# Earthquake Safety

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#### FEATURE STORY: 'BALIYO GHAR' PROGRAM COMPLETES, DIRECT SOCIO-TECHNICAL SUPPORT PROVIDED TO REBUILD MORE THAN 63000 HOUSES



Baliyo Ghar – the Housing Reconstruction Technical Assistance Program (HRTAP) has completed its operation. To support Government of Nepal's owner driven approach for the reconstruction of private houses damaged during 2015 Gorkha Earthquake, NSET implemented USAID's 'Baliyo Ghar' program which is a key part of the reconstruction portfolio of USAID/Nepal.

The five-year (October 2015 – September 2020) program, with an extension for one more year till Sep 2021, was implemented in 3 districts out of 14 earthquake-most-hit districts: Dolakha, Dhading and Nuwakot and also in one Municipality in Kathmandu.

Program activities initially planned and revised in due course of time as needed are all accomplished. Targets set for various activities are all met. Goals and objectives defined while during program design are all achieved.

Key outcomes of Baliyo Ghar program are

- direct socio-technical support provided to rebuild 63,700 safer houses in the program areas,
- ✓ orientations conducted for 146,559 persons,
- Itraining provided to 13,474 masons in the program districts,
- vulner on-the-job training (OJT), supported rebuild 910 houses of vulnerable families identified by the government, 5430 new masons produced under 50-day long OJT, and
- support provided to retrofit 74 houses producing 467 masons including 15 females.

#### National Workshop on Closing of Baliyo Ghar program held

"National Workshop on Closing of Baliyo Ghar Program" has been held on Sep 24, 2021 in Kathmandu. The main purpose was to share major learning and experiences of reconstruction efforts in past 6 years in Nepal.

Addressing the event, CEO Mr. Sushil Gyewali from National Reconstruction Authority (NRA) recalled the journey of Nepal's reconstruction after 2015 Gorkha earthquake. Nepal could accomplish this responsibility so well, he remarked. CEO Gyewali appreciated USAID and NSET for all the worth support provided and the contribution made through Baliyo Ghar program.

Newslette

On the occasion, Dr. Chandra Bahadur Shrestha, Executive Committee Member of NRA shared experiences of Nepal's reconstruction and highlighted how satisfying was to have larger portion of task accomplished within this period. Dr. Shrestha advised NSET to help managing Nepal's reconstruction repository for future generations.

Dr. Hari Ram Parajuli, Executive Committee Member of NRA shared on on how Nepal could resolve technical issues of reconstruction timely and

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"Achieving 95% compliance rate in private housing is a big achievement to mark"

Dr. Parajuli

efficiently. "Achieving 95% compliance rate in private housing is a big achievement to mark", Dr. Parajuli stated.

Deputy Director General from DUDBC Mr. Dilip Bhandari shared on housing reconstruction at districts and local level, and explained on how technical support was provided to earthquake affected families. Mr. Shyam Kishor Singh, Program Director of CLPIU (Building) stressed on need to consolidate the learnings of Nepal's housing

reconstruction for the use of future generation. Mr. David B. Chalmers, Office Director from Environment and Resilience Office of USAID Nepal expressed that USAID family was delighted to have been able to walk together with thousands of earthquake-affected families in their post-earthquake recovery efforts.

Among from representatives from local government, Deputy Chairperson Ms. Kamala Sharma from Siddhalek RM appreciated the support provided to the communities through Baliyo Ghar program to build back better and safer.

Ward Chairs from Bhimeshwor Municipality, Mr. Birajman Shrestha shared about resolving complex issues for reconstruction in the city core areas & heritage sites of historical Dwalkha Bazar, while Mr. Haribansha Chaulagain shared his happiness to have number of trained female masons in the community. Ward Chairs Mr. Bijay Raj Itani from Nilkantha-10, Mr. Laxman from Siddhalek-7 and Mr. Rammani Pudasaini from Kageshowori-Manahara - 2 also shared their experiences of housing reconstruction in their areas and appreciated contribution from Baliyo Ghar program.

Ms. Bhubneshowri Parajuli from HRRP mentioned on collective efforts of various agencies to support and accomplish housing reconstruction in Nepal and appreciated Baliyo Ghar's stake.

Journalist Sunil Koirala shared on media campaigns conducted for effective and safer housing reconstruction.

On the occasion, National Reconstruction Authority (NRA) offered Letters of Appreciation to USAID and NSET. USAID and NSET also handed Letter of Acknowledgement to NRA for overall guidance and leadership in reconstruction efforts.

The closing program was chaired by NSET Executive Director Mr. Surya Narayan Shrestha. Mr. Shrestha thanked all the participants and also expressed gratitude to all the stakeholders and communities for their guidance and support to



Designed to help homeowners and communities rebuild in a way that increases their resilience to future disasters, Baliyo Ghar remained closely aligned with the Nepal Government's owner-driven housing reconstruction campaign which empowers and supports homeowners, allowing them to build back safer. Baliyo Ghar established district and local-level reconstruction technology centers, construction models, and demonstration homes. Project mobile units provide technical assistance to homeowners at the household and community level. At the national level, Baliyo Ghar supported Government of Nepal in developing improved and standardized training curricula and procedures. Baliyo Ghar program provided trainings for Engineers, Government officials, Construction actors, political leaders, elected representatives, policy makers, social mobilisers and many sections of society with a focus to raise publish awareness, strengthen their capacity and understanding and encourage for actions on building community resilience.

On the occasion, trained masons Ms. Bimala Basnet and Mr. Surya Prasad Subedi shared their journey of earthquake resistant construction practice.

successfully accomplish Baliyo Ghar program activities.

In the beginning, Baliyo Ghar Program Director and NSET's Deputy Executive Director Dr. Ramesh Guragain had shared program accomplishments highlighting key achievements, impacts and lessons. Baliyo Ghar Program Manager Mr. Ranjan Dhungel shared on program implementation and also acknowledged the guidance and support received from various agencies and sections of people.

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#### MAKING RESILIENT SETTLEMENTS: TECHNICAL SUPPORT TO MUNICIPALITIES FOR RESILIENCE BUILDING

# Scaling Up Seismic Retrofitting of Residential Buildings through USAID's Tayar Nepal grant

#### Residential building retrofitted as model work under USAID's Tayar Nepal grant handed over to house-owner

Model work of retrofitting a residential building has been completed and handed over to house-owner in Ghorahi Sub-Metropolitan City. The house was retrofitted as a part of model work under USAID's Tayar Nepal grant: "Scaling Up Seismic Retrofitting of Residential Buildings through the Local Government Regulatory System" being implemented by NSET with the guidance and supervision from Ghorahi Sub Metropolitan City (GSMC) and



Tulsipur Sub-Metropolitan City (TSMC) in Dang. Two more residential houses in the area are now undergoing seismic retrofitting.

Mayor Mr. Narural Chaudhary from Ghorahi City inaugurated the retrofitted house at the retrofit technology handover ceremony held at Mageri, Ward No. 13 of GSMC on Nov1, 2021. Mayor

Chaudhary handed over the retrofitted house to Mr. Tika Bahadur Biswakarma and Pabitra Sherpali, the owner of the house.

Addressing the ceremony, Mayor Chaudhary underscored the need of building safer buildings for people. District Coordination Committee Chief Mr. Jitendra Man Nepali stressed on the need of maximizing the ongoing efforts. House-owner Ms. Pabitra Sherpali expressed happiness to have stronger house after retrofitting.



On the occasion, Mr. Tirtha Raj Joshi from USAID's Tayar Nepal Project, Mr. Mohan Paudel, Chief Administrative Officer of TSMC, Ms. Sabitri Biswakarma, Deputy Chairperson of Babai Rural Municipality, Dr. Ramesh Guragain from NSET, Mr. Yubaraj Paudel from GSMC also shared their views.

Shake Table demonstration was

organized following the handover ceremony. Mr. Bijay Krishna Upadhyay from NSET explained its process, objectives, and method, and responded queries raised.

### Discussion on scaling up seismic retrofitting of residential buildings held, experiences of pilot retrofit works shared

National Workshop held in Kathmandu to share experiences and discuss ways of scaling up efforts of seismic retrofitting of residential buildings based on pilot works implemented by NSET under USAID's Tayar Nepal Project in Ghorahi and Tulsipur.

discussion А panel was organized that discussed on the ways to scaling up seismic retrofitting of residential buildings in Nepal and how academia, local and central governments and private sectors could contribute to the process. The panelists were Mr. Narulal Chaudhary, Mayor of GSMC, Mr. Ghanashyam Pandey, Mayor of TSMC. Ms. Nani Maiva Oli. Social Mobilizer of TSMC, Mr. Ramdhan Shrestha, Senior Engineer from GSMC. Mr. Anand Nepal, Manager of Sarbottam Cement Limited, Mr. Dhrubaraj Thapa, President of Cement Manufacturing Association, Nepal, Mr. Rajesh Thapa. President of SCAFE and SONA, Prof. Dr. Gokarna Motra from Institute of Engineering and the house-owners Ms. Pabitra Biswakarma and Mr. Bharat Kumar Sharma from GSMC and TSMC.

At the end, Mr. Dilip Bhandari, Deputy Director General of DUDBC. Ms. Tammie Harris. COP, USAID's Tayar Nepal project, Mr. Surya Narayan Shrestha, Executive Director of Bishnu NSET. Mr. Dutta Gautam, Under Secretary from MoFAGA, Mr. Madhav Prasad Dhakal from NDRRMA, Mr. Tirtha Raj Joshi from USAID's Tayar Nepal and Dr. Ramesh Guragain from NSET put worward their remarks. There were total 70 participants from various stakeholders Total 70 persons from various agencies and sectors participated.



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#### 'Mero Surakshit Gaun (TESREC)" program activities

Under USAID supported 'Mero Surakshit Gaun (TESREC)" program, NSET has been conducting various trainings in the rural municipalities.

#### **Mason Training**

Mason training conducted in different places during this quarter. A total of 29 local masons from Baijanath Rural Municipality, Banke got trained on earthquake resistant building construction. Likewise, 24 local masons from Simta rural municipality, Surkhet got trained on earthquake resistant building construction and retrofitting in Dec 2021. Similarly, 36 local masons from Kailari are also trained on earthquake resistant construction techniques.

#### Training course for local leaders



A 2-day "Training Workshop on Multi-hazard Risk Mitigation at the local level" conducted in Tamakoshi Rural Municipality. A training course on 'Multi-hazard Risk Reduction for Local Leader' has been developed under the program. The objective of this course is to understand the concept of DRR, visualize the multi-hazard

risk assessment results and formulate appropriate strategies for multi-hazard risk reduction and mainstreaming of DRR into local development plans. The course is designed into 3 series, with each series running for two consecutive days.

#### 3D physical Model of Rural Municipality developed



A 3D model demonstrating the topographic map of the program rural municipality has been developed under the program. The model is prepared with 3D printer using wooden board. The model provides visualization of the topography of their areas including the hazards & risk exposure. This tool is

expected to help planners & decision makers to develop mitigation plans and process for mainstreaming disaster risk reduction into their municipal development plans. The 3D physical model of Malu village has already been developed and models for other municipalities are under progress.

#### Capacity building training to Engineers organized in Kathmandu

NSET conducted a 4-day Basic Training for Engineers on Earthquake Resistant Design of Buildings based on updated Nepal National Building Code (NBC), in Dec 2021. Total 27 technical persons and civil engineers working in various rural & urban municipal offices participated in the 3-day training held at Godavari Lalitpur.

#### Series of Community Orientations held in program municipalities

A total of 26 community orientation programs have been conducted where a total of 956 persons oriented on disaster risk reduction and preparedness.

Events held in Tamakoshi (10 events with 437 participants), Kailari (10 events with 306 participants) and Chure (6 events with 192 participants) rural municipalities during the quarter.

### BEMR, DAT and CSAR trainings in Simta RM

Trainings on Basic Emergency Medical Response (BEMR), Damage Assessment Training (DAT) and Community level Search and Rescue (CSAR) have been organized in Simta Rural Municipality. 71 persons got trained.

# Sharing on 'Tomorrow's Cities' project activities

NSET presented the initial findings and research methodologies on 'Tomorrow's Cities' project in October 2021 in Kathmandu. Presenters and speakers included representatives from SIAS, IOE, TU and Practical Action.



The dissemination workshop was organized by South Asia Institute of Advanced Studies (SIAS) for local community of Khokana focusing on the Ward level Disaster Risk Management committee members.

The event also included a session on participatory hazard mapping.

#### ENHANCING PREPAREDNESS AND EMERGENCY RESPONSE CAPACITY

### Equipment installation and handover at PHEOCs and LEOCs conducted under PEER

NSET made needful modifications in the implementation of Program for Enhancement of Emergency Response (PEER) by realigning the approved and remaining obligated program funding for the new program activities because of COVID-19 adverse situation.

Information and Communication Technologies (ICT) equipment sets were distributed to Health Emergency Operation Center (HEOC), Ministry of Health and Population (MOHP), Provincial Health Operation Centers (PHEOCs) and Local Emergency Operation Centers (LEOCs). Provincial Health Operation Centers (PHEOCs) of all the provinces were handed over the ICT equipment's. Similarly, 5 Local Emergency Operation Centers (LEOCs) namely, Vyas Municipality, Simta Rural Municipality, Mahalaxmi Municipality, Baijanath Rural Municipality and Kailari Rural Municipality were provided ICT equipment.



LEOC of Vyas Municipality



PHEOC of Province no. 1 in Biratnagar

**Orientations for Security persons on DRR basics** 



LEOC, Mahalaxmi Municipality



LEOC of Baijanath Rural Municipality

Handover of some ambulance/hospital equipment to 2 selected hospitals

NSET also provided some inkind assistance support to selected ambulance groups (of Government hospitals) for strengthening rapid and appropriate pre-hospital care (e.g., AED and other lifesaving equipment). District Hospital, Sindhupalchok and Baitadi were handed over the ambulance/ hospital equipment.



PHEOC of Karnali Province in Surkhet



LEOC of Simta RM





NSET's DPER division facilitated visits by Nepal Police and Armed Police Force, Nepal. During Disaster Management Training, there is a regular NSET learning visit from security forces as part of the regular curriculum. NSET facilitates theory session and

facilitates theory session and demo of response equipment.

#### HOPE training conducted

NSET facilitated Hospital Preparedness for Emergencies (HOPE) course organized by NDRRMA and funded by UNDP during December 24-28, 2021, in Dhulikhel, Nepal. There were total 23 participants.



Doctors and nurses from working at various hospitals from the valley were also a part of the training. A total of 6 instructors involving a monitor and a course coordinator delivered 26 lessons of HOPE enhancing and sharing information to participants about hospital-based preparedness.

#### MAKING RESILIENT SCHOOLS: EFFORTS ON SCHOOL SAFETY

#### **NSSP** formally concluded

The Nepal Safer Schools Project (NSSP), a DfID funded project was designed 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 was a consortium of Crown Agents, Save the Children, Arup international and NSET.

The Nepal Safer Schools Project (NSSP) was originally conceptualized as a five-year project with three major outputs:

- Safer learning facilities, particularly through seismically-resilient 1. retrofitting and rebuilding;
- School-level disaster management and resilience (DRR) education and 2. awareness:
- 3. National-level technical assistance for safer learning facilities and Disaster Risk Reduction.





focal teachers on school safety; support in conducting Vulnerability and Capacity Assessments (VCAs) and incorporating Disaster Risk Reduction (DRR) components into School Improvement Plans; and making schools physical infrastructure safer, including a trial of retrofit methodologies on four schools in Achham, Bardiya, and Surkhet.

Due to changes in funding priorities to support the Covid-19 response, the Nepal Safer Schools Project was closed early. All field activities were completed in July 2021 and the Project closed in its third year in September 2021. Therefore, the NSSP targets were revised to reflect the early closure and amended budget of the Project.

The following the are key achievements at output level.

#### **KEY PROJECT NUMBERS** Students and teachers 4.135 attending safer schools Classrooms retrofitted or rebuilt 97 to improve earthquake resilience\*

Masons trained

Teachers trained

in school safety

355

497

Plans prepared

under

the

and

in

Bardiya,

Surkhet

worked

Minimum

portfolio

Sudurpaschim

municipalities

and

NSSP

closely with 52 schools

to improve school safety

through a range of activities that follows the Government of Nepal's

**Comprehensive School** 

Package requirements.

This included training of

The

Safetv

#### School-level Complaint 48 Response Mechanisms (CRM) put in place Municipalities supported in 5 integrating DRR into the local curriculum, and support for integrating DRR content into the national-level Grade 1 curriculum 17 50 Municipal-level School Improvement Plans Education Contigency drafted or updated to include DRR components

rofitted in schools outside of the project with technical support from NSSP driven by demand from the schools

#### **RESPONDING TO COVID-19** Schools provided with NFI kits including 52 non-contact thermometers, masks, and cleaning and hand washing products to help nitioate the spread of Covid-19 Municipality requests for Covid-19 17 response support recei to with additional NFIs contributions fo Handwashing stations installed 104 50% with accessibility ramps Toilets constructed 52 CDGF (child, gender, and disability friendly/ compatible Students supported in accessing distance education Teachers trained in Psychosocial First Aid People from highly vulnerable backgrounds provided work opportunities on NSSP sites

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#### MAKING RESILIENT COMMUNITIES: COMMUNITY FOCUSED DRM EFFORTS

# Capacity building of Local communities at Pasanglhamu RM, Solukhumbu

Capacity building of local communities of Kharikhola, Ward No 1 of Khumbu Pasanglhamu Rural Municipality, Solukhumbu on Disaster Risk Management initiated from 16 November 2021. Capacity Building of the Kharikhola inhabitants include a series of mass awareness programs in the community at the first stage. In the second stage selected participants of the mass awareness programs will be involved in a training workshop on hazard mapping of the local community. The prepared hazard map during the workshop will be revised and submitted to the Ward Office 1 of the Khumbu Pasanglhamu Rural Municipality. Total 24 residents of Ward No 1 of Khumbu Pasanglhamu Rural Municipality participated in the first event of the series. Other orientation programs along with the Hazard Mapping workshops is being continued. Communities of Kharikhola had identified awareness



raising, education and training on Disaster as the priority action to be implemented in their community in the VFL survey conducted.

A structured VFL survey was conducted to get the local actor's perspectives on risk assessment of the community in 15 different

communities of Nepal. The results obtained from the survey was then shared with the communities so that the communities themselves identify and prioritize the local level actions to be taken further. The survey not only captured local perspectives on risk and resilience, but also monitored the extent to which local actors are included in resilience-planning processes. It helped establish a local baseline and local monitoring process to measure progress towards achieving an inclusive, people-centred approach to resilience-building, as promoted within the Sendai Framework for DRR and associated frameworks. NSET is serving as the National Coordinating Organization for implementing the Views from the Frontline Program (VFL 2019) in Nepal. Forum for Awareness and Youth Activity (FAYA), Fulvari Integrated Rural Development Organization (FIRDO), Friends Service Council Nepal (FSCN) and Nava Prabhat Nepal are the four POs supporting the implementation of the program.

## Pratibaddhha conducting community-based interactions on landslide risk management

NSET along with PIN, SWN, DU and NU, is implementing the program "Riskinformed Landslide Management in Nepal's Hill Areas (Pratibaddhha) in Dolakha and Sindupalchowk districts of province 3 in 119 municipal units in the province with 1121 ward offices. Pratibaddha aims to work in the grass root level to enhance the understanding of communities regarding landslide risk and their relationship with human activities. The principal objective of the program is to increase the resilience of communities in rural hill areas of Nepal through the effective mitigation and management of landslides. As part of sensitizing people, communities, local authorities, and members of local disaster risk reduction committee to understand landslides, their risk and interrelation of human activities with landslides through community-based orientations, ward and municipal level workshops. IEC materials and innovate landslide models like LDEM and P3DM. During the period, the project was dedicated mostly in scaling of communitybased interactions, piloting of ward level workshops. The below are the lists of activities.

### Community level orientation using LDEM

38 Live demonstrations were carried out in this quarter where 984 people participated. The demonstrations were held at all the municipal units of program area. The manual for the demonstration was developed in the first quarter of the project. The manual along with the content and curriculum of orientation was used to ensure holistic knowledge on LS, their risk, risk mitigating strategies, preparedness and response are imparted to the participants. Further, LS calendars were also distributed to the participants. The distribution of participants as per their gender, profession, family size, profession, education and vulnerability have been depicted in figures below.

#### Ward level workshops

10 ward level workshops were piloted on 6 wards of Tamakoshi RM and 4 wards of Barabise UM in this period. 3 different models were prepared and used for these 10 workshops. The layers cut by the CNC machine were glued together and filed using a paper sand to get a uniform surface. The model later was

taken to community for workshop where they plotted different attributes like rivers, roads, LS, infrastructures etc. upon plotting on the model it was used to describe how our development works were affected by LS and also how some of our development works specially roads exacerbated LS. The model was also used as a planning tool to identify some prospects of development works and also to identify areas where LS risk reduction works are required.

Total 211 participants participated in the workshops where 136 were male while 75 were female. The participants were selected as per their profession

participants comprised and mostlv of local authorities. political leaders. students. development members of committee. qumba and volunteers. The database of the participants can be assessed on projects google drive.

#### **OTHER ACTIVITIES**

#### Research activity under Sajag Nepal kicked off

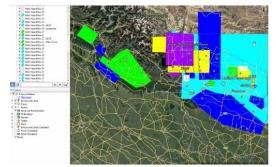
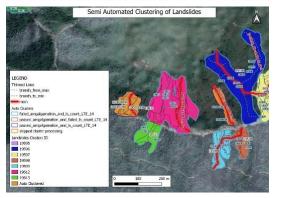


Figure 1: Collation of Landslide inventory marked in Google Earth depicting their location for further analysis



Sajag-Nepal is a research (Planning project and preparedness for the mountain hazard and risk chain in Nepal: 2020 - 2023) funded by UK Global Challenges Research Fund: Multi-Hazards and Systemic Risks.

The project aims to improve decision-making and preparedness in order to mitigate the impacts and reduce the risks from the mountain hazard chain in Nepal with the objectives to contextualize the contemporary multi-hazard and systemic risk landscape in Nepal, and develop the first national-scale multihazard inventory, Develop national-scale preparedness plans for earthquake-related

multi-hazards (support GoN/UN RCO), Develop national- and municipalityscale plans for seasonal, monsoon-related multi-hazards and Develop new ways to embed local, natural, and social scientific knowledge of the mountain hazard and risk chain in preparedness and response.

It has multidisciplinary project team and equitable partnership between practitioners, government, and academics from Nepal, the UK, Canada and New Zealand, with shared interests in and responsibilities for improving disaster risk management in Nepal.

The project partners include Government of Nepal (MoHA), Durham University, Northumbria University, University of Canterbury, Newcastle

University, NSET. Social Science Baha, DFID, University of Oxford, Asian Disaster Reduction and Response Network (ADRRN), Tribhuvan University, University of Bristol, Nepal: RCO UN & HCT. Auckland. University of University of British Columbia, BBC Media Action, Flowminder.

The major activities) are Working in coordination with UNRCO, NDRRMA and humanitarian cluster at National and provincial level in lieu of monsoon response Monsoon and Emergency Response and Preparedness Plan, Clustering of existing landslide inventory data, Categorization of the landslide inventories: Collation of existing landslide inventories, developing Online Questionnaire form on Landslide Mapping in Nepal and Prepare a database of 100 landslide events (2018-2021) based on ranked impact (Fatalities). Until December 2021, it has been accomplished the activities like collation of landslide inventory marked Google Earth in depicting their location for further analysis.

For more information, please contact us:



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