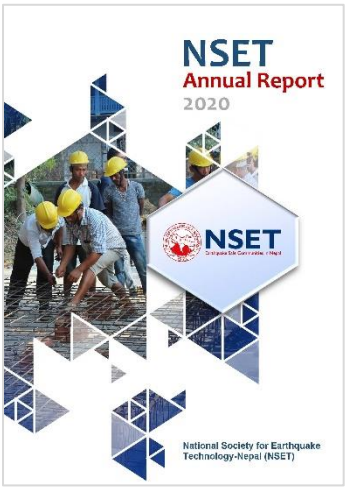
NSET
Annual Report
2020

NSET
Earthquake Safe Communities in Nepal

National Society for Earthquake Technology-Nepal (NSET)



NSET Annual Report 2020

National Society for Earthquake Technology-Nepal (NSET)

Cover Photo (Back)
Glimpses of NSET Activities

June 2020

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MESSAGE FROM THE PRESIDENT

Mr. Varun Prasad Shrestha

I would like to share my immense pleasure to present you NSET Annual Report for the year of 2020, the efforts and achievements that we have made within 2019-2020. During past 26 years, NSET has been contributing towards building disaster resilience in Nepal and in the region. This annual publication is expected to assist DRR stakeholders to accurately evaluate NSET's works vis-a-vis its stated mission and vision statements.

NSET strongly believes that the earthquake resiliency of communities can be achieved through enhancing awareness and building capacity by helping them to understand seismic risk and providing them with simple and practical methods in mitigating the risks. We are proud for the wider acceptance of concepts, methodologies and safety measures NSET has been facilitating, developing and propagating in Nepal and the region.

NSET understands that mere implementation of successful model projects and development of methodologies are not enough. These programs and approaches need to be scaled up and institutionalized in order to achieve the goal of earthquake safety for all. Accordingly, we design our programs to expand outreach and partnerships with local institution particularly with local authorities. Apart from earthquakes, time has come for us to work on multi-hazard risk mitigation. In the current context of COVID-19, our efforts for responding it and mitigating the future risks should go effective as well.

I would like to take this opportunity to acknowledge all our key partners including the government agencies, donors, international and national NGOs, civil society organizations, and communities to continuously trsut NSET and work with us. . I would also like to commend all the staff at NSET for their hard and dedicated works. With your continued and sustained efforts, I'm sure we can achieve NSET Vision of 'Earthquake Safe Communities in Nepal'.

Thank you!

MESSAGE FROM THE GENERAL SECRETARY

Dr. Amod Mani Dixit

We feel proud that NSET has completed 26 worth years in serving Nepal towards making our communities resilient. Our concerted efforts for earthquake risk reduction and disaster risk mitigation in collaboration with government authorities, national and international partners, and the communities has been a great journey. The year 2019-2020 continued the same spirit in collaborating and implementing earthquake and other disaster risk mitigation activities. It's our pleasure to come with a new issue of NSET Annual Report covering the efforts and achievements of the past year.

NSET is on the way to implement the mandates of different global platforms and frameworks. In Nepal, newly formulated policies and strategies on disaster risk reduction and management have well recognized the value and functions of civil society organizations. We have the challenge, how we can embed our activities in the line of formulated policies and strategies and how we can dive in line to improve nation's position in disaster risk reduction and management. Definitely, the federal structures and decentralization of authorities in Nepal provides great opportunity to mainstreaming and instituionalizing disaster risk reduction and management efforts at local level.

These days, innovation is primary subject of focus for NSET. We are encouraging young scientists because an assortment of energetic scientific minds and use of advanced technology will support to synthesize and sustain the scientific policies in disaster management sector. Students and practitioners in the field of disaster risk reduction and management can work collaboratively to better understand the different aspects of disaster risk reduction and management practices. We encourage the advancement of science and bring new technology and innovations in practice to help make change in people’s living.

As usual we vow to cooperate and collaborate with you all. We request our government agencies, donors, partners, urban and rural municipalities and wards of every municipal units to guide us, collaborate with us and help us in pursuing our institutional journey that aims to help building community resilience. We appeal all the concerned to critically review our efforts and guide us by which NSET can contribute better in making our communities resilient to disasters.

Thank you!

MESSAGE FROM THE EXECUTIVE DIRECTOR

Mr. Surya Narayan Shrestha

NSET has successfully completed another year of journey towards building resilient communities. It was a great opportunity for us to serve the nation and the region. As the Executive Director of NSET, I congratulate the staff and our stakeholders on this occasion. I thank the members of the Management Committee for the guidance and directives that have helped NSET to productively engage in the task of disaster risk reduction and management as per the aspirations of our mission, vision, objectives, strategies and values.

We are proud at the level of trust that NSET has built up with our national and international partners, from the informal groups to the numerous municipalities, and districts of Nepal, from the individual home-owners to the officials of government, bi-lateral agencies, donor institutions, national and international finance institutions, private sector businesses, Nepalese diaspora and their organizations. This has been achieved because of the values we pursue, the professional ethics and technical standards we adhere to, the strict financial and performance discipline we exercise, and also because of collective belief in our vision, mission and objectives.

This Annual Report of NSET presents the efforts and achievements of NSET implemented projects during June 2019 – May 2020 along with the performance in terms of financial and organizational development. This publication reports on NSET's collaboration with national and international agencies, academia and research institutions not only for ensuring high standards of our work in Nepal but also in our collaborative work in exploring the solutions for hazard risk reduction globally.

NSET is committed to contribute to the efforts of newly formed NDRRMA and governments at federal, provincial and local levels as envisaged in legal and policy documents.

The reconstruction of buildings and infrastructures devastated by 2015 Gorkha Earthquake has now been near to completion. NSET provided technical assistance for housing reconstruction in earthquake affected districts. We have been continuously working with Municipalities for the effective enforcement of building codes. We have has also started pilot works to develop Building Permit systems and Building Codes implementation in Rural Municipalities. Making safer schools is a flagship program of NSET that is being continued. We are continuing community focused efforts working in various localities.

The world is now witnessing the increasing rate of COVID-19 infections, and Nepal is not an exception. NSET has taken timely and needful measures to safeguard its staff and made efforts to continue at the level best. COVID-19 has come up with so many challenges but in the meantime brings opportunity to redesign and test the approach and measures of preparedness and response to the disasters.

We want to reassure our friends and well-wishers, federal and local authorities, scientists and masons, and the people that we will continue in years to come to serve the nation by continuing doing what we did so far and we will add more dimensions to our services. We request for continued understanding and support from all.

Thank you!

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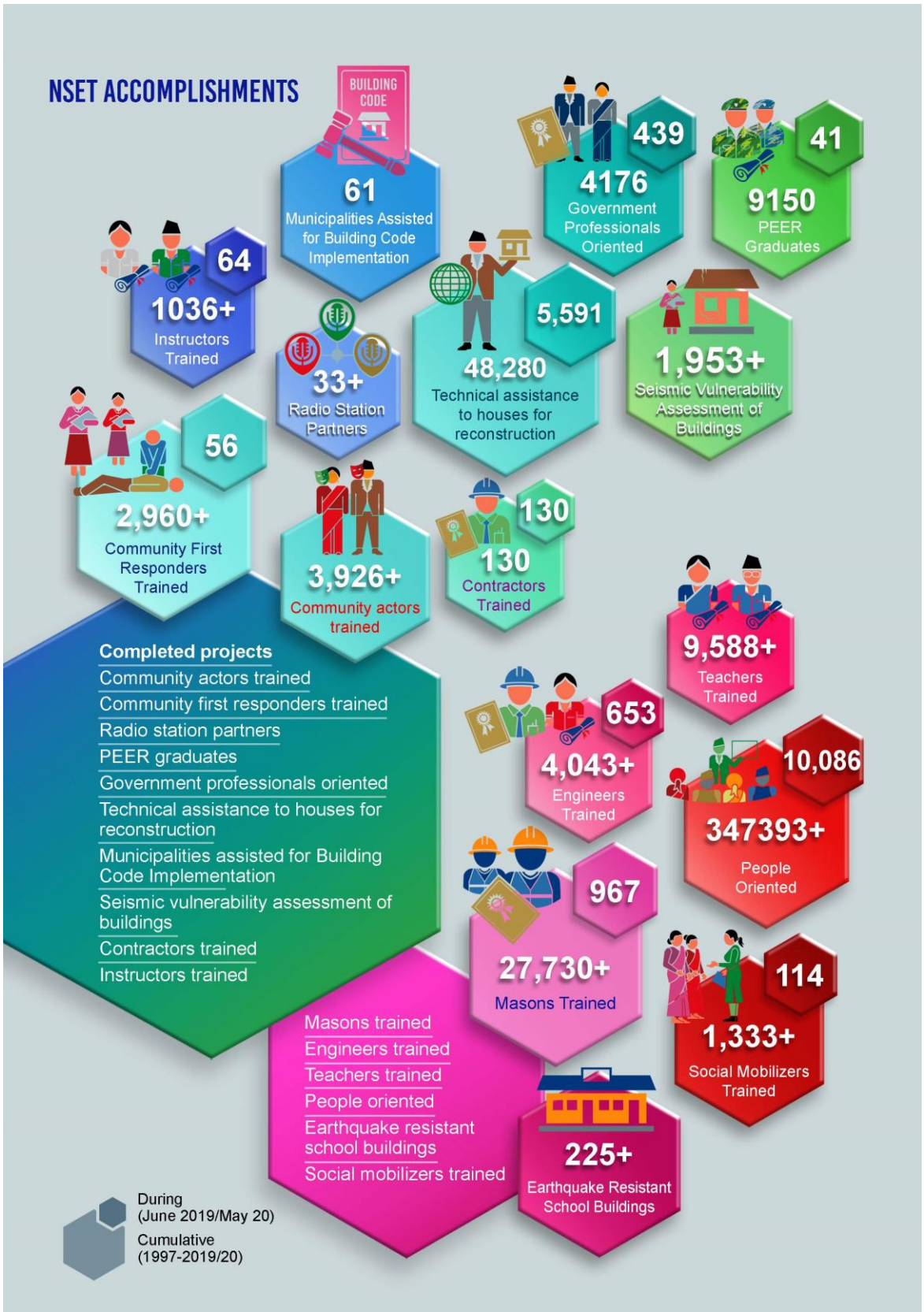
NSET Accomplishments at a glance



NSET Efforts in Past One Year (June 2019–May 2020)

1 Build Back Better: Assisting Post Gorkha Earthquake Reconstruction

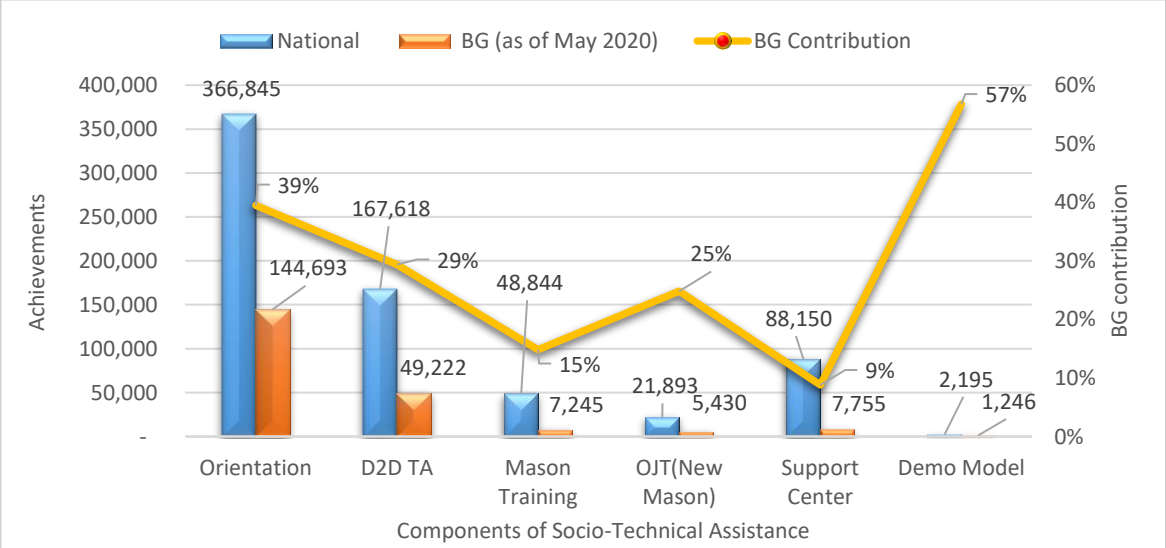
Background

National Society for Earthquake Techonology – Nepal (NSET) staretd implementing USAID funded Housing Reconstruction Technical Assistance Program (HRTAP) with the name "Baliyo Ghar" under the guidance and directives of National Reconstruction Authority (NRA), Nepal to support Nepal Government's owner driven approach for the reconstruction of private houses after 2015 Gorkha Earthquake.

Baliyo Ghar Program aims to provide comprehensive technical support to government's reconstruction efforts, by empowering and supporting communities for "Build Back Better". In shorter-term, the program aims at ensuring earthquake safer construction of all houses being reconstructed. For longer-term, the program aims to establish a system of disaster-resilient construction to achieve the goal of disaster-resilient communities in Nepal.

The program is being implemented during October 2015–September 2021 in 4 districts (Kathmandu, Dolakha, Dhading and Nuwakot) out of the 14 most-affected districts.

The program primarily imparts knowledge, skills and awareness regarding disaster resilient construction techniques to earthquake affected communities in program districts. Further, the program assists the government in developing policies, guidelines, standards and training curricula to standardize the entire process of reconstruction under the leadership of the National Reconstruction Authority (NRA) and its project implementation units.



*Source: In-house data & HRRP as of May 2020

Baliyo Ghar Contribution in National Reconstruction

Under Baliyo Ghar program, more than 15,000 skilled human resources including masons, technicians and technical professionals have been trained to enhance their skills in view of their contribution to reconstruction process. Demonstration models and model houses constructed during the training courses have been very effective to transfer the earthquake resistant technology in the quake hit communities. Efforts on awareness raising carried on through door-to-door visits in the program areas and also through mass media awareness in non-program areas. The community orientation program conducted through mobile teams not only raised awareness on earthquake safety and preparedness but also changed the perceptions of people on safer housing construction. NSET collaborated with local radios and national television channels for education and media advocacies.

Accomplishments (June 2019 – May 2020)

Capacity Building of Construction Actors

Masons refresher course conducted in Dolakha

Baliyo Ghar program, in last one year has focused on capacity building and demonstration activities for masons, engineers and house-owners regarding retrofitting of partially damaged houses. Another major focus of the year was to support on institutionalization of reconstruction efforts at igniting local authorities by initiating building permit system and building code implementation through training courses for local authorities.

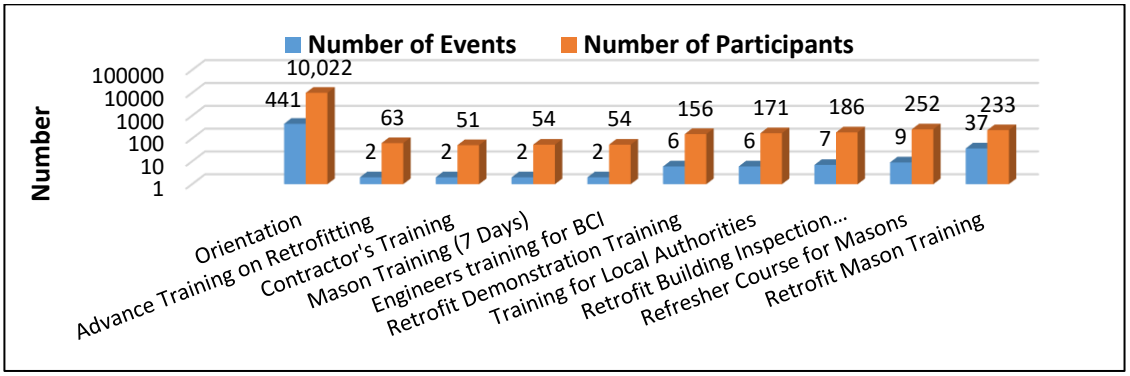
Mason Refresher Course

In the previous years, existing masons working in rural areas and urban areas were trained on reconstruction of safe houses. This year, refresher course for the rural trained masons was organized to acquaint them with the knowledge and techniques for building urban houses. As many of the rural masons are shifting to urban areas for the new construction after the reconstruction is over in rural areas, the refresher courses have enabled them to enhance their knowledge and skills on the urban construction practices.

Training for Contractors

Realizing the fact that the contractors are one major stakeholder in making the communities resilient, Baliyo Ghar program conducted training courses for contractors on earthquake safe construction techniques.

Various training courses conducted under the program are enlisted in the chart below.



Baliyo Ghar activities conducted from June 2019 - May 2020

Institutionalization of Safer Construction Practices

Baliyo Ghar Program initiated various technical support activities to support local governments to implement and enforce the National Building Code (NBC) and building regulations. These activities were primarily focused on training local authorities, engineers and contractors on building code, its implementation and building permit process, and on supporting for the preparation and review of policy documents related to implementing the building code and permit process. Coordination meetings, workshops and exposure visits to share knowledge on BCI and BPS among local authorities and stakeholders were organized.

Exposure Visit for Representatives of Local Governments

Consultation meeting held in Kawasoti

A team consisting of 22 representatives from 9 municipalities from Baliyo Ghar Program districts visited Vyas, Bandipur and Kawasoti Municipalities to learn about the strategies, issues and lessons of building code implementation and building regulations. The consultation meeting at Kawasoti Municipality had a total of 34 participants, including local representatives, officials, house owners and masons from the municipality. As an outcome of these efforts, the Bhimeshwar Municipality, Dolakha has started the process for contractor registration.

Sharing and Learning Workshop

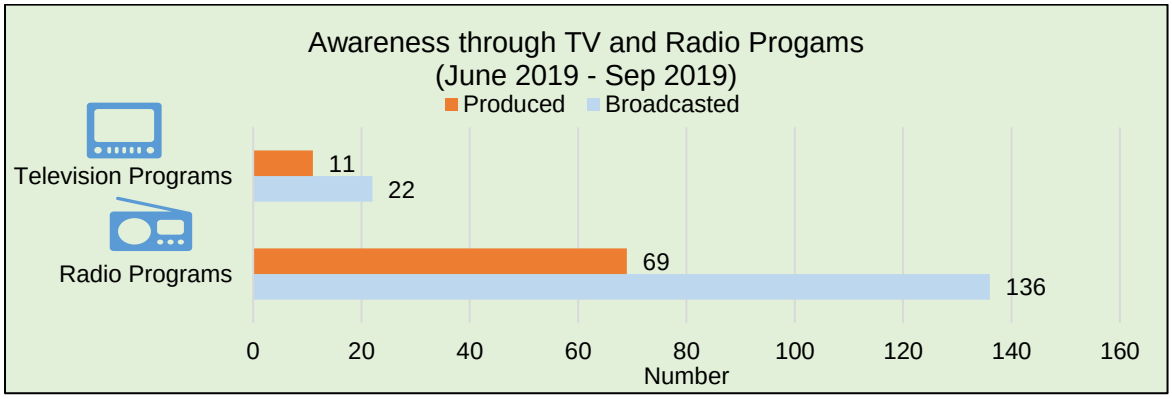
Sharing and Learning Workshop held in Vyas

A one-day workshop on "Sharing experiences, enhancing knowledge and capacities on Building Code Implementation" organized on March 2020 in Vyas Municipality. The objective was to enhance understanding of elected representatives and government officials in local governments regarding building code implementation (BCI) and building permit system (BPS). Urban and Rural Municipalities all over the country are gradually moving towards urbanization. The Gorkha earthquake has spurred the construction of urban buildings as well. So, municipalities, especially rural have felt the need of having institutional framework in place to ensure safer building construction and to curb haphazard development. Rural municipalities, in particular, lack adequate physical and technical resources to effectively implement the Building Code. In many Urban Municipalities, building permit process is in place, but has not been effectively administered. Learnings of Vyas Municipality, the approaches, framework, structure, impacts, challenges and learnings of implementation of building code and other DRR measures were shared during the workshop.

Awareness activities to promote resilient communities

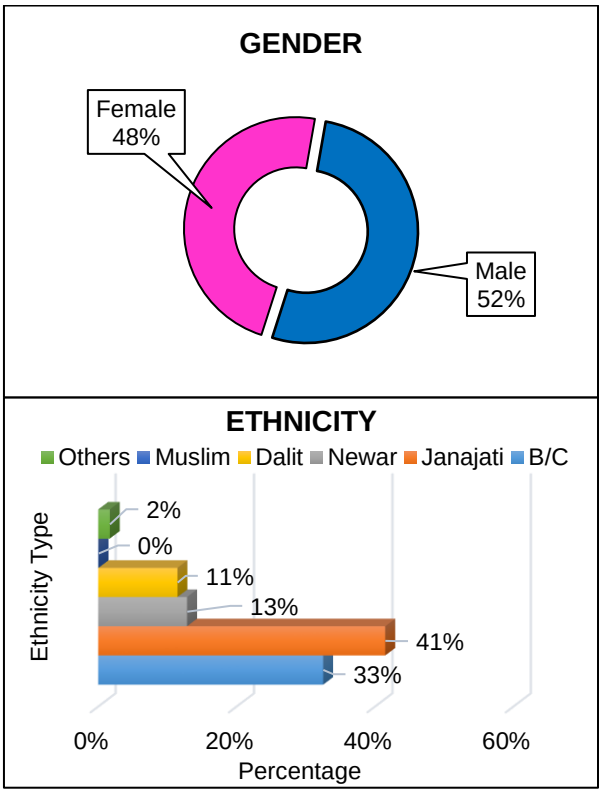
Awareness raising has been an integral part of Baliyo Ghar program since its inception. To continue highlight issues relevant to safer housing reconstruction and also promote process of building resilient communities, TV and radio programs were developed and broadcasted on safer

construction policies and practices, issues of retrofitting, good practices, impact of socio-technical assistance, and advocacy for institutionalizing sustainability of reconstruction efforts. Updating and disseminating awareness information through mass media, social networks, printing and publication continued in this period too. During June 2019-May 2020, eleven episodes of TV program were produced and 69 episodes of radio programs were produced. TV and radio programs got discontinued in the year 2020.



GESI in Baliyo Ghar Program

The on-the-job trainings conducted under Baliyo Ghar program also contributed to support reconstruction of houses belonging to the vulnerable groups in the communities. The houses constructed as demonstration models during OJTs belong to highly vulnerable groups of people prioritized by the National Reconstruction Authority. In the course of program implementation, inclusion of women and disadvantaged social groups has been kept in high priority. Nearly half of all the beneficiaries in Baliyo Ghar activities belong to Janajati group, followed by Brahmin, Newar, Dalit and Muslims. The program has also been able to support for the reconstruction of 910 houses, primarily belonging to vulnerable beneficiaries during the demonstration construction of On-the-Job Trainings. These beneficiaries were selected based on the priorities set by the NRA. Thus, through a wide range of activities, Baliyo Ghar program has been able to achieve inclusion and equality on gender and social aspects, focused towards developing a disaster resilient community.



Gender and Ethnicity based inclusion in Baliyo Ghar program activities (June 2019 to May 2020)

Reconstruction support for vulnerable beneficiary: a case from Bhimeshwor Municipality

Meeting at Bhimeshwar-2 to discuss on issues and strategies for supporting vulnerable population in reconstruction

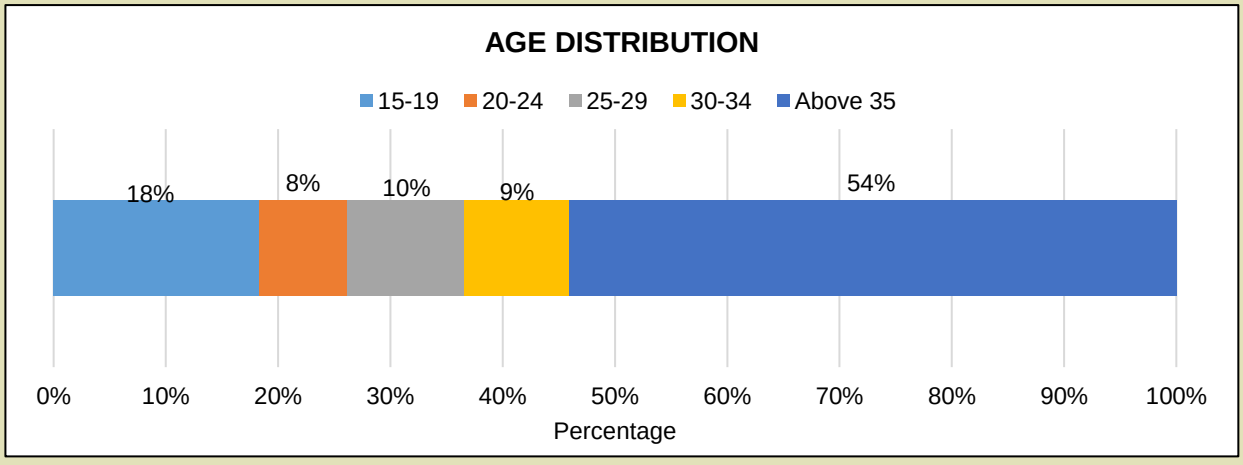
Ms. Mahendra Devi Yogi, a resident of Bhimeshwar Municipality-2 is a single woman in her early forties. She also suffers from intellectual disability and has been enlisted as a vulnerable beneficiary by the National Reconstruction Authority. Like many vulnerable beneficiaries around the country, she was not able to reconstruct her house for more than four years of the earthquake. During a status survey of vulnerable beneficiaries in the ward, Baliyo Ghar Program found out she wasn't able to reconstruct her house due to lack of support.

In January 2020, in accordance with the plan to support vulnerable persons, a meeting was conducted in Bhimeshwar-2 in presence of the ward Chairperson, DLPIU representatives, local forest committee and Baliyo Ghar Program team. The meeting discussed the issues of vulnerable beneficiaries in the ward, including Ms. Yogi and devised strategies to support. As Ms. Yogi needed both financial and physical support for construction, the meeting decided to convince her brothers to support, as well as requested Baliyo Ghar Program to provide technical support, DLPIU (Building and GMALI) to facilitate inspection and grant disbursement and the local forest committee to support providing timber.

Three of her brothers equally contributed and supported for the construction of a single room concrete block house as prescribed in the NRA manual. Baliyo Ghar program actively worked in close coordination with the house owner, her brothers, ward office and NRA/DLPIU to provide support for the reconstruction. Now, her house has reached the lintel level, with only roofing work remaining.

Due to the proactiveness of the government agencies, her second tranche was also disbursed within half the normal time. The story of Ms. Yogi is testimony as to how the local governments, NRA district offices and communities can collaboratively work to support vulnerable beneficiaries in reconstruction.

Reconstruction works in the house of Ms. Mahendra Devi Yogi at Bhimeshwor Municipality, Dolakha.



Agewise inclusion in Baliyo Ghar program activities (June 2019 to May 2020)

Technical support for promoting retrofitting

Mr. Sushil Gyewali, CEO of NRA handing over the retrofitted house of Mr. Ram Prasad Naharki in Nalang, Dhading

Retrofitting of partially damaged houses has been a technical and social challenge. When it occurs, it needs celebration. Mr. Sushil Gyewali, CEO of NRA along with officials from the NRA, CLPIU GMALI, CLPIU Building and DLPIUs in Dhading, representatives from Siddhalek RM, USAID, partner organizations and media personnel did just that in Dhading. They attended the Retrofit Technology Handover Program organized by Baliyo Ghar Program. 6 houses that were retrofitted as part of trainings under NSET implemented Baliyo Ghar were handed over to the beneficiaries in Siddhalekh Rural Municipality, Nalang, Dhading. Total 54 houses have been retrofitted under the program.

Organizations like NSET have developed retrofit model houses. However, it is not enough, we need to scale up the retrofit to strengthen the seismic capacity of 70 thousand houses that were partially damaged by the earthquake.

Addressing the ceremony, CEO Mr. Gyewali stressed on the need of retrofitting 70 thousand more houses in quake-hit 32 districts. “There is no other option either to demolish or retrofit the partially damaged houses”, he said. He also believed that retrofitted houses in Nalang can be model houses for other areas.

Through the technical support from Baliyo Ghar on retrofitting:

- There has been significant progress on retrofitting of damaged houses.
- Acceptance and ownership of retrofitting technology by the communities have been increased.

"I ignored advice to demolish my house"

Mr. Rudra Prasad Subedi and his retrofitted house at Mathani, Bhimeshwor-5 Dolakha

"My two-and-half-story house got partially damaged during Gorkha earthquake. I had built the house with my earnings of more than 20 years service in the government. My family stayed in temporary shelter for 2 years. Many villagers advised me to demolish the house, but my heart couldn't do so as I was attached to the house emotionally. In the due course, I happened to meet Baliyo Ghar Program team who helped my house get retrofitted. With 25 days intensive works, my house has been retrofitted and turned into a quake safe house. I am sure, no such earthquakes like 2015's would damage this house, as it has been tied up by splint and bandage and jacketing around the walls. The persons who used to force me to demolish the house now come to see this and get astonished. Local authorities appreciate my decision to retrofit the house, I have preserved our traditional and cultural identity. I am quite satisfied and happy that upcoming generations can also use this house without worries. There were several houses enlisted for the retrofit in the village but almost all have been demolished just to receive 3 lakhs rupees of government grant. The house-owners never thought to preserve the traditional architecture with enough rooms to accommodate. Observing my home in its original form, now they regret of what they did. "

Preserving traditional identity in Dwalkha

Dwalkha, located 4.5km north east from Charikot, the district headquarter of Dolakha, boasts a long history dating as far as the 13th century. It is well known for its traditional settlement of the ethnic Newar community with the famous Bhimsen Temple that draws thousands of devotees from all over the country every year. Dwalkha has its own unique language, culture and festivals that ought to be preserved.

The devastating earthquake of 2015 caused massive destruction in 32 districts of Nepal, among which Dolakha was one of the most severely affected districts. In Dwalkha area, 45 houses collapsed while 188 houses had to be demolished and around 105 houses needed repair and retrofit.

In urban areas, the reconstruction has been more complex. The major issue that hindered the reconstruction pace in Dwalkha area was a special context in which multiple families lived together and shared common house due to their socio-cultural need and limited availability of land. The houses were not habitable after the earthquake and had to be rebuilt, but people were in dilemma on whether to make a single joint house as they used to have or spilt up to receive the grant as promised by the government.

To assist the reconstruction and preserve the complex traditional semi-urban identity, retrofit of the magnificent houses which exhibits the original Nepalese architecture is the best strategy. However, this technology needed to go through a lot of scrutiny before being accepted by the stakeholders involved in reconstruction.

As government has adopted owner driven approach for the process of reconstruction and has provided the subsidy amount of three hundred thousand Nepali Rupees, beneficiaries were more attracted towards the amount.

Thus, various influential approaches were needed to intensify the adaptation of retrofit concept amongst the common people. Number of meetings, discussions, conslutations and studies held, that led local communities and householders to find good solutions to rebuild their houses ensuring traditional and cultural identities preserved. Now the reconstruction process is, though lately, taking a pace.

Intervention of Baliyo Ghar

Mr. Purusartha Shrestha who owns a magnificent traditional stone masonry house in Dwalkha was approached by the mobile team of Baliyo Ghar to assess his house for retrofitting. Mr. Shrestha was impressed by the idea of retrofitting as he had witnessed the house of his neighbor, Mr. Ananda Bahadur Shrestha being retrofitted. That retrofitted house functioned as demonstration model in the community which helped increase interest of beneficiaries in the process. However, he had his own constraints as he was listed in reconstruction beneficiary and in addition, his house had multiple owners. He was sharing his house with his brother as a part of their tradition. They were in dilemma as to whether to demolish the house and construct two separate houses as they were listed for two separate grants or whether to build a single joint house that would not be as large as the existing one.

House of Ananda Bahadur Shrestha before retrofitting

House of Ananda Bahadur Shrestha after retrofitting

House of Purusartha Shrestha before retrofitting

House of Purusartha Shrestha after retrofitting

Retrofitting Mr. Ananda Bahadur Shrestha's house has created an environment in which people have started to consider retrofitting as a feasible solution. Initially, people did not believe they could conserve these traditional houses because of the age of the house and the recent government norms. But they were later convinced that it was a feasible technique and so was Mr. Purusartha Shrestha. After convincing his brother and completeing necessaryformalities, he retrofitted his house with the technical support for design and supervision from Baliyo Ghar program. His house became one of the demonstration sites for the 25-day retrofit training that Baliyo Ghar Program is conducting in the district.

These models of retrofit have helped preserve the features of traditional settlements and traditional architecture. These houses have also provided sufficient space for residents who stay together in families and this has helped preserve the social structure.

Dwalkha is a semi-urban settlement which carries historical and traditional structural values. The traditional assets can be aptly utilized to uplift the economy of the area. By preserving the traditional architecture, Dwalkha can attract the attention of whole Nepal and set out as a model. There are many other beneficiaries like Mr. Purusartha Shrestha and Mr. Ananda Shrestha.

Impacts of the Program

Coming to the end of program implementation, Baliyo Ghar program has left with some significant impacts at the community level:

- As of May 2020, more than 85% of the 60-thousand households in the program areas directly supported by Baliyo Ghar Program have completed reconstruction of their houses.
- 97% of the the houses rebuilt in program area are compliant to the codes.
- Several villages have completed housing reconstruction and going back to normal.
- As retrofit and institutionalization of reconstruction efforts was the major focus of the program, acceptance to the retrofit technology has widely increased.
- Local level initiatives for disaster risk reduction and management have begun.
- Ward level disaster risk management committees have been formed in some of the Municipalities in the program areas.

Way ahead

The post-earthquake housing reconstruction in Nepal has witnessed significant progress in rebuilding more than 65% of private houses after 4 years of devastating earthquake with the support system for technical assistance, household-level financial subsidy and the system of compliance check. Baliyo Ghar program is contributing in technical assistance system through its program interventions.

Despite the progress, the institutionalization and sustainability of reconstruction achievements is an

issue that must be on focus. Masons were trained, peoples were oriented and safer houses have been constructed well, however, this all should go into governance system and this is actually good opportunity the country need to grab.

Baliyo Ghar Program is now focused on major three areas of housing reconstruction:

i. Start the process of institutionalization of reconstruction efforts. This will eventually facilitate for implementation of building code.
ii. Conduct capacity enhancing trainings to municipal staff and stakeholders by supporting them to develop mechanisms to start the building permit system and
iii. Conduct awareness raising activities targeted to house-owners and stakeholders to propagate the knowledge of building permit systems and safer construction practices.

Ultimately, the program intends to develop a model of building permit and building code implementation for the rural municipalities through the learnings from the implementation of the building permit process. Also, the learnings will guide for the decision support tools for selecting appropriate housing reconstruction and management strategies, if in-case local authorities need to be involved for post-disaster reconstruction in the future.

Housing reconstruction progressing in one of the rural areas of Dhading, where Baliyo Ghar team discusses withhouse-owners and masons

2 Resilient Cities: Technical Support to Municipalities for Building Code Implementation in Nepal

Introduction

NSET has been implementing **Technical Support for Building Code Implementation in Nepal (TSBCIN)** program since 2017 with the funding support from the United States Agency for International Development / Bureau for Humanitarian Assistance (USAID/BHA) to support municipalities in implementing the National Building Code (NBC). TSBCIN program is an extension and continuation of USAID/OFDA supported Building Code Implementation Program in Municipalities in Nepal (BCIPN) that NSET implemented during 2012-2016.

Under the guidance and directives of the Department of Urban Development and Building Construction (DUDBC), Ministry of Urban Development (MOUD) and the program municipalities, the program is being implemented in 30 municipalities scattered in 7 provinces of Nepal.

In order to achieve the program objectives, TSBCIN has adopted four main strategic components:

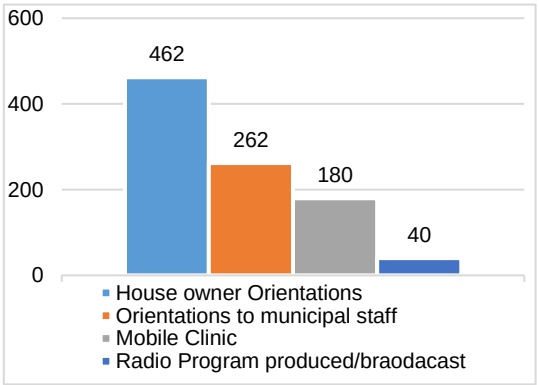
1. Raising awareness of local community, related stakeholders and government representatives on the root cause of earthquake risk in Nepal and possible ways of mitigating the risks,
2. Building the capacities of construction workforce such as local masons and contractors in earthquake-resistant construction technology; and building capacities of engineers and technical professionals to design and supervise construction of safer building;
3. Building institutional capacity of municipalities to effectively enforce building code and institutionalize the code compliance system; and
4. Expanding the concepts, cooperation and networking from ongoing successful municipalities to nearby new municipalities, collaboration with local organizations including other NGOs, CBOs, technical colleges, local media among others as well as the use of existing local capacity, accelerating local community interactions and generating local resources.

Accomplishments (June 2019 – May 2020)

Awareness and sensitization for effective Building Code Implementation

During the period of June 2019 to May 2020, various activities have been accomplished under the program.

Raising awareness is the first step towards improving risk perception and creating demand for earthquake risk reduction. One of the major activities of TSBCIN program is promoting awareness on earthquake safer construction. During the period, several awareness and sensitization programs have been conducted for



house-owners, political and social leaders, social mobilizers, community people, students and other stakeholders through orientation sessions, earthquake safety campaigns, mobile clinics and local radio campaigns. These stakeholders are engaged to further disseminate information on earthquake safer building construction practices.

House-owner orientations

House owner orientation is about to aware and orient house owners for the roles and responsibilities to build their houses strong and earthquake resilience by following the building code. In this period, a total 462 house-owners got oriented in Itahari, Dhangadhi and Nepalgunj Sub-Metropolitan Cities, and Dhankuta, Mithila, Damak, Godawari and Kawasoti Municipalities.

Orientation for municipal staff

Municipal staff were oriented on the building permit system, building code and their role for effective implementation. Further, the municipality officials were updated with the current status of building code implementation in the municipalities. A total of 246 municipal staff got oriented from Mithila, Kawasoti, Sainamaina, Ghorahi, Nepalgunj, Godawari, Suklaphanta, Dhangadhi and Bhimdatta Municipalities in this period.

Mobile Earthquake Clinic

Mobile Earthquake Clinic is an on-site consultation provided by the team of field engineers and respective municipal engineers or engineering students to house owners and construction workers. The main objectives of mobile earthquake clinic are to provide knowledge of safer building construction, assist on-site building code implementation, and further stimulate the house owners and builders to consider earthquake risks. A total of 180 mobile clinics were conducted during the period benefitting a total of 5400 people.

Awareness campaigns through radios

Radio program is one very effective tool to promote awareness at community level. NSET highly emphasizes in utilizing local radios and mass media tools to promote the understanding on earthquake risks in Nepal and ways to reduce it. In this period, total 40 episodes of radio programs produced and aired from 5 partner radios.

The radio programs focused on earthquake and disaster safety such as earthquake resistant building construction techniques, stakeholders' roles and responsibilities, municipal capacities etc. In addition to this, Public Service Announcements (PSAs) related to earthquake safety produced and broadcasted everyday 10 times by all the radio partners. 8 new additional PSAs produced and broadcasted from the partner radios during the period.

Collaboration and Networking

Collaboration is a key component of TSBCIN program to build cooperation among related stakeholders for providing effective support for building code implementation. During this period, NSET has collaborated with various local stakeholders; CBOs/NGOs, professional societies, academic institutions, local media, volunteers etc. to conduct various activities. Some of the major collaborations undertaken are as follows:

Collaboration with Academic Institutions

An MOU was signed between Mid-Western University (MWU), Civil Engineering Department and NSET to work together for capacity enhancement of the students and teachers on earthquake-resistant design and construction. The university teachers and students are later mobilized to provide support to municipalities in conducting further training programs. NSET and the university are working to promote research activities as well. The university is taking lead on research work by involving students and NSET/TSBCIN is taking lead for facilitating and imparting training to engineering students. Similar MOU was also signed with Far-Western University (FWU) to pave way for the activities in capacity enhancement of teachers and students.

A tripartite agreement has been signed among Bharatpur Metropolitan City (BMC), United Technical College and NSET to assist municipality to conduct sensitization of House owners. As per the agreement, the college provided required resources to conduct two orientations to the potential new house-owners who have applied for building permits in the municipality. NSET helped develop instructors for the orientation.

Collaboration with Teach for Nepal

"Teach for Nepal" is a movement of outstanding university graduates and young professionals who are committed to end education inequity in Nepal

starting with two years of fellowship teaching in public schools.

Collaboration with ISET Nepal

NSET and Institute for Social and Environmental Transition - Nepal (ISET) collaborated for conducting three-day training to local contractors of selected wards of Kathmandu Metropolitan City (KMC) and Lalitpur Metropolitan City (LMC).

Sharing with HRRP Nepal

HRRP is a platform of non-government organizations who are supporting the government initiatives for post 2015 Gorkha Earthquake Reconstruction. NSET organized a sharing session for Housing Recovery and Reconstruction Platform (HRRP) in Kathmandu. A total of 19 staff from HRRP participated the session. NSET professionals shared experiences, lessons learnt, challenges and achievements of building code implementation. Discussions were held on the possibilities of future collaboration with HRRP in building code implementation activities. Such session is helpful on bringing the lessons and practices of building code implementation in the reconstruction areas.

Collaboration with Social Welfare Council (SWC)

Social Welfare Council (SWC) is the regulatory agency for all non-government organizations (NGO) in Nepal. Social Welfare Council (SWC) observed its anniversary on September 23, 2019 organizing various events. As part of the anniversary events, SWC organized an exhibition to demonstrate civil society's contribution on various social issues in Nepal. During the exhibition, a booth was setup by NSET to display safer construction techniques, the achievements made in Building Code Implementation in Nepal, and other disaster risk reduction and preparedness initiatives by NSET. Several government and non-government organizations participated in the program and was attended by around 200 people.

Collaboration with Nepal Geological Society

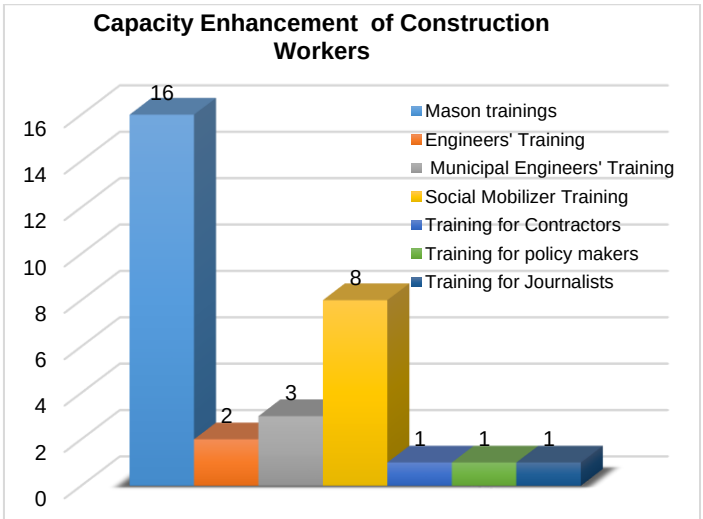
Nepal Geological Society (NGS) has collaborated with Ministry of Home Affairs, Department of Mines and Geology (DMG), NSET and other National and International organizations in celebrating International Day for Disaster Risk Reduction (IDRR), 2019. NSET participated in two different programs at Bharatpur and Kathmandu. A one-day orientation program was held in Bharatpur Metropolitan City Hall on October 16, 2019 and discussed on the efforts made in disaster risk reduction in Bharatpur along with the future activities in Disaster Risk Reduction. NGS organized a one-day symposium in Kathmandu on October 18, 2019. NSET made a presentation on "Towards Community Resilience through Building Code Implementation".

Technical support to additional municipality

NSET and Kushma Municipality of Parbat district signed a MoU for working together on effective building code implementation. One mason training and one sensitization program for political and social leaders conducted at the Municipality under the technical support of TSBCIN.

Capacity enhancement of construction workers and other stakeholders

As part of capacity enhancement training programs, NSET trained construction workers, engineers, municipal staffs/engineers, and policy makers. The objectives of these training courses had been to enhance the capacity of key construction stakeholders on earthquake safer construction practices and earthquake risk management.



Training course for masons

During past one year, 10 mason training courses and 6 mason refresher courses conducted. These courses are to help masons build better understanding on safer construction practices.

Training course for masons on retrofitting

Total 3 number of 'On-the-job Training' on retrofitting conducted in Birendranagar Municipality, 43 masons got trained through retrofitting of a public building.

Training course for engineers

TSBCIN organized training course on "Seismic Vulnerability Assessment of Existing Buildings" in Ghorahi Sub-Metropolitan City of Dang with focus on seismic vulnerability assessment of existing buildings and basic concepts of retrofitting. Total 30 engineers from different municipalities and consulting firms of Province No 5, 6 and 7 and from the Department of Urban and Building Construction (DUDBC), Dang participated the course.

Likewise, a five-day training on "Retrofitting Design" was conducted. This was the second series of training for the same participants who already participated the basic training course. Total 27 participants attended the training on retrofitting design of residential buildings. NSWT also organized 3 Refresher courses for engineers on earthquake resistant building design and construction.

Training for municipal engineers

TSBCIN program organized training course for municipal engineers and sub engneers focusing on building permit system. Total 84 technical staff from Bheemdutta, Bhimeshwor and Vyas municipalities took part in the course.

Training for social mobilizer/social leader

NSET organized 8 trainings on Earthquake Risk Management in Bharatpur and Vyas Municipality for municipality social mobilizers and local social leaders. Total 289 social mobilizers and social leaders got trained.

Training workshop for radio journalists

A training workshop was organized for radio program producers from partner radios. The purpose was to share the experiences, learning and challenges while producing radio programs on methods and processes of safer building construction and key issues of effective building code implementation in Nepal. Total 12 radio journalists participated. The training ended with earthquake vulnerability walk in historical core area of a local community in Patan.

Training course for contractors

A three-day training course for contractors was organized at Bharatpur Metropolitan City that focused on basic principles of construction management and its practical approaches. The course covered: human resource management, construction materials management at site, equipment handling and operation, financial record keeping methods, basic methods on estimation of materials and learning key points on municipal drawing. Total 27 local contractors participated.

Training for policy makers

A three-day training program was organised on Land Pooling in Vyas Municipality that focused on sharing the concept and overall process of land pooling with the participants. The training consisted of a mixed participation of 34 stakeholders consisting of representatives of user committees, representatives of the concerned wards, engineers, architects, sub-engineers and social mobilizers of project implementation unit and other technical staff of the municipality.

Technical assistance for demonstration of retrofitting

The technical support for the assessment, design and estimate of retrofitting of a residential building at Ghorahi Sub-Metropolitan City was prepared in this period. It plans to provide further technical assistance through field visits at critical points in the phase of construction. Masons and engineers in the city have already been trained and involved in the previous retrofitting work.

Support for improving institutional system

NSET aims to provide technical inputs and supports for improving institutional systems of municipalities for building code implementation. As part of it, consultation meeting with municipalities, finalization of 'houseowner and contractor training manual', preparation of video documentaries, workshop on building code updates and works on the land pooling were

carried out during the period. The following are the major activities conducted during the period.

Plan and program for building code implementation

NSET has been providing technical support to municipal offices to develop plans and programs for building code implementation. These plans include programsa and activities related to building code enforcement by the municipalities together with budgetary allocation for conducting awareness and training activities. Numerous orientation programs, capacity enhancement programs and building surveys have been conducted under the leaderships and with the budget of the municipalities. Small external financial support has been key to generate significant amount of resources from within the municipality for building code enforcement. This effort has ensured local ownership and is believed to sustainably lead the programs in the municipalities.

Establishment of systems for retrofitting

NSET provided technical support to carry out retrofitting of two existing buildings in western region of Nepal. Seismic retrofitting of a private house has been done as a demonstration in Ghorahi Sub-Metropolitan City and similar retrofitting of one public building has been done in Birendranagar Municipality. NSET assisted these two municipalities to develop systems and plans for promoting and enforcing retrofitting of other vulnerable buildings. These municipalities plan to integrate the system of retrofitting into the existing system of building permit.

Local Disaster and Climate Resilience Plan (LDCRP)

NSET assisted Bharatpur Metropolitan City for developing Local Disaster and Climate Resilience Plan (LDCRP). The plan is based on the LDCRP Guidelines - 2074 developed by the Ministry of Federal Affairs and General Administration (MOFAGA). In addition to LDCRP, 3-year Action Plan was also prepared through series of meetings and discussion with the Municipality Officials. Training program was also conducted for the members of Disaster Risk Management Committee (DRMC) along with interaction program with ward level DRMC members to share outcome of the planning process. Bharatpur Metropolitan City is second municipality to be assisted in LDCRP preparation after Vyas Municipality. These LDCRPs prepared by the municipality offices have now been endorsed by the respective Municipal Councils and have now become the mandatory plan and policy of the municipalities.

Support for planned urban development through land-pooling

With the view to develop disaster resilient communities, Vyas Municipality is working to initiate and implement Land-Pooling Program with technical assistance from NSET. A Memorandum of Understanding (MOU) was signed between Vyas Municipality and NSET to initiate the program. A pilot Land-Pooling work is underway at Baireni of Vyas Municipality Ward Number 10.

Publication of Houseowner Manual

An updated version of houseowner manual has been prepared and published. The main objective of this booklet is to provide all necessary basic information for the houseowner regarding earthquake resistant construction, municipal building permit process, and other practical issues related to construction. Municipalities will provide this manual to house-owners when they purchase the building permit application forms. House-owners can refer to this manual before they start the application and construct their new houses.

Preparation of Manual for Contractors' Training

A manual for contractors' training (3-day course) has been prepared. This new course mainly focuses on human resource management, construction materials management at site, equipment handling and operation, financial record keeping methods, basic methods on estimation of materials and learning key points on municipal drawing. The schedule, curricula, and lesson plan of each session is incorporated in this training manual.

Preparation of Video Documentary

NSET collaborated with Panchakanya Pictures, a private organization working in developing video documentaries. NSET and Panchakanya Pictures have jointly developed video documentaries on building code implementation and building permit systems. These videos are meant to be used for the house-owner orientation in the municipalities. These short videos are developed largely based on the orientation sessions conducted by the municipalities. The videos cover concepts of earthquake resistant building construction, quality of building materials and stages of building permit system.

Support for Planned Urban Development through Land-Pooling

NSET has been providing technical assistance to Vyas Municipality for the implementation of land pooling project at Baireni, Tanahu. As part of it, a training on Land Pooling for Urban Development was conducted by NSET and Vyas municipality to the technical staff of Vyas municipality Land Pooling Project Implementation Unit (PIU) which includes Architect, engineers, sub-engineers, surveyors and Social Mobilizer from Vyas municipality and NSET both. Similarly, representatives from the beneficiary groups and ward political persons were also trained.

Case Stories

Efforts of Vyas Municipality to improve seismic safety of buildings

Vyas Municipality, the headquarters of Tanahun District in west Nepal, was declared as Municipality in 1991. The Municipality has 14 wards, that occupies area of 248 sq. km and has a total population of 70,335.

Vyas Municipality initiated earthquake risk management efforts with the development of earthquake scenario in 2001, that helped in raising public awareness. Then followed various awareness programs in the area. Vyas declared National Building Code mandatory in Vyas in 2011. According to Mr. Rabindra Mul, Senior Municipal Engineer, mason trainings, engineers' trainings and orientations for house-owners and communities were conducted massively since then.

Vyas went ahead with the formation of mason groups, preparing list of consultants and allocation of budget for BCI in 2012. Trained Masons and Consultant Engineers were registered. In 2014, an Advisory Committee of technical consultants was formed. The same year, licensing system for trained Masons and Contractors started along with reward and punishment mechanism.

Vyas started field supervision of under construction buildings since 2014 through consultants. In 2015, municipality prepared and implemented building permit guidelines and also developed and implementated Revised Building Permit Book. In 2017, implementation of revised building permit form started. Further, Municipality increased technical workforce of the Municipality and launched field supervision/ inspection through its own team of engineers. Building Permit System Software was installed in the Municipality to convert existing permit system into digital system. In 2018, mandatory checks for structural design of B class Buildings was also initiated the same year. In addition, Municipality is conducting orientations regularly for house-owners focusing on earthquake safety. Likewise, Mobile Earthquake Clinics are being organized to help house-owners.

In these efforts, NSET provided technical assistance and strategic guidance.

Now, Building Code Implementation has been ensured through 14-steps Supervision from consultant and monitoring from Municipality in 3-steps. The reward and punishment mechanism initiated evaluating the performance of masons and consultants. As per record of fiscal year 2017/18, total 709 number of houses were permitted for construction which is around 93% of the building constructed in Municipality. In 2019-2020 alone, 450 new buildings were constructed with permit. Currently there are 20059 building stock in the Municipality. Till date, Municipality has provided earthquake resistant mason trainings to 520 masons while a total 174 consultant engineers have been trained so far.

Mr. Baikuntha Neupane, the Mayor, believes that they have experienced challenges such as difficulties in bringing the non-compliant buildings into the building permit system, development of proper regulation for retrofitting of existing building stock, dispelling negative influence of other neighboring municipalities, building permit process by government buildings and schools and bringing the rural part of municipality into building permit process which were recently merged into the municipality, among others.

Vyas Municipality has learned important lessons from its efforts. "BCI is not only a technical but also a social issue. It can't be implemented without the trust of community. It needs to be complemented by at least one percent of Municipality's budget per annum" said, Mayor Neupane.

Vyas Municipality aims to continue awareness promotion and capacity building programs. It also aspires to accelerate proper site supervision activities and monitoring system. further, the municipality is planning to incorporate and mainstreaming earthquake risk reduction in municipality plans and policies and implement building permit software to digitize building permit system.

A journey of Ms. Pema Chaudhary, a female mason from Godawari Municipality

I have been engaged in construction works since past 10 years. Initially, I worked as a Labor but its now 5 years I have been working as mason. Now, I am different from what I was 10 years back. I am a trained mason, who knows how to build an earthquake-resistant house.

I was willing to be a mason. Sometimes masons used to be absent at the construction site where I worked, that was an opportunity for me to hold the trowel. This way, I started working as a mason.

In 2018, I got an opportunity to join mason training course which focused on construction of an earthquake-resistant house. Under USAID supported program, National Society for Earthquake Technology-Nepal (NSET) had conducted Mason Training that taught me many ideas and skills of earthquake resistant building construction. We came to know that we need to improve the way that we were doing every day. Earlier we used to build only houses but now we are building safe houses. Now, I am involved in the construction work from the foundation to the roof of the house. My husband is also a mason. But I took the training and he has not. It would have been easier for me to work together with my own husband, but he never took me to work with him. Therefore, we always worked at different construction sites.

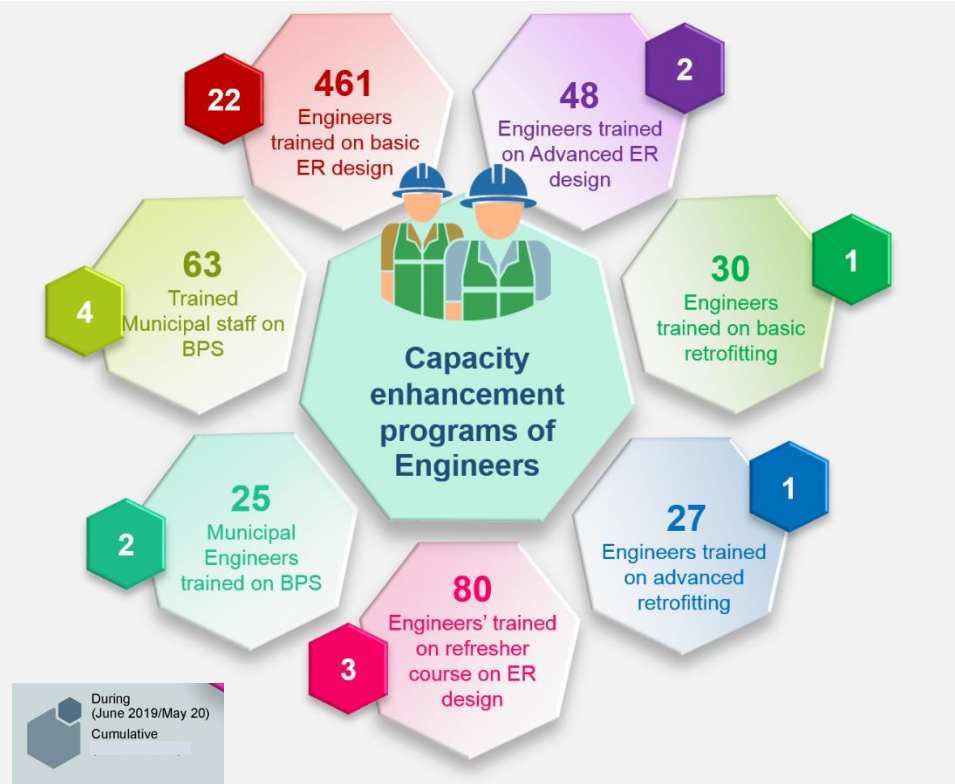
My husband's income is not enough to support the family and educate children. I also started earning so that all the expenses are easily met. I have also some savings. When I started working that helped my husband and family to tackle financial burden. As I am trained mason, I get work more easily. After receiving the training, I feel that I am not only earning money but also contributing to society and the municipality by building earthquake-resistant houses. I feel proud of my work. Now I am thinking of building my house according to what I have learned in the training.

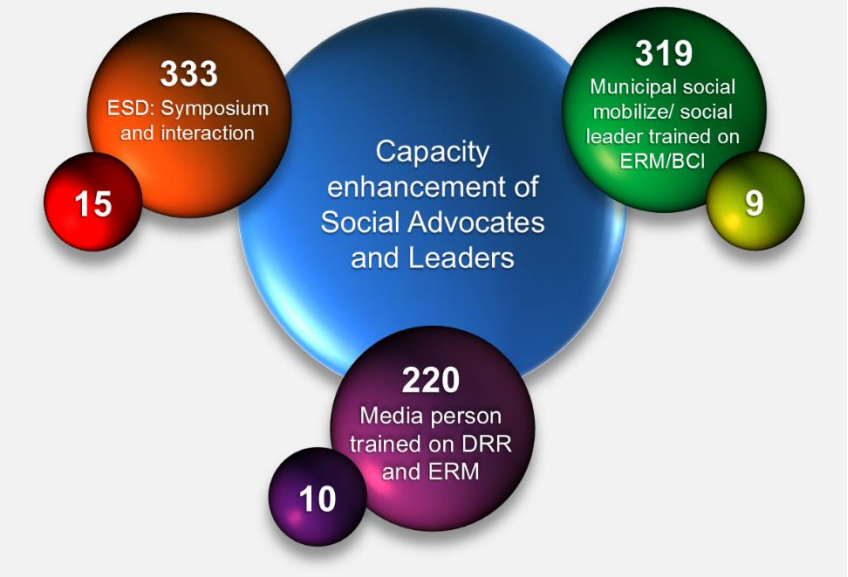
There are many challenges in this profession, but women face more challenges. I have 3 children. Doing all the housework, farming work, and also go for construction works all day is very much tiring for a woman. My husband leaves for work at around 8am in the morning but that's not possible for me.

It seems for the society that the skilled construction work is done only by men. It is true that in the past, there were not many women in this profession. I also face many problems to manage my household activities and my profession, but I wanted to earn something for my family, and I took challenge to manage it.

But again, it is very difficult for a woman to work that requires more physical labor like a Mason. Not only that, the salary I used to get when I was working for labor has not been increased even after receiving the training. If there was a male Mason in my place, his salary would have been doubled or he would have become a contractor. I made progress at my work, but the wage rate is same as previous. But now this work becomes my habit, so I am thinking of doing this work as long as my health supports me.

Overall progress and impacts of TSBCIN




333
ESD: Symposium and interaction
15
Capacity enhancement of Social Advocates and Leaders
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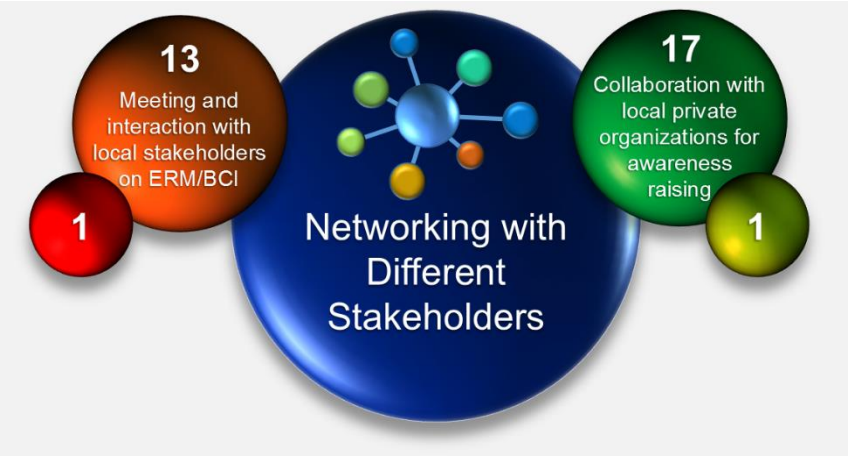
Municipal social mobilize/ social leader trained on ERM/BCI
9
220
Media person trained on DRR and ERM
10


13
Meeting and interaction with local stakeholders on ERM/BCI
1
Networking with Different Stakeholders
17
Collaboration with local private organizations for awareness raising
1


6
347
National Level workshop on BCI beneficiaries
Program for Improving Institutional System
231
Meetting with Municipalities officers and local stakeholders
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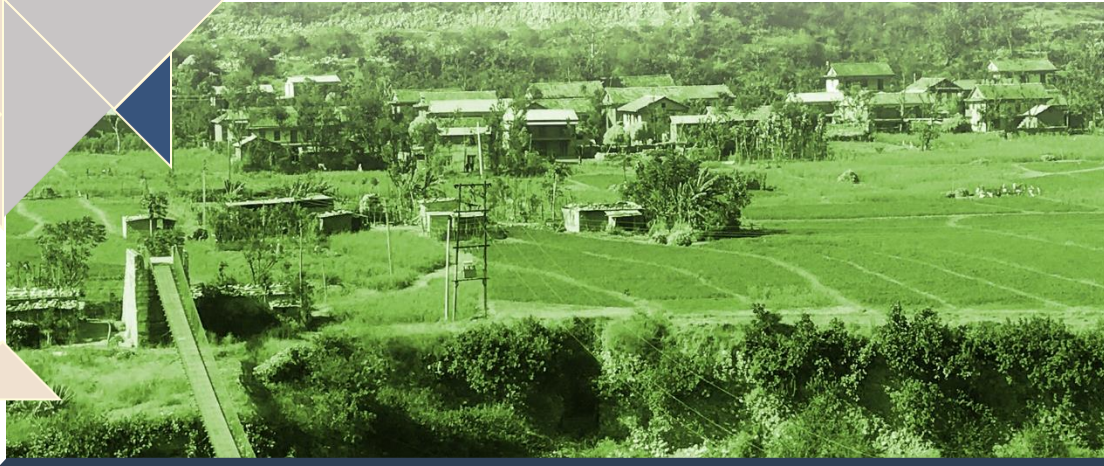
28
Beneficiaries from Earthquake scenario and Action plan of municipality
1



3 Building Resilient Communities in Rural Municipalities

Nepal is predominantly a rural country and disaster risk factors are aggravated owing to poor accessibility and livelihood conditions. To develop model for building community resilience, NSET is implementing Technical Support for Resilient Community Program (TESREC) with the name "My Village is Resilient" Program during 2019-2021 in 7 Rural Municipalities of Nepal. The program is funded by United States Agency for International Development / Bureau for Humanitarian Assistance (USAID/BHA) and implemented in collaboration with and under the leadership of Rural Municipalities. It is expected to contribute to building resilient Nepal by strengthening local government's capacities to cope with disasters.

The major objective of the intervention is to support in establishing model for resilient rural community through safer building practices and preparedness.

Two major components of program are; 1) establishing framework and systems for ensuring safer building construction in rural municipalities; and 2) developing model disaster resilient community.

The program covers following thematic areas: Building and Infrastructures Regulation, Multi-Hazard Risk Assessment and Planning, and Preparedness and Response Planning.

Accomplishments (June 2019 – May 2020)

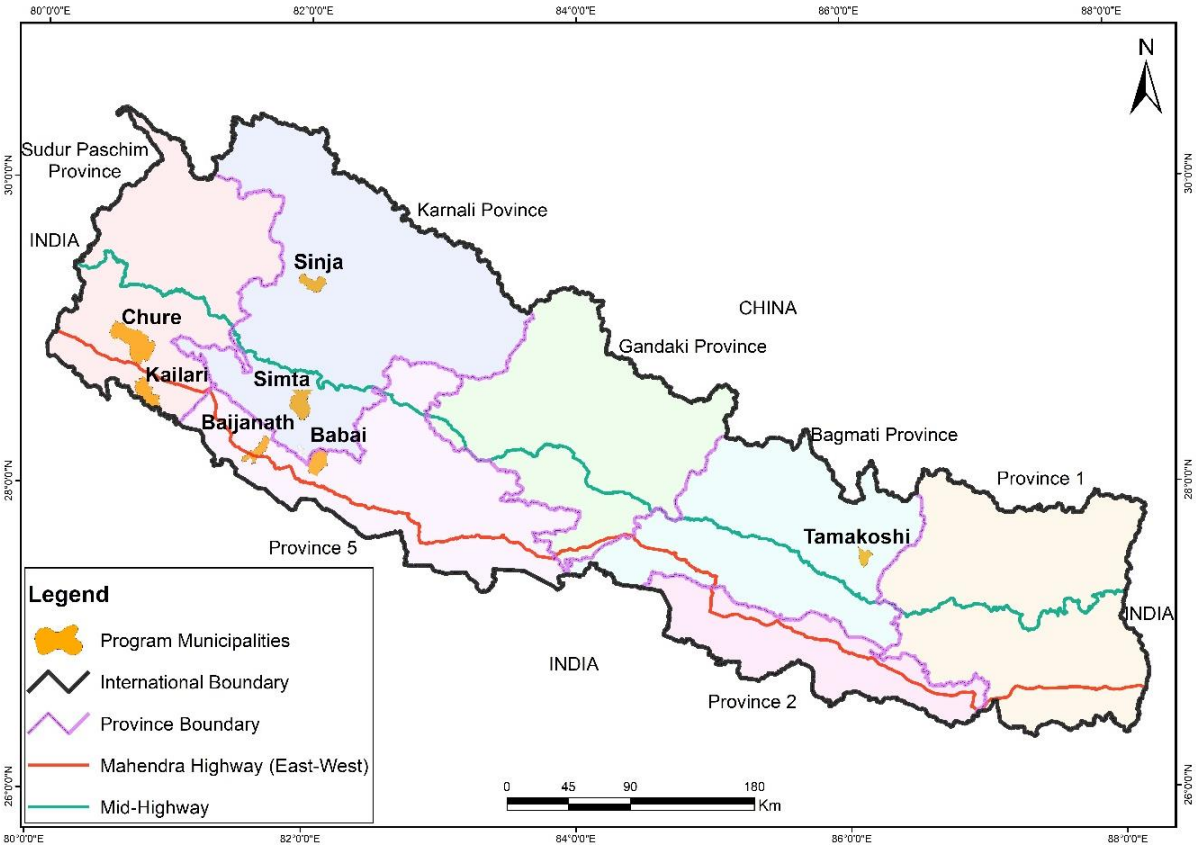
Exploratory Visits and Consultation Meetings

Exploratory visits were organized to understand and finalize the rural municipalities for program implementation. NSET team, comprising of senior professionals, made exploratory visits to the most potential rural municipalities. Interaction meetings were organized in the municipalities to verify collected information and to collect more data, to know the status of disaster risk reduction and existing capacities, and to gauze the level of commitment in the rural municipalities. The interaction meetings were attended by the elected members, municipal officials and technical professionals. A survey questionnaire was used for collecting pertinent information and data from the municipalities. Interaction through telephonic conversations was done with few other municipalities where filed visits could not be conducted to understand their level of commitment. Likewise, consultation meetings were also organized with the Ministry of Federal Affairs and General Administration (MoFAGA) of

the Government of Nepal for the final selection of rural municipalities.

Selection of Program Rural Municipalities

Through the preliminary analysis and further verification during the field exploratory visits, 7 program areas were selected. The 7 selected program areas are: Tamakoshi Rural Municipality, Dolakha; Babai Rural Municipality, Dang and Baijanath Rural Municipality, Banke; Simta Rural Municipality, Surkhet; Sinja Rural Municipality, Jumla; Kailari Rural Municipality, Kailali; and Chure Rural Municipality Kailali



Tamakoshi Rural Municipality

Tamakoshi Rural Municipality is located in Dolakha District of Province No 3, Nepal. It lies in the east of Kathmandu, the capital city of Nepal. The municipality is located on the banks of the Khimti and Tamakoshi River.

This municipality is formed with the merger of former 7 Village Development Committees (VDCs) consisting of Bhirkot, Jhule, Japhe, Malu, Shahre, Chyama, and Hawa. Baiteshwar Rural Municipality in the north, KhimtiKhola and Gokulganga Rural Municipality of Ramechhap in the south, Melung Rural Municipality in the west and Jiri Municipality in the east are the adjoining rural municipalities. Tamakoshi Rural Municipality is known for its potential for development and prosperity. According to 2011 census, the total population of this municipality is 18849. This municipality has a total of 4345 houses.

Babai Rural Municipality

Babai Rural Municipality located in Dang District in Province No. 5, Nepal. Babai Rural Municipality has area of 257.48 sq. km. It is surrounded by Shantinagar Rural Municipality and Dangisharan Rural Municipality in the east, Banke District in the west, Salyan District in the north and Dangisharan Rural Muncipality and Banke district in south. The total population of Babai is 27,469.

Baijanath Rural Municipality

Baijanath Rural Municipality is located in Banke District of Province No. 5, Nepal. Kohalpur Municipality in the east, Khajura Municipality in the south, Mankhola in the west and Bansgadhi Municipality in the north are the adjoining municipalities. This municipality was formed after merging the earstwhile Chisapani VDC, Nauwasta VDC, Bankatwa VDC and Titihiriya VDC. This rural municipality has altogether 7 wards. The current population of Baijanath is 54,987. There are total 11,066 buildings; 6020 are masonry buildings,

1178 timber buildings, 211 RCC buildings and 3614 others.

Simta Rural Municipality

Simta Rural Municipality is situated in north east of Surkhet District of Karnali Province of Nepal. This municipality comprises of then eight village development committees namely Ghoreta, Kafalkot, Agrigaun, Bajedichaur, Rakam, Kaprichaur, Dandakhali and Khanikhola. It shares borders with Salyan District in the east, Jajarkot District in north, Chingad in west and Gurvakot Municipality of Surkhet district in south. Inhabitants are mostly Chhetri, Kaami, Thakuri, Damai, Brahmin, Magar, Sarki and Sanyasi ethnic groups. The Municipality has not started building code implementation.

Sinja Rural Municipality

Sinja Rural Municipality is located in Jumla District of Karnali Province, Nepal. The municipality came into existence on 10 March 2017. Dhapa, Sanigaun and Narakot Village Development Committees were merged to form this municipality. The headquarters of the municipality is situated at Narakot. The rural municipality is divided into 6 wards. The total area of the rural municipality is 153.29 square kilometres (59.19 sq mi) and the total population as of 2011 Nepal census is 12,395.

Kailari Rural Municipality

Kailari Rural Municipality is located at Kailali District in Sudurpashchim Province of Nepal. It is surrounded by Bajani Municipality in the East, Dhangadhi Sub-Metropolitan City in the West, Gauriganga Municipality and Ghodaghodi Municipality in the North and Uttar Pradesh, India in the South. According to 2011 census, the total population of this municipality is 47,987.

Chure Rural Municipality

Chure Rural Municipality is a Gaunpalika in Kailali District in Sudurpashchim Province of Nepal. The population of Chure is 19157 with 9501 male and 9656 females. Chure Rural Municipality is surrounded by Mohanyal Rural Municipality in the east, Geryal Gaunpalika in north, Badikedar Rural Municipality in west and Godawari Municipality of Kalali in south. The total area is 493.18 square kilometer. There are total of 3478 buildings.

As observed during the exploratory visit, the program rural municipalities don't have a system of Building Permit and neither they have inventory of building of their municipality. There has been no effort on building code implementation (BCI) in these municipalities. Likewise, the program municipalities have just started registration for RCC buildings only; Building Permit System needs to be developed. Among the municipalities, only Chure municipality informed that they have started building permit system while Simta and Babai are in the process of starting. People come to municipalities for getting the building permit only when they need bank loan otherwise for other buildings they don't come to the municipality.

Most of the municipalities lack the technical professionals in their municipal office. Out of the 7 municipalities, only two municipalities, Tamakoshi and Sinja have engineers while other have only sub-engineers that too few in number. These municipalities have at least 1 sub-engineers in their office. There seem to be around 200 masons in average in these rural municipalities. Only Simta and Baijanath informed that they had trained masons as there was 1 mason training each in both municipalities. Among the 7 municipalities, only 4 municipalities have municipal profile of their respective municipalities. And none of the municipalities have Risk Sensitive Land Use Plan, Byelaws and other standard form of other disaster risk managements plans. Only one rural municipality (Simta) had drafted the Local Disaster and Climate Resilient Plan; various other documents and guidelines still needs to be developed.

None of the Municipalities have the local risk assessment, hazard data and information of the municipalities. These municipalities also didn't have any emergency response plans and equipment stored for the same. And there were also lack of trained municipal staff, community members on emergency preparedness and response (Search and Rescue/First Aid etc).

MoU signed with Federal Ministry and Advisory Committee formed

A Memorandum of Understanding (MOU) has been signed between Ministry of Federal Affairs and General Administration (MOFAGA) and NSET to facilitate the effective implementation of the program. Both organizations agreed to work together in establishing framework and foundation for model disaster resilient rural community and safer building construction practice.

Similarly, an Advisory Committee formed under the leadership of Joint Secretary of MoFAGA as per the provision in the MOU. The main objective of the committee is to provide guidance, feedback and monitoring of the program. The committee meets once in every six months.

MoU signed with Rural Municipalities

NSET signed MoU with two Rural Municipalities; Chure and Kailari for implementing program activities at the municipal levels. The MOU guides for joint works to develop systems of safer building construction and establishing framework and foundation for model disaster resilient rural community.

As per MoU, Coordination Committees formed in municipal level under the leadership of Vice Chairperson in both Rural Municipalities. The main objective of the committee is to collaborate and implement the activities of the program effectively. The committee meets every month. Advisory committees are also formed in both rural municipalities under the leadership of Chairman of the Rural Municipality to guide the coordination committee and program. The committee meets once in every three months.

Orientation for Political Leaders

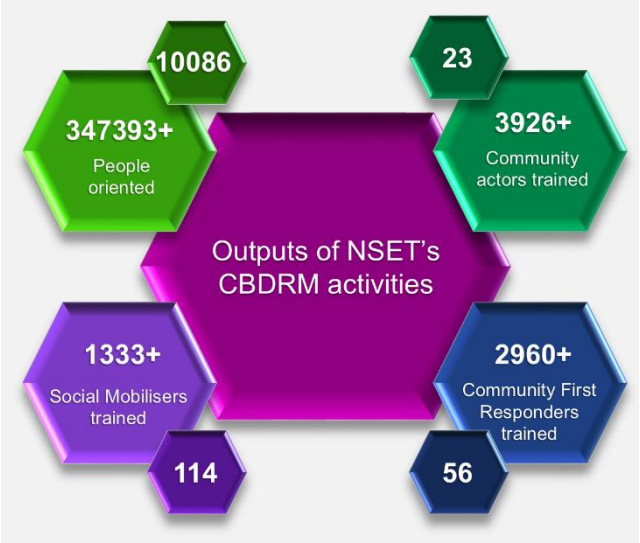
Orientation programs were organized for political leaders and municipal staff one each in Kailari and Chure Rural Municipalities. A total of 62 persons sensitized through orientation program on the multi-hazard risk reduction and management and safer construction.

4 Making Resilient Communities: Efforts on Community Based Disaster Risk Management (CBDRM) in Nepal

Background

Community members are the first ones to respond to and provide immediate assistance whenever any disaster occurs in a community. NSET prioritizes and focuses on enabling community members to respond to disaster emergencies.

NSET's CBDRM Division has been working together with communities and local governments on multi-hazard risk reduction with special focus to earthquake. In such efforts, main focus is on building community resilience through local capacity building on preparedness and response, community led DRR efforts from planning to implementation, as well as institutionalization of efforts.



Major accomplishments (July 2019 – June 2020)

Training on Non-Structural Mitigation

Nonstructural Mitigation training program was held in Ward no. 21, Khokana of Lalitpur Metropolitan City (LMC) to promote women's engagement and contribution in Disaster Risk Management efforts. NSET team performed practical sessions on non-structural mitigation as per the request from the Ward 21. Total 34 volunteers (30 Female, and 4 Male) participated.

Training Program on Local Disaster and Climate Resilience Planning

Three-day Training on Local Disaster and Climate Resilience Planning was conducted from 24-26, September 2019 at Namobuddha Municipality Kabhrepalanchok. The program was jointly

organized by Namobuddha Municipality, Architectes Sans Frontières (ASF) and Habitat for Humanity with technical support from Earthquake Safety Solution (ESS). The objective of the training was to enable the members of Ward Level Disaster Management Committees to initiate planning and implemention of disaster risk reduction activities.

A total of 38 persons (13 female and 25 male) representing 11 wards including few ward Chairpersons and Municipality officials actively participated in the workshop. The training was delivered in six thematic sessions spread over three days. The participants came up with the list of actions to be carried out in the near future by the municipality.

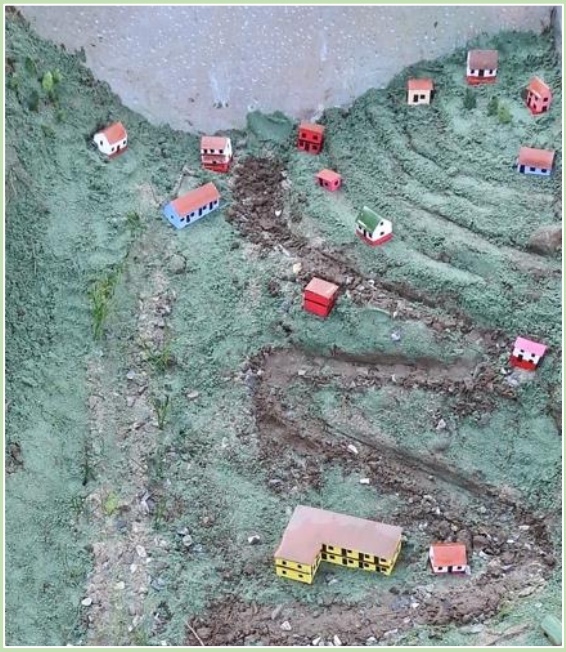
Workshop on 3D Landslide Demonstrator

A one-day workshop on 3D Landslide Demonstrator was organized at NSET office in Lalitpur on 24 February 2020. The workshop was organized to present the 3D Landslide Demonstrator, its concept, the implementation and reflections from the first set of field trials undertaken in 2019. It was aimed to get feedback, suggestions and creative comments from participants from a range of institutions.

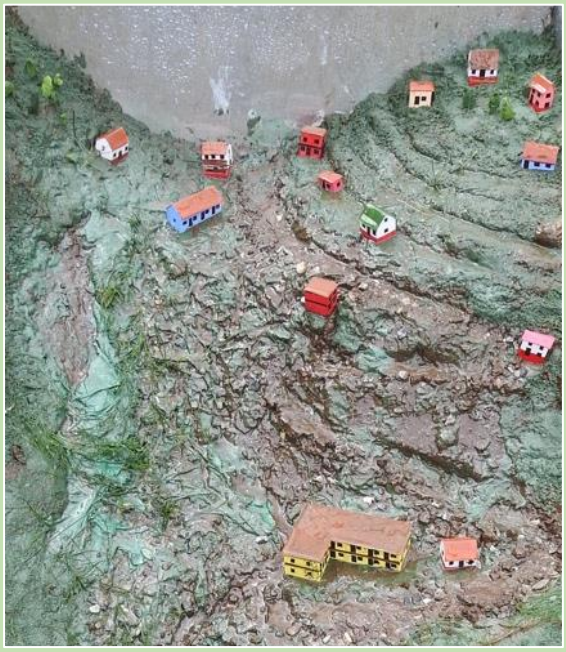
A total of 25 participants from universities, civil society organizations and research institutions were present at the program.

The workshop discussed the knowledge gaps around landslide hazard and risk in rural Nepal, the need of science/knowledge for reducing landslide risk and effectiveness of communicating DRR message to the vulnerable community.

3D Landslide Demonstrator test done in Sindhupalchowk



3D Landslide Demonstrator for rain induced landslide model before demonstration



3D Landslide Demonstrator for rain induced landslide model after demonstration

A field testing of 3D Landslide Demonstrator was conducted at the premises of Shree Bhimsen Secondary School Tyangathali at the BhoteKoshi Rural Municipality of Sindhupalchowk on 28 December 2019. The demonstration was observed by students and teachers of the school with significant attendance of parents (mostly housewives), youth and other villagers. Landslide is one of the major hazards existing in all over the hilly areas of Nepal and making communities at very high risk. The 3D Landslide Demonstrator was conceptualized as an awareness tool to educate the community members about landslide preparedness and mitigation.

The field testing aimed to help communities to understand that all types of landslides cannot be mitigated, some may be reduced or retarded and only a little of them can be mitigated. The tests also intended to provide some techniques of landslide monitoring at the community level, identify and implement simple small-scale mitigation measures at the community level.

The 3D Landslide Demonstrator is widely expected to be useful to students in the school, college and universities to help them understand the practical aspects of landslide mechanism and soil stability parameters. It is also considered a useful tool to the local area planners for basic infrastructure and settlements planning and development.

First 3D Landslide Demonstrator was designed in Durham University, UK by the NSET professionals. The mechanism of landslide and the model was successfully tested.

5 Making Resilient Schools: Efforts on School Safety in Nepal

Background

Schools in Nepal face extreme risk from earthquakes. Realizing the urgency of earthquake risk reduction in the school sector in Nepal, NSET started School Earthquake Safety Program (SESP) back in 1997 with a model retrofitting in one school. Building earthquake-safe communities through intervention at schools is at the core of SESP approach.

NSET's school program aims to raise awareness among schools, community and education stakeholders, reduce earthquake risk and enhance preparedness in schools, protect children from the impact of potential hazards and assists schools in continuation of education after hazard events.

Accomplishments (April 2019-March 2020)

"Students' Summit" on Comprehensive School Safety

Students' Summit on Earthquake Safety was organized as a collaborative effort by Ministry of Education, Science and Technology, CEHRD, Maiko High School, Kobe, Japan, NSET, UKAID, UNOPS, UNICEF, Save the Children, NDRC, PLAN International, USAID, NRCS, WVI, NSSP, SAFER, British Red Cross, Teach for Nepal and EPSRC.

Initiated in Nepal in 2002, the main purpose of this event has remained to exchange knowledge, ideas and information of earthquake safety and also safety from all types of disasters amongst students, teachers and education stakeholders from Nepal, Japan and other countries.

The 2-day "Students' Summit on Comprehensive School Safety 2019" held in Birendranagar, Surkhet in August 25-26, 2019. The major objectives of the program were to:

- Raise awareness and sensitize the school students and teachers on comprehensive school safety;
- Learn about rich knowledge and experience of other countries;
- Promote inter-school exchange of knowledge and experiences on disaster safety;
- Assist to set common goals and objectives on school safety and preparedness.

Chief Minister of Karnali Province, Mr. Mahendra Bahadur Shahi formally inaugurated the Students' Summit 2019 in Surkhet, Nepal.

Addressing the program Chief Minister Shahi said that DRR has been high priority for the government as Karnali Province is vulnerable to hazards like earthquakes and landslides. "The government has taken initiative to build integrated settlements to those who are developed from disaster risk zones," he said.

Social Development Minister of Karnali Province, Mr. Dal Rawal, Former Education Minister and DRR Expert Dr. Gangalal Tuladhar, Mayor of Birendranagar Municipality Mr. Dev Kumar Subedi, Under Secretary at Ministry of Education, Science and Technology Mr. Jaya Prasad Acharya,

Deputy Director General of Center for Education and Human Resource Development (CEHRD) Mr. Chudamani Paudel and others addressed the opening session of the summit.

The Summit concluded with 7-point declaration that confirmed commitments of all stakeholders to work together for comprehensive school safety.

Seismic Safety and Resilience of Schools in Nepal (SAFER)

SAFER (Seismic Safety and Resilience of Schools in Nepal) is a multi-disciplinary program for improving the earthquake-related safety of school buildings and the resilience of educational communities in Nepal. SAFER is a three year (2017-2020) program and being implemented by consortium of various partners; Bristol University, University of Southampton, California Institute of Technology (CALTECH), University at Buffalo, University of Roma Tre, NSET, Tribhuvan University, Institute of Engineering, Kathmandu University (KU), Arup International Development (ARUP-ID) and Save the Children.

Webinar on SAFER Smart School Inspection Mobile Application (School Buildings Safety in Nepal)

An online training on usage of the SAFER mobile application (School Buildings Safety in Nepal) was provided to 14 engineers and sub engineers working in 4 districts i.e. Bardiya, Surkhet, Achham and Jumla on September 17, 2019. After the training, a total of 127 blocks were inspected using the mobile application and the data were uploaded to the SAFER database.

Webinar for Field Engineers on use and application of SAFER smart school inspection app

A webinar was conducted under SAFER in order to train Field Engineers on the use and application of the SAFER smart school inspection app. Field personnel deployed at four districts i.e. Achham, Jumla, Surkhet and Bardiya were trained via a Skype Webinar using video conference. The smart school inspection app gives a relative vulnerability score for school buildings depending upon answers given in the electronic form in the app, filled by inspectors in the field. In the webinar, a presentation was given followed by a question and answer session. A total of 127 school blocks have been inspected collectively from the four districts and the data has been uploaded to the web server at University of Bristol.

Online Training to Engineers and Architects on the SAFER smart school inspection mobile application conducted

An online session on use of mobile application to assess the seismic vulnerability of a school building under the SAFER project was conducted on May 30, 2020. A total of 35 registrations were done for the online session. The program was organized by Nepal Engineers Association,

Bagmati Province, Professional Security and Capacity Building Committee with technical support from NSET. After a brief overview on the growing importance of mobile-digital inspection and data collection, the participants were given a tutorial on the operations and features of the application. A demonstration with three sample structures followed the session

Nepal Safer School Project (NSSP)

The Nepal Safer Schools Project (NSSP) is a DfID funded project seeking to increase the safety of approximately 250 vulnerable schools in Nepal and build the resilience of pupils, staff and the wider community to disasters. It is a consortium of Crown Agents, Save the Children, Arup international and NSET.

The NSSP is aligned with the Government of Nepal's School Sector Development Plan (2016-2023) which includes a focus on School Safety and Disaster Risk Reduction, by upgrading physical infrastructure to be more resilient and ensuring the curriculum and teacher training integrates disaster resilience.

NSSP is one of the programs under DFID's "Strengthening Disaster Resilience in Nepal" that includes a total of six programs. The major objective of the NSSP is to support the implementation of the Comprehensive School Safety framework in four districts in the Far and Mid-West and Support national-level capacity in the Center for Education and Human Resource Division (CEHRD) to further develop policy and guidance.

Formally launched on May 29, 2018, the NSSP has successfully completed the inception period and is now in its implementation phase. The working area of the NSSP covers 17 local units of four

districts- Bardiya of Province No. 5, Jumla and Surkhet of Karnali Province and Achham of Sudurpaschim Province.

Here follows the brief description of NSET accomplishments under NSSP during past one year period.

Construction Manual and Training Materials Developed

A Construction Manual has been developed for NSSP which is designed to assist the field technical team (construction technician, sub-engineer and district engineer) in the construction process for the works which are to be carried out as part of NSSP. It has been developed in order to help the teams at each school deliver the highest quality of construction by providing support on Quality Assurance, Health and Safety, Material Specification and also by enhancing the Engineering Construction Drawings through the provision of additional drawings, diagrams, step-by-step construction processes and checklists.

NSSP has developed the Capacity Development Training Course for School Management Committee (SMC) based on the identified activities for implementation under the Comprehensive School Safety Minimum Package (CSSMP). The customized SMC training manual

contains safeguarding and gender equality and social inclusion and leave no-one behind (GESI/LNOB) requirements. Considering school safety is the prime responsibility of SMCs under CSSMP, NSSP is endeavoring to enhance the project implementation skills of SMCs in overall school safety management, including resource management, financial management and construction quality management.

Consultation Meetings with Selected Palikas

Consultation Meetings were held to provide information to the selected Palikas regarding NSSP, its objectives, and scope with planned outcomes. Project staff also took the opportunity to reinforce the importance of DRR and earthquake resilient schools and the need for the stakeholders, including each Palika, School and local community, to develop a sense of ownership on disaster preparedness and resilience building in each area. NSSP team members were provided with feedback on how best to coordinate, communicate and collaborate with stakeholders to allow for smooth implementation of NSSP activities. Each meeting was attended by the Mayor, Deputy Mayor, Ward Chairs, Education Officials/Palika Education Focal Points, DRR Officials and other stakeholders. The participants requested the Project to start works as soon as possible.

For NSSSP implementation, 17 MOUs signed between NSSP and the individual municipalitiies. The list of Palikas that executed a Project MOU is provided below:

Province	District	Palika
Province5	Bardiya	Barbardiya Nagarpalika
Province5	Bardiya	Thakurbaba Nagarpalika
Province5	Bardiya	Rajapur Nagarpalika
Province5	Bardiya	Madhuwan Nagarpalika
Province5	Bardiya	Gulariya Nagarpalika
Province6	Surkhet	Panchpuri Nagarpalika
Province6	Surkhet	Gurbhakot Nagarpalika
Province6	Surkhet	Simta Gaunpalika
Province6	Surkhet	Birendranagar Nagarpalika
Province6	Surkhet	Bheriganga Nagarpalika
Province6	Jumla	Chandannath Nagarpalika
Province6	Jumla	Tila Gaunpalika
Province6	Jumla	Sinja Gaunpalika
Province6	Jumla	Hima Gaunpalika
Province7	Achham	Sanphebagar Nagarpalika
Province7	Achham	Chaurpati Gaunpalika
Province7	Achham	Mangalsen Nagarpalika

The kick-off meetings endorsed by each Palika's nine-member Project Advisory Committee (PAC).

Training on DRR and Vulnerability Assessment Training of Trainers (ToT)

Training on DRR and Vulnerability Assessment Training of Trainers (ToT) on Comprehensive School Safety (CSS) held in Surkhet during December 10-12, 2019. Total 35 participants, including 16 participants who were nominated by Education Development Coordination Units (EDCUs) of Project Districts, and 3 trainers from the Surkhet Provincial Human Resource Development Centre- Education (HRDC-E) joined.

The resource persons for this training were from the Central Roster of Trainers on school safety, being the former National Centre for Education Development. Participants who completed the training were awarded a certificate by the Director of the Provincial Directorate. These trainees will be registered on a roster in each District as key trainers available for School Safety training, including for NSSP activities.

Assesment and design

Steps of selection and assessment have been done before finalizing the block to retrofit.

Screening Survey: NSSP completed the screening survey in all four Project Districts with a total of 402 schools surveyed. This is the first step of selection process and the demographic data of school with minimum structural detail were collected. The data collected were analyzed to get list of 258 schools feasible for RVA.

Rapid Vulnerability Assessment (RVA): The structural details with visual inspection are collected during RVA and this assessment helps to come into the decision weather to retrofit, no requirement of retrofit or not feasible to retrofit. RVA to total 64 schools were done in first phase to finalize 52 schools to be worked in first phase.

Detail Assessment and Design: The structural test (destructive and non- destructive) are done after RVA to get design parameter and material properties of building. The result of test is used for design.

Construction works at schools

NSSP selected 4 schools as project's pre-pilot schools in Bardiya, Surkhet and Achham. These schools were selected following an assessment of retrofit suitability, site visibility, efficacy, replication potential, and following consultation with the relevant municipal authorities. These schools will establish points from which clusters of schools are to be selected for retrofit under the project's full implementation phases.

The retrofitting of the buildings started right after the MOU made with school management committees in 4 pre-pilot schools.

Mason trainings

7-day mason training was conducted in Surkhet, Bardiya, Achham and Jumla to enhance the capacity of practicing masons on earthquake resistant building construction and retrofitting technology. Total 6 trainings were conducted, and 186 masons got trained, who would be involved in construction activities under NSSP. The training covered theoretical as well as practical sessions. The training was conducted coordinating with municipality and ward offices. The mason nearby to pilot and pre-pilot schools were involved so that they could engage in construction. In addition to support for construction of NSSP, the trained masons will help on earthquake resistant building construction in community.

Orientation and Evacuation Drill at Shramjit Kishor School

An orientation program has been organized at Shramjit Kishor Secondary School in Lalitpur Metropolitan City, Ward No.17 on August 20, 2019. The program was jointly organized by Society of Urban Poor (SOUP) and Shramjit Kishor School with technical support from NSET. The objective of the orientation program was to familiarize the participants with technique and importance of the evacuation drill at the school foscuing for the disaster situation mainly earthquake.

Earthquake evacuation drill was conducted at the school on September 10, 2019. The drill which was targeted to the morning shift students (grade 6 to

10) of the school conducted with the involvement of schoolteachers, students, NSET, SOUP and Shapla Neer.

Inter-School quiz contest focusing on school earthquake safety

A quiz contest focused on school earthquake safety was conducted in Lalitpur on October 1, 2019. The main purpose was to help enhance level of understanding and promote awareness of school level students on School Earthquake Safety. Shanti Bidhyashram Secondary School, Lalitpur grabbed the title. Saraswati Niketan Secondary School, Kathmandu and Prabhat Secondary School, Lalitpur secured second and third position while Mahendra Saraswoti Basic School, Kathmandu placed in 4th position. The quiz contest was jointly organized by Shapla Neer, Society of Urban Poor (SOUP) and National Society of Earthquake Technology (NSET).

6 Enhancing Preparedness and Emergency Response Capacity: Efforts in Nepal and Beyond

Background

NSET through its Disaster Preparedness and Emergency Response (DPER) Division develops concepts and imparts skills and knowledge to enhance disaster preparedness and emergency response capacity in institutions and the communities.

NSET organizes earthquake orientations on earthquake preparedness, conducts training courses on community search and rescue (CSAR), basic emergency medical response (BEMR), designs relevant emergency trainings for community and institutional levels, and develops/evaluates emergency plans of different organizations and communities.

NSET is implementing USAID/OFDA funded Program for Enhancement of Emergency Response (PEER) in South Asia.

Accomplishments (June 2019 to May 2020)

TFI for Kathmandu Metropolitan City

'Training for Instructors (TFI)' conducted for the officials of Kathmandu Metropolitan City (KMC) during January 21-24, 2020 at Armed Police Force Nepal, Disaster Management Training School (DMTS), Kurintar, Nepal. The course was organized by Disaster Management Department of KMC, with technical support from NSET and Earthquake Safety Solutions (ESS). There were 17 participants among which 14 were male and 3 were female. The participants were from Kathmandu Metropolitan City, Gokarneshwor Municipality, Nagarjun Municipality, Kirtipur Municipality and Dakshinkali Municipality. Most of the participants were senior officials working in disaster management departments. The course was facilitated by a team of 9 instructors and 1 course monitor.

Orientations to staff of Nepal Police & APF Disaster Management Training School

NSET has been regularly providing orientations and facilitating the field visit to Nepal Police and Armed Police Force DMTS. The field visits to NSET is integral to the "Basic Disaster Management Training" of Nepali police forces. Through these field visits to NSET, the trainees from Nepal Police and Armed Police Force, Nepal learn more about NSET's initiatives/programs, facilities and various emergency response training equipment. NSET's DPER division facilitated 3 visits from Nepal Police DMTS, and 2 from Armed Police Force Nepal DMTS during June 2019 to May 2020.

APF team during NSET visit

A team from Nepal Police in orientation class at NSET

Program for Enhancement of Emergency Response (PEER)

MFR and CSSR regional courses in Nepal

Program for Enhancement of Emergency Response (PEER) is a regional training program initiated by the USAID/OFDA in 1998 to strengthen disaster response capacity of vulnerable countries in Asia. NSET is implementing PEER Stage-4 in four South Asian countries, namely, Bangladesh, India, Nepal and Pakistan, with some participation of other SAARC countries; which include Afghanistan, Bhutan, Maldives and Sri Lanka. PEER Stage-4 is a logical continuation of previous program implementated by Asian Disaster Preparedness Center (ADPC) and NSET. The core trainings that are provided under the PEER are:

- Medical First Responder (MFR)
- Collapsed Structure Search and Rescue (CSSR)
- Community Action for Disaster Response (CADRE)
- Hospital Preparedness for Emergencies (HOPE)
- Swift Water Rescue (SWR), and
- Instructors' development streams for MFR, CSSR, CADRE and HOPE courses

NSET and Armed Police Force (APF) Nepal jointly organized MFR and CSSR regional courses during the period of June-July 2019 at APF's Disaster Management Training School, Kurintar, Chitwan. Participants were from emergency response organizations in Afghanistan, Bhutan,

Participants learning MFR and CSSR skills

Maldives, Sri Lanka and Nepal. Both courses were facilitated by PEER regional instructors from Bangladesh, India, Nepal and Pakistan. Total 21 graduates joined MFR Course, held on June 12-24, 2019; while there were 20 participants who successfully completed the CSSR Course, held on June 28 to July 5, 2019.

MFR/CSSR Regional Course

Home Secretary Mr. Prem Kumar Rai graced as the Chief Guest for the MFR/CSSR closing program and certificate distribution held on July 6, 2019 in Kathmandu, Nepal. Mr. Rai appreciated the US Government, NSET and all partnering agencies for all the efforts they have been doing in strengthening disaster response capacity in Nepal. Acting Mission Director from USAID Nepal Mr. Mark Driver expressed that through PEER, we are creating chances to make sure that we are ready for tomorrow. Inspector General of Armed Police Force (APF) Nepal, Mr. Shailendra Khanal mentioned the role of security forces in Nepal being the first line of rescuers and beneficiaries of PEER courses, would certainly gain the necessary knowledge and skills consistent with the internationally accepted guidelines.

Group Photo of closing program of regional MFR CSSR course

Signing of extension of MoU between Nepal Police and NSET

Memorandum of Understanding (MoU) made between Nepal Police and NSET to extend the MoU for the implementation of PEER Stage 4, in line with the program's no-cost extension that is from October 1, 2019 to September 30, 2020. All clauses mentioned in the earlier MoU signed in July 23, 2015 remain in effect.

MoU signing between NSET and Nepal Police

CADRE Course Review and CADRE Courses in India

NSET conducted CADRE Course Review Workshop in India during November 18-22, 2019, followed by two CADRE courses during November 25-28 2019 and December 1-4, 2019. The PEER CADRE series in India was organized by NSET in collaboration with National Disaster Response Force (NDRF), at 03 Battalion of NDRF, Mundali, India. Commandant Sh. Jacob Kispotta, 03 BN NDRF, in his message during the opening and the closing sessions of the training highlighted the importance of community responders in case of disasters. Commandant Kispotta also thanked USAID and NSET for conducting disaster-based training programs which would help in enhancing India's disaster response capacity.

Participants during CADRE course in India

CADRE TFI/IW in Pakistan

NSET conducted PEER Community Action for Disaster Response – Training for Instructors / Instructors' Workshop (CADRE-TFI/IW) in collaboration with Pakistan Red Crescent Society (PRCS) during November 21–28, 2019, in Islamabad. There were 25 participants who had completed CADRE course in 2016, under NSET-led PEER Stage 4; and CADRE supported by other organizations. The course was facilitated by instructors from PRCS, Network of Disaster Management Practitioners (NDMP) and Nepal Police; and monitored by senior PEER CADRE instructor from Nepal Red Cross Society (NRCS).

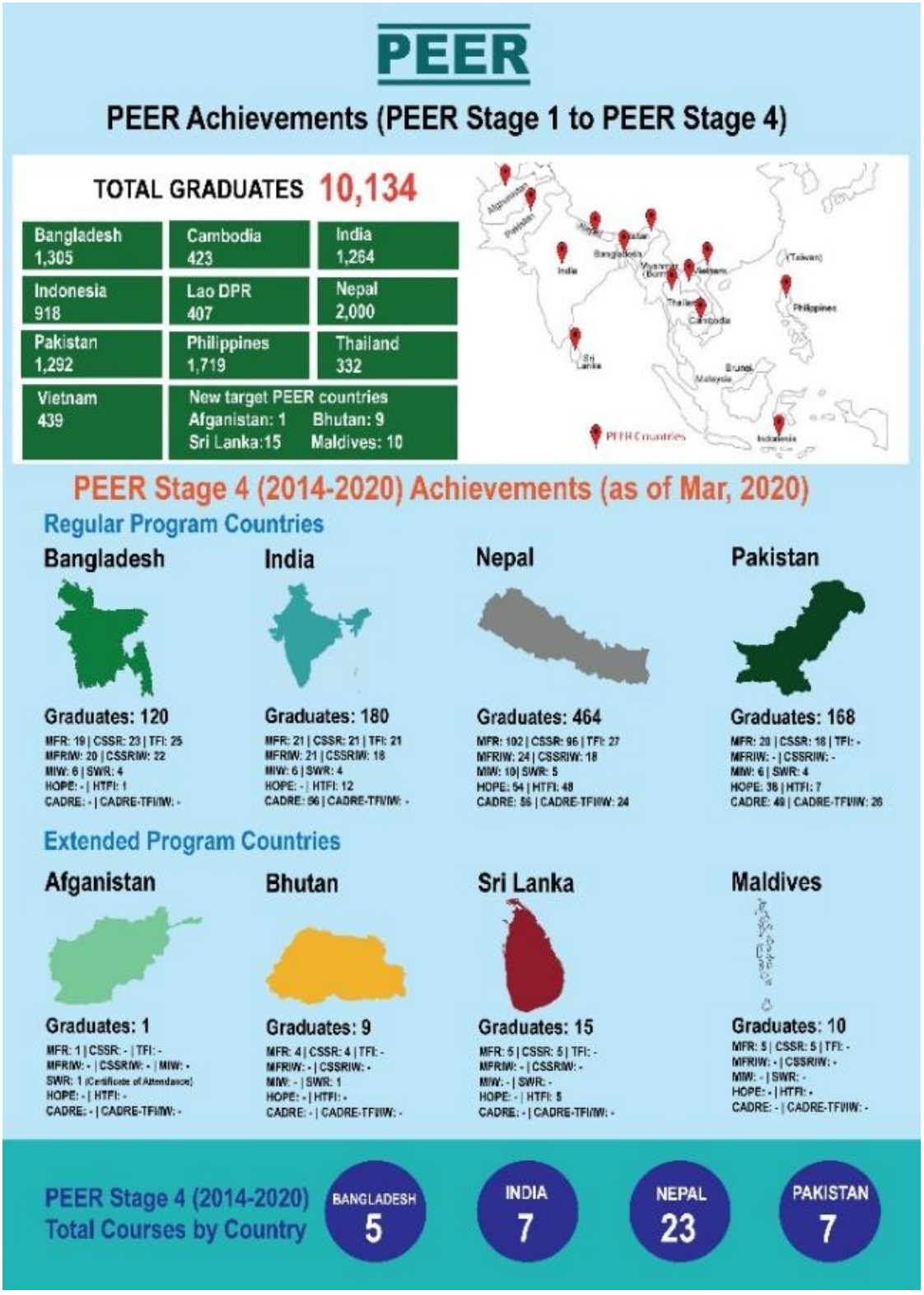
Break out session during CADRE-TFI/IW in Pakistan

H-TFI Regional Course

NSET conducted a regional course on Hospital Preparedness for Emergencies -Training for Instructors (H-TFI), during 27Feb-2Mar 2020 in Kathmandu, Nepal. The participants in this H-TFI were future HOPE instructors from the program countries, Bangladesh, Pakistan, India, Sri Lanka and Nepal. A group of ten instructors from Nepal, Bangladesh, India, Pakistan and Sri Lanka facilitated the course.

Group discussion in H-TFI Regional Course, Nepal

Summary of PEER Accomplishments



Activation of NSET Emergency Medical Response Team (EMRT)

With the global threat of coronavirus disease 2019 (COVID-19) pandemic situation, NSET also activated its Emergency Medical Response Team (EMRT). During the last week of January 2020, series of internal consultations on COVID-19 crisis were conducted among NSET divisions, programs and team leads; with NSET Emergency Response Team (ERT) and NSET Wellness Committee. NSET immediately implemented health and precautionary measures for all NSET staff in Kathmandu, field staff assigned in various districts of Nepal and NSET professionals who were at that time on official trips overseas. NSET EMRT has circulated health and other general advisories on COVID-19 in Nepali and English through emails and posters in locations in NSET premises. NSET also started temperature screening of all staff and visitors at entrance, additional access to hand sanitizers and started observing physical distancing in meetings. A technical advisory group formed consisting of NSET partner-senior medical doctors and a representative from NSET-partner hospital.

On March 20, 2020, NSET provided individual health and hygiene kit to all NSET staff, containing essential medicines, mask, disinfection liquid, had sanitizer, gloves, oral rehydration salt, digital thermometer, etc. NSET also prepared Guidelines for Work from Home (WFH) as part of its business continuity plan (BCP) to manage and minimize the pandemic impact on NSET operations. As part of NSET's precautionary measure, WFH arrangement was activated from March 23, 2020. General Staff Meetings and all other official meetings were held through virtual platforms. NSET WFH guidelines has so far been effective in guiding NSET and its staff for operating office businesses through teleworking.

Construction of Display board

NSET, through support from PEER Stage 4, has set up a display case at NSET. This has been a captivating showcase of the major tools and equipment used in various emergency response trainings like MFR, CSSR and SWR.

Display board with MFR, CSSR and SWR rescue equipment

7 Research and Development: Use of Science & Technology in Resilience Building in Nepal

Background

NSET is prioritizing the research and development ever since its establishment. NSET Values states, "NSET will seek, translate and transfer foreign and domestic knowledge and research results to the earthquake problem in Nepal, as also to bring state-of -the-art earthquake technology to Nepal." NSET's role in Earthquake Risk Management is best placed to bridge Academia, Governments and Communities. NSET attempts to link Science and Technology with real-life situations of people. It tries to explore ways of using Science and Technology for building resilient communities. For that, NSET is involved in research works, technology development and technology transfer. Therefore, various projects on earthquake risk reduction, landslide mapping and monitoring, post-earthquake reconstruction, emergency response, seismic retrofitting among others emphasizing the R&D as one of the important part of activities. In doing so, NSET has been also joining hands with US Geological Survey, Global Earthquake Model Foundation, Durham University, Institute of Engineering, Nepal, and Kathmandu University among others.

Accomplishments (May 2019-April 2020)

Experimental Tests

The second phase of experimental tests on Seismic Safety and Resilience of Schools in Nepal (SAFER) was carried out at NSET premises. The trial pulldown tests on the retrofitted and non-retrofitted random rubble stone in mud masonry walls were carried out on Oct 24, 2019 and Nov 8, 2019. The test showed influence of plaster on the overall strength and deformation behavior of both retrofitted and non-retrofitted stone masonry walls. The main tests of this second phase of the experimental study were carried out on January 14, 2020. Two stone in mud masonry walls were tested, one of which was retrofitted using welded wire mesh at critical locations and GI wires in other locations. The test very clearly showed the improvement in both the strength and deformability upon retrofitting.

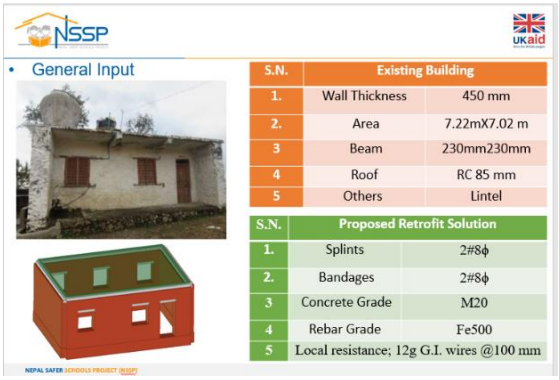
SAFER is a holistic and multi-disciplinary program for improving the earthquake-related safety of school buildings and the resilience of educational communities in Nepal, a consortium of various organizations, led by University of Bristol.

Out of plane pulldown test of stone in mud wall retrofitted using welded wire mesh

Out of plane pulldown test of non retrofitted stone in mud wall

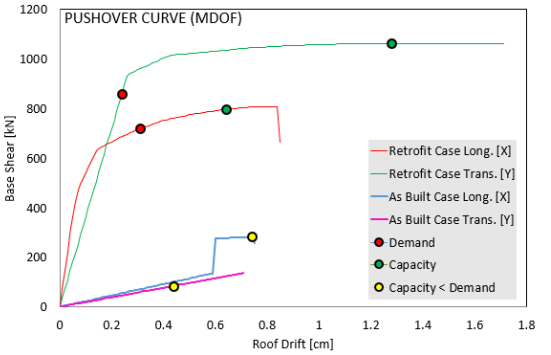
Analysis on performance of Masonry School Building

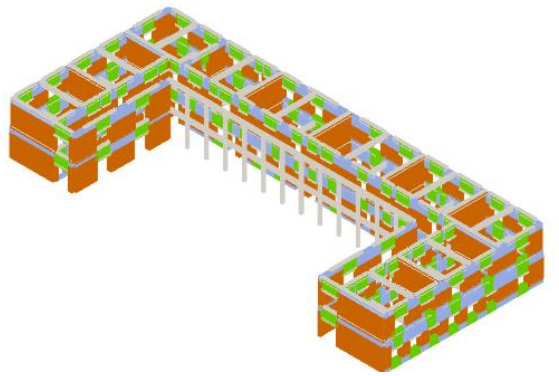
Seismic evaluation of buildings is a core activity of NSET. During the period, state-of-the-art methodologies were practiced for the first time and the performance of masonry school building before and after retrofitting intervention were compared using TreMURI Software. TREMURI is a computer program specifically developed for the structural and seismic analysis of masonry buildings. The use of this program has allowed a more reliable means to study the behavior of masonry structures, which can lead to more advanced design for masonry building retrofit.

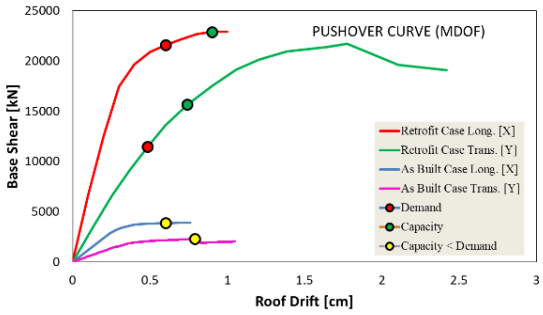


S.N.	Existing Building	
1.	Wall Thickness	450 mm
2.	Area	7.22mX7.02 m
3	Beam	230mm230mm
4	Roof	RC 85 mm
5	Others	Lintel

S.N.	Proposed Retrofit Solution	
1.	Splints	2#8ϕ
2.	Bandages	2#8ϕ
3	Concrete Grade	M20
4	Rebar Grade	Fe500
5	Local resistance; 12g G.I. wires @100 mm	







Non – linear analysis of masonry structures using TreMURI

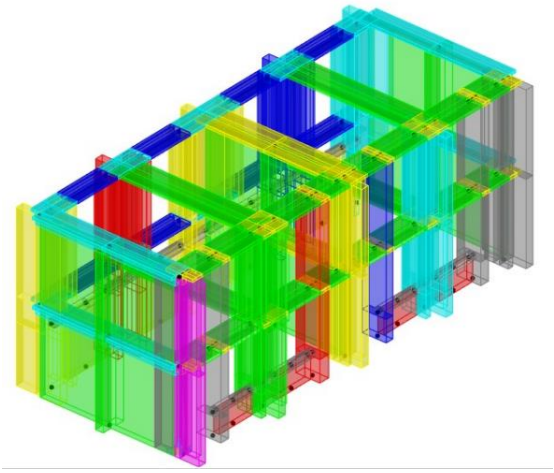
Confined masonry as a retrofitting technique for reinforced concrete buildings

Retrofitting of any building is justifiable if its cost is reasonable as compared to the cost of rebuilding. The major challenge faced in the design phase of NSSP school retrofit project was regarding the cost of retrofit for Reinforced Concrete (RC) frames with masonry infills. Retrofit options such as global RC frame jacketing, external shear walls or any other designed for RC frames using conventional analysis procedures proves to be costly, reducing its value. This demands for an alternative solution which is easily adaptable among design and construction professionals/ practitioners in Nepal and most importantly cost effective.

Confined masonry, a state-of-the-art building and retrofitting technique, fits in all these qualities. Retrofitting of RC frame building using the concept of confined masonry utilizes full potentiality of the inherent masonry infills in resisting lateral load which is regarded almost dormant in the case of RC frames with infills. Knowledge and experiences gained from the research works carried out under Confined Masonry Initiatives (CMI) – Nepal has been utilized in adapting the most practicable approach of analysis. It is an experimentally verified and well-established method of confined masonry analysis. Retrofitting as confined masonry significantly reduces additional interventions on the building ultimately reducing retrofitting cost. A considerable finding that the extensively used external RC splints and bandages in retrofitting of

unreinforced masonry structures can also be effectively utilized in confining and bonding infill masonry to RC frames reinforces the cost-effectiveness and flexibility of retrofitting by this method.

The knowledge gained during the project proceedings can be helpful for preparing research works and guidelines and can be the subject of dissemination to the practicing personnel/ groups involved in design and construction in the future. Furthermore, an evaluative study on the cost of retrofitting the building as confined masonry compared to other conventional methods is necessary and can be a way forward in imprinting it as a most effective retrofitting technique in RC frames. Study on incorporating nonlinear behavior and analysis procedures in wide column method of confined masonry analysis can open a path to more desirable performance-based design approach.



3D model of confined masonry in retrofit design of a school building under the NSSP

Construction sequence of confined masonry

Collaboration on Earthquake Hazard Studies for Himalayan Region

Seminar on "Earthquake Hazard Studies for Nepal/Himalayan Region" was held in Kathmandu underscoring the need of building consensus among the Nepali stakeholders on Hazard studies and development of hazard model, a half-day 'Seminar on Earthquake Hazard Studies for Nepal/Himalayan Region' has been held in Kathmandu on November 1, 2019. The seminar focused on understanding various studies related to earthquake hazards in Nepal/Himalayan region and introduced the US and Global Earthquake Hazard Studies.

The seminar was jointly organized by the Department of Mines and Geology (DMG), Government of Nepal, United States Geological Survey (USGS), Global Earthquake Model (GEM) Foundation and NSET with the support from USAID/OFDA. The main objective of the seminar was to understand the ongoing efforts of earthquake monitoring and hazard assessment in Nepal and identify the need of capacity building for Nepalese stakeholders, and potential collaborative efforts for organizing earthquake hazards studies in Nepal.

To begin with, Mr. Surya Narayan Shrestha, Executive Director of NSET had highlighted the objectives of the seminar. Total 5 presentations were made. Mr. Mukunda Bhattarai from DMG made presentation on 'Earthquake Monitoring and Hazard Assessment in Nepal'.

Dr. Sudhir Rajaure, Deputy Director General of DMG shared in his presentation about an overview of recent hazard studies in Nepal. Dr. Mark Peterson and Dr. Kishor Jaiswal from USGS jointly made a presentation on US Seismic Hazard Mapping and relevant efforts of USGS.

Dr. Marco Pagani from GEM Foundation highlighted GEM's efforts on various fronts of seismic studies and activities across the world. Dr. Susan Hough from USGS briefed on collaboration efforts and studies being carried out between USGS and Nepali stakeholders including government, public and private organizations in a bid to develop a Model for seismic Hazard Mapping.

Study of Urban Development in Kathmandu Valley

A Workshop on 'Study of Urban Development in Kathmandu Valley, Status of National Building Code and Building By-Laws Implementation' was held in Kathmandu on March 22, 2019.The workshop, which saw the participation of around 80 stakeholders, was organized with view to share the survey findings among the stakeholders, get their feedback on the findings of the study, revise the findings in line with the feedback and make recommendations for the effective implementation of Building Code and Building By-Laws in the future.

Representatives from Ministry of Urban Development (MoUD), Department of Urban Development and Building Construction (DUDBC), Kathmandu Valley Development Authority (KVDA), various professional societies, namely, Nepal Engineers' Association, Society of Nepali Architects (SONA), Nepal Engineering Council), Municipalities, INGOs and NGOs among other professionals joined the program made their contribution.

Japan International Cooperation Agency (JICA) collaborated with NSET to carry out the survey on 'Study of Urban Development in Kathmandu Valley'. The Department of Urban Development and Building Construction (DUDBC) has provided guidance for carrying out the study. The study focused on existing Acts and Regulations related to By-laws and Building Code enforcement, the By-laws and Building Code compliance of constructed buildings and drawings and priority areas of interventions to enhance the by-laws and Building Code compliance rate.

Tomorrow's Cities Program

Tomorrow's Cities, the UK Research and Innovation (UKRI) Global Challenges Research Fund (GCRF) Urban Disaster Risk Hub – a five-year global interdisciplinary research hub, has been formally launched in Kathmandu. With 4 focus cities i.e. Nairobi, Quito, Istanbul and Kathmandu, the program aims to catalyze a transition from crisis management to multi-hazard risk-informed planning and decision-making, for cities in low-and-middle income countries. The Kathmandu city hub comprising of Tribhuvan University, PA(Practical Action), NSET, SIAS (South Asian Institute of Advanced Studies), Lumanti, NDRC (National Disaster Risk Reduction Centre) and NDRI (Nepal Development Research Institute) is led by Prof. Dr. Sangeeta Singh, Professor of Urban Planning and Deputy Director of Centre for Disaster Studies. For Kathmandu, the specific impact objectives are:

- To reduce the risk of multiple, interacting hazards on the poorest populations that do, and will inhabit the rapidly expanding urban development of the Kathmandu City region
- To support city and community decision-makers in the transition to equitable, integrated multi-hazard risk management as part of urban development policy and practice.

Support for Inter-college "Earthquake Resistant Design Competition"

In one of the major yearly events organized by the students' society of Kathmandu Engineering College, Dristi 2.0, NSET technically supported for conducting an inter-college competition on "Earthquake Resistant Design Competition", which was held from July 5 to July 7, 2019 for three consecutive days.Teams of students from different colleges affiliated to Tribhuwan University, took part in the competition where they had to build scaled-down model of multistoried framed buildings of wooden sticks, meeting all the competition requirements and primarily, being earthquake resistant. For the purpose, NSET facilitated by providing a small scale electric powered Shaking Table as well as a structural engineer to contribute as an expert in the jury panel

and help organizers to properly operate the shaking table. Apart from the decision regarding the winner of the competition, from the shaking of models having different horizontal and vertical configurations, it was also observed that regularity in plan, inter-story distribution of masses, building height, bracings, building materials and base isolation can play vital role in the earthquake resistant behavior of the buildings.

Views from the frontline 2019

"Views from the Frontline 2019" (VFL) is a survey conducted to assess the impact of implementing Sendai Framework on Disaster Risk Reduction (SFDRR). VFL 2019 is the largest independent global review of disaster risk reduction at the local level. It aims to strengthen the inclusion and collaboration between at-risk people, civil society and governments in the design and implementation of policies and practices to reduce risks and strengthen resilience. Respective government of the countries adhering SFDRR monitor and evaluate impact of Disaster Risk Reduction (DRR) activities implemented every year. This evaluation largely presents the assessment from the government prospect perspectives. Global Network for Disaster Reduction (GNDR) assists the Civil Society Organizations (CSO) of the countries following SFDRR to assess the impact of DRR activities by their respective governments from the civil society perspectives. GNDR is a worldwide network of not for profit CSOs working in DRR with its head office in the United Kingdom. GNDR has been conducting this kind of evaluation survey throughout the world in collaboration with the identified Regional Coordination Office (RCO) and national CSOs from the respective countries since 2009 every alternate year.

NSET has been conducting VFL-2019 in the capacity of National Coordination Office (NCO) in collaboration with GNDR. A National Advisory Board is formulated to provide overall directions and coordinate with the local, provincial and federal government institutions whenever required. 15 communities each from one of the wards of 15 municipalities spread over four provinces have been selected for the implementation of VFL - 2019. These communities represent all three geographic regions, effects of existing major hazards, urbanization and level of disaster risk reduction (DRR) intervention in the community. The communities representing urban and rural municipalities, province, geographical region, existing major hazard and the level of DRR intervention is presented in table 1

Table 1: the communities selected for VFL 2019

SN Community Municipality-Ward Province Geographic Region Existing Hazard Level of DRR intervention Rural Urban

1. Sharanapara + Kamal-1 1 Terai Fire/Flood Minimum
2. Kharikhola + Khumbu Pas. Lhamo-1 1 Himal Landslide Minimum
3. TelteleFant + Udaypurgadi-5 1 Mountain Fire/Fvlood Minimum
4. Chappan + Triyuga-11 1 Mountain Fire Moderate
5. Kalinchok + Kalinchok-1 Bagmati Himal Landslide Minimum
6. Lagenkhel + Lalitpur-12 Bagmati Mountain Fire Good
7. Pariyartol + Changunarayan-8 Bagmati Mountain Landslide Moderate
8. Imakhel + Chandragiri-3 Bagmati Mountain Landslide Moderate
9. Gajedanda + Vyas-1 Gandaki Mountain Flood/slide Good
10. Mohandanda + Galyang-5 Gandaki Mountain Flood/ Landslide Moderate
11. Tanlichok Gandaki-2 Gandaki Mountain Landslide Minimum
12. Ghursa Birendranagar-10 Karnali Mountain Fire Moderate
13. Ghatgaun Chaukune-10 Karnali Mountain Landslide Minimum
14. Bistabada Sinja-2 Karnali Himal Landslide Minimum

15. Talium Chabdannath-9 Karnali Himal Landslide Minimum

Level of Disaster Risk Reduction (DRR) Intervention:

"Minimum" refers to the availability of mandatory legal documents like disaster risk reduction and management act, establishment of disaster relief fund and formation of municipal level Disaster Risk Management Committee in the municipality.

"Moderate" refers to formation of Ward level Disaster Risk Management Committee at the ward level, prepare Disaster and Climate Change Resilient Plan in the prescribed format based on the vulnerability and Capacity Assessment of the municipality in addition to the "Minimum" level of intervention.

"Good" refers to the periodic improvement and implementation of Municipal Disaster and Climate Change Resilient Plan. Implementation of National Building Code and initiate Integrated Urban Development Plan.

Geographical location of the selected 15 sites is presented in the following map of Nepal.

Map of Nepal with selected municipalities, province and geographical region.

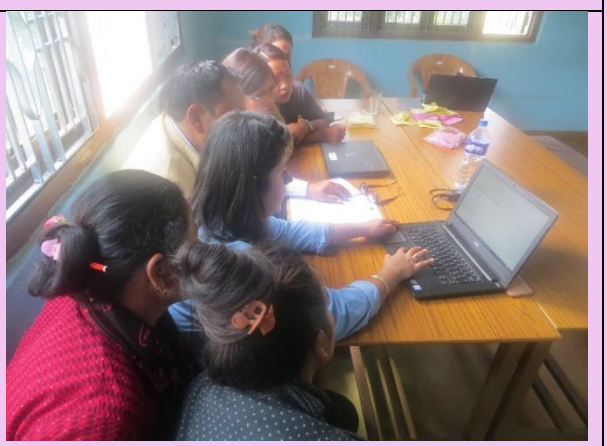
One local non-government organization working in the field of disaster risk reduction from each of the four provinces were selected as Partner Organization to coordinate the survey and other activities.

The VFL survey as well as preliminary analysis of the data had been completed. It is in the process of final analysis. Selected communities for VFL-2019 have also identified one small scale mitigation activities in each of the 15 communities. They have prepared action plan for to implement the identified mitigation measure. It is pending due to the Covid-19 Pandemic.

Discussion on the survey questionnaire

Random Household Survey in the community

Focused Group Discussion in the training hall



Data entry in the "Survey Gizmo" (GNDR Database)

Earthquake Safety Day 2020

Nepal marks ESD every year on 15 or 16 January (Magh 2 according to Nepalese Calendar) commemorating the Great Bihar-Nepal Earthquake of 1934 by organizing various activities nationwide. The main purpose of marking this Day has been to re-affirm national commitment to enhance Earthquake Resilience of Nepali communities and also share and review past experiences & strategize further.

Nepal marked 22nd Earthquake Safety Day (ESD) at central, provincial and local level with the slogan "Resilient Infrastructures for Sustained Happiness and Prosperity". Bhaktapur Municipality hosted the National Meeting of 22nd ESD on Jan 16, 2020.

Chief Guest of National Meeting of the 22nd ESD Minister for Home Affairs, Mr. Ram Bahadur Thapa 'Badal' said that construction of buildings and infrastructure that are resilient to earthquakes would be a best way out for reducing the impact of impending earthquake risks as country is at high risk of such disaster.

The National Meeting was chaired by Mr. Sunil Prajapati, Mayor of Bhaktapur Municipality. Mayor Mr. Prajapati highlighted Municipality's efforts and progress in post-earthquake reconstruction campaign claiming that it has set an exemplary model in the country especially in terms of reconstructing cultural and historical heritages.

Addressing the meeting, Mr. Sushil Gyewali, Chief Executive Officer of National Reconstruction Authority (NRA), claimed that post Gorkha Earthquake reconstruction campaign in Nepal is moving ahead in right direction apart from some initial hiccups.

Mr. Prem Suwal, a federal parliament member from Bhaktapur, stressed on the need of introducing specific plans, programs and appropriate technology for effective implementation and institutionalization of initiative to combat earthquake risk in Nepal.

Ms. Valerie Julliand, Resident Coordinator of UN, addressing the meeting, said that the commemoration of ESD reminds the importance and need of disaster preparedness.

At the program, Mr. Anil Pokhrel, Executive Chief of National Disaster Risk Reduction and Management Authority (NDRRMA), shared that his institution, although it is newly established, is already in action and working to formulate workplans, budget and working modality and approach in line with the assigned responsibilities.

Mr. Maniram Gelal, Coordinator of ESD Publicity Sub-Committee and Director General of Department of Urban Development and Building

Construction (DUDBC) briefed on how National Building Code (NBC) implementation is progressing in Nepal.

Mr. Surya Narayan Shrestha, Member Secretary of ESD National Organizing Committee and Executive Director of NSET highlighted the significance and importance of marking the ESD. Briefly highlighting the achievements in Disaster Risk Reduction so far in Nepal, Mr. Shrestha also put forth the tasks and priorities to be done in the days to come.

Earthquake Safety Rallies

To elevate the level of public awareness, perception, and attitude towards earthquake risks as well as preparedness and to promote and encourage safer construction practice, Earthquake Safety Rallies were organized in Bhaktapur.

The Earthquake Safety Rallies, started from two different places of Bhaktapur; Lamgal Pukhu and Bhajya Pukhu, with the awareness-raising messages, converted into Earthquake Memorial Meeting organized at Bhaktapur Durbar Square. The rally started from Lamgal Pukhu was led by Sunil Prajapati, Mayor of Bhaktapur Municipality, while the rally started from Bhajya Pukhu was led by Ms. Rajani Shrestha Joshi, Deputy Mayor of Bhaktapur Municipality.

The rallies were attended by various rank and file government officials, elected representatives, officials and participants from various organizations including schools, colleges, business community, non-government organizations, security personnel, professionals & activists of disaster risk reduction and people from the community. earthquake safety rally is one of the major program events of ESD being held every year and it is held before the National Meeting.

Earthquake Memorial Meetings

As a key event of 22nd ESD, earthquake memorial meeting was held in historical Earthquake

Monument at Bhugol Park in memory of 1934 Great Nepal-Bihar Earthquake. On behalf of ESD National Organizing Committee, the Kathmandu Metropolitan City (KMC) hosted the memorial meeting on January 16, 2020 to pay tributes to all those who lost lives in the past earthquakes in Nepal and to commit to work for enhancing earthquake safety of Nepali communities.

The program was attended by Home Minister, Mayor of Kathmandu Metropolitan City, NDRRMA chief, elected representatives, senior government officials, chief & senior officials of security agencies, DRR professionals, practitioners, volunteers, community representatives and many more.

Also, earthquake memorial ceremony was held at Patan durbar square, Mangal bazaar, Lalitpur, on January 16, 2020 to pay tribute to those who lost their lives during the past earthquakes in the country.

Centenarian expert on culture, Mr. Satya Mohan Joshi along with parliament members, elected representatives from Lalitpur Metropolitan City, officials and distinguished personalities from the government, non-government organizations, security personnel, professionals & activists of disaster risk reduction, and people from the community extended heartfelt tributes to the victims of past earthquake.

Earlier, an earthquake safety rally was organized in Lalitpur. The rally was started from Jawalakhel with the awareness-raising messages had converted into earthquake memorial meeting at Patan durbar square.

Earthquake Safety Exhibition

To disseminate information regarding measures related to Earthquake Risk Reduction and Safer Reconstruction to the general public as well as other stakeholders, a three-day Earthquake Safety Exhibition was organized at City Hall, Bhrikuti Mandap, Kathmandu during January 16-18, 2020. Minister for Home Affairs, Mr. Ram Bahadur Thapa 'Badal' inaugurated the Exhibition. Along with Executive Chief of National Disaster Risk Reduction and Management Authority (NDRRMA), Mr. Anil Pokhrel, government officials, experts in the fields of disaster risk reduction in Nepal, Minister Thapa observed all the stalls on the occasion.

During the exhibition, more than 300 persons visited different stalls of exhibition. Altogether 20 stalls including Nepal Army, Armed Police Force, Nepal Police, Red Cross, IOM, NSET, DUDBC were placed in the exhibition where visitors could get the information and ideas in regard to emergency risk management and disaster risk management efforts.

Apart from the Exhibition held in City Hall, a separate one-day earthquake exhibition was organized in Bhaktapur durbar square in Bhaktapur on January 16, 2020.

National Symposium on Earthquake Risk Reduction and Management

Under the Earthquake Safety Day (ESD), National Symposium on Earthquake Risk Reduction and Management in Nepal has been held in Kathmandu on January 27, 2020. The Symposium discoursed on issues of Building Code implementation, Post-Earthquake Reconstruction and Future Directions of Disaster Risk Reduction and Management in Nepal.

Addressing the brief inaugural session, Chief Executive Officer (CEO) of National Reconstruction Authority (NRA) Mr. Sushil Gyewali wished to handover all the accomplishments achieved and experiences gained in the course of Post-Earthquake Reconstruction to the nation with the view to help build our communities resilient to future disasters.

Mr. Anil Pokhrel, Chief Executive of National Disaster Risk Reduction and Management Authority (NDRRMA) shared his experience and progress made so far after being appointed him as head of NDRRMA. Mr. Sunil Prajapati, Mayor of Bhaktapur Municipality, briefed about the efforts and progress of post-earthquake reconstruction with major focus on reconstruction of heritage in the Municipality as the reconstruction of historical and cultural heritage is considered exemplary in Bhaktapur.

Ms. Valerie Julliand, Resident Coordinator of UN expressed happiness over the ongoing efforts of Government of Nepal (GoN) and Civil Society Organizations in reducing the Disaster Risk Reduction in Nepal.

Dr. Som Nath Sapkota, Director General of Department of Mine and Geology (DMG), highlighted various efforts that DMG has carried out in the past year regarding identifying and communicating earthquake hazards in Nepal.

From the Chair, Mr. Ramchandra Dangal, Deputy Director General of Department of Urban Development and Building Construction (DUDBC) briefed about various efforts that DUDBC is working with in the past one years.

To begin with, Mr. Surya Narayan Shrestha, Executive Director, NSET briefed about the objectives of the National Symposium which is being organized in Nepal as part of ESD since past 22 years. He also highlighted the significance of the program as it has been a forum for various

stakeholders involved in DRR sectors in Nepal for sharing their efforts, activities and experiences, to discourse and develop consensus on burning issues of DRR and to devise common plan for future work plans.

The symposium intensively discussed on the various issues of earthquake risk reduction and safer reconstruction and reviewed the efforts on reconstruction, risk reduction and preparedness

In this year's Symposium, there were three thematic sessions conducted:

- Thematic Session TS1: Panel Discussion on Implementation of Building Code in Nepal: Status, Challenges and Way Forward
- Thematic Session TS2: Panel Discussion on Post-earthquake Reconstruction: Current Status, Challenges and Potentials
- Thematic Session TS3: Panel Discussion on Future Direction of Disaster Risk Reduction & Management in Nepal
- The Symposium was organized jointly by DUDBC, Bhaktapur Municipality and NSET in association with various government and non-government organizations. More than 200 persons representing different DRR stakeholders, professionals, teachers and students participated the program. The National Symposium is a regular program as a part of the annual ESD.

Awareness Raising activities on Earthquake Safety and Preparedness

As part of 22nd ESD 2020, various awareness events, namely, Street Drama, First Aid, Community Search and Rescue, exhibition and awareness dance were held in Bhaktapur district.

Street Drama

As an event under 22nd Earthquake Safety Day, a street drama was performed by a group of artists in Lamgal Pukhu and Bhajya Pukhu in Bhaktapur. At a Bhajya Pukhu, a drama called 'Malati ko Bihe' was performed while a drama called 'Bhukampa' was performed at Lamgal Pukhu.The street drama was conducted by Khwopa Engineering College, Bhaktapur. The drama focused on raising public awareness on various aspects of safer construction techniques a building.

First Aid Simulation

First Aid is one of important tools to support in disaster response activities. As part of raising awareness of community people about the basic techniques of First Aid, which could be useful them during emergencies, a simulation exercise was conducted in Bhaktapur as part of 22nd ESD 2020. Nepal Scout organized the event demonstrating how to respond during emergencies situations with available means. During the simulation, emergency situations with mock causalities was simulated enabling people to assess and respond to the emergency. This included providing First Aid to casualties and evacuation using stretchers among others.

Fire Fighting Response Simulation

With view to making community people aware on the basics of fire safety and also help teach hands-on skills on responding to fire disasters that could be useful during emergency situation, a fire response simulation was conducted at Bhajya Pukhu. The simulation basically demonstrated how to extinguish gas cylinder fires and also operating fire extinguishers. Nepal Red Cross had conducted the simulation.

Earthquake Safety Demonstration

Earthquake Safety Demonstration is one of the regular events of ESD. During the National Meeting, a special siren was aired from Radio Nepal and other FM stations across the country at 2.24 PM as a notification of an earthquake, coinciding with the devastating 1934 Earthquake. The safe behavior (Drop, Cover and Hold on) demonstration was conducted by a team of NSET. Then, each of the participants joined into a Human Chain by holding hands as a symbolic gesture of working together in reducing the earthquake risk in days to come.

Awareness Activities in Municipalities out of Kathmandu

Various awareness raising activities organized to mark ESD around the country.

ESD activities in Dolakha, Dhading and Nuwakot districts

On the occasion of 22nd ESD, various awareness raising programs like Street Drama, Information Hub, Rally, and Essay Competition were held in Dolakha, Dhading and Nuwakot districts. Under the guidance of and coordination with DAO, DCC, NRA, POs, municipality and ward level stakeholders, NSET through Baliyo Ghar program supported organize these events.

Awareness Activities in Janakpur, Vyas, Birendranagar & Ghorahi

On January 16, 2020, the 22nd ESD was marked in Janakpur Submetro-politan City, Vyas Municipality, Birendranagar Municipality and Ghorahi Municipality with various awareness raising activities including rallies, demonstrations and street dramas.

Awareness Raising activities in schools

The 22nd Earthquake Safety Day has been marked in schools with various awareness raising campaigns. NSSP has conducted various Awareness Raising Campaigns including formation of child clubs and dissemination of information regarding the precautionary and preventative measures to be deployed to control the spread of COVID-19 to mark the Earthquake Safety Day.

NSET Day 2019

NSET marked 26 years of its journey with a ceremony at NSET Headquarters, Bhainsepati, Lalitpur and also in Dhading, Dolakha and Surkhet districts. Interaction Programs and Photo Exhibitions along with in-house sharing session were also held to mark the occasion.

Established in 1993 with its mission to enhance seismic safety of Nepali communities, NSET observes the day on June 18 every year as 'A Day to Reaffirm the Commitments to Earthquake Safety". Prominent professionals from different government agencies, partner organizations and other stakeholders joined the celebrations.

Addressing the formal NSET Day program held in NSET Headquarters, Dr. Chandra Bahadur Shrestha, Executive Member of National Reconstruction Authority (NRA), appreciated NSET efforts in Nepal's post earthquake reconstruction. Addressing the program, Mr. Bamshi Kumar Acharya, Under Secretary at Ministry of Home Affairs (MoHA), highlighted the role played by NSET in national and international arena.

Highlighting the long partnership with NSET, Mr. Mark Driver, Acting Mission Director of USAID Nepal, acknowledged the impact that NSET work has made in Nepal's school safety, earthquake risk reduction and preparedness. Mr. Rajesh Thapa, President of SCAEF, highlighted the contribution of NSET in Nepal's Earthquake Risk Management.

Dr. Amod Mani Dixit, NSET General Secretary, presenting the various milestones of NSET's 25 years' history, briefed about NSET's various activities and efforts from past to present. Mr. Surya Narayan Shrestha, Executive Director of NSET thanked guests and participants. During the program, the distinguished guests also unveiled the publications published by NSET.

On the occasion, a photo exhibition was also organized at NSET office premises with the view to share experiences of reconstruction through USAID supported and NSET implemented Baliyo Ghar program. Guests and invitees from various organizations observed the exhibition.

Total 150 persons including guests representing various Government Offices, Local Governments, Security Forces, Diplomatic Missions, Bilateral/Multilateral Agencies, Donors/Partners, I\NGOs, CBOs, Professional Societies, Private Sector, Media, Local Communities and various DRR stakeholders as well as NSET Staff and Members joined the ceremony held in Kathmandu.

Formal programs were also held in three districts; Dhading, Dolakha and Surkhet where participants and stakeholders from various agencies and institutions were present. Inhouse sharing programs were held in the three districts as well on the occasion prior to formal program.

9 Sharing and Cross Learning: NSET's involvement in National, Regional and Global Initiatives

Background

NSET is paying organize efforts on sharing information, developing and strengthening networking, cooperation and collaboration among the like-minded organizations, disaster management practioners, policy makers and others at national, regional and global level with the aim of induce synergy and additiobal capabilities to deal with potential threats and help build resilient communities. NSET, therefore, has been actively involved in cross learning processes. It has developeded connection, cooperation and bonding with many national and international organizations including Asian Disaster Reduction and Response Network (ADRRN), Global Disaster Network of CSOs in Disaster Reduction (GNDR) Disaster Preparedness Network (DPNet-Nepal), Disaster Management Network-Nepal (DiMANN), Coalition for Global School Safety (COGSS), International Live Lessons Transfer Network (TeLLNet), International Association for Earthquake Engineering (IAEE) and World Seismic Safety Initiative (WSSI) and many more. NSET has been contributing to various initiatives at national, regional and global level as well. It also constantly participates in various regional and international meetings, workshops and seminars.

Accomplishments (June 2019 – May 2020)

Modeling Exposure through Earth Observed Routine (METEOR)

A workshop on "Modeling Exposure Through Earth Observed Routine (METEOR)" held in Nepal during November 13-14, 2019. NSET in collaboration with other international partners jointly organized the Workshop with the objective to understand the METEOR work and its targeted outcomes in Nepal.

Focusing on earthquake, landslide and flood hazard in Nepal, NSET in collaboration with other international partners (BGS, FATHOM, GEM, HOT, ImageCAT, OPM) with funding support from the UK Space Agency is developing innovative application of Earth Observation (EO) technologies to improve understanding of exposure under "Modeling Exposure Through Earth Observed Routine (METEOR)". METEOR takes a step-change in the application of EO exposure data by developing and delivering rigorous and open routines (protocols) and standards to allow quantitative assessment of exposure, with explicit uncertainties. METEOR is to deliver country-wide openly available exposure data, which will help in DRM decision making for the government.

The workshop Day 1 was focused on planning and policy level where the METEOR national scale hazard (earthquake, flood and landslide) model

and the national scale exposure model can be used in disaster risk management in Nepal and how it can be used in the country by different stakeholders.

The Workshop Day 2 was focused on understanding the process and methodology of developing the exposure model from EO data and hazard model with the technical participants of the workshop and how it can be integrated into national DRM policy and planning.

The participants of the workshop were form different government and non-government organizations mainly focused on disaster management and METEOR hazards (earthquake, flood and landslide).

GNDR National Coordination Workshop

A one-day "GNDR National Co-ordination Workshop' was jointly organized in Kathmandu by Global Network of Civil Society Organizations for Disaster Reduction (GNDR), NSET and Practical Action. The Workshop was organized on Dec 31, 2019 as an event on the occasion of Earthquake Safety Day (ESD), 2020 to mark in the country with month-long activi-ties.

The workshop focused on developing and enhancing the effectiveness in coordination among the GNDR members and CSOs working in the areas of Disaster Risk Reduction (DRR) in Nepal, increasing collaboration and networking; and working jointly on DRR planning and initiatives among others.

The event saw the participation of total 28 people representing various civil society organizations, associations and networks working in the field of Disaster Risk Reduction(DRR) including GNDR, Disaster Management Network Nepal (DiMaNN), NSET, FAYA, FSCN, Nava Prabhat, FIRDO,

UMN, Deprosc Nepal, SIAS, Mercy Corps, NDRC, SUM Nepal, Dalit Welfare Association, Kirtipur Women Network, Eco-Nepal among others.

CityNet's International Seminar in Nepal

CityNet organized series of sharing & learning events and discussions in Nepal. The 38th Executive Committee Meeting held during November 6-7, 2019 in conjunction with the International Seminar on November 8, 2019. Lalitpur Metropolitan City (LMC), a member of the CityNet Executive Committee hosted the events.

Earlier, Nepal National Chapter Meeting of CityNet held on November 5, 2019 in Kathmandu. Current Chair of National Chapter, the Mayor of Hetauda Municipality and NSET through the CityNet Secretariat, facilitated organizing of the National Chapter Meeting.

CityNet is the regional network of local authorities for the management of human settlements. Established in 1987 with the support of UNESCAP, UNDP and UN-Habitat, the Network of cities has grown to include over 135 municipalities, NGOs, private companies and research centers.

Addressing the meeting, Mr. Chiri Babu Maharjan, Mayor, Lalitpur Metropolitan City briefed the involvement in CityNet and the importance of the outcome from the National Chapter's meeting. Mr. Hari Bahadur Mahat, Mayor, Hetauda Sub-Metropolitan City emphasized on the city to city collaboration for sustainable development. Mr. Kendra Hirata , Director, CityNet Yokohama Office, shared about the importance of the local level networking, recent ongoing projects of Nepal Chapter and key points of planning along with the timeframe for the newer cities to join the memberships.

Mr. Surya Narayan Shrestha, Executive Director NSET, drafted and proposed the short term, mid-term and long-term goals for the Nepal chapter.

Mayors, Deputy Mayors, Officers and professionals from various municipalities, Informal Sector Service Centre (INSEC), Research for Environment, Forest, Agriculture, Development Nepal, Lekhnath Small Town Water Supply & Sanitation User Committee, Municipal Association of Nepal and Lumanti Support Group for Shelter participated the program.

International Day for Disaster Risk Reduction (IDDRR) 2019

International Day for Disaster Risk Reduction (IDDRR) 2019 was marked with awareness activities at national and local levels on October 13, 2019. NSET was also actively participated in the program organized to mark the occasion. Nepal marked IDDRR under the leadership of Ministry of Home Affairs (MoHA) and coordinated by DPNet-Nepal in association with different Government Agencies, CBOs, NGOs, INGOs and professional societies. NSET is also the member of DPNet-Nepal.

A rally started from world heritage site of Patan that walked along city core areas and assembled at Jawalakhel. Addressing the gathering, Ms. Indu Ghimire, Joint Secretary and Head of Disaster and Conflict Management Division of MoHA, highlighted the importance of the Day.

Mr. Surya Bahadur Thapa, Chairperson of DPNet-Nepal, shared that Nepal's efforts in DRR&M are better than past and local levels are also focused on mainstreaming DRR. On the occasion of IDDRR 2019, there were other activities also held in capital city and in various parts of the country.

NSET participation in 40th Social Service Day

Nepal marked 40th Social Service Day on September 23, 2019. The national level event organized by Social Welfare Council (SWC) in association with government agencies, non-government & community-based organizations and their networks. NSET also participated in the various programs organized to mark the occasion. Vice President Nanda Bahadur Pun was the chief guest.

On the occasion, he urged to focus social efforts in less privileged areas. Ms. Tham Maya Thapa, Minister for Women, Children and Senior Citizen highlighted the roles of Social Welfare Council to mobilizing and monitoring non-government organizations for the upliftment of women, children, senior citizen, persons with disability and others who are marginalized.

On the occasion, Vice President Pun conferred social service awards to individuals and organizations who have made significant contribution in the areas of social service in Nepal. Vice President also visited Exhibition Stalls including one managed by NSET. There were many stalls managed to showcase efforts of various agencies and organizations.

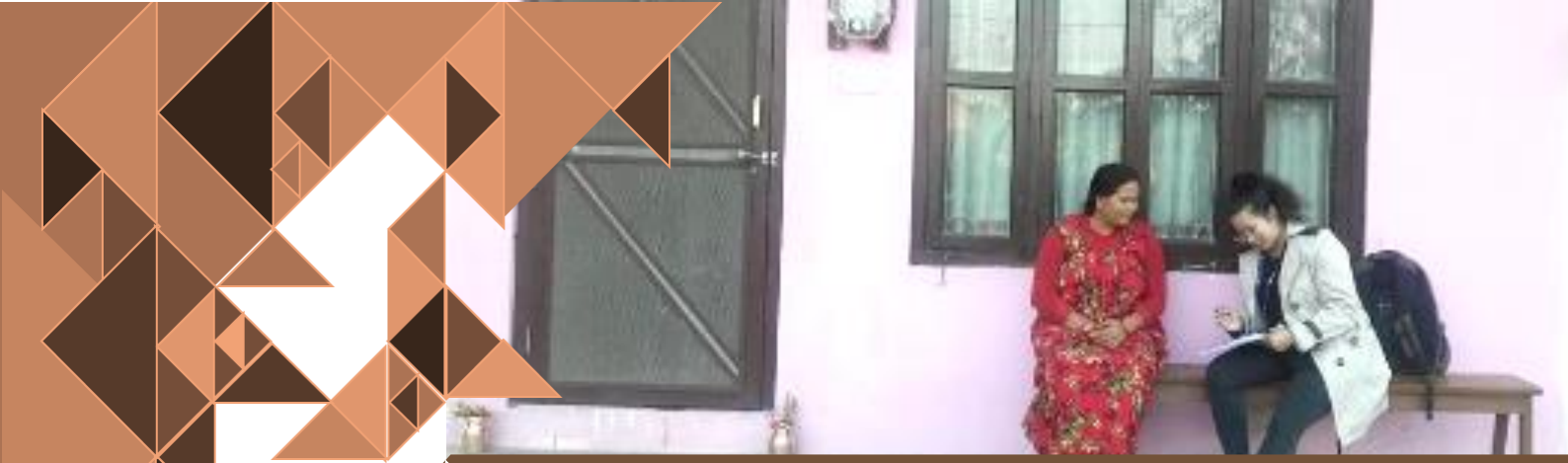
Earlier, an Awareness Rally walked from Bhrikuti Mandap along city core areas around Tundikhel, Kathmandu and assembled back in starting point. NSET joined both in rally and exhibition. Social Welfare Council (SWC) was established in 1977 with the mandate of facilitation, coordination and monitoring & evaluation of non-government organizations (NGOs). Nepal has now around 250 international NGOs and more than 50-thousand NGOs.

NSET Participation/Contribution in Learning & Sharing on Earthquake/ Disaster Risk Management

- Mr. Surya Narayan Shrestha, Executive Director and Monitoring and Evaluation Manager at NSET Ms. Nisha Shrestha attended Social Vulnerability Workshop and GEM Governing Board Meeting with OGS at Pavia, Italy held during 17-27 June 2019.
- Dr. Ramesh Guragain, Deputy Executive Director of NSET and Director at SESP Division, Dr. Narayan Marasini participated at a workshop on Recent advances and perspectives in multi-hazard risk and resilience at Bristol University during 1-7 July 2019.
- Mr. Ganesh Kumar Jimee, Director at DPER division, NSET and Mr. Sharad Wagle attended METEOR Quarterly meeting held at Edinburg, UK during 1-6 July 2019.
- Dr. Amod Mani Dixit, General Secretary of NSET, Ms. Rita Thakuri & Mr. Ayush Baskota from NSET attended Mercy Malaysia International Humanitarian Conference (MMIHC,2019) and ADRRN Executive Council Meeting organized by Mercy Malaysia & ADRRN in Kualalumpur, Malaysia during 5-7 Aug 2019.
- Mr. Surya Narayan Shrestha, Executive Director and Mr. Ganesh Kumar Jimee, Director at DPER division, NSET attended GNDR Meeting held at Bangkok, Thailand 4-5 Sept, 2019.
- Deputy Executive Director of NSET, Dr. Ramesh Guragain participated at International Symposium on Green Development and Integrated Risk Governance in Schenzen, China during 13-16 Oct 2019. He also visited the Lab at the Faculty of Geosciences and Environmental

Engineering, Southwest Jiaotong University in Chengdu, china on the occasion.

- Mr. Surya Narayan Shrestha, Executive Director and Mr. Ganesh Kumar Jimee, Director of DPER division, NSET attended PEER coordination Meeting and GNDR Meeting held at Bangkok, Thailand 4-5 Sept 2019. The program was organized by OFDA/ADP.
- Ms. Sarmila Paudyal attended a Workshop on Modern Analytical Geochemistry and its Application held in Beijing, china. The program is organized by Institute of Geology and Geophysics, Chinese Academy of Science (IGGCAS).
- Dr. Amod Mani Dixit, General Secretary and Executive Director of NSET, Mr. Surya Narayan Shrestha held meeting and interaction with various people in USA. They held meeting with Dr. Christopher G. Burton Assistant Professor, Geoscience Faculty of Auburn University, Alabama on 14 Nov 2019. A meeting was also held to discuss potential collaboration of NSET with GeoHazards International also attending Brian Tucker's Retirement Celebration on 15-16 Nov 2019 at Palo Alto, San Francisco, CA. Likewise, a meeting with Susan Hough, USGS held on 17-18 Nov,2019 at Pasadena, LA California. A meeting with Prof. Binod Tiwari, and Mr. Kanhaiya Kayastha was also held on 18 Nov 2019 at LA, California. Similarly, a meeting with Mr. Ambika Adhikari held in Nov 2019 at Phoenix. They also participated a seminar in Arizona States University, Phoenix on 22 Nov 2019.
- Dr. Narayan Marasini, Director at SESP Division, attended Asian Conference on Disaster Reduction 2019 (ACDR2019) held at Ankara, Turkey during 25-27 Nov 2019. On the occasion, he made Presentation on NSET Experiences on Safer Schools Initiative: School DRR Education for Enhancing Capabilities to Cope with Unexpected Situation in Disasters.
- Ms. Manisha Pantha attended International Workshop for Youth and Young Professionals in Disaster Risk Reduction Research: Mobilizing Youth Through International Collaboration held in Chengdu, China during 6-9 Dec 2019. The program was organized by Institute for Disaster Management and Reconstruction, Sichuan University.
- Mr. Surya Narayan Shrestha, Executive Director, attended GEM Governing Board meeting held at Pavia, Italy 5-6 Dec 2019.
- Dr. Amod Mani Dixit, NSET General Secretary, attended as speaker on International Symposium on Disaster Risk reduction during Dec12- 16, 2019 at Beijing, China. It was organized by
- Institute of Mountain Hazards and Environment, Chinese Academy of Sciences. Further, he also attended the 4th Digital Belt and Road Conference during Dec 16-19, 2019 at Shenzhen, China. On the occasion, he also visited Institute of Mountain Hazards and Environment, Chinese Academy of Sciences during 21 Dec 2019 at Chengdu, China.
- Dr. Ramesh Guragain, Deputy Executive Director of NSET, and Vivek Manandhar of NSET attended Seismology workshop, working on the design and planning for the seismological aspect for the project GCRF: Urban Disaster Risk Hub (Tomorrow's cities) and identify collaboration opportunities between Turkey and Nepal in the project held at London, UK during 21-22 Jan, 2020. Thhe program was organized by University College London.
- Dr. Amod Mani Dixit, General Secretary of NSET, attended High-Level Symposium on Disaster Management Panelist and presentation on the session "Understanding the likelihood for prevalent risks, political dynamic of hazard and disaster policymaking in South-East Asia" held in Indonesia during 26-27 Feb 2020. The program was organized by ASEAN.



10 Monitoring, Evaluation and Learning at NSET

Background

NSET, in the year 2014, established the Monitoring and Evaluation (M&E) Unit to track implementation and outputs systematically, and measure the effectiveness of its activities. NSET's monitoring and evaluation system includes quality monitoring (checking quality against the set standards), output/outcome monitoring, mid-term evaluations and final evaluations based on the life cycle of the programs/ projects. NSET uses mobile-based applications (KOBO Collect, Google forms, Survey Monkey) for quantitative data. Evidences are generated through different sources of information (primary and secondary) for informed decision-making.

Accomplishments (May 2019-April 2020)

Particularly over the last couple of years, NSET-MEL is trying to establish a system of measurement, evaluation and learning throughout NSET. Some of the guidelines/process that we have been working on during this past one year are as follows;

NSET Data Policy

NSET recognizes that reliable data and information is fundamental in supporting its goal. The purpose of the document is to set out a policy framework for ensuring highest standard of all data produced, reported/collected, stored, analyzed and shared during the implementation of NSET activities. The developed NSET data policy will guide the data quality assessment works to ensure that all data possess key data quality attributes.

At NSET, DQA is carried out in all the programs where large data is being collected. Generally, data quality assessment is done in three steps for all kinds of data i.e. Before Data Collection, During Data Collection and After Data Collection.

NSET Management Information System

NSET's Management Information System (MIS) is an integrated system being designed to improve coordination, reporting and data management; data visualization and analysis, and intuitive data entry. The aim of this data portal is to improve access to NSET data so that it can be used for decision making and advocacy. The focus will be on various project indicators of NSET and their linkages with NSET indicators and with global indicators on a broader perspective. The system/framework has been designed and we are now in the stage of data migration into the system.

Knowledge Management and Learning Framework

Knowledge management and Learning is needed in every project to process the learnings that are generated from the activities and it should be well documented and shared to the related stakeholders. Realizing the importance of Knowledge Management and Learning (KML), NSET MEL is working towards developing the KML framework of NSET.

Baseline Status Survey of Rural Municipalities

Exploratory visits were organized to understand and finalize the rural municipalities for program implementation. NSET team, comprising of senior professionals, made exploratory visits to the most

potential rural municipalities and conducted Key Informant Interview and Interaction with the Municipal staffs to gather more data and information on the status of disaster risk reduction and existing capacities, and explore the level of commitments in the rural municipalities. The interaction meetings were attended by the elected members, municipal officials and technical professionals. A survey questionnaire was used for collecting pertinent information and baseline data from the municipalities. During the baseline survey it was observed that the program rural municipalities lack trained human resource in their building permit section, to look after the construction. It was observed that municipalities lack the number of engineers in their municipalities. Most of the municipalities only have sub-engineers to look after the construction. In those rural municipality, it was observed that there is no registered engineering consultancy or even an engineer. There were few numbers of petty contract and masons available but most of them were not trained on disaster resilient construction. There is a huge need of trained human resources in those municipalities so that they can then work towards achieving safer communities.

Most of the rural municipalities of Nepal doesn't have building permit system and same goes with the TESREC program municipalities. Almost all the program municipalities lack proper plans and system for disaster risk reduction in their communities. The municipal staff themselves lack proper knowledge and information on disaster and resilient communities.

Risk Perception Survey (RPS) of the residents of the TSBCIN program Municipality

Risk Perception Survey of the residents of the TSBCIN program municipalities is being conducted to measure the perception of the residents on earthquake risk and risk reduction activities. KAP Survey which stands for Knowledge, Attitude and Practice approach is being employed to measure the change in the perception of the residents due to program interventions.

Building Code Implementation Status Survey in Municipalities

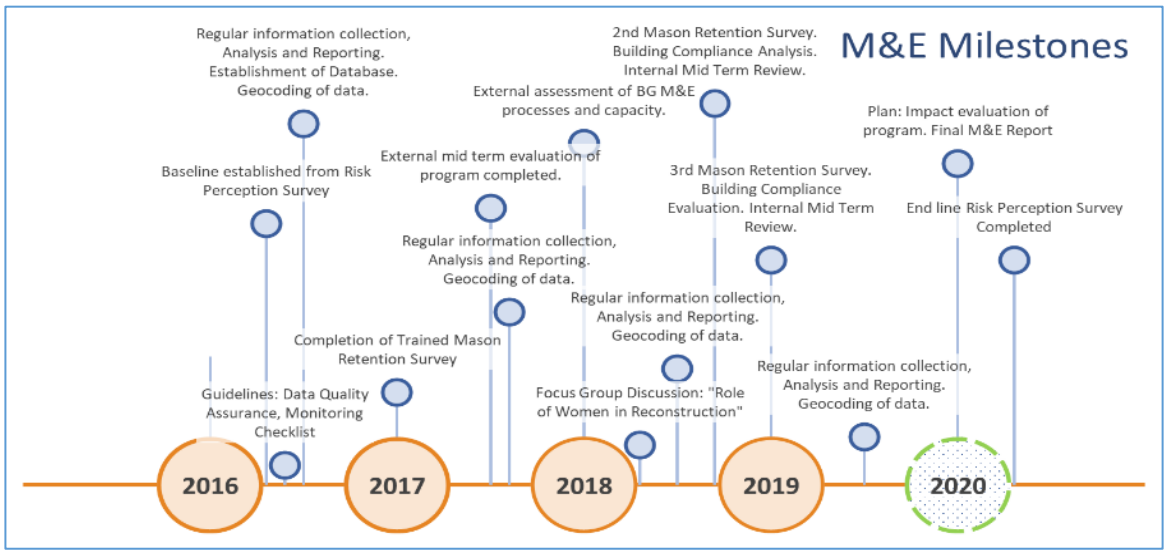
A sound institutional system, capable manpower within and outside the municipal office, and budget are vital for the effective implementation of building code in the municipalities. As a component of the M&E plan of TSBCIN, the change in the status of municipalities in terms of institutional mechanisms, technical capacities and budget allocation for building code implementation is being studied. The respondents were mostly the engineers at the municipality. The results of the municipalities of western region shows that there has been significant improvement in the capacity of municipalities towards implementing building code over the years. Of the three major elements of BCI Status, the Institutional System (S1) has had a greater change than the other two components. The value increased from 43% to 72% for Institutional System, 36% to 54% for Technical Capacity and not much change in Budget Allocation.

Continuous Monitoring and Evaluation under Baliyo Ghar Program

The overall success and failure of a program is ascertained by its ability to reach the outputs of the activities that it had set. The regular monitoring and evaluation of performance ensure the activities will able to reach the goal of program and change happened. The learnings from program give evidence for informed decision. The Figure below shows the achieved M&E milestones and future plan for milestones.

The regular information and data are collected through standard forms and formats. To assure the data quality the Data Quality Assurance guideline is developed and is in regular use. This guideline ensures data Validity, Reliability, Precision, Timeliness and Integrity. An activity monitoring checklist is in use to ensure quality and effectiveness of program activities.

Evaluation of Effectiveness of Interventions on Retrofit of Houses



Baliyo Ghar program had incorporated Retrofit Mason Training activity as one of the key interventions to promote retrofitting in the program area. There are two folds of retrofitting interventions under the program 1) Hands on skill transformation on retrofitting among mason groups and 2) Demonstration of retrofitting works for house owner at local level. Qualitative method was adopted for the evaluation of the intervention. In depth interviews and Focus Group Discussion (FGD) techniques were used for data collection.

Some of the key findings generated from the qualitative data analysis are as follows:

- The respondents' information source for knowledge on retrofit was the orientation activity of Baliyo Ghar
- The Local Government had played coordination role between Baliyo Ghar and Retrofit beneficiary to implement mason retrofit training and construction of retrofit demo house.
- The implementation of Mason retrofit training and construction of demo house; built up the confidence of community, house owner as well as of Local Government representative.
- The desire to build new house and associated social benefit had opted the retrofit beneficiary to drop the retrofitting idea of old house. The social benefit includes the damage house could be utilized somehow for any purpose and "Arma parma" sharing.
- The respondents had perceived the influencing actors for promotion of retrofit housing as; Policy Makers; Creditor; Municipality; Technical Assistance provider; Civil Society; Trained construction workforce and House owner
- House owners are key actor and most powerful influential actor in terms of successful implementation of housing retrofitting.
- NRA and Local elected representatives are second most key actor and most powerful influential actor in terms of successful implementation of housing retrofitting

Mason Retention Survey

Seven days mason training (MT) is one of the key activities of Baliyo Ghar program. Number of Construction workforce Trained is the output indicator of this activity while retention of trained mason after one year of training is the expected outcome of this output. The defined indicator for the outcomes is: Percentage of trained construction workforce who continue working in the field one year after training

To measure this indicator, mason retention survey is planned annually. This survey consists collection of information of all trained masons who had crossed one year of mason training. But do not include the mason who had been surveyed before. The design of survey was quantitative with some qualitative information collected via open-ended questions. The main objective of the survey

was to know the effectiveness of the mason training among trained construction workforce. Mason Retention Survey is the measurement of Baliyo Ghar trained masons' retention in terms of work and knowledge.

A total of 1593 masons were trained from 57 different 7 days mason trainings during this period. The survey is not a sample survey but a population survey. Of the total sample size, 87% were male and the remaining 13% were female. Retention in work means, masons had continued the construction work even one year after the training and knowledge retention is the knowledge retained by the mason one year after the completion of training.

The survey results indicate that majority (80%) of the masons have been working as a mason in respective VDC/Municipalities after participating the mason training conducted by Baliyo Ghar Program. And the mean knowledge score of trained masons after one year was 77 out of 100, which indicates that the average knowledge score of respondents was very good. Extensively, about 93 % of active masons had utilized gained skill in full-fledged during construction of houses.

During Mason Retentions Survey at Chaturale-7

SDO interviewing for Mason Retention Survey in Lapse, Sikre-9.

Risk Perception Survey (Endline) under Baliyo Ghar

The Endline Risk Perception Survey conducted in three districts of Baliyo Ghar program; in Dhading, Dolakha and Nuwakot. The endline survey covered 33 former VDCs and 2 municipalities of three districts where the project was implemented. During January-March 2020, an end-line survey of the project was conducted to assess the change in the perception of the people due to program interventions.

The survey was conducted using structured questionnaire among sample respondents selected using random sampling based on Stratified Systematic Area Sampling Procedure. Total number of households in each program wards were treated as population to calculate the sample size in each program wards. The survey was administered to 3,073 samples respondents in three program districts: Nuwakot, Dhading and Dolakha. The questionnaire attempted to measure respondents' demographic characteristics, knowledge about earthquake and risks in their community, their attitude towards earthquake risk reduction and uptake of earthquake resilient construction practice. From the survey, people's Knowledge, Attitude and Practice (KAP) towards Earthquake risk resilience is measured.

The difference between KAP value at baseline and endline survey was used to reflect program impact and change achieved towards sustainable earthquake reconstruction. The Knowledge score increased from 36 (Baseline) 48 (Endline). The attitude score has also increased in endline, the baseline score was 41 and the endline score was 57. Drastic change was seen in Practice Score, it increased from 11 to 46 reflecting significant improvement in the perception of the program communities.

Field enumerator conducting Endline Risk Perception Survey in Dhading

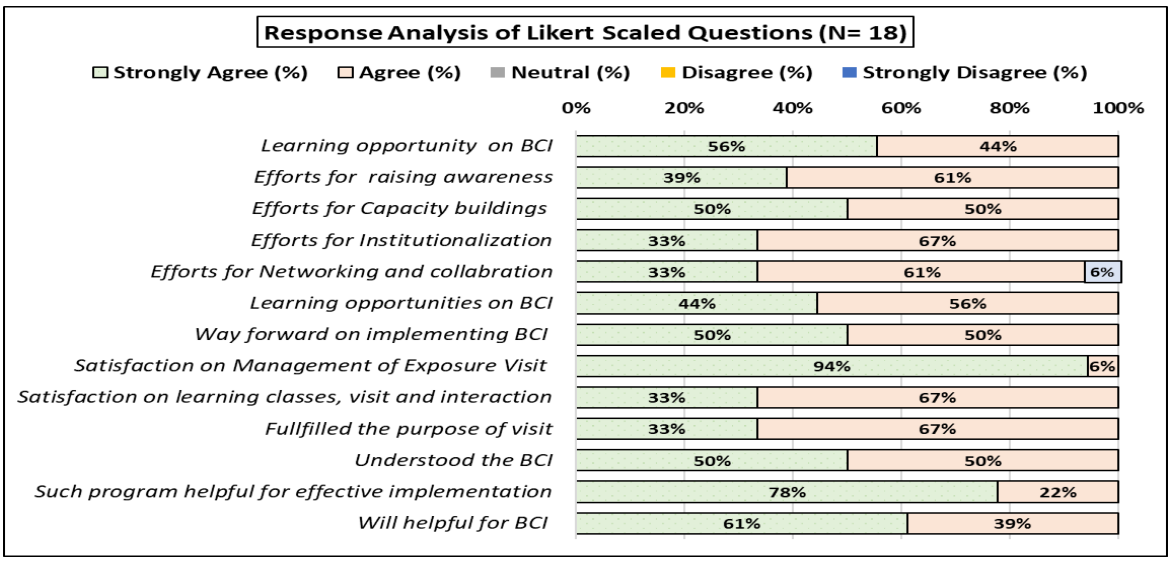
Field enumerator conducting Endline Risk Perception Survey in Dolakha

Evaluation of Trainings and Workshops

As a part of the MEL activities under Bliyo Ghar progarm, qualitative and quantitative surveys and analyses is being done to evaluate the usefulness, effectiveness of the conducted training courses/workshops and also to evaluate the retention of knowledge and skills imparted during the training courses. Below are few highlights of the result of evaluations undertaken during the reporting period.

Evaluation of Exposure Visit of Local Government Representatives

Baliyo Ghar Program had conducted an exposure visit of local government representatives and officials from its program municipalities to Vyas and Kawasoti Municipalities. The objectives of the visit are to enhance understanding among municipal representatives regarding building code implementation and building permit process through sharing of experience, challenges and strategies, observation of institutional framework and provide opportunity for collaboration for effective exchange of expertise, knowledge and wisdom. Altogether, 22 representatives from nine local governments in Dhading, Dolakha, Nuwakot and Kathmandu participated in the exposure visit. To evaluate the effectiveness of the visit, an evaluation survey was carried out. The feedback of 18 participants who responded to the evaluation survey on the effectiveness of the visit in different aspects is depicted in Figure. As evident from the figure, most of the participants agree that the exposure visit was effective in different aspects such as learning opportunity, raising awareness, capacity building and others.



Participants' opinion on different aspects of the exposure visit

Evaluation of Engineer's Training on "Seismic Retrofit Design of Masonry Buildings"

The national level Engineers Training on "Retrofit Design of Masonry Buildings" was organized in order to acquaint Engineers and Professional Designers with the current practices of retrofit design of masonry buildings.

The key findings of the survey from two Engineers training held at Kathmandu in fourth quarter (July-August) of 2019 is discussed here forth.

The trainees had felt the contents covered during the training are relevant to their work. The strengths of training were concentered on "Practical based training", "Dedicated teaching of instructors" and "Designed content of training". For the needs improvement the trainees had mentioned that time allocated for practical sessions was not enough.

Evaluation of Media Workshop

To measure the effectiveness of the national media workshops conducted by Baliyo Ghar, NSET conducted both quantitative and qualitative surveys at the end of the workshops. Key findings from survey results were;

- Workshopp was more effective in understanding of institutionalization of reconstruction efforts and promotion in scaling up of housing retrofitting.
- Discussionn on retrofitting had been very effective and became the takeaway message of the workshop.
- Overall rating of workshop from the majority of participants was 'Good'.

Baliyo Ghar Field Staff Learning Workshop

Baliyo Ghar Staff Learning Mini Workshop was conducted to generate and apply learning from BG field staff to improve the program's effectiveness in safer reconstruction in a gender sensitive and socially inclusive manner. The objective of the workshop was to learn from BG staff on what has worked, not worked, and what can be better in the next disaster recovery process. The learnings during the program intervention was gathered conducting different activities in the workshop. Different activities were conducted during the half day workshop such as: i. Peak and Valley Method, ii. Challenges and Learning Via Meta Card Posting, iii. Thematic Groups Discussion and iv. Satisfaction Survey of the staff. The data collected during workshop was coded and then categorized into broader themes. After coding and re-coding, and the data analysis the peer reviewed learned lessons for the three major components Capacity Building, Awareness Raising and Networking are summarized as the following recommendations

Capacity Building

- Involvement of the local stakeholders for the coordination and conduction of the desired programs for effective outcome.
- Involvement of the Baliyo Ghar staffs in engaging local authority, beneficiaries and trainees.
- Communicating and co-ordinating timely and effectively about the programs like trainings to be conducted.
- Difficulty in engaging masons in the training due to their busy schedule.
- Need to increase the technical manpower from office.
- Difficulty in convincing the houseowners of retrofit as well as to ward chairperson too.
- Community highly influenced by the political deep-rooted issues and geographical difficulties as the other major issues.

Awareness

- Learned to work with the community people engaging with them in their environment.
- Involvement of the local stakeholders is effective in raising awareness among the community people, but it takes time to convince them.
- The beneficiaries can be engaged in awareness raising through the videos.

Networking

- Networking is inevitable while engaging the authority, beneficiaries and trainees in the communities.
- Difficulty in engaging the local stakeholders.
- Difficulty for field staff in networking.

11 NSET: Organizational Updates

Introduction

NSET was established in 1993 by a group of professionals dedicated to reducing earthquake risk of Nepal. It was registered with the Government of Nepal in 1994 as a non-governmental organization. It is a multi-disciplinary professional society of professionals belonging to various physical and social sciences related with aspects of earthquake risk management. NSET is the national member of the International Association for Earthquake Engineering (IAEE), and it also sits in various regional and global networks on earthquake and disaster risk management.

Vision

Earthquake Safer Communities in Nepal.

Mission

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

Objectives

NSET has a three-pronged strategy:

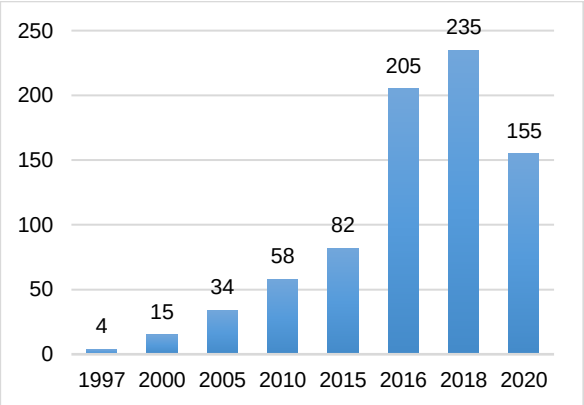
- To sensitize, educate and facilitate all institutions to undertake organized approaches to managing and minimizing earthquake risk by transferring information, technical knowledge and skills, and helping them to mobilize resources for this purpose.
- To advocate for favourable and supportive policies, 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.

NSET completes 26 years of action

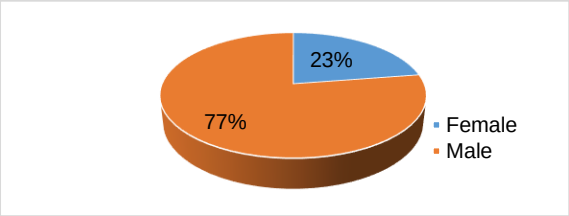
NSET that started operating with a few professionals has now completed 26 years in action. Last year, NSET marked 26th NSET Day. Over the years, NSET has contributed to support efforts on Earthquake Risk Management and Disaster Risk Reduction at the local and national level, and also at the regional and global levels.

NSET's 26-year long journey has been a landmark in terms of quality & effectiveness of its services to help communities and nations in building their resilience. NSET has now grown significantly with a large number of qualified professionals and with adequate physical facilities.

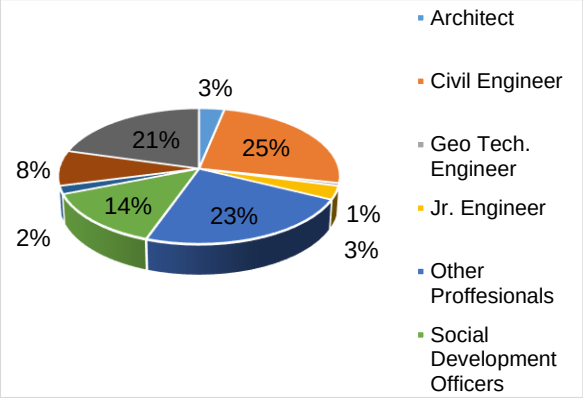
With a total of 4 staff back in 1997, we are now 234 professionals and supporting staff (as of May 2019) who dedicatedly serve in various programs/projects across the country and beyond.



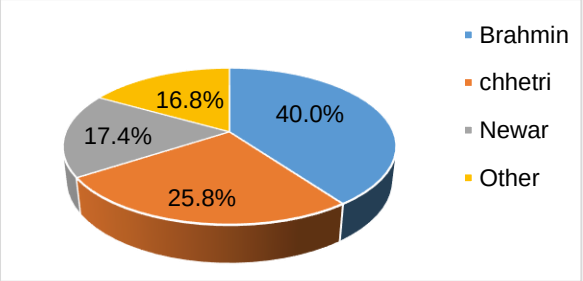
NSET Staff: Gender Mix



NSET Professionals

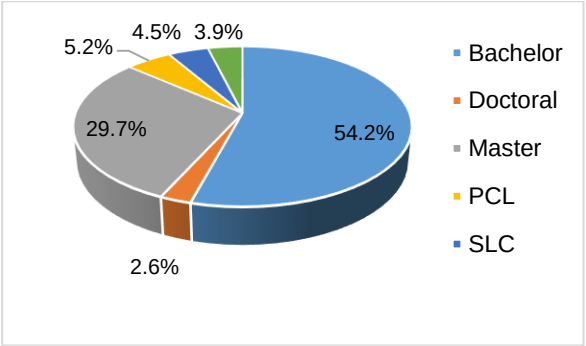


NSET Staff: Ethnic Mix



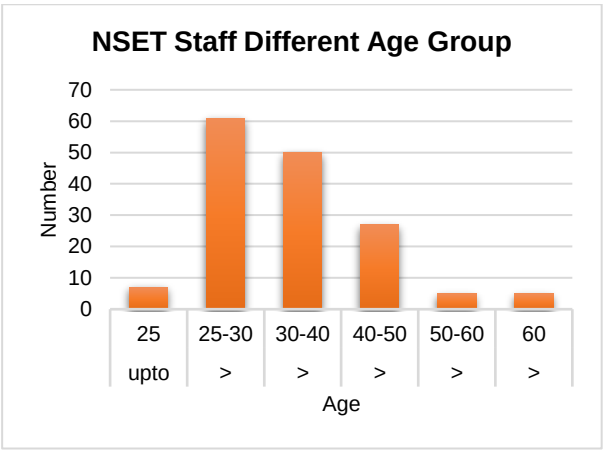
NSET Staff: Level of Education

NSET staff consists of professionals from diverse academic backgrounds in terms of level of education and disciplines they come from.

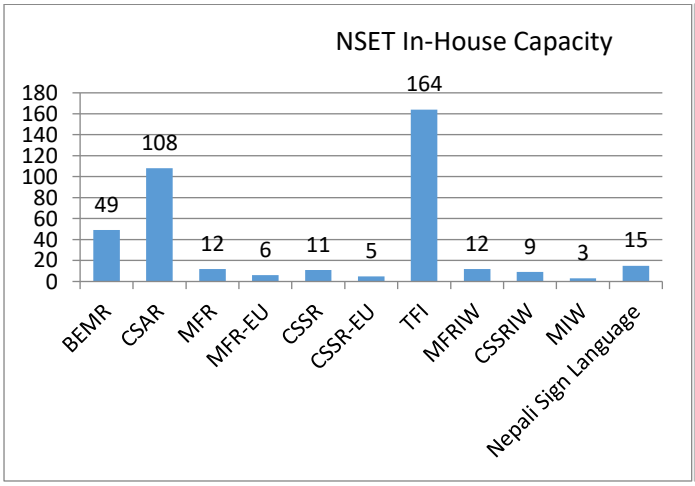


Also, there is a diversity in age-groups too with big majority of youths.

NSET Staff: Age Groups



Capacity of Emergency Response



BEMR:	Basic Emergency Medical Response
CSAR:	Community Search and Rescue
MFR:	Medical First Responder
EU:	End User
CSSR:	Collapsed Structure Search and Rescue
TFI:	Training for Instructors
IW:	Instructors' Workshop
MIW:	Master Instructors' Workshop

HR Management and Development

NSET In-House Capacity: NSET staff are trained on various life-saving skills to ensure their own safety first and also viewing their potential roles in disaster emergencies. Many of NSET staff are trained on specialized courses on Emergency Response. NSET manages Instructor development and other various professional courses for enhancing quality services in the work areas.

NSET's Actions during COVID-19 pandemic situation

Safeguarding NSET staff from COVID-19: In the context of COVID-19 pandemic, NSET has taken timely actions for safeguarding its staff from COVID-19 while during the operations of organization's businesses. As the Coronavirus infection was spreading in many parts of the world, NSET started taking account of the developments. In last week of January 2020, internal consultations among NSET divisions, programs and team leads; and also with NSET Emergency Response Team (ERT), Emergency Medical Response Team (EMRT) and Wellness Committee were conducted. NSET started serious considerations about this global outbreak and precautionary measures were immediately applied and advised for NSET staff.On Jan 31, General Advisory on NOVEL CORONAVIRUS (2019-NCOV) were prepared both in Nepali and English, and circulated among NSET Staff. That information is based on WHO and CDC advisories. Awareness materials also pasted in cafeteria, reception area and near at the entrance. Each staff made aware of prevention and control of COVID-19.

NSET then started managing for precautionary provisions at NSET Office. Hand sanitizer was placed in the reception. Mask bought in adequate amount. Staff and the visitors entering NSET premises were advised to wash their hands with sanitizer.

Based on the Government's Travel Advisory on March 2, 2020, NSET decided to restrict non-essential official international and domestic travels immediately, minimize or avoid meetings, workshops and mass-gatherings, complete planned activities with highest precautionary measures, and advised to take sick leave and stay on self-quarantine for staff exhibiting flu-like symptoms and to seek medical advice. The staff on self-quarantine were suggested to work from home. NSET adapted and prepared awareness materials on COVID-19 and displayed in visible places of NSET's offices. NSET's Disaster Preparedness and Emergency Response (DPER) Division and the Emergency Medical Response Team (EMRT) were asked to regularly monitor and share updates on global and Nepal's COVID-19 situations.

NSET Emergency Medical Response Team (EMRT) was activated on March 5. EMRT conducted Orientation on COVID-19 to all key

professionals and support staff. All who use public transport were advised to take special precautions. Similarly, reminder for washing hand was posted in all washrooms. EMRT developed information materials for self-quarantine and household in both English and Nepali for field staff.

On March 18, following WHO's declaration of COVID-19 as Pandemic and Nepal as a vulnerable to COVID-19 and released updated travel advisory, NSET made further precautionary decision/activities for program events, surveillance and observance of precautions at office premises, travels, international staffs and others. NSET started temperature screening of the staff and visitors at entrance and started maintaining distances in meetings also. A technical advisory group was formed consisting of relevant medical doctors and representative of nearest hospital. A self-assessment tool based on the algorithm published by EDCD was developed.

NSET on March 20 provided Health and Hygiene kit to all NSET staff with essential medicines, mask, disinfection liquid, gloves etc. The kit contained 1 alcohol-based hand rub/hand sanitizer (with at least 70% isopropyl alcohol), 5 disposable masks, 2 pairs of Latex gloves, 1 Ziploc bags (for kit distribution, drugs like Paracetamol- 1 Strip, Sinex -1 Strip, 3 ORS (Jeevanjal) and 1 Mercury thermometer.

NSET prepared Guidelines for Work from Home (WFH) with the view to guide and manage NSET operations in case NSET staff are to work from home. On March 21, NSET Executive Director declared of Work from Home (WFH) for all NSET staff from March 23 to April 3, 2020. March 23, 2020 was the first day for NSET staff to Work from Home. General Staff Meeting held online where almost 80% staff participated. NSET Executive Director briefed about the situation and gave instructions to team leads and all staff to Work from Home. Since then, NSET has been operating office businesses from distance by its staff working from home.

USAID/OFDA's Program for Enhancement of Emergency Response (PEER) under NSET appealed a call for the PEER trained responders to assist during the COVID-19 situation from their level. This was done in a "PEER Community", an active group in Facebook.

NSET has also consulted medical professionals to have their guidance to cope with the threat. An online Orientation on COVID-19 was conducted by Senior Surgeon and Expert on Hospital Preparedness for Emergency Prof. Dr. Pradeep Vaidya. All NSET executives, directors, managers, and relevant staff attended the orientation session. Dr. Vaidya shared information on COVID-19, its prevention measures, facts, misinformation, way forward and possibility of NSET's involvement in COVID-19 situation.

All these decisions and actions of NSET helped to build confidence of all staff and families to become safe from COVID-19. NSET intends to continue such actions and help propagate accurate information and knowledge to the communities.

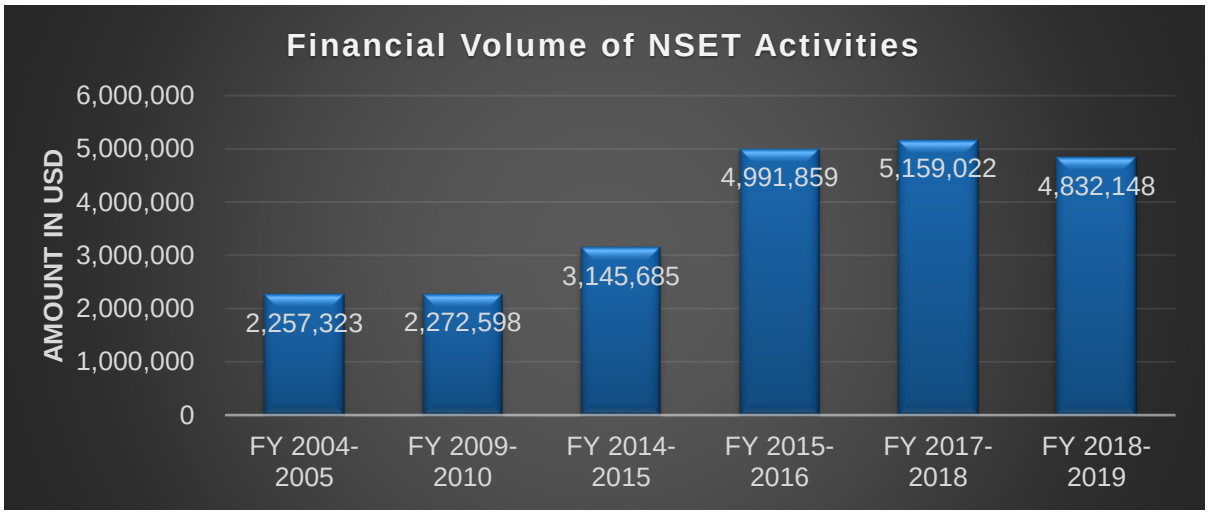
For updaes, please visit www.nset.org.np

Regular Orientation: NSET has been providing regular orientation to its staff members to update with NSET policies and to enhance the capacity of NSET staff members. The past year, NSET held orientations on New Procurement Manual, Personal Policy, Travel Policy, IT Policy and Security, Health Insurance and Orientation on Roles and Responsibilities of Secretary and Receptionists.

NSET Finances

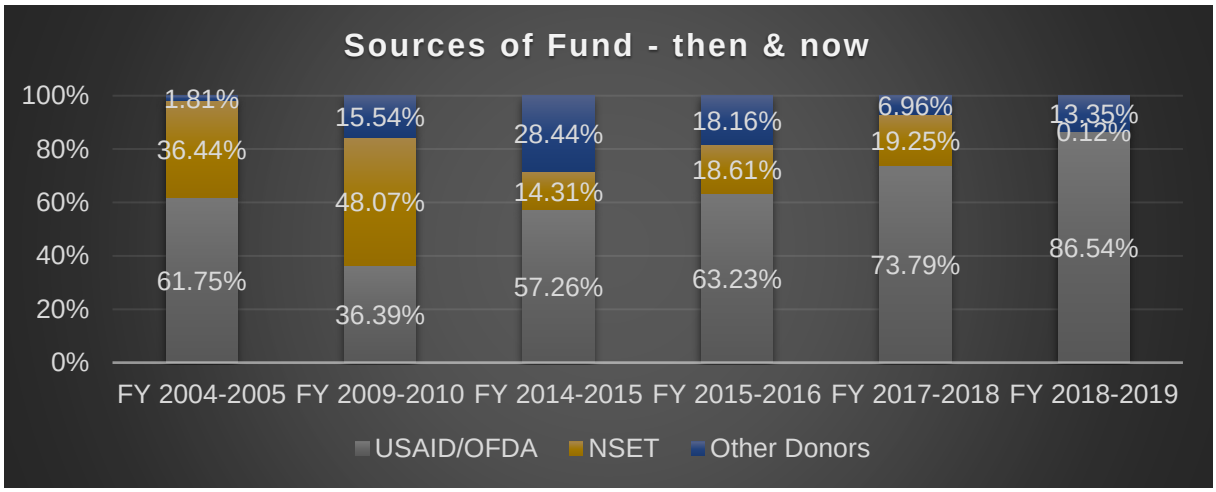
Financial Volume of NSET Activities

The financial volume of NSET has been increasing with the growth in the number of staff and programs. The annual turnover of around 80 thousand USD that was back in 1997 from 2.2 Million USD in 2004/2005 has reached in 2018/2019 the amount of 4.8 Million USD. This shows the growth in the financial volume of NSET.



Sources of Fund then and Now

There is a gradual increase in NSET funds generated through its services in the form of building vulnerability assessment of existing buildings, orientation programs and emergency preparedness planning and drills. NSET has been prioritizing to diversify the sources of fund. It has also expanded its funding sources and now there are several key sources of funds including USAID project funding other bilateral agencies, and funds generated by selling technical services.

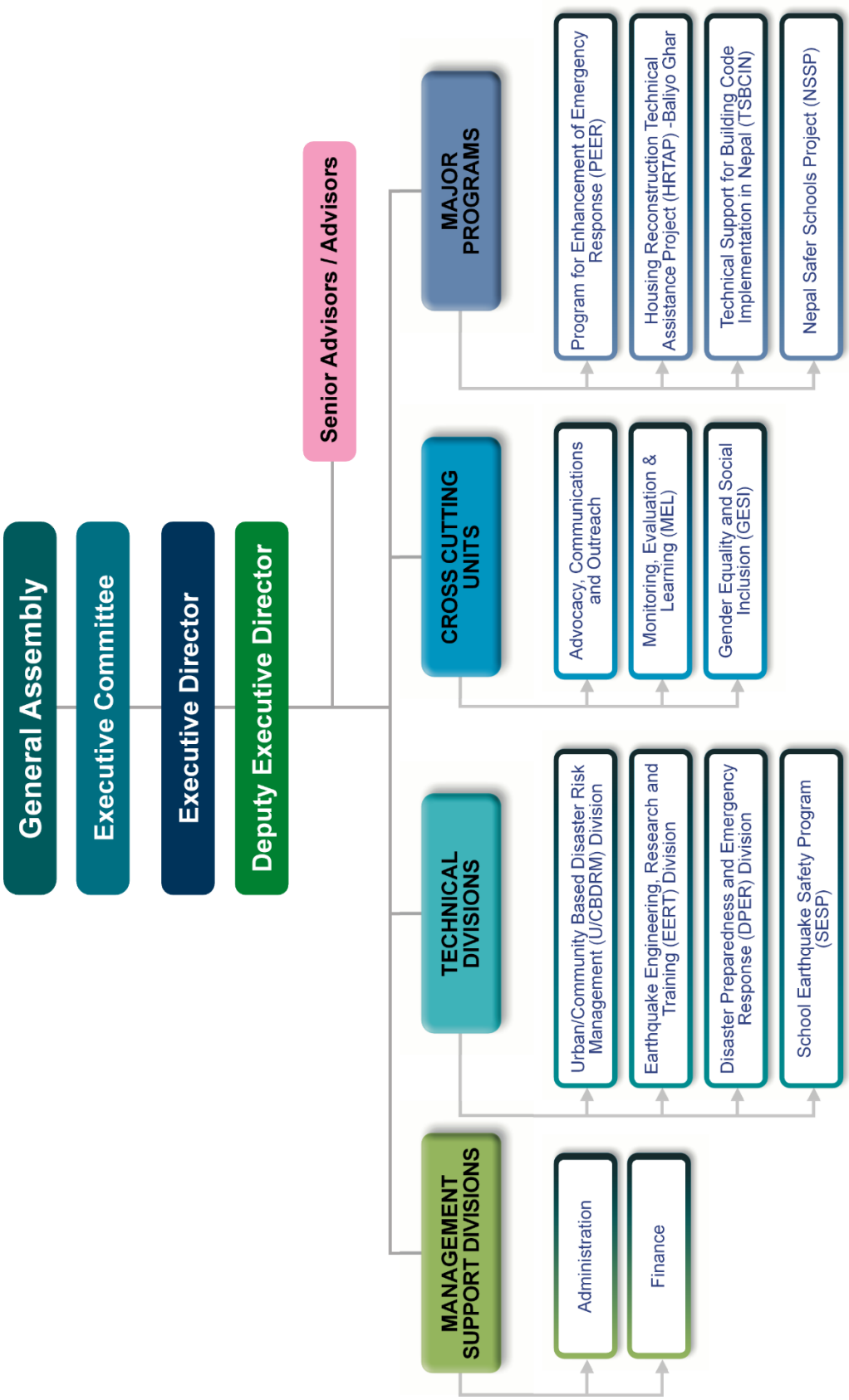


26th AGM of NSET held

26th Annual General Meeting (AGM) of NSET held on October 26, 2019. NSET General Secretary Dr. Amod Mani Dixit presented NSET's Progress Report for the past one year with special glimpses of 26 years' achievements, its completed and ongoing programs, challenges and way forward. On the occasion, the Treasurer of NSET Executive Committee, Mr. Yogeshwor Krishna Parajuli submitted Financial Report of the organization including Auditor's Reports for the last Fiscal Year. A total of 26 General & Life members including Executive Committee Members attended the

meeting. The General Meeting unanimously endorsed both the Reports of General Secretary and Treasurer. The AGM also appointed new Auditing Firm for next Fiscal Year.

NSET Organogram



Annex 1: Income and Expenditure Statement

National Society for Earthquake Technology - Nepal
Income and Expenditure Statement
for period July 17, 2018 to July 16, 2019

Particulars	Schedule	NSET Small Projects	NSET PEER IV/USAID	NSET-Baliyo Ghar (HRTAP) / USAID	NSET TSBCIN/USAID	NSET HRRP	NSET Sakura Net	NSET NSSP	Elimination of Inter-project balance	Total	Previous Year (2017/18)
Income		NRs	NRs	NRs	NRs	NRs	NRs	NRs		NRs	NRs
Project Grants		121,559,709	54,944,750	210,598,235	77,089,615	17,025,537	-	12,152,323	(106,407,491)	386,962,678	555,597,537
Contribution towards awareness programs and trainings		-	-	-	-	-	-	-		-	2,009,202
Contribution towards Earthquake Safety Day		482,537	-	-	-	-	-	-		482,537	549,892
Contribution towards GO Bag/ HH LSAR Kit		-	-	-	-	-	-	-		-	20,000
Total Income		**122,042,246**	**54,944,750**	**210,598,235**	**77,089,615**	**17,025,537**	-	**12,152,323**	**(106,407,491)**	**387,445,215**	**558,176,632**
Expenses											
Administrative Expenses	V	110,597,263	39,900,307	177,449,539	54,881,467	17,219,036	694,539	29,874,975	(106,026,134)	324,590,992	294,312,652
SESP related expenses	VI	-	-	-	-	-	-	-	-	-	10,580
Event Expenses	VII	1,418,029	-	-	-	-	-	-	-	1,418,029	2,228,899
Workshop/Training/Seminar and other program costs	VIII	8,534,782	14,927,990	157,139,126	13,699,182	-	591,391	809,268	-	195,701,739	120,261,115
Travel Expenses	IX	3,630,919	-	1,494,241	1,181,875	1,054,664	-	-	-	7,361,699	8,887,464
Public Awareness	X	25,000	-	10,948,503	-	-	-	-	-	10,973,503	14,463,464
Exchange (Gain)/Loss		(334,777)	(211,771)	-	525,931	-	-	(27,686)	(381,357)	(429,660)	240,759
Total Expenditure		**123,871,216**	**54,616,526**	**347,031,409**	**70,288,455**	**18,273,700**	**1,285,930**	**30,656,557**	**(106,407,491)**	**539,616,302**	**440,404,935**
Excess of Income Over Expenditure		(1,828,970)	328,224	(136,433,174)	6,801,160	(1,248,163)	(1,285,930)	(18,504,234)	-	(152,171,087)	117,771,697
Opening Balance		86,412,285	10,577,018	145,597,855	(11,326,190)	818,320	1,285,930	(57,602)	-	233,307,616	116,062,252
Refund to donor		-	-	-	-	-	-	-	-	-	(208,004)
Foreign Exchange Translation Gain/ (Loss)		-	74,846		(192,827)			1,032,475	-	914,494	(318,331)
Balance of funds as on July 16, 2019		**84,583,315**	**10,980,088**	**9,164,681**	**(4,717,857)**	**(429,843)**	-	**(17,529,361)**	-	**82,051,022**	**233,307,615**

Significant accounting policies and other explanatory notes — XI

As per our report of even date

Varun Parsad Shrestha
President

Amod Mani Dixit
General Secretary

Yogeshwar K. Paraju
Treasurer

Surya Narayan Shrestha
Executive Director

Suyarn Prasad Gautam
Finance Manager

Jitendra Kumar Mishra
Partner
CSC & Co.
Chartered Accountants

Date: 11 November 2019
Place: Kathmandu

Annex 2: Balance Sheet

National Society for Earthquake Technology - Nepal

Balance Sheet
As at July 16, 2019

Particulars	Schedule	As at July 16, 2019 NRs	As at July 16, 2018 NRs
Assets			
Fixed Assets	I	52,780,836	52,666,581
Receivables	II	20,383,784	74,351,755
Cash & Cash Equivalents	III	49,063,672	132,765,975
Total Assets		**122,228,292**	**259,784,311**
Liabilities			
Current Liabilities	IV	40,177,270	26,476,696
General Fund			
Opening Balance		233,307,615	116,062,252
Excess of Income Over Expenditure during the year		(152,171,087)	117,771,697
Exchange Fluctuation Gain/ (Loss)		914,494	(318,331)
Refund to Donor		-	(208,004)
Closing Balance		**82,051,022**	**233,307,615**
Total Liabilities		**122,228,292**	**259,784,311**

Significant accounting policies and other explanatory notes XI

As per our report of even date

Varun Parsad Shrestha
President

Amod Mani Dixit
General Secretary

Yogeshwar K. Panjiuli
Treasurer

Jitendra Kumar Mishra
Partner
CSC & Co.
Chartered Accountants

Surya Narayan Shrestha
Executive Director

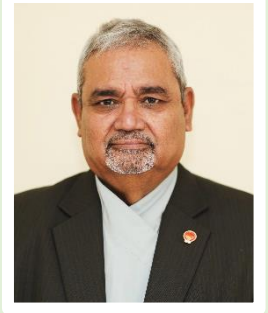
Suvam Prasad Gautam
Finance Manager

NSET

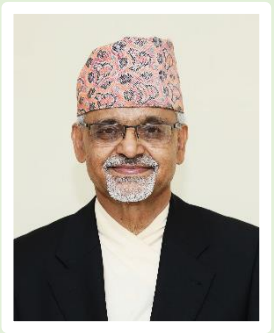
Date: 11November 2019
Place: Kathmandu

Annex 3: Executive Committee

Mr. Varun Prasad Shrestha
President



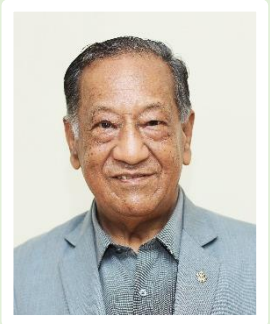
Dr. Amod Mani Dixit
General Secretary



Mr. Yogeshwor K. Parajuli
Treasurer

Mr. Shreeram S. Basnet
Executive Member

Mr. Surya Narayan Shrestha
Executive Member



Mr. Manohar Rajbhandari
Executive Member

Mr. Tika Sharma
Executive Member

Dr. Ramesh Guragain
Executive Member

Annex 4: Institutions that helped us grow through collaboration and support

National

- Armed Police Force (APF)
- Bhaktapur Sub-Metropolitan City
- Bagmati Rural Municipality
- Department of Education (DoE)/(Center for Education and Human Ressource Development)
- Curriculum Development Center (CDC)
- Department of Archeology (DoA)
- Department of Mines and Geology
- Department of Urban Development and Building Construction
- Disaster Management Committee, Alapot
- Disaster Management Committee, Ward No.12, Lalitpur Sub Metropolitan City
- Disaster Management Committee, Ward No. 18, Kathmandu Metropolitan City
- Disaster Preparedness Network (DPNet), Nepal
- Diploma Engineers' Association, Nepal
- Federation of Contactors' Associations of Nepal (FCAN)
- Federation of Nepalese Chamber of Commerce and Industries (FNCCI)
- Heavy Equipment Association Nepal (HEAN)
- Hotel Association of Nepal (HAN)
- Institute of Engineering, Tribhuvan University
- Institute of Medicine, Tribhuvan University
- Initiative Outdoor (IO), Nepal
- Kamal Rural Municipality
- Kathmandu Valley Development Authority (KVDA)
- Kathmandu University
- Kirtipur Women's' Network
- Lalitpur Metropolitan City
- Lumanti Support Group for Shelter
- Ministry of Education, Science and Technology
- Ministry of Health
- Ministry of Home Affairs (MoHA)
- Ministry of Federal Affairs and Local Development (MoFALD)
- Ministry of Environment, Science and Technology
- Ministry of Physical Infrastructure & Transport (MoPIT)
- Ministry of Urban Development (MoUD)
- Ministry of Women, Children and Social Welfare
- Municipalities of Kathmandu Valley and other districts
- National Disaster Management Network of Nepal (DiMaNN)
- National Network of Women for Community Resilience
- Nepal Academy of Fine Arts (NAFA)
- Nepal Amateur Radio Operators' Society (NAROS)
- Nepalese Army (NA)
- Nepal Association of Tour and Travel Agent (NATTA)
- Nepal Bankers' Association (NBA)
- Nepal Bureau of Standards and Metrology
- Nepal Engineering Council (NEC)
- Nepal Engineers Association (NEA)
- Nepal Forum for Environmental Journalists (NFEJ)
- Nepal Geological Society (NGS)
- Nepal Red Cross Society (NRCS)
- Nepal Mediciti Hospital
- Nepal Police (NP)
- Nepal Telecommunications Authority (NTA)
- Nepal Tourism Board (NTB)
- Nepal USA Chamber of Commerce and Industry (NUSACCI)
- National Police Academy
- Rotary Club, Bhainsepati
- Sakha & Co. Private Limited
- Shivam Cement Private limited
- Social Welfare Council
- Society of Consulting Architectural and Engineering Firms
- Society of Nepalese Architects
- Disaster Management Committee, Ward No.12, Lalitpur Sub Metropolitan City

- Bhaise, Bagmati Gaupalika- 3, Lalitpur
- Society for Urban Poor (SOUP)
- Shaplaneer
- Forum for Awareness and Youth Activity, Nepal (FAYA) Kailai
- Ratanchura VDC (Golonjor Gaupalika-5) sindhuli
- Jhagajholi Ratmata VDC (Sunkoshi Gaupalika 3,4) Sindhuli
- Katunjebeshi VDC (Roshi Gaupalika 7) Kabhre
-
- Dhangadhi Sub-Metropolitan City
- Bhimdutta Municipality
- Nepalgunj Sub-Metropolitan City
- Thankot Women's Cooperative Network
- Karnali Integrated Rural Development and Research Center (KIRDARC)
- Nepal Mediciti Hospital
- Nawa Prabhat Nepal
- Architects Sans Frontiers Nepal
- Institute for Social and Environmental Transition-Nepal (ISET)
- JICA Nepal
- Earthquake Safety Solutions
- Three H Management

Media Partners

- All Three Media Ghar, Ktm
- Bhimeshwor FM, Dolakha
- Bulbule FM, Surkhet
- Dinesh FM, Kailali
- Hamro Radio, Dolakha
- Kalinchowk FM, Dolakha
- Media Helpline, Ktm
- Mero FM, Ktm
- Nuwakot FM, Nuwakot
- Radio Audio, Ktm
- Radio Bihani, Dhading
- Radio Dhading, Dhading
- Radio Upatyaka FM
- Radio Jalapa, Nuwakot
- Radio Janasanchar FM, Bhaktapur
- Radio Krishnasar FM, Banke
- Radio Sagarmatha 102.4MHz, Ktm
- Radio Trishuli, Nuwakot
- Sailung FM, Dolakha
- Saptakoshi FM, Sunsari
- Ujyalo 90 Network, Ktm
- Vijaya FM, Nawalparasi
- Watch Dog Media
- Media Helpline
- Radio Khandbari, Sankhuwasabha
- Nepalbani FM, Ilam
- Radio Sargam, Jhapa
- Samad FM, Siraha
- Saptakoshi FM, Sunsari
- Radio Makalu, Dhankuta
- Kalinchowk FM, Dolakha
- Radio Triveni, Chitwan
- Radio Rudrakchya, Mahottari
- Radio Sarlahi, Sarlahi
- Radio Sagarmatha, Lalitpur
- Ujyalo FM, Lalitpur
- Radio Audio, Kathmandu
- Star FM, Kathmandu
- Radio Myagdi, Myagdi
- Vijay FM, Nawalparasi
- Butwal FM, Rupandehi
- Radio Marshyangdi, Lamjung
- Shreenagar FM, Palpa
- Radio Annapurna, Kaski
- Bulbule FM, Surkhet
- Community Radio Nepali Awaj, Kalikot
- Radio Krishnasar, Banke
- Radio Karnali, Jumla
- Radio Madhyapachchim, Dang
- Saipal FM, Bajhang
- Radio Mahakali, Kanchanpur
- Dinesh FM, Dhangadi

International

- Action Aid International Nepal
- All India Institute of Hygiene & Public Health (AIIH&PH), India
- Ambulance 118, Indonesia
- American Heart Association
- American Red Cross
- American Society of Nepalese Engineers
- Amity Public Safety Academy of Philippines
- Asian Development Bank (ADB)
- Asian Disaster Preparedness Center (ADPC)
- Asian Disaster Reduction Center (ADRC)
- Asian Disaster Reduction and Response Network (ADRRN)
- Asian Seismological Commission
- Alliance for Adaptation & Disaster Risk Reduction, India
- Badan Koordinasi National of Indonesia
- Badan Search and Rescue National of Indonesia
- Bangladesh Disaster Preparedness Centre
- Global Network of Civil Society Organisations for Disaster Reduction (GNDR)
- Bangladesh Red Cresent Society (BDRC)
- Beijing Normal University, China
- Boarder Security Force of India
- Building Research Institute of Japan
- CAN-USA
- Central Reserve Police Force, India
- Central Industrial Security Force, CISF, India
- Chittagong University of Engineering & Technology (CUET)
- Christian Aid-UK
- Commissioner ate of Health & Medical Services, Gujarat, India
- Center for Participatory Research and Development, Bangladesh
- Crown Agents, UK
- Danish Cultural Institute, Denmark
- Directorate General of Health Services (DGHS), Bangladesh
- Disaster Management Bureau of Bangladesh
- Disaster Prevention Research Institute DPRI/Kyoto University
- Durham University, Institute of Hazard, Risk and Resilience (IHRR)
- Earthquake and Megacities Initiatives (EMI)
- Earthquake Engineering and Research Institute
- Emergency Rescue Unit Foundation of Philippines
- Emergency Medical Relief (EMR)/ Directorate of Health Services, New Delhi, India
- Earthquake Reconstruction and Rehabilitation Authority (ERRA), Pakistan
- European Center of Training and Research in Earthquake Engineering (EUCENTRE), Italy
- EHIME University, Japan
- Fire National Training Institute of Philippines
- Fire Service and Civil Defense Directorate of Bangladesh
- Focus Humanitarian Assistance, Pakistan
- GeoHazards International
- Give2Asia
- Global Earthquake Model (GEM) Foundation, Italy
- Global Network of Civil Society Organizations for disaster Reduction (GNDR)
- Graduate Research Institute for Policy Studies (GRIPS) of Japan
- Handicap International
- Indian Tibetan Boarder Police (ITBP), India
- Indian Medical Association, (IMA), India
- Indonesian Red Cross
- Institute of Mountain Hazards and Environment, Chengdu
- Integrated Research on Disaster Risk (IRDR)
- International Association of Earthquake Engineering
- International Centre Integrated Mountain Development
- International Federation of Red Cross Crescent Societies (IFRC)
- International Resources Group
- Janathaksan, Sri Lanka
- 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
- Karlsruhe Institute of Technology (KIT)
- Kunming University, China
- Lutheran World Federation
- MERCY Malaysia
- Mercy Corps, Nepal
- 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 Disaster Response Force (NDRF), India
- National Health Emergency Preparedness and Response Network (NHEPRN), Pakistan
- National Industrial Security Academy of India
- Nat'l Institute of Preventive and Social Medicine of Bangladesh
- National Research Institute for Earth Science and Disaster Prevention of Japan
- Network of Disaster Management Practitioners (NDMP), Pakistan
- New Zealand Society for Earthquake Engineering
- OGS, Istituto Nazionale di Oceanografia e Geofisica Sperimentale (National Institute of Oceanography and Applied Geophysics)
- Oxfam GB Nepal
- Pakistan Red Crescent
- Plan Nepal
- Practical Action, Nepal
- Philippines General Hospital
- Punjab Emergency Services, Rescue 1122, Pakistan
- Reynolds Geo-Sciences Limited, UK
- SAARC Disaster Management Center, SDMC
- Safety Solutions Incorporated, USA
- Save the Children, Nepal
- Sustainable Environment and Ecological Development Society (SEEDS/India)
- Shanti Volunteer Association
- The International Institute for Geo-Information Science and Earth Observation (ITC)
- The World Bank
- United Mission to Nepal
- United Nations Center for Regional Development - Disaster Management Planning Hyogo Office
- United Nations Development Programme, Geneva, Pakistan, India, Nepal, China, Thailand offices)
- United Nations International Strategy for Disaster Reduction (UNISDR)
- United Nations Educational, Scientific and Cultural Organization
- United Nations International Children's Emergency Fund (UNICEF)
- United Nations World Food Programme (WFP)
- University of Basilicata, Potenza, Italy
- University of Sapienza, Rome, Italy
- University of Durham
- United Nations Human Settlements Programme (UN-Habitat)
- U.S. Office of Foreign Disaster Assistance (USAID/OFDA)
- World Health Organization
- World Seismic Safety Initiatives (WSSI)

BCIPN & TSBCIN Municipalities

- Amargadhi Municipality, Dadeldhura
- Baglung Municipality, Baglung
- Bardaghat Municipality, Nawalparasi
- Bardibas Municipality, Mahottari
- Besishahar Municipality, Lamjung
- Bhadrapur Municipality, Jhapa

- Bharatpur Metropolitan City, Chitwan
- Bheriganga Municipality, Surkhet
- Bhimeshwor Municipality, Dolakha
- Biratnagar Metropolitan City, Morang
- Birendranagar Municipality, Surkhet
- Birtamod Municipality, Jhapa
- Butwal Sub-Metropolitan City, Rupandehi
- Damak Municipality, Jhapa
- Dhangadhi Sub Metropolitan City, Kailali
- Dhankuta Municipality, Dhankuta
- Dharan Sub-Metropolitan City, Sunsari
- Gaindakot Municipality, Nawalparasi
- Ghorahi Municipality, Dang
- Godawari Municipality, Kailali
- Gorkha Municipality, Gorkha
- Guleriya Municipality, Bardiya
- Hetauda Sub Metropolitan City, Makwanpur
- Inaruwa Municipality, Sunsari
- Itahari Sub-Metropolitan City, Sunsari
- Janakpur Sub-Metropolitan City, Dhanusha
- Kamal Rural Municipality, Jhapa
- Kamalamai Municipality, Udaypur
- Karyabinayak Municipality, Lalitpur
- Kawasoti Municipality, Nawalparasi
- Khandbari Municipality, Sankhuwasabha
- Kohalpur Municipality, Banke
- Lalitpur Metropolitan City
- Manthali Municipality, Ramechhap
- Mithila Municipality, Dhanusha
- Narayan Municipality, Dailekh
- Nepalgunj Sub Metropolitan City, Banke
- Phidim Municipality, Panchthar
- Putalibazar Municipality, Syangja
- Sainamaina Municipality, Rupandehi
- Shuklagandaki Municipality, Tanahun
- Shuklaphata Municipality, Kanchanpu
- Siddharthanagar Municipality, Bhairahawa
- Tansen Municipality, Palpa
- Triyuga Municipality, Udaypur
- Tulsipur Municipality, Dang
- Vyas Municipiality, Tanahun
- Tamakoshi Rural Municipality, Dolakha
- Baijanath Rural Municipality, Banke
- Sinja Rural Municipality, Jumla
- Kailari Rural Municipality,
- Kailali Simta Rural Municipality, Surkhet
- Babai Rural Municipality, Dang
- Chure Rural Municipality, Kailali

Abbreviations

ADRRN	Asian Disaster Reduction and Response Network
BCIPN	Building Code Implementation Program in Nepal
BEMR	Basic Emergency Medical Response
BTT	Basic Technical Training
CSSR	Collapsed Structure Search and Rescue
DMC	Disaster Management Committee
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DUDBC	Department of Urban Development and Building Construction
EPRP	Earthquake Preparedness and Response Plan
ERM	Earthquake Risk Management
ERR	Earthquake Risk Reduction
ESD	Earthquake Safety Day
ESS	Earthquake Safety Solutions
GEM	Global Earthquake Model
HSS	Higher Secondary School
HOPE	Hospital Preparedness for Emergencies
IAEE	International Association for Earthquake Engineering
IOE	Institute of Engineering
KMC	Kathmandu Metropolitan City
LSMC	Lalitpur Sub Metropolitan City
MFR	Medical First Responder
MIW	Master Instructors' Workshop
MT	Mason Training
NBC	National Building Code
NRCS	Nepal Red Cross Society
NRRC	Nepal Risk Reduction Consortium
NRTC	National Reconstruction Technology Center
NSET	National Society for Earthquake Technology – Nepal
OJT	On-the Job Training
PEER	Program for Enhancement of Emergency Response
3PERM	Promoting Public Private Partnerships for Earthquake Risk Management
SESP	School Earthquake Safety Program
SM	Social Mobilizers
TFI	Training for Instructors
TOT	Training of Trainers
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VCA	Vulnerability Capacity Assessment

NSET
Earthquake Safe Communities in Nepal

National Society for Earthquake Technology-Nepal (NSET)
House 65, CR-13, Sainbu Awas, Bhainsepati, Lalitpur Metropolitan City-25, Nepal, P.O.Box No.: 13775, Kathmandu, Nepal
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www.nset.org.np