



TAYAR NEPAL – IMPROVED DISASTER RISK MANAGEMENT PROJECT

Year 2 Progress Summary | November 2021



PHOTO CREDIT: AURA CREATIONS FOR USAID

YEAR 2 PROGRESS SUMMARY

USAID's Tayar Nepal—which means “prepared Nepal”—is USAID's flagship disaster risk reduction and management (DRRM) activity that strengthens the capacity of national and sub-national institutions responsible for disaster risk reduction, preparedness, and response. The project works with the Government of Nepal (GoN), selected municipalities, the private sector, and other stakeholders to jointly improve Nepal's preparedness, response, and recovery actions—both from the bottom-up and top-down.

Tayar Nepal's second year was unfortunately fraught with many disasters in Nepal—and globally. The project year started off with a long-feared spike in COVID-19 cases (the country's first wave) and renewed concern countrywide. The total number of positive cases to date has exceeded 900,000, with a 1.4% fatality rate as of October 2021. In recent months, the daily rate of positive cases has declined to below 500 on average. Nepal's first COVID wave around August 2020 followed the lifting of an extended four-month lockdown from earlier in the year that limited the initial spread of the disease, but also left many communities in dire economic straits. At USAID's direction, the project activated its Component 3 Task Order to provide immediate economic relief to most vulnerable populations through cash for work and conditional cash grants (the results from the Task Order are summarized in a separate Final Report that details activities from July 2020 – January 2021).

As winter approached in Nepal, many regions of the Terai experienced severe cold waves, leaving their most vulnerable, such as the elderly, at risk. Two Municipal Emergency Operation Centers (MEOCs) that Tayar Nepal previously activated took proactive steps to provide cold wave relief by distributing warm clothes and blankets to nearly 3,000 vulnerable senior citizens using their own funds. Next, a winter drought and inadequate prevention and response measures led to a series of uncontrolled wildfires throughout the country, burning from November 2020 through May 2021, at some points with over 6,700 active fires across the country. This exacerbated Nepal's already bad air pollution status, bring the air quality index to a whopping 500¹ on January 4, 2021 (the highest rating globally on that day). During this time, Tayar Nepal advised the National Disaster Risk Reduction and Management Authority (NDRRMA)—Nepal's leading disaster response and preparedness entity—so they could communicate important fire safety messages to keep the public safer and prevent the further spread of wildfires.

As the temperatures rose during the spring, the country experienced a brief period of relief as the fires subsided and air quality slightly improved. However, in April 2021, an even deadlier and more contagious strain of COVID-19, the Delta variant, reached Nepal's doorsteps, bringing a devastating second wave to the country's minimally vaccinated population. Hospitals quickly filled up, oxygen supply was depleted, and the COVID death rate took a grim turn. Again, Tayar Nepal responded with medical supplies and volunteers to staff helpdesks and information centers. Lastly, Nepal experienced one of the most unrelenting monsoons this year, starting early and ending later than usual, bringing with it devastating floods and landslides, death and property damage, and crop inundation that devastated farming communities. In sum, Year 2 was a tough one, especially for the Nepali people.

Despite these challenges, more than 25,000 Nepalis are safer because of project interventions. Over the past two years, the project helped prepare the federal government and partner municipalities to cope with disasters. Tayar Nepal helped local governments develop disaster preparedness plans,

¹ <https://www.nepalitimes.com/latest/kathmandu-air-pollution-hits-record-high/>

establish coordination and response mechanisms, practice their disaster responses, and allocate emergency funds—all of which helped save lives and property during this year’s back-to-back disasters.

A huge part of DRR is effective disaster and risk communication. As a result of Tayar Nepal’s targeted technical and communications support to NDRRMA, which reached over 4 million Nepalis in Year 2, NDRRMA is now more capable of keeping citizens informed and safe by producing and disseminating informative hazard-related products, IEC materials, and disaster bulletins on their increasingly popular social media platforms. During this year’s disasters, NDRRMA consistently produced and posted hazard-related messages on the country’s latest crises. From communicating wildfire control and prevention measures and hosting media events to raise awareness on fire-affected communities, to posting messages on flood and landslide safety, and publishing daily situation reports that were cited by the media, NDRRMA filled its important role as Nepal’s leading DRR resource this year. Similarly, the project further supported NDRRMA in becoming fully operational by handing over IT equipment and vehicles. In addition, the National Disaster Risk Communications Strategy 2021 was handed over to NDRRMA which will help provide a roadmap on the approaches to communications and outreach in the coming days.

Some disasters are somewhat predictable, like monsoon floods and landslides, and others come with little warning, like COVID-19. To equip Nepal to handle either, Tayar Nepal completed its annual Political Economic Analysis (PEA) in June 2021 to help prioritize and target DRRM interventions and resources. The project also helped the Ministry of Federal Affairs and General Administration (MoFAGA) develop a Socio-Economic Framework to guide the government in establishing the plans and resources it needs to cope with whichever disaster comes next—from preparing recovery plans, to assessing damages and losses, and conducting Post-Disaster Needs Assessments (PDNA).

Following Tayar Nepal’s targeted municipal support, the project’s partner municipalities now have better functioning Ward- and Local- Disaster Management Committees (WDMCs and LDMCs) that are activated, properly equipped, and mobilized for effective coordination during disasters. Tayar Nepal completed the set-up of Environment and Disaster Management Sections (EDMSs) in each of its partner municipalities in addition to actively supporting all municipalities with prioritizing DRRM activities and allocating DRRM budgets into their municipal annual plans.

The previously stalled (due to COVID-19) implementation of Tayar Nepal’s “quick win” DRR mitigation projects gained momentum at the end of Year 2, with some activities already nearing completion. These include disaster mitigation programs, like foot trail construction in Bhimeswor, flood and landslide mitigation in Birendranagar and Dullu, gully work for flood prevention in Lamkichuha, and Compressed Stabilized Earth Blocks (CSEB) training in Tulsipur, Rajapur, and Lamkichuha.

Finally, Tayar Nepal completed multi-hazard risk assessments and multi-sectoral vulnerability assessments as a part of ongoing efforts to complete tailored Risk Sensitive Land Use Plans (RSLUPs) for each partner municipality. All RSLUPs will be completed in Year 3 and Tayar Nepal will help each of eight partner municipalities identify specific priority DRR actions and projects to mitigate disaster risks.

Below are summaries of Tayar Nepal’s approach and contributions to date, across a range of disasters, as well as Year 2 results by project component

MONSOON (FLOOD/LANDSLIDE)

Disaster Synopsis

Nepal's recurring monsoon season creates frequent landslides and floods throughout the country. Landslides are prevalent in Nepal's hilly slopes, mid-hills, and high Himalaya terrains, while heavy flooding is common in the low lying Terai region. Continuous rains across the country during monsoon (June-September) caused floods and landslides in 56 districts this year—including all of Tayar Nepal's partner municipalities. This year, a sudden and extreme rainfall one month after monsoon submerged and destroyed around 325,258 tons of ready-to-harvest paddy on 85,580 hectares across seven provinces, according to preliminary estimates. The resulting floods following the unseasonal torrential rains in mid-October killed more than 100 people and left settlements in several districts awash in water¹.

Tayar Nepal's monsoon-related disaster response

Tayar Nepal supports micro- and medium-scale landslide and flood mitigation projects across its partner municipalities to create safer settlements by using adaptable, replicable, and scalable low-cost bioengineering technologies. Tayar Nepal also helps municipalities develop DRRM policy documents, such as DRRM Acts, DRR Policies, DRR Strategic Plans of Action, DRRM Fund Mobilization Guidelines, Standard Operating Procedures for Emergency Operation Centers, Municipal Platforms for DRR Guidelines, and household disaster preparedness plans. These policies and guidelines help municipalities plan for and respond to recurring monsoon-related disasters. Tayar Nepal also helps municipalities set up and strengthen DRRM institutions, like Environment and Disaster Management Sections (EDMS), Municipal Emergency Operation Centers (MEOCs), and to form and activate Local and Ward Disaster Management Committees (LDMCs / WDMCs)—all of which can improve long-term disaster preparedness and resilience.

¹ <https://kathmandupost.com/money/2021/10/24/october-rains-damage-record-rs8-26-billion-of-paddy-crop>

Monsoon-related disaster support – in numbers

- **8 MEOCs** established and strengthened in partner municipalities through equipment support, development of SOPs, BIPAD system localization, initial rapid assessment training, and emergency logistic management training.
- **2.4% of municipal budgets** in partner municipalities allocated for DRR for fiscal year FY 2078/79 (FY 2021/22) and three municipalities – Godawari, Lamkihchuwa and Birendranagar – established dedicated DRRM funds.
- **23,350 people (3,800 households)** safer from floods and landslides as the result of Tayar Nepal's quick win DRR projects.
- **700 households** in highly flood-prone areas protected by flood mitigation projects in Birendranagar, Godawari, Lamkihchuwa and Thakurbaba. In addition, an additional 700 households and 800 school children are indirectly benefitting in Birendranagar.
- **80 households and 12 government offices** protected through adaptable, replicable, and scalable low-cost bio-engineering technologies for landslide mitigation in Dullu and Bhimeswor Municipalities and Chaurideurali Rural Municipality while also conserving popular tourism destinations that attract hikers and visitors.



People evacuating from their homes from the recent flood in Rajapur, Ward 1, to find shelter in Daulatpur School. Photo credit: Lok Narayan Pokharel for USAID

Future plans

Tayar Nepal will continue to strengthen MEOCs and DEOCs, improve policy documents, and implement mitigation activities to help local governments deal with landslides and floods.

“Every year, Rajapur Municipality suffers from floods. We have been creating plans to tackle disasters by managing search and rescue materials. However, due to our lack of appropriate skills, knowledge and understanding, our preparedness was not systematic. After the tabletop exercise conducted by NDRRMA and USAID's Tayar Nepal, our approach to planning for disasters became more systematic, coordinated, and collaborative. We have improved on our resource mobilization, early warning system, and dissemination of information to communities.

- Ms. Manakala Chaudhary, Deputy Mayor, Rajapur Municipality



CLIMATE CHANGE ADAPTATION

Disaster Synopsis

Millions of people in Nepal are directly impacted by climate change, from worsening annual floods and river cutting, to monsoon-induced landslides, heat waves, cold waves, and increasing forest fires—including the worst Nepal has seen in years. These weather events cause human casualties, reduce agricultural production, limit food security, strain water resources, and result in the loss of forests and biodiversity, as well as damaged infrastructure and homes. The trend of unpredictable and worsening weather events continues, with a heavy cost.

Tayar Nepal's approach to climate change adaptation

Tayar Nepal prioritizes climate change mitigation and adaptation and works to address climate stressors caused by: **1) precipitation variability and water availability** (i.e. drought/flood/hail/lightning/decreased snowmelt); **2) temperature variability** (extreme hot/cold seasons); **3) increased fire risk**; and **4) glacial lake outburst flooding (GLOF)**. Through scientific studies that assess climate change data, support improving disaster data platforms, and municipal support to establish early warning systems, the project addresses climate change by emphasizing multi-hazard awareness and preparedness. Tayar Nepal improves governance systems to manage climate risks through disaster preparedness plans; helps form, equip, and empower DRR governance structures; and builds capacity and raises awareness of DRR committees and citizens to manage known climate risks. Tayar Nepal's climate change adaptation and mitigation practices also include piloting climate smart infrastructure and approaches, like bioengineering for landslide mitigation, production of eco-friendly compressed stabilized earth bricks, and risk sharing through index-based agriculture insurance. These activities contribute to USAID's Climate Change and Development Strategy (2022-2033/Draft).



Climate change adaptation response – in numbers:

- **8 multi-hazard risk assessments** (one in each partner municipality) conducted to analyze prevalent climate-related hazards, like floods, landslides, lightning, fires, and cold/heat waves. These will inform tailored risk sensitive land use plans (RSLUPs) to help municipalities reduce disaster risk.
- **2 simulation exercises** on monsoon preparedness and response held to help municipal and federal officials, disaster responders, and civilians better prepare for and respond to various disaster scenarios.
- **3+ million people** reached with life-saving content on climate-related hazards through NDRRMA's social media outreach, supported by Tayar Nepal.
- **14 municipalities** localized disaster information platform (BIPAD), enabling them to maintain and manage their own data on climate change to guide annual planning and budgeting.
- **588 vulnerable households** protected from common disasters through household disaster preparedness and response plans.
- **400 households** mitigated hazards through low-cost bio-engineering technologies.
- **240 households** have access to improved livelihoods through bio-gardening tools.
- **182 trainees** in community fire safety further raised awareness of **6,000+ people** on fire safety.

Future plans

Tayar Nepal is developing tailored risk sensitive land use plans in eight municipalities that will identify hazard-prone areas with required mitigation and adaptation measures for municipalities to mainstream into their annual plans. The project will complete eco-tourism, gully-protection, landslide protection, and flood retaining initiatives, in addition to expanding bioengineering and eco-friendly construction work. The project is training local masons in low-cost and safe bamboo house construction. To further mitigate climate risks, the project will expand disaster simulation exercises in two municipalities, roll out a disaster data management system at sub-national levels, and will promote climate smart technologies, like solar pump irrigation in its working areas.

A local resident being trained to operate the weather advisory and early warning system (EWS) in remote areas of Mustang, northern Nepal.
Photo Credit: WindPower Nepal for USAID



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The installation of the weather advisory and early warning system has increased awareness among locals on weather-induced hazards and empowered them to seek weather related information and forecasts. We always try to keep ourselves updated about weather forecasts, as it helps us prepare accordingly. We certainly feel safer now as we know that we will receive timely information on weather events.

- Local resident, Nyima Gurung

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FIRES/ DROUGHT/ LIGHTNING



Disaster Synopsis

In Nepal, the human and economic cost of lightning, drought, and fires worsens each year. In the last five months alone, lightning has caused 48 casualties, 131 injuries, and losses worth around USD 141,000. Drought is also common in Nepal's lowlands and western hills. Since 2002, the country has experienced frequent dry spells, which have the most severe impacts on farmers. Wildfires and household fires are also common. The country recorded around 730 fire incidents in the past five months, resulting in 16 casualties, 127 injuries, and property losses of around USD 6.5 million.

Tayar Nepal's response to fires/drought/lightning

Tayar Nepal is helping to build the country's capacity to manage lightning hazards through demonstrations on lightning safety technologies and by improving the technical capacity of municipal electricians and local entrepreneurs, in addition to raising public awareness on lightning safety measures. To ease the impact of droughts, Tayar Nepal is promoting drought-tolerant seed production in eight municipalities and collaborating with the private sector to develop agriculture index insurance products to protect farmers from losses due to weather events. The project implemented an extensive community fire risk reduction training program in seven urban municipalities to build local capacity to reduce fire risk, ensure fire-safe structures, and maintain fire safety equipment. The project also supported NDRRMA with communications capacity to raise public awareness on fire (and other hazard) preparedness through social media channels.

Fires/Drought/Lightning support – in numbers

- **7 public buildings** (including 3 schools, 3 health posts, and 1 ward office) in Neelakantha Municipality identified for demonstrations of replicable lightning protection technology.
- **1,000 outreach products** (300 brochures and 700 posters) distributed, and 9 awareness events held to raise public awareness on lightning safety.
- **3 training modules for 40 participants**, including local technicians and electricians, conducted on lightning protection systems.
- **144 farmers** supported with drought-tolerant seeds over **106 hectares**, with estimated seed production of **160 metric tons**.
- **182 people** trained in firefighting safety techniques, and Community Fire Risk Reduction Guidelines drafted for wider use.

Future plans

Based on learnings from the lightning technology demonstrations, Neelakantha Municipality plans to replicate the same in other public and private buildings and to share learnings in twin municipalities. To mitigate drought hazard, Tayar Nepal will provide training to farmers on drought-resistant seed production technologies and will develop agriculture index insurance products to help protect farmers from weather and climate-related losses. Lastly, Tayar Nepal will continue to help municipalities mitigate fire risk by raising their awareness and capacity to prevent and manage fires through practical trainings and drills.



Awareness posters and brochures handed to school children to raise awareness on lightning hazards
Photo credit: Scott Wilson Nepal for USAID



The work Tayar Nepal is doing will not just help save lives and property, but it will set a path for implementing lightning protection systems that are compliant to the International Electrotechnical Commission (IEC) and ensuring that lightning protection is incorporated in policies by the local government.

- Mr. Tulasi Ram Paudel, Chief Administrative Officer, Neelakantha Municipality



EARTHQUAKES

Disaster Synopsis

Lying in the most seismically active region in the world and ranked 11th for earthquake vulnerability, Nepal has suffered from numerous earthquake-related disasters over the years. In 2015, the massive 7.8 magnitude 'Gorkha' earthquake killed more than 9,000 people and damaged or destroyed over 600,000 structures. The overall damage is estimated at around USD 10 billion. In the past year alone (October 2020-September 2021), Nepal has witnessed 35 separate earthquakes, although fatalities, injuries, and damage remained minimal.

Tayar Nepal's response to earthquakes

Tayar Nepal considers risk sensitive land use planning (RSLUP) to be a vital instrument to help local governments improve their own disaster resilience. Tayar Nepal conducted foundational studies to integrate earthquake risk parameters into municipal planning and implementation mechanisms, including zoning ordinances, building regulations, and investment programs to promote safer settlements. Tayar Nepal provides technical support to help municipalities implement Nepal's National Building Code, and the project is developing a pilot institutional mechanism to promote retrofitting for residential buildings, with demonstration houses for earthquake-, flood- and fire-resilient buildings.

Earthquake support – in numbers:

- **8 seismic hazard assessments** (one in each partner municipality) conducted as part of multi-hazard risk assessments and land use planning.
- **28 engineers and 41 social mobilizers** in Ghorahi and Tulsipur trained in seismic retrofitting and earthquake-resilient construction, and **30 masons** received on-the-job retrofitting training. Retrofitting handbook also developed and disseminated for further capacity building.
- **500+ homeowners and community members** sensitized on earthquake risk, preparedness, earthquake safe construction, and risk mitigation measures.
- **3 residential buildings** retrofitted as demonstration buildings, and model framework for economic incentives initiated to further promote retrofitting of residential buildings.



Mason trainees who completed on-the-job training developed by USAID's Baliyo Ghar program on retrofitting construction practices put their new skills to use under a Tayar Nepal grant on seismic retrofitting of residential buildings led by NSET in Tulsipur and Ghorahi Sub-Metropolitan cities. Photo credit: NSET for USAID.

Future plans

As a part of multi-hazard risk assessments, Tayar Nepal will finalize seismic hazard assessments and will complete tailored RSLUPs for each municipality. The project will also support implementation of an e-building permit system and will continue to construct demonstration buildings resilient to various hazards. Lastly, Tayar Nepal will continue to build the capacity of masons and construction-related stakeholders in hazard-safe techniques.



I knew very little about retrofitting before, but now, through this training and opportunity to practically apply the techniques in building construction, I am equipped with skills and knowledge on retrofitting that helps to promote safe buildings.

- Rajendra Gharti Magar, a mason worker trained in retrofitting by Tayar Nepal



COVID-19

(Non-Task Order Response)

Disaster Synopsis

As the second wave of COVID-19 hit Nepal in mid-2021, local governments were not prepared to deal with the massive surge in COVID-19 cases. They were in dire need of essential medical supplies and safety gear to provide basic care and services. Health posts struggled with limited resources, lack of physical facilities, and limited hospital beds and equipment, like thermometers, masks, and sanitizers. Tayar Nepal supported its eight partner municipalities with urgently needed COVID-19 safety supplies and human resource support. According to Nepal's Ministry of Health and Population, Nepal's COVID-19 positive caseload reached 800,997 by mid-October 2021, with a 96.7% recovery rate.

Tayar Nepal's response to COVID-19

At the peak of the COVID-19 crisis, municipalities saw a huge influx of migrant workers from India. Tayar Nepal's partner municipalities were among the hardest hit, and they requested support ensuring a basic standard of quality, sanitation, and safety at their quarantine and health centers. Tayar Nepal completed a rapid assessment and identified specific items needed in the quarantine centers to improve their current standards. The project then supported municipalities in their COVID-19 response by providing safety materials, mobilizing volunteers in isolation centers and health centers, raising awareness and managing the flow of COVID-19 information; and re-activating helpdesks to disseminate key information in communities.



Volunteers at the Godawari Municipality COVID-19 help desk provide sanitizer to a disabled person before checking his temperature. Tayar Nepal helped activate helpdesks and mobilize volunteers across its partner municipalities. Tayar Nepal for USAID.

COVID-19 support—in numbers

Tayar Nepal equipped its eight partner municipalities with essential supplies, including:

- **500+** sets of PPE, **3,000** boxes of masks, **200** liters of sanitizer, **124** thermal guns, **80** oximeters, and **100+** isolation/hospital beds distributed in Tayar Nepal's eight partner municipalities.
- **51** volunteers mobilized to manage new or re-activated emergency help desks and to provide COVID-19 information at hospitals or isolation centers.
- **10,208** people received information, resources, or support from help desks and mobilized volunteers within six weeks of Nepal's second COVID-19 wave.

Future plans

Tayar Nepal held a sharing workshop among municipal officials and partners to document lessons learned from this COVID-19 emergency response support to inform similar emergency support in the future. The project learned that the material and human resource support was timely and valuable to municipalities in serving more individuals and enhancing the quality of services provided by the municipality and health units.

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The timely support we received during this pandemic was very beneficial to the hospital and its staff. The recently established helpdesk provided us with much needed relief and support in our daily work. We had a human resource shortage, but the team of volunteers has supported us with counselling, reporting, and running the lab. The eight beds we have received will go a long way in helping our efforts to fight this pandemic. I appreciate all the organizations for their support specially USAID and Tayar Nepal.

-Dr. Binod Dangal, Chief, Charikot Hospital, Bhimeshwar

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IMPROVING NATIONAL GOVERNANCE THROUGH GUIDELINES, STRATEGIES AND PLANS

-  National Disaster Risk Communication Strategy 2021
-  Model Socio-Economic Recovery Planning Framework for Municipalities – MoFAGA
-  Simulation Guidebook for NDRRMA
-  BIPAD Localization Standard Operating Procedure (SOP)

“It was a great learning experience for all participants, especially for officials from NDRRMA. It helped develop our capacity to lead TTX, from design to implementation and to customize the concept to a Nepalese context. Today’s learnings will help us design a tailor-made model on TTX that we will disseminate across the country.”

- Krishna Hari Pushkar
Joint Secretary, MoHA, NDRRMA

CAPACITY BUILDING THROUGH EQUIPMENT SUPPORT



Improved communication and outreach at NDRRMA through essential equipment support



Municipalities can now coordinate with EOCs and security agencies more quickly with newly installed teleconference equipment and VHF sets.

BUILDING CAPACITY AT NATIONAL LEVEL TO ENHANCE DISASTER RESILIENCE

STRATEGIC COMMUNICATIONS AND OUTREACH

4+ MILLION
people reached through social media

3.8+ MILLION
people reached through Dhukka TV series and YouTube video outreach

IMPROVE DRRM DATA INFORMATION PLATFORM



115,000+

data integrated in BIPAD portal on educational institutions, healthcare facilities, security stations, LEOCs, and others

BUILDING CAPACITY ON DRRM AT NATIONAL LEVEL

243 People trained on Disaster Preparedness at National level

18 People trained in Early Warning System

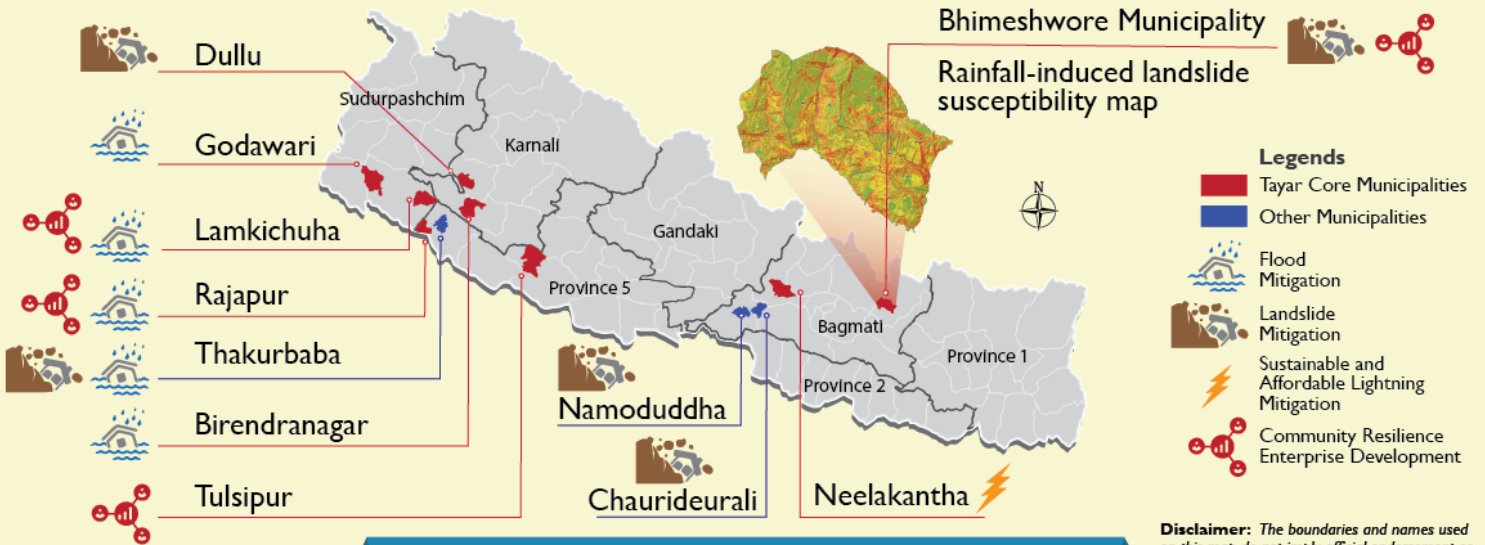
24 People trained on DRR & Eco – Tourism

170 People trained in Monsoon Preparedness and Response through Tabletop Exercise

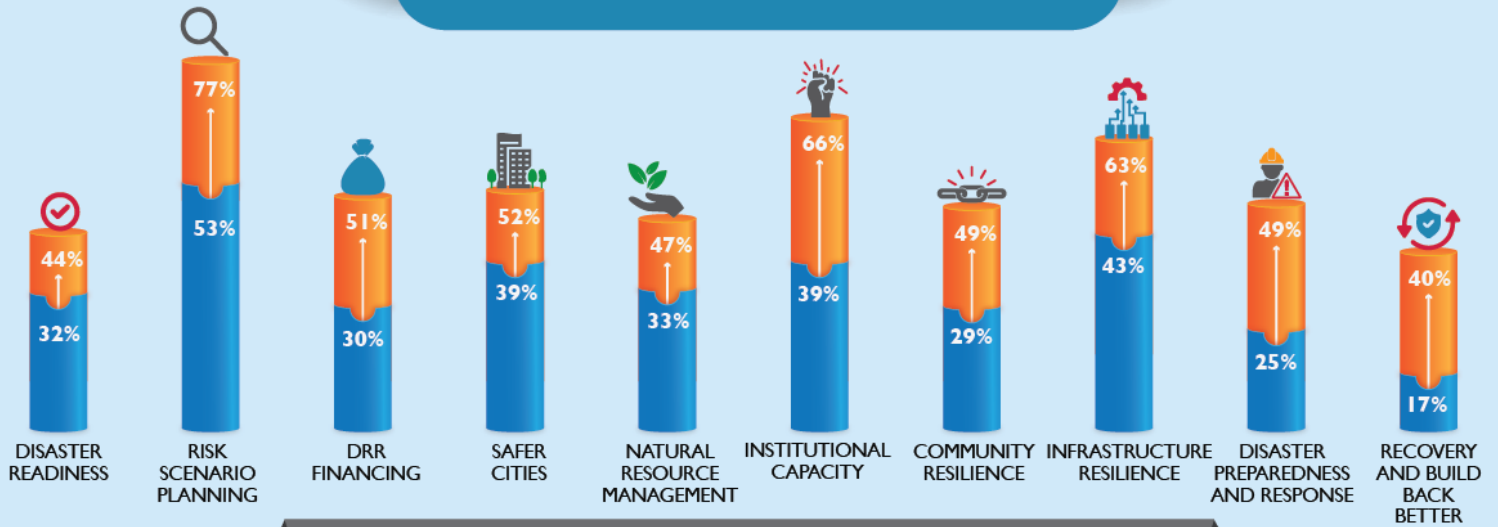
31 Trained on Simulation Playbook TOT



SUPPORT TO BUILD MUNICIPAL AND COMMUNITY CAPACITY ON DRRM



CHANGES IN DRRM INDEX SCORES



CAPACITY BUILDING ON DISASTER PREPAREDNESS AND PLANNING



IMPROVING LOCAL GOVERNANCE THROUGH ACTS, GUIDELINES, AND PLANS



SOCIO-ECONOMIC RECOVERY RESPONSE ON COVID-19

