC)/Thailand to implement the UNDP-Government of Iran Joint National Program for Strengthening Capacities for Disaster Risk Management, a five year program. The goal of the program is 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.

### **6.4 Community Based Disaster Management Program in Kathmandu Valley**

NSET has been implementing Community Based Disaster Management Program in Kathmandu valley with financial support from Oxfam GB Nepal. The main goal of the project is to enhance the disaster safety of selected communities through awareness campaigns, trainings and institutionalization of the process in the local governance system for the sustainability of such initiatives. The specific objectives of the program are; a) Capacity building of communities and their institutions to design and implement disaster risk reduction and preparedness activities, b) Capacity building of municipal wards authorities and officials on disaster risk reduction, preparedness and effective response and c) Institutionalize the Disaster Risk Management (DRM) initiative at various levels of local governance (Ward level and Municipality Level).

### **6.5 National Strategy for Disaster Risk Management in Nepal (NSDRM):**

NSET is providing technical assistance to UNDP in assisting the Government of Nepal in preparing the National Strategy for Disaster Risk Management (NSDRM) in Nepal based on Hyogo Framework of Action (HFA) with financial support form European Commission through its Humanitarian Aid department. The project will prepare draft strategy documents for eight specified sectors: Agriculture and Food Security, Health, Education, Shelter, Infrastructure and Physical Planning, Livelihood, Water and Sanitation, Information, Coordination and Logistics, and Search and Rescue, Damage/Need Assessment and will also address cross cutting issues such as Human Rights and Protection, Gender and Social Inclusion, Staff Safety and Security and Decentralization and Local Self Governance. All these collectively will constitute the consolidated National Disaster Strategy on DRM. The strategy is expected to provide the road map for all sectors to prepare sector specific programs for DRM and formulate the necessary policy decisions for facilitating mainstreaming DRM into the development process.

### **6.6 Disaster Preparedness and Response Plan for Safe Drinking Water in the Kathmandu Valley, Lalitpur Sub-Metropolitan City (DPRP):**

The project has two components, notably a) development of an outline of a Comprehensive Framework of Disaster Preparedness and Response Plan for the Lalitpur Sub-Metropolitan City (LSMC), emphasizing the linkages between the different critical facilities and emergency response services, and b) development and implementation of pre-positioning of water supply at identified potential evacuation site ensuring a minimum supply of safe water after a scenario earthquake resulting in IX MMI intensity of shaking. Seismic vulnerability

assessment of existing and identified water wells, identification and implementation of possible structural and non-structural interventions, and encouraging wider ownership of the experiences gained, lessons learned are the main activities that are being carried out with wide consultations and participation of all stakeholders. The project will put forward recommendations for further enhancing disaster preparedness and its institutionalization in LSMC. The project is being implemented by UNICEF with financial support from EU-DIPECHO in close collaboration with concerned central and municipal government. NSET is commissioned to provide technical assistance.

#### **6.7 Nepal Earthquake Risk Management Program (NERMP):**

This project started on Oct 1, 2005 with the funding support from Office of the Foreign Disaster Assistance (OFDA) of the USAID. Improving earthquake safety of Nepal through earthquake vulnerability reduction and preparedness initiatives is the goal of the program. Improving seismic safety of public and private schools, critical facilities, residences and public infrastructures as well as institutionalizing earthquake risk management practice in Nepal are the specific objectives of the program. NERMP is the logical continuation of a long term efforts of NSET in reducing earthquake risk in Kathmandu Valley and Nepal, which OFDA / USAID has been supporting since 1997.

#### **6.8 Program for Enhancement of Emergency Response (PEER):**

This is a regional training program managed by NSET in partnership with International Resources Group, the Center for International Emergency, Disaster and Refugees Studies of John Hopkins University, and Safety Solutions Inc. with a purpose to strengthen and institutionalize capacities in emergency and disaster response in six participating Asian countries viz. Bangladesh, Indonesia, India, Nepal, Pakistan and the Philippines. Pakistan has been added as sixth participating country to PEER from October 2006. Developing a regional cadre of instructors for Medical First Responder (MFR), Collapsed Structure Search and Rescue (CSSR) and the Hospital Preparedness for Emergencies (HOPE) and Training for Instructor (TFI) is a primary objective of PEER. The program is funded by the U.S. Office of Foreign Disaster Assistance (OFDA). The program, started in April 2003, will run till March 2008.

#### **6.9 Community-Based Disaster Management Project (CBDMP):**

NSET has been implementing Community-Based Disaster Management Project in six districts (Tanahun, Syangja, Chitwan, Makwanpur, Sarlahi and Sindhuli) of Nepal since May 2006 under the CBDRM program of UNDP/Nepal. This project will enhance the security of men and women vulnerable to natural disasters and protect common property and community resources in selected disaster prone districts through appropriate capacity building measures at community, district and central levels and supporting and replicating community-based disaster mitigation initiatives that preferably enhance livelihood opportunities.

#### **6.10 Disaster Risk Inventory/Information Management System:**

In continuation of the efforts to institutionalize Disaster Information management system, and to further the achievements of the previous DesInventar project in 2003, UNDP has provided financial support to NSET to carry on second phase of DesInventar (April –December 2006) where it has been proposed that DesInventar system is to be institutionalized into a simple

disaster risk information system/disaster inventory management system in the official administration at the ground level. For this, the system is being piloted in two districts of Nepal. The objectives of this pilot phase are to organize experience sharing platforms for finalizing the methodology and classification of the roles of different stakeholders in the collection, validation, compilation and analysis of the relevant disaster data; to develop an institutional framework to record all natural disaster events irrespective of their scale at the VDC/Municipality level of the piloted districts; to build the required capacities of the mandated institutions and personnel to implement the activities and to prepare mid-term and final reports that highlight the methodology, lessons learnt and, especially assess the possibility of applicability and adaptation of the DesInventar methodology at a nation wide scale.

#### **6.11 Earthquake Safety Construction Skill Training for Masons and Construction Technicians in Bhardrapur, Gaur, Bhaktapur, Maddhapur Thimi, Kirtipur Municipality and Kathmandu Metropolitan**

NSET has provided technical assistance to the Lutheran World Federation (LWF), Nepal under the LWF DIPECHO-CPDRR component, in implementing the Earthquake Safety Construction Skill Training for Masons and Construction Technicians in Bhardrapur, Gaur, Bhaktapur, Maddhapur Thimi, Kirtipur Municipality and Kathmandu Metropolitan. Enhancing knowledge and skills of masons and construction workers of specified municipal areas on the earthquake-resistant construction technology was the main objective of the proposed project. Other additional objectives of the project were a) Capacity enhancement of municipal construction technicians for incorporating earthquake-resistant construction technology, disseminating the technology and in implementing earthquake risk management activities, b) Dissemination of earthquake resistant construction technology including the retrofitting technology for existing buildings to the key role players of the building construction process, and c) Include municipal authorities in the training process and help them to initiate the process of promoting safer building construction practices. Upon completion of the proposed training programs 70 masons and construction technicians in Bhadrapur Municipality of Jhapa, 70 in Gaur Municipality of Rautahat and 350 in Kathmandu Valley (total 490) have been trained on earthquake-resistant construction technology.

#### **6.12 School Earthquake Preparedness Program in Jhapa, Rautahat and Kathmandu Valley**

NSET has provided technical assistance to the Lutheran World Federation (LWF), Nepal under the LWF DIPECHO-CPDRR component, in implementing the School Earthquake Preparedness Program in Jhapa and Rautahat Districts and in Kathmandu Valley. Keeping in view of current need of earthquake preparedness at schools, this project has met five major objectives ; notably a) publication of School Teachers' Training Manual for earthquake preparedness, b) awareness raising and capacity building of school teachers on earthquake risk and earthquake preparedness, c) develop trained school teachers for conducting training programs on earthquake preparedness through Training of Trainers (TOT) programs, d) assist school teachers to prepare and implement earthquake preparedness plan for their schools and e) awareness raising of common people through programs conducted by the trained school teachers and students.

#### **6.13 Collaborative Research and Development on Network of Research Institutes in Earthquake Prone Countries**

NSET and National Graduate Institute for Policy Studies (GRIPS) of Japan made two separate research agreements a) to conduct a field survey and analyze the result to better understand the earthquake risk perception among people and identify factors to affect actions for housing safety as a part of Collaborative Research and Development on Network of Research Institutes in Earthquake Prone Countries, and b) to collect information on disaster education of ordinary people at community people, mainly through internet and publications.

As per the agreement on joint research, study survey of total 800 households around the community of Kathmandu-2 was completed. As discussed and agreed with GRIPS, NSET had selected the households in Ward #13 and #17 of Kathmandu Metropolitan City (KMC) for field survey. Disaster Management Committee (DMC) of Ward # 17 has been effectively working for last three years on disaster preparedness activities. Community of Ward # 13 of KMC was selected because of one of the highly populated areas of KMC. The field survey was extremely successful to understand the earthquake risk perception among community people.

#### **6.14 Capacity Building and Knowledge Management: Institutionalization of Earthquake Preparedness in School of Earthquake Affected Areas of Pakistan (CBKMP):**

With funding support from UN-ISDR, NSET has implemented the project in close collaboration with Focus Humanitarian Assistance Pakistan (FOCUS). The overall goal of the project was to contribute to building resilience of communities to disasters through capacity building of teachers and students in earthquake affected areas in Pakistan. The specific objectives were three-fold a) to introduce the knowledge and skills on earthquake-resistant construction of new and seismic retrofitting of existing school buildings in Gilgit and Muzaffarabad of the Northern Areas and AJK respectively by undertaking pilot demonstration programs in each areas and conducting appropriate training for masons and school operators, b) to enhance earthquake awareness among the school system and institutionalize disaster preparedness and response planning, especially on seismic risks (on actions and measures to be taken before, during and after earthquakes, and development of safe school program, including check lists, evacuation drills, and so on c) to undertake a comparative research of lessons-learnt and best practices in the aftermath of earthquake rehabilitation and reconstruction process in India, Iran, Turkey and Pakistan.

#### **6.15 Technical Support for Earthquake Resistant Housing Reconstruction in Pakistan:**

With financial support from OFDA of USAID, NSET has provided technical support to Earthquake Reconstruction and Rehabilitation Authority (ERRA) of Pakistan working in close co-ordination with UN-HABITAT since February 2006. The responsibility included policy support in developing strategies for Earthquake Reconstruction and Capacity Building for Earthquake-resistant reconstruction, and technical support in capacity building including development of training curricula and training of partnering organization and their Master Trainers, Mobile Teams for reconstruction as well as monitoring of the training activities throughout the earthquake-affected areas of the October 2005 South Asian Earthquake in Pakistan. Training of Engineers in earthquake-resistant design, refreshers training to engineers, training of masons and development of earthquake awareness materials, provision of assistance in the development of an operation manual for urban housing reconstruction;

support implementation of a public awareness campaign etc., were some other tasks that were undertaken.

#### **6.16 Shake Table Demonstration in Banda Aceh**

NSET provided technical assistance to the World Bank/Indonesia in association with Building Research Institute (BRI) of Japan to conduct a shake table demonstration of model buildings in Banda Aceh, Indonesia in July 2006 in order raise awareness on earthquake resistant construction practices and promotion of safer houses in Aceh. The Shake Table Demonstration was a part of the training to the housing facilitator of the World Bank in Banda Aceh, Indonesia. The program period was for a month for making the model buildings and conducting the shaking table demonstration.

#### **6.17 Shake Table Demonstration of PP Band Technique in Pakistan:**

NSET provided technical assistance to JICA/Pakistan in association with Tokyo University to conduct a shake table demonstration of model buildings with PP Band technology in Muzaffarabad and Bagh (earthquake affected areas) of Pakistan. The objective of the program was to raise awareness of earthquake resistant construction technology to the large number of people in Pakistan and disseminate information on new PP Band technology in building construction and train the technicians on this new technology in Pakistan as well as see the possibility to bring this new construction technique to Nepal. The program period was for two months (Feb –Mar 2006) for making the model buildings and conducting the shaking table demonstration.

#### **6.18 Capacity Building for Reconstruction of Earthquake-Affected Areas of Pakistan (Bagh and Muzaffarabad):**

UNDP/Pakistan sought technical assistance from NSET to demonstrate people-centered, cost-effective, environment-friendly rubble removal and emergency housing strategy that facilitate incorporation of earthquake-resistance in transitional as well as permanent reconstruction of the building, and will ensure sustainable livelihoods and habitats for the earthquake-affected communities. An indicative output of the program is capacity building, support to the affected rural communities for emergency shelter construction and reconstruction of earthquake resilient housing units during the Early Recovery period following the October Earthquake in Pakistan.

#### **6.19 Kathmandu Valley Earthquake Risk Management Action Plan Implementation Project (APIP):**

The activities suggested in the Kathmandu Valley Earthquake Risk Management Action Plan were implemented in this project. NSET has implemented this project since 2000 with the funding support from Office of the Foreign Disaster Assistance (OFDA) of the USAID. Improving seismic safety of Kathmandu Valley was the broader objective of the project and improving seismic safety of public schools, residences and public infrastructures as well as institutionalizing earthquake risk management in Kathmandu were the specific objectives. Implementing the School Earthquake Safety Program (SESP), assisting in enhancing structural and non-structural safety of public institutions, providing technical assistance to the municipalities for implementing seismic building code, conducting training programs for masons, technicians, engineers, business community, and conducting free and mobile earthquake clinics for the house owners were some of the key activities of the project.



#### **6.20 Kathmandu Valley Earthquake Preparedness Initiative (KVEPI):**

Kathmandu Valley Earthquake Preparedness Initiative (KVEPI) was implemented in 10 locations of Kathmandu Valley as a joint program of Nepal Red Cross Society (NRCS), American Red Cross and NSET. This program used a combined approach of building capacity of NRCS volunteers, pre-positioning critical emergency supplies and rescue equipment, training people in basic first aid and rescue techniques, and helping the general public to identify and advocate for safer building practices. Primary goal of the initiative was to help communities develop preparedness capabilities and to reduce potential sufferings from earthquake disasters.

#### **6.21 Disaster Inventory/ Information Management System in Nepal (DIMS):**

This was an effort to establish a systematic data base of natural disaster events in Nepal, and was carried out with the financial support from UNDP, Nepal. The project consisted in collection, computer-entry, and analysis of natural disaster data during the period of past 33 years (1971-2003). A standard data collection format was developed and used to capture the data from different sources and entered into the software "DesInventar", a methodological tool developed by Latin American Network of Social Studies on Disaster Prevention (LARED).

#### **6.22 Seismic Vulnerability Assessment of Major Hospitals of Nepal.:**

For the first time in the region, NSET conducted during 2000-2003 a seismic vulnerability assessment of all major hospitals of Nepal in collaboration with Ministry of Health and World Health Organization (WHO). Structural and non-structural vulnerability of 14 major hospitals of Nepal have been assessed and mitigation and intervention options were identified and planned for implementation. Guided by the region-level interest in to assessment methodology, NSET published "Guidelines for Seismic Vulnerability Assessment of Hospitals" jointly with the World Health Programme (WHO).

#### **6.23 Seismic Vulnerability Assessment of Drinking Water Supply Network of Kathmandu Valley:**

A study for the assessment of seismic vulnerability of drinking water supply system of Kathmandu was undertaken with support from UNICEF Nepal in 2002. A practical methodology for assessing the seismic vulnerability of the water supply network was developed. Assessment results have been presented in the form of a network system damage scenario. Optimum routes for the most expedient restoration of the water supply services are identified and possible emergency evacuation points are also suggested in view of the water demand in case of large earthquake event.

#### **6.24 Municipal Earthquake Risk Management Projects (MERMP):**

As a replication process of the successes of the Kathmandu Valley Earthquake Risk Management Project (KVERMP), NSET implemented Municipal Earthquake Risk Management Project (MERMP) in four municipalities of Nepal: Banepa, Vyas, Dharan and Pokhara, during 2002-2003 under the Asian Urban Disaster Mitigation Program (AUDMP) of Asian Disaster Preparedness Center (ADPC) with core funding from OFDA. Project activities consisted of developing earthquake damage scenarios of the cities including building

inventory surveys, preparing an action plan for earthquake risk management, construction or retrofitting of school or other public structure as demonstration of feasible mitigation measures, awareness-raising, training, capacity building and institutionalization. The project was a grand success. Therefore, NSET has now plans to work with other municipalities of the country as a regular program and has targeted to cover all-58 municipalities of Nepal within next 5 years.

#### **6.25 Earthquake Risk Assessment of Kathmandu using RADIUS Tool (UNESCO-CCT Program):**

The project was implemented by Kathmandu Metropolitan City (KMC) with the technical support from NSET and as a part of the UNESCO Cross Cutting Theme initiative in 2003. In this project, earthquake risk of Kathmandu metropolitan area was assessed using RADIUS tool which assisted KMC authorities to understand the earthquake disaster risk of Kathmandu and helped in developing affordable and effective risk management measures and sound urban growth policies.

#### **6.26 Project for Pre-Positioning of Emergency Rescue Stores (PPERS):**

This project was jointly carried out by NSET and different ward disaster management committees of Kathmandu Valley and was supported by Civil Affairs Group of the British Army. The purpose of PPERS was to provide a reserve of essential tools and equipment to assist in the immediate community level response to a major disaster, such as an earthquake. PPERS is intended to help those ‘first responders’ on the ground at the local level to enable neighbors to rescue neighbors. Organizational structures such as local level disaster management committees and community emergency response teams are constituted as required to assist in setting up the stores and its effective operation. Such stores are pre-positioned in 8 locations of Kathmandu Valley.

**Apart from these, NSET had also successfully completed the following projects in the past;**

- **Kathmandu Valley Earthquake Risk Management Project (KVERMP):**

The first major project of NSET implemented during 1997 – 2000; published Earthquake Scenario for Kathmandu Valley and prepared the Earthquake Risk Management Action Plan for Kathmandu Valley. The methodology is replicated under the UN project for RADIUS and also in other Nepalese cities.

- **Environmental Mapping Projects:**

Environmental Mapping Projects were implemented by NSET in four municipalities with the main objective to prepare a strategy for urban environmental management plan and to generate systematic digital database for the municipalities. The first EMP was initiated in 1998 in Madhyapur Thimi Municipality. Similarly, it was initiated in Kirtipur, Dharan and Banepa Municipality in 1999, 2000 and 2002 respectively. This project was partly funded by Regional Urban Development Office (RUDO)/South Asia, United States Agency for International Development (USAID).

- **Nepal Gujarat Mason Exchange and Training Program (NGMET):**

NSET assisted SEEDS India, New Delhi to implement the Patanka Navajeevan Yojana (PNY) – a post earthquake reconstruction project for GSDMA in the village of Patanka, Patan District, Gujarat, India (2001). The Technical Assistance, called NGMET, involved Nepalese Masons, trained by NSET in earthquake-resistant construction, imparting hands-on training to their Gujarati counterpart masons, in ways of improving construction quality and practice.

- **Solid Waste Management Project** in Dharan Municipality
- NEST provided technical support to JICA in the **Study on Earthquake Disaster Mitigation in the Kathmandu Valley**.

## **7. ON-GOING PROGRAMS**

### **7.1 School Earthquake Safety Program (SESP)**

The findings of the Kathmandu Valley earthquake vulnerability assessment survey of public schools carried out in 1998 were very alarming. The study showed as much as 60% of the public school buildings being highly vulnerable and risky to use even in normal conditions. This situation urged NSET to implement vulnerability reduction programs in schools, which lead to a pilot program of retrofitting one of the public schools in a rural area of Kathmandu Valley in 1999. Since then SESP has been implemented in more than 20 schools in different parts of the country.

*The objectives of the programs are:*

- Identify and implement measures to reduce the vulnerability through retrofitting of existing buildings or construction of new buildings;
- Raise awareness of earthquake risks and preparedness of teachers students, local and government officials and the local communities; and
- Train local masons on earthquake-resistant building construction technology.

This program is very successful 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. They are also training other masons.

### **7.2 Public Awareness Program**

Almost all activities of NSET consist of public awareness-raising components. Some important stand-alone public awareness programs are:

#### **7.2.1 Earthquake Safety Day:**

Nepal observes the Earthquake Safety Day on Magh 2 of Nepali month (either 15 or 16 of January) as commemorating day of the Great Nepal-Bihar Earthquake of 1934 as an annual event organized on a sustainable basis since 1999. This day is observed with a host of activities such as school children essay, art and poetry competitions, national meeting and rally, symposium, earthquake safety exhibitions and the shake table demonstration.

### **7.2.2 Earthquake Safety Radio Program:**

Community radio stations of Kathmandu and Pokhara – Sagarmatha Radio and Annapurna Radio, broadcast weekly half-hour earthquake awareness-raising radio programs.

### **7.2.3 Orientation Lectures:**

Series of orientation lectures are provided to various local and international institutions upon their request. The content usually covers basic information about earthquakes situation in Nepal, what to do before, during and after earthquakes etc. Occasionally, earthquake drills are also included.

### **7.2.4 House owners Consultation Program:**

Free consultations in the form of workshops are provided to the potential house owners who are planning to construct new house in Kathmandu Valley. This weekly consultation program focuses on how to construct earthquake resistant buildings and usually the house owners come with their masons, contractors or the technicians to learn about the technology.

### **7.2.5 Mobile Earthquake Clinics:**

NSET has recently started mobile earthquake clinics in Kathmandu Valley to provide on-site consultation in aspects of earthquake-resistant building construction. A team of earthquake engineer/structural engineer, technician and masons visit different locations/building construction sites in Kathmandu Valley and provide technical advice. The aim is to improve construction of non-engineered buildings.

### **7.2.6 Community Based Disaster Risk Management Program:**

Several communities of Kathmandu Valley have started community based disaster risk management programs in their localities and NSET is providing technical assistance to such communities in implementing earthquake risk management initiatives. Some wards of Kathmandu city have begun the CBDM efforts by forming Ward Level Disaster Management Committees, recruiting community volunteers and providing training and capacity building opportunities for them. Ward No. 34 and Ward 17 of Kathmandu Metropolitan City have put tremendous efforts in making these initiatives sustainable. These CBDM initiatives are also supported by KVEPI and PERS initiatives of NSET and recently launched CBDM project with support from UNDP.

## **8. Training Programs on Earthquake-resistant Construction for Masons and other Stakeholders of Building Industry:**

NSET, as an outcome of the rich experiences gained during last seven years, has developed training courses targeting various stakeholders involved in earthquake risk reduction. These courses include training of masons/contractors, technicians, junior engineers, engineers,

schoolteachers and policy/decision makers. A series of training courses is being organized during 2004-2005 as part of the APIP activities, and also in collaboration with the Department of Urban Development and Building Construction (DUDBC), municipalities, professional societies, business community and other partnering institutions.

## **9. NSET's involvement in other regional activities**

- NSET provided consultant service to European Commission in identifying the disaster preparedness program especially on earthquake hazard and risk mitigation in Bangladesh.
- NSET provided consultant service to UN-HABITAT for the implementation of the Community-based Disaster Management Program, Government of Afghanistan in order to develop Guidelines for Earthquake-resistant Buildings and Earthquake Preparedness, conduct Training for Trainers (TOT) for Afghan professionals for Earthquake resistant Building Construction.
- NSET provided consultant service to the Disaster Preparedness and Education Program of Bogazici University (Istanbul, Turkey) and GeoHazards International (USA) under the project Central Asia Region Earthquake Safety Initiative (CAR-ESI) for the conduction of a Training for Trainers program for professionals from Turkey and Central Asia.
- NSET provided technical assistant to MERCY Malaysia to conduct a three day workshop on "Rebuilding A Safer Aceh" held in Banda Aceh, Indonesia. The workshop gathered a group of experts and academia that specialize in earthquake resistant construction of buildings as well as community based disaster management.
- NSET provided consultant service to SEEDS/India to implement Post Tsunami Recovery Project in Andaman Island, India.
- NSET provided technical input and logistics support to hold the Second Core Member Meeting (CMM II) of International Framework for Development of Disaster Reduction Technology List of Implementation Strategies (Disaster Reduction Hyperbase) in Nepal. This project has been initiated in collaboration between the Ministry of Education, Culture, Sports, Science and Technology of Japan and National Research Institute for Earth Science and Disaster Prevention (NEID)/Japan and UNISDR to establish a mechanism to identify, collect and analyse worldwide technologies, tools and effective practices on disaster reduction.
- NSET has actively been involving with International Transfer Live Lessons Network (TeLL-Net), established during the UN-World Conference in Disaster Reduction in January 2005 in Japan, as one of the active members and has been participating in its assembly meetings. NSET intends to carry out Transfer Live Lessons activities through museum exhibitions in its proposed new community learning center building.
- NSET provided technical assistance to JICA/Pakistan in association with Tokyo University to conduct a shake table demonstration of model buildings with PP Band technology in Muzaffarabad and Bagh (earthquake affected areas) of Pakistan.
- NSET associated with UNCRD/Japan in organizing the international workshop on "Keeping Schools Safe from Earthquake" in Kathmandu, Nepal in collaboration with Ministry of Education/Nepal and Kyoto University/Japan.
- NSET is collaborating with DPRI/Japan for the implementation of Case Station and Field Campus (CASIFICA) in Nepal and taking a lead in implementation of CASIFICA in association with the academic institutions. Students from Nepal and Japan are involved in the research programs which aim at consolidating the lessons

learned and replicating the lessons in Nepal and in the region for promoting disaster risk reduction and enhancement of response planning and capability development.

- NSET provided technical assistance to The World Bank/Indonesia in association with Building Research Institute (BRI)/Japan to conduct a shake table demonstration of model buildings in Banda Aceh of Indonesia.

## 10. MEMBER AFFILIATION

NSET is the national member of the International Association for Earthquake Engineering (IAEE). Since 1993, NSET has been a member of the World Seismic Safety Initiative (WSSI). It organized the High Level Meeting of WSSI in Nepal in 1993, even before the official registration of the organization. It is also a member of various disaster reduction networking groups worldwide. We are the Founder Member and a Board Member of the Asian Disaster Reduction and Response Network (ADRRN), a Founder Member of the Coalition for Global School Safety (COGSS), a Founder Member of the International Live Lessons Transfer Network (TeLLNet), Founder Member of the Disaster Preparedness Network Nepal (DPNet) and a member of a host of other networks as well as national and international technical committees.

## 11. AWARDS

- NSET has been awarded with the 2001 United Nations Sasakawa Award for Disaster Reduction for which it has received a Certificate of Merit in appreciation for its outstanding contribution to disaster reduction, thereby furthering the goals of the International Strategy for Disaster Reduction (ISDR).
- NSET has been honored as one of the Laureates to receive The Tech Museum Awards 2004 under Microsoft Education Award Category for its innovation of ‘**Shake Table**’ technology.

*“Shake Table Demonstration” is one of the regular activities under earthquake risk management works of NSET. This low-tech innovation tool has been highly effective in educating the common person about the structural behavior of building during earthquakes and for raising earthquake awareness for safer building construction. The demonstration complement NSET’s other efforts on earthquake risk management. The ‘Shake Table’ demonstration was first performed in January 1999 and it has gradually become very popular in Nepal and the region. Having received requests from the local NGOs working towards earthquake risk management, we have helped communities of Bam (Iran), Gujarat (India), Kabul (Afghanistan), Dushanbe (Tajikistan), Banda Aceh (Indonesia) and Muzarrafabad (Pakistan) to implement shake table demonstration by providing necessary training to the local engineers and masons. Besides, NSET also conducted improvised shake table demonstration with support from UNCRD, as special event in World Conference in Disaster Reduction (WCDR), Kobe, Japan in Jan 2005.*

*“Shake Table” is a simple shaking platform with two identical models of traditional buildings, one with earthquake-resistant technology and another without it. The table is shaken mechanically simulating an earthquake. The resulting damage/collapse of the weaker building vividly demonstrates the wisdom of incorporating earthquake resistant technologies to be considered in building construction. The demonstration*

*educates people on the technology and also convinces them on the feasibility of technology options, including their affordability.*

(The Tech Museum Awards honor those who are using technology to address the United Nations' 15 most urgent global challenges facing humanity and the environment.)

## **12. NSET MANAGEMENT COMMITTEE**

NSET Management Committee consisting of six elected and two nominated members manages NSET. While the President provides the overall direction and guidance, the General Secretary runs the day-to-day activities for which he is given the executive authority. The General Secretary is also given responsibilities of Executive Director.

<b>Name</b>	<b>Designation</b>
Mr. Shiva B. Pradhanang	President
Mr. Amod Mani Dixit	General Secretary
Mr. Yogeshwor K. Parajuli	Treasurer
Prof. Mukunda Pradhan	Executive Member
Mr. Shreeram Singh Basnet	Executive Member
Mr. Varun Prasad Shrestha	Executive Member
Mr. Mahesh Nakarmi	Executive Member
Mr. Tika Sharma	Executive Member

#### 14. PROFESSIONAL PEOPLE AND FACILITIES AT NSET

Name	Designation
Mr. Amod Mani Dixit	Executive Director
Mr. Varun Prasad Shrestha	Senior Technical Advisor
Mr. Surya Narayan Shrestha	Deputy Executive Director (Director for Urban and CBDRM Division)
Mr. Tika Sharma	Director, Finance
Mr. Kalyan Bista	Director, Administration
Mr. Ram Chandra Kandel	Director, SESP and Senior Civil Engineer
Mr. Ramesh Guragain	Director, Earthquake Engineering Research Division and Senior Earthquake Engineer
Mr. Ganesh Jimjee	Division Manager, Emergency Response and Preparedness
Mr. Surya Acharya	Senior Civil Engineer
Mr. Bijay K. Upadhyay	Earthquake Technology Training Specialist
Ms. Hima Shrestha	Structural Engineer
Mr. Binod Shrestha	Geotechnical Engineer
Mr. Rudra Pun	Structural Engineer
Mr. Narayan Marasini	Civil Engineer
Mr. Gopi Krishna Basyal	Geographer/Urban Planner
Mr. Ram Prasad Adhikari	Civil Engineer
Mr. Suman Pradhan	Civil Engineer
Mr. Sujan Rai	Disaster Risk Management Officer
Ms. Nisha Shrestha	Documentation and Outreach Officer
Mr. Sudhar Man Tuladhar	Accounts Officer
Ms. Neeva Upreti	Executive Secretary (ED's Office)
<b>Program for Enhancement of Emergency Response (PEER) Team:</b>	
Ms. Jasmin P. Lagahit	Training Consultant for PEER
Mr. Rajju Man Pradhan	Office Manager for PEER
Mr. Sanju Sharma	Training Coordinator for PEER
Mr. Kabindra Pradhan	Information Management Specialist for PEER
Ms. Neelam Parajuli	Materials Production Specialist for PEER

#### NSET Facilities

NSET has about 42 staff members working in its six divisions. The office is fully equipped with the computers (all in LAN), printers, photocopier and all other required office machines. A state of the art power generator with 65 KVA capacity provides power back up for ensuring cut-off of power surges and uninterrupted work in case of power failure. An internet server with optic fiber cable link (with radio link back up) to the ISP provides the necessary infrastructure for the operation and management of its website. Its office has adequate floor



area exceeding 5000 sq. ft, and the security of the NSET premises has been managed by the Group 4 Flak security service for 24 hours.

## **15. PARTNERS AND SUPPORTERS**

### ***National***

- Armed Police Force
- B.P. Koirala Institute of Health Sciences
- Department of Mines and Geology
- Department of Urban Development and Building Construction
- Disaster Management Committee of Wards 17 and 34, Kathmandu
- Disaster Preparedness Network (DPNet)
- Diploma Engineers' Association, Nepal
- Institute of Engineering, Tribhuvan University
- Institute of Medicine, Tribhuvan University
- Kathmandu University
- Ministry of Education and Sports
- Ministry of Health
- Ministry of Home Affairs
- Ministry of Local Development
- Ministry of Science and Technology
- Ministry of Women, Children, and Social Welfare
- Municipalities of Banepa, Bhaktapur, Biratnagar, Byas, Dharan, Kathmandu, Kirtipur, Lalitpur, Madhyapur, Pokhara
- Nepal Army
- National Forum for Earthquake Safety
- Nepal Forum for Environmental Journalists
- Nepal Bureau of Standards and Metrology
- Nepal Engineering College
- Nepal Engineers Association
- Nepal Geological Society
- Nepal Red Cross Society
- National Police
- Rotary Clubs
- Social Welfare Council
- Society of Consulting Architectural and Engineering Firms
- Society of Nepalese Architects

### ***International***

- Action Aid International Nepal
- All India Institute of Hygiene & Public Health (AIHH&PH), India
- Ambullan 118 of Indonesia
- American Red Cross
- Amity Public Safety Academy of Philippines
- Asian Disaster Preparedness Center
- Asian Disaster Reduction Center
- Asian Disaster Reduction and Response Network
- Asian Seismological Commission
- Badan Koordinasi National of Indonesia

- Badan Search and Rescue National of Indonesia
- Bangladesh Disaster Preparedness Centre
- Boarder Security Force of Inida
- Central Reserve Police Force , India
- Commissionerate of Health & Medical Services, Gujarat, India
- Disaster Management Bureau of Bangladesh
- DPRI/Kyoto University
- Earthquake and Megacities Initiatives (EMI)
- Emergency Rescue Unit Foundation of Philippines
- Emergency Medical Relief (EMR)/ Directorate of Health Services, New Delhi, India
- Earthquake Reconstruction and Rehabilitation Authority (ERRA), Pakistan
- Fire National Training Institute of Philippines
- Fire Service and Civil Defense Directorate of Bangladesh
- Focus Humanitarian Assistance, Pakistan
- GeoHazards International
- Give2Asia
- Indian Tibetan Boarder Police (ITBP), India
- Indonesian Red Cross
- International Centre Integrated Mountain Development
- International Association of Earthquake Engineering
- International Resources Group
- Jakarta Fire Services, Indonesia
- Japanese International Cooperation Agency
- Jawaharlal Institute of Post Graduates Medical Education & Research (JIPMER), India
- Johns Hopkins University - Center for International Emergency, Disaster, and Refugee Studies
- Lutheran World Federation
- Mercy Malaysia
- Ministry of Food and Disaster Management, Bangladesh
- Ministry of Health and Family Welfare, Bangladesh
- Ministry of Health, Indonesia
- Ministry of Home Affairs, India
- National Disaster Management Authority of Pakistan
- National Disaster Coordinating Council of the Philippines
- National Industrial Security Academy of India
- Nat'l Institute of Preventive and Social Medicine of Bangladesh
- New Zealand Society for Earthquake Engineering
- Norwegian Refuge Council
- Office of Foreign Disaster Assistance of United States Agency for International Development of USAID.
- Oxfam GB Nepal
- Philippines General Hospital
- Reynolds Geo-Sciences Limited
- Safety Solutions Incorporated
- Sustainable Environment and Ecological Development Society
- The International Institute for Geo-Information Science and Earth Observation (ITC)
- United Missions to Nepal
- United Nations Center for Regional Development - Disaster Management Planning Hyogo Office

- United Nations Development Program
- UN-ISDR
- United Nations Educational, Scientific and Cultural Organization
- UN-HABITAT
- World Health Organization
- World Seismic Safety Initiatives

**Annex: 1 (Milestones of Earthquake Risk Reduction Efforts of NSET)**

**Annex: 2 (Memorandum of Understanding - List of Organizations)**

**Annex: 3 (List of NSET Publications)**

## **Milestones of Earthquake Risk Reduction Efforts of NSET**

### **1988**

Udaypur Earthquake

- 721 deaths
- 22 districts of eastern Nepal affected
- Total direct loss of 5 billion rupees
- Earthquake considered a major concern for the first time in the country

### **1992**

Start of the National Building Code Development Project (BCDP)

- Future founders of NSET involved

Nepal observed the International Decade for Natural Disaster Reduction (IDNDR) Day for the first time

### **1993**

First World Seismic Safety Initiative (WSSI) Workshop in Bangkok

- Future founders of NSET participated

NSET established

First National Conference on Disaster Management

High Level Meeting organized by NSET and WSSI in Kathmandu

Kathmandu Municipal Mayor participated in Istanbul Workshop on Issues in Urban Risk

### **1994**

NSET registered as a non-governmental organization with His Majesty's Government of Nepal

NSET became a member of the IDNDR national committee

The National Action Plan for Disaster Management prepared

National Building Code drafted

BCDP released

- consolidated earthquake catalogue
- earthquake hazard maps

NSET and GeoHazards International conceptualized the Kathmandu Valley Earthquake Risk Management Project (KVERMP)

First earthquake safety pamphlet published

### **1995**

First training course for journalists on Disaster Journalism

### **1996**

NSET inducted into the International Association of Earthquake Engineering as national member during the 11th World Conference on Earthquake Engineering (WCEE)

First training course for school teachers on Earthquake Preparedness

### **1997**

KVERMP launched as national project under the Asian Urban Disaster Mitigation Program of Asian Disaster Preparedness Center

NSET moved into its present office premises

### **1998**

His Majesty's Government of Nepal declared 16 January as national Earthquake Safety Day (ESD)

Kathmandu Valley Earthquake Scenario published

NSET and US Army engineers conducted preliminary assessment of structural and functional vulnerability of Bir Hospital, Teku Hospital and Lincoln School

Seismic vulnerability assessment of 1100 buildings of 643 public schools in Kathmandu Valley completed

Building Council Act adopted by the Parliament

Workshop on Health and Medical Implications of Earthquake Disaster was organized for the first time

Kathmandu Valley Earthquake Risk Management Action Plan finalized

Set up of the Disaster Management Section in Kathmandu Metropolitan Office

### **1999**

NSET launched the School Earthquake Safety Program (SESP)

- Bhuwaneshwori Lower Secondary School – the first school to be retrofitted
- Proved the technical, social, and economic feasibility of retrofitting public buildings

First ESD

- Prime Minister released the Kathmandu Valley Earthquake Scenario and Risk Management Action Plan
- First earthquake safety exhibition

Completed the first Environmental Mapping Project in Madhyapur Municipality

NSET, Ministry of Health, and World Health Organization (WHO) conducted the training course on Mass Casualty Management

NSET participated in 2nd WSSI Bangkok Workshop, and the closing meetings of IDNDR in Bangkok, Mexico, and Paris

### **2000**

Start of the Kathmandu Valley Earthquake Risk Management Action Plan Implementation Project

First WSSI Fellowship awarded to NSET's General Secretary

2nd ESD

- Regional Symposium on Experience in Earthquake Risk Management

SESP in

- Vaisnabi Secondary School

- Upayogi Primary School
- Gadgade Primary School

Completed the Kirtipur Environmental Mapping Project

Set up of a ward-level disaster management committee

NSET participated in 12th WCEE in New Zealand

## **2001**

3rd ESD

- Late His Majesty King Birendra granted audience to NSET and foreign delegates

NSET received the United Nations Sasakawa Award for Disaster Reduction - Certificate of Merit

Participated in the WSSI/Earthquake and Megacities Initiatives Inter-disciplinary team to Gujarat following the Gujarat Earthquake

Launched a half-hour weekly earthquake safety program on a community radio station

The Nepal-Gujarat Mason Exchange and Training Program implemented with Sustainable Environment and Ecological Development Society and NGOS Kobe

Emergency Preparedness and Disaster Response Plan for the Health Sector drafted

Organized the National Training on Urban Disaster Mitigation

Collaboration with Room to Read on earthquake-resistant construction of two schools in Dhading District

NSET and UN Center for Regional Development initiated the Kobe-Kathmandu Students Collaboration on School Earthquake Safety

NSET became a member of the Disaster Health Working Group, Ministry of Health

## **2002**

Published a manual for designers and builders on Protection of Educational Buildings Against Earthquakes

Commenced a weekly structural safety program for house owners and builders

Ministry of Home Affairs completed, in cooperation with the Japanese International Cooperation Agency, the study on Earthquake Disaster Mitigation in the Kathmandu Valley, Kingdom of Nepal

4th ESD

- First ever mass casualty drill involving the emergency rescue responders and hospitals

Seismic vulnerability assessment of 14 hospitals undertaken with Ministry of Health and WHO

Organized the Asian Seismological Commission 2002

- 4th General Assembly of the Asian Seismological Commission
- Symposium on Seismology, Earthquake Hazard Assessment and Risk Management
- Pre-Symposium Training Course on Earthquake Vulnerability Reduction for Cities

NSET participated in Regional Workshop on Networking and Collaboration among NGOs of Asian countries in Disaster Reduction and Response

KVERMP completed, the Municipality Earthquake Risk Management Project conceptualized as the replication and consolidation of KVERMP

## **2003**

5<sup>th</sup> ESD

Exhibitions held in Bhaktapur

Second phase of Program for Enhancement of Emergency Response (PEER) started in March 2003 for 5 countries including Nepal

Five more schools retrofitted under SESP program

Pre-Positioned Emergency Rescue Stores (PPERS) established in eight communities in Kathmandu. Local volunteers trained

Non-structural Vulnerability Assessment of nine hospitals conducted, methodology published

Half-hour weekly earthquake safety program launched with Annapurna FM Radio of Pokhara

MERMP implemented in four more municipalities as replication of KVERMP under the AUDMP program

Laitpur DDC awards land to NSET for building a community learning centre

DesInventar system introduced in Nepal with assistance of UNDP/BCPR. Inventory of natural disasters of the country for the last 33 years (1971-2003) prepared and analyzed

RADIUS established in Kathmandu Metropolitan City as a planning tool in cooperation with UNESCO

NSET experience shared widely in SAARC and other Asian Countries

Lalitpur Sub Metropolitan City became the first municipality of Nepal to announce mandatory implementation of Nepal National Building Code via building permit process

## **2004**

NSET awarded Tech Museum Award Microsoft Education Award category for the innovative Shake Table Technology

Seven papers on earthquake risk management in Nepal presented by 5 NSET professionals to the 13 WCEE in Vancouver, Canada

Kathmandu Valley Earthquake Preparedness Initiative (KVEPI) started jointly by American Red Cross, Nepal Red Cross Society and NSET as a preparedness and capacity building program in 10 locations of Kathmandu Valley under OFDA support

National Disaster database of the period 1971 – 2003 was prepared by NSET with the support from UNDP Nepal and BCPR India using “DesInventar” methodology

For effective ERM efforts in Nepal, NSET signed Memorandum of Understanding (MOU) with

- Department of Urban Development and Building Construction (DUDBC)
- Nepal Red Cross Society
- Diploma Engineers’ Association, Nepal (DEAN)
- Nepal Forum of Environmental Journalists (NEFEJ)
- Tribhuvan University, Teaching Hospital
- Kathmandu University

Training courses developed for masons, technicians, engineers, policy/decision makers and schoolteachers. Training programs started.

“Guideline for Seismic Vulnerability Assessment of Hospitals” published jointly by NSET, WHO and Ministry of Health

## **2005**

7th ESD, Exhibitions held in Patan Durbar Square

NSET participated in 14<sup>th</sup> UN- World Conference on Disaster Reduction (WCDR) in Kobe, Japan

Curriculum for Mason Training (Instructor Manual) published with financial support from ADPC, Bangkok

Nepal Earthquake Risk Management Program (NERMP) started with the support from OFDA/USAID as a continuation of previous projects

Capacity Building for Reconstruction of Earthquake-Affected Areas of Pakistan (Bagh and Muzaffarabad) project implemented in Pakistan with support from United Nations Development Programme (UNDP), Pakistan during November 2005-March 2006

Second Core Member Meeting (CMM II) on “International Framework for Development of Disaster Reduction Technology List on Implementation Strategies - Disaster Reduction Hyperbase” for Asia-Pacific Region organized in Nepal

Completed Training Programs on “Earthquake Risk Management and Earthquake Resistant Construction (Nov 2004- May 2005)” with support from LWF

Mason Training Program Conducted in association with Banepa Municipality

For effective ERM efforts in Nepal, NSET signed Memorandum of Understanding (MOU) with

- Nepal Engineering College (to develop curricula for M.Sc level disaster management course and to build collaborative approaches for earthquake and other disaster management activities)
- Bangladesh Disaster Preparedness Centre (BDPC)
- Nepal Police, MOHA / Government of Nepal – to implement the PEER program

Orientation lectures, drill exercises as part of earthquake awareness activities of NSET conducted to many I/NGOs.

Conduction of seismic vulnerability assessment of various buildings of INGOs, diplomatic missions, public schools, health institutions

## **2006**

8th ESD, Exhibitions held in Bhaktapur

Community Based Disaster Management Program (CBDMP) implemented in six districts with assistance from UNDP/Nepal

Second phase of DesInventar started with assistance of UNDP for the institutionalization of the DesInventar system



With the aim of conducting action research interventions in the field of disaster mitigation in Nepal, NSET signed MOU with DPRI/Kyoto University, Japan for the establishment of Case Station and Field Campus (CASIFICA).

NSET signed MOU with Shree Adarsha Saul Higher Secondary School for SESP program.

NSET providing technical assistance to ERAA/Pakistan for the implementation of project on "Training Support for Earthquake Resistant Reconstruction (TSERR)" through UNHABITAT under the auspices from OFDA/USAID.

NSET provided technical assistance to JICA/Pakistan to conduct Shaking Table Demonstration on PP Band Technology in Pakistan.

NSET participated in International Conference on Rethinking Capacity Development for Disaster Risk Reduction: Action 2005-2015 in Geneva.

NSET provided technical assistance to the World Bank/Indonesia in association with BRI/Japan to conduct Shaking Table Demonstration in Banda Aceh/Indonesia.

NSET providing technical assistance to UNICEF/Nepal to implement a project on "Disaster Preparedness and Response Plan for Safe Drinking Water in the Kathmandu Valley, Lalitpur Sub- Metropolitan City (DPRP)" supported by EC through its Humanitarian Aid department.

NSET providing technical assistance to UNDP/Nepal to implement a project on "National Strategy on Disaster Risk Management for Nepal (NSDRM)" supported by EC through its Humanitarian Aid department.

Pakistan has been added as sixth participating country to PEER from October 2006

NSET providing technical assistance to UN-ISDR to implement "Capacity Building and Knowledge Management: Institutionalization of Earthquake Preparedness in Schools of Earthquake Effected Areas of Pakistan (CBKMP)" from November 2006

NSET providing technical assistance to LWF to implement 'School Earthquake Preparedness in Jhapa, Rautahat and Kathmandu Valley Program' under LWF- DIPECHO/CPDR component

International Workshop on "Keeping Schools Safe from Earthquakes" organized in co-ordination with UNCRD/Japan and Ministry of Education/Nepal

Celebrated Earthquake Memorial Day (Bhadra 5) Program in Dharan

Facilitated a three day workshop on Disaster Risk Management Master Plan in Coordination with, 3cd Program jointly organized by KMC, EMI, PDC, and NSET

Facilitated Refreshers Workshop for Trained Masons on "Earthquake Resistant Construction of Buildings" jointly by Lalitpur Sub Metropolitan City, JICA Nepal and Lalitpur Trained Masons Group

Facilitated Third consultation meeting on Disaster Risk Management Master Plan in Coordination with 3CD Program

Organized District-level Workshop on: "Preparatory Works for Institutionalization of Disaster Inventory/Information Management System (I-DIMS) in Nepal" in Bharatpur, Chitwan

## **2007**

9<sup>th</sup> Earthquake Safety Day (ESD) held at Kathmandu, ESD Exhibitions at Kathmandu Durbar Square

Community Based Disaster Management Program implemented in Lalitpur District with support from Oxfam GB Nepal

NSET signed MOU with Mahendra Shanti Vidyalaya for SESP program.

NSET signed MOU with National Research Institute for Earth Science and Disaster Prevention (NIED), Japan on development of Disaster Reduction Hyperbase (DRH). Both institutes have decided to cooperate in order to enhance their contribution capability for disaster reduction and to benefit each other by sharing common information on disaster reduction technology and knowledge.

NSET signed MOU with National Disaster Management Authority (NDMA), Pakistan on the need to implement PEER program in the best interest of Pakistan and create an environment of mutual cooperation towards its successful implementation.

MOU with DUDBC for SVA of DUDBC buildings and train HR for the same.

Shake Table Demonstration at Dhaka, Bangladesh

International Conference on ERM at Pakistan

Executive Director of NSET participated in Tokyo Int'l Conference

Executive Director of NSET attended the Global Platform on DRR held in Geneva.

NSET participated in ADRC Annual Meeting held in Astana, Tajikistan.

**List of Organizations that have signed MOU with NSET for Cooperation in Earthquake Risk Management and Emergency Response Training Program:**

<b>S. N.</b>	<b>Name of Institution</b>	<b>Specific Purpose</b>
1	UNDP, Nepal	To cooperate in the implementation of Kathmandu Valley Earthquake Risk Management Project.
2	United Mission to Nepal (UMN)	To cooperate in the implementation of Kathmandu Valley Earthquake Risk Management Project.
3	Room to Read	To assist communities to construct earthquake resistant public schools
4	Bhivuti Man Singh, Architect	Architecture design/drawings of NSET's proposed Community Learning Center Building
5	Nepal Forum For Environmental Journalists (NEFEJ)	To work on collaborative approaches for environmental protection, urban management, awareness raising through dissemination of information, training, workshop, seminar and community radio broadcasting.
6	Lalitpur Sub-Metropolitan City, ICIMOD, ITC/Netherlands	To develop the methodology for the implementation of seismic risk assessment for Lalitpur area within Kathmandu valley of Midland Mountain range of Himalaya and to support LSMC in the development of GIS and its application.
7	Kathmandu University	To pool information, expertise and human resources in the fields of disaster risk reduction and emergency response capacity enhancement
8	Department of Urban Development and Building Construction (DUDBC)	To work on collaborative approaches for raising awareness on earthquake resistant building construction practices in accordance to National Building Code, developing human resources, making efforts to implement building code at local level, organizing training, workshop and seminar for the same.
9	Diploma Engineers Association Nepal (DEAN)	To reduce earthquake risk through awareness raising program as well as organizing training, workshops/seminars, research and development.
10	Nepal Red Cross Society (NRCS)	To work together in the field of disaster reduction and earthquake risk management, awareness raising through dissemination of information, training, workshop, seminar, and various other collaborative approaches.
12	Central Department of Geology, Tribhuvan University	To pool information, expertise and human resources in the fields of disaster risk reduction and emergency response capacity enhancement
13	Kathmandu Metropolitan City (KMC)	To pool information, expertise and human resources in the fields of disaster risk reduction and emergency response capacity enhancement.

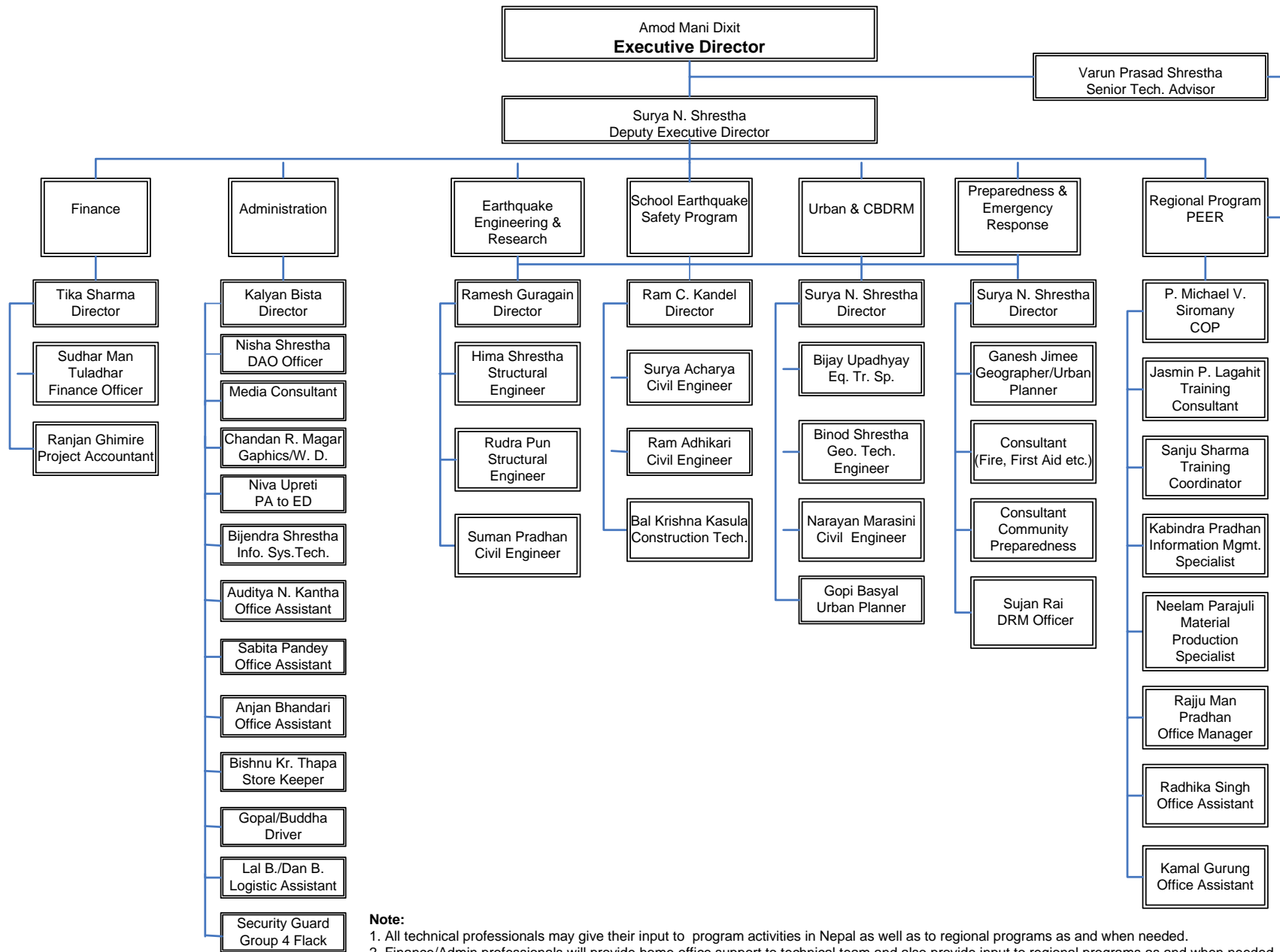
<b>S. N.</b>	<b>Name of Institution</b>	<b>Specific Purpose</b>
14	Nepal Engineering College (NEC)	To work together to develop curricula for M.Sc level disaster management course and to build collaborative approaches for earthquake and other disaster management activities.
15	DPRI/Kyoto University	Establishment of Case Station and Field Campus
16	Bangladesh Disaster Preparedness Center (BDPC)	Enhancing cooperation and collaboration in disaster risk management areas.
17	Focus Humanitarian Assistance, Pakistan	Enhancing cooperation and collaboration in SESP program in Pakistan
18	Norwegian Refuge Council (NRC), Nepal Bar Association (NBA), Social Welfare Council (SWC)	NRC will work in partnership with NSET and NBA for the Information, Counseling and Legal Assistance (ICLA) and Shelter Program components for IDPs.
19	Ministry of Home Affairs, Ministry of Local Development, Ministry of Physical Planning and Works, Lalitpur Sub-Metropolitan City, Nepal Water Supply Corporation, Nepal Red Cross Society, District Disaster Relief Committee and UNICEF/Nepal	To facilitate development of a disaster response framework and emergency drinking water facilities in the event of a major earthquake in Kathmandu Valley.
20	Action Aid, Center for Policy Research and Consultancy, Education Network and Disaster Preparedness Network of Nepal	To reduce peoples' vulnerabilities to disasters by contributing towards the implementation of the Hyogo Framework the project "Disaster Risk Reduction through School".
21.	National Research Institute for Earth Science and Disaster Prevention (NIED)	To enhance the institution's contribution capability for disaster reduction to benefit each other by sharing common information on disaster reduction technology and knowledge in order to cooperate in the development of Disaster Reduction Hyperbase.
<b>MOU For the Implementation of Program for School Earthquake Safety Program (SESP)</b>		
1	Bhuaneshwory Lower Secondary School , Nangkhel, Bhaktapur	To retrofit the existing school building and to build the earthquake resistant new building.
2	Gadgade Primary School, Nagarkot, Bhaktapur	To retrofit the existing school building
3	Upayogi Primary School, Sirutar, Bhaktapur	To retrofit the existing school building
4	Vaisnabi Secondary School ,Kritipur	To construct new earthquake resistant school building
5	Bal Vikash Secondary School, Alapot, Kathmandu	To retrofit the existing school building

<b>S. N.</b>	<b>Name of Institution</b>	<b>Specific Purpose</b>
6	Kabhresthali Lower Secondary School, Kavresthali, Kathmandu	To construct new earthquake resistant school building
7	Himalaya Primary School, Thimi, Bhaktapur	To construct new earthquake resistant school building
8	Tinkannya Primary School, Katrak, Dhading	To construct new earthquake resistant school building
9	Amarkhu Lower Secondary School, Bhumisthan, Dhading	To construct new earthquake resistant school building
10	Nateshwori Primary School, Chhaling, Bhaktapur	To construct new earthquake resistant school building
11	Vidyodaya Primary School, Jhochen Kathmandu, KMC-23	To construct new earthquake resistant school building
12	Saraswoti Secondary School, Thencho, Lalitpur	To construct new earthquake resistant school building
13	Shree Krishna Secondary School, Dhapakhel, Lalitpur	To construct new earthquake resistant school building
14	Saraswoti Secondary School, Thakalmath, Bhaktapur	To construct new earthquake resistant school building
15	Chaitnya Multiple Campus, Banepa	To construct new earthquake resistant school building
16	Shiva Primary School, Viyas, Tanahun	To construct new earthquake resistant school building
17	Sangam Primary School, Viyas, Tanahun	To construct new earthquake resistant school building
18	Bal Premi Secondary School, Thimi, Bhaktapur	To construct new earthquake resistant school building
19	Golmadevi Primary School, Sindupalchowk	To construct new earthquake resistant school building
20	Janajyoti Secondary School, Bhimad Tanahun	To construct new earthquake resistant school building

<b>S. N.</b>	<b>Name of Institution</b>	<b>Specific Purpose</b>
21	Janasewa Primary School, Viyas Tanahun	To construct new earthquake resistant school building
22	Suryodaya Bal Bikash Primary School, Imadol, Lalitpur	To construct new earthquake resistant school building
23	Adarsha Saul School, Bhaisepati, Lalitpur	To construct new earthquake resistant school building
24	Shree Jana Udaya Nimna Madhyamik Vidyalaya, Bhaisepati, Lalitpur	To retrofit the existing school building
25	Mahendra Shanti School, Balkot, Bhaktapur	To retrofit the existing school building
26	Mahendra Adarsha High School, Imadol, Lalitpur	To retrofit the existing school building
<b>MOU For the Implementation of Program for Enhancement of Emergency Response (PEER)</b>		
1	Institute of Medicine, Tribhuvan University	To nationalize and institutionalize HOPE course in Nepal
2	Nepal Police, Ministry of Home Affairs	To implement the PEER program in the best interest of Nepal, and create an environment of mutual cooperation towards successful implementation of MFR, CSSR and TFI courses.
3	Ministry of Health & Family Welfare, Ministry of Food and Disaster Management, National Institute of Preventive & Social Medicine, Bangladesh	To nationalize and institutionalize HOPE course in Bangladesh.
4	Disaster Management Bureau (MDMR), Bangladesh	To implement the PEER program in the best interest of Bangladesh, and create an environment of mutual cooperation towards successful implementation of MFR, CSSR and TFI courses in Bangladesh.
5	National Disaster Coordinating Council, Philippines	To implement the PEER program in the best interest of Philippines, and create an environment of mutual cooperation towards successful implementation of MFR, CSSR and TFI courses in the Philippines.
6	National Disaster Management Authority (NDMA), Pakistan	To implement the PEER program in the best interest of Pakistan, and create an environment of mutual cooperation towards successful implementation of MFR, CSSR and TFI courses in Pakistan

**National Society for Earthquake Technology- Nepal (NSET)  
List of NSET Publications**

S. N.	Name Of Publication
	<b>Books and Guidelines</b>
1	A Manual for Designers and Builders
2	The Kathmandu Valley Earthquake Risk Management Action Plan
3	Earthquake Scenario of Kathmandu Valley (English)
4	Earthquake Scenario of Kathmandu Valley (Nepali)
5	Non-Structural Vulnerability Assessment of Hospitals in Nepal
6	Earthquake Preparedness Hand Book
7	Bhaicha (Illustrated story on Earthquakes)
8	Guidelines for Seismic Vulnerability Assessment of Hospitals
9	Guidelines for incorporation Earthquake Safety Measures in Repair and Maintenance of Buildings with Historical/Archeological Importance
10	Abstract Book (ASC 2002)
11	Proceedings of Asian Seismological Commission (ASC 2002)
12	Earthquake Resistant Construction of Buildings Curriculum for Mason Training (Guidelines for Training Instructors)
13	National Building Code 203 (In Nepali)
14	What to do during an Earthquake (In Nepali)
15	Earthquakes (30 Frequently Asked Questions and Answers by NSET) –In Nepali
	<b>Posters and Fliers</b>
1	Risk Land
2	NSET Timeline (Boucher)
3	Calendar (Baisakh 2060 to Jestha 2061)
4	Earthquake-induced Cracks in building (size 20" X 30")
5	EQ. Safety thru community-based initiative (size 17" X 22")
6	Modified Mercalli Intensity Scale (Size 20" X 30")
7	Poster: Earthquake Risk Reduction of Non Structural Items
8	Citizens Responsibilities During Mass Casualty Management
9	ESD-2005 Poster
10	NSET News Letter
11	Guideline for Training Instructors
12	Fliers (Pillar, Stone, Brick Masonry, Earthquake Safety and Retrofitting)



**Note:**

1. All technical professionals may give their input to program activities in Nepal as well as to regional programs as and when needed.
2. Finance/Admin professionals will provide home office support to technical team and also provide input to regional programs as and when needed.