POST PROJECT SUSTAINABILITY (PPS) STUDY FOR VISTAR-II PROJECT

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Acronyms

AIDS	Acquired Immuo Deficiency Syndrome
AINTGDM	Association of International Non-Governmental Organization Task Group on Disaster Management
CBDP	Community Based Disaster Preparedness
CBEWS	Community Based Early Warning System
CBA	Cost Benefit Analysis
CCSD	Conscious Society for Social Development
CBO	Community Based Organization
CDMC	Community Disaster Management Committee
COVID	Corona Virus Disease
CREHSS	Center for Research on Education Health and Social Sciences
DDMC	District Disaster Management Committee
DDMP	District Disaster Management Plan
DDRT	District Disaster Response Team
DEOC	District Emergency Operation Centre
DEOC	District Emergency Operation Committee
DM	Disaster Management
DMC	Disaster Management Committee
DPRP	Disaster Preparedness and Response Plan
DPNet	Disaster Preparedness Network- Nepal
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EDCD	Epidemiological Disease Control Division
EWARS	Early Warning and Reporting System
EWS	Early Warning System
FGD	Focus Group Discussion
FHRD	Forum for Human Rights and Disabled Nepal
GESI	Gender Equality and Social Inclusion
GoN	Government of Nepal
HH	Household
HIV	Human Immuno Deficiency Virus
KII	Key Informant Interviews
LDCRP	Local Disaster and Climate Resilient Plan
LDMCs	Local Disaster Management Committees
LDRMP	Local Disaster Risk Management Planning
MoFAGA	Ministry of Federal Affairs and General Admin.
MoHA	Ministry of Home Affairs
MoHP	Ministry of Health and Population
MT	Master Trainer
NDRRMA	National Disaster Risk Reduction and Management Authority
NGOs	Non-governmental Organization
NHRC	Nepal Health Research Council
NNSWA	Nepal National Social Welfare Association
NRCS	Nepal Redcross Society
NRRC	Nepal Risk Reduction Consortium
NPC	National Planning Commission
ODK	Open Data Kit
PPS	Post Project Sustainability
PSC	Psycho social Counselling
RM/M	Rural Municipality/Municipality
SIP	School Improvement Plan
SMC	School Management Committee
UNDP(CDRMP)	United Nations Development Program(Community Based Disaster Risk Management Plan)
VCA	Vulnerability and Capacity Assessment
VDC	Village Development Committee
VDCs	Village Development Committees
WASH	Water Sanitation and Hygiene
WDMC	Ward Disaster Management Committee

EXECUTIVE SUMMARY

Background:

Nepal is among the twenty most disaster-prone countries, globally affected by multiple recurrent hazards due to the diverse topography, complex geography, fragile geology, and highly varying climate. Every year the country suffers from significant loss of human lives and property due to natural and human-induced hazards such as floods, landslides, soil erosion, fire, road accidents, and epidemics. To build the resilience of communities and institutions from the impacts of natural disasters in Sudurpashchim and Lumbini Province of Nepal, CARE and Handicap International (HI) jointly implemented the VISTAR II project in Kailali, Dadeldhura, Kanchanpur, and Dang districts with a significant focus on standardizing and institutionalizing Community-Based Disaster Preparedness (CBDP) model that hasensuredthe engagement of multi-level stakeholders, schools, community level preparedness and mitigation, and advocating for inclusive DRM policy.

This project was funded by European Civil Protection and Humanitarian aid Operations department (ECHO) and implemented by local partners NRCS, CSSD, FHRD, and NNSWA. This project was for a period of 22 months from March 1, 2015 to December 31, 2016.

Objective:

The objective of this study was to examine the sustainability of the project results to better understand whether, how, and why the VISTAR-II project would be able to make lasting impacts to sustain a flow of benefits over time.

Methodology:

The PPS study adopted a sequential mix methods study design to collect quantitative data in the first phase, followed by qualitative data collection to triangulate and validate quantitative results with qualitative findings. Quantitative data was collected through a household survey and municipality-level key stakeholder survey. A total of 403 HHs (272 females and 131 males) respondents and 125 stakeholder (53 females and 72 males) were interviewed to gather quantitative information. Similarly, a total of 25 key stakeholders were interviewed, and six Focus Group Giscussions (FGD) were conducted with the community people (beneficiaries) to collect qualitative information. Whenever the differences between endline and PPS, and men and women have been examined statistically, the Test of Independence (Chi-square test) has been used at a 5 percentage significance level.

Resilience/ Capacity of Communities and Institutions

Anticipatory Capacity: The ability of individuals and groups to foresee risks of disasters that are likely to occur has increased significantly compared to the end-line survey. Similarly, based on the qualitative findings, the capacity of the groups formed during the VISTAR projects has increased. Almost half of the groups are functioning well. This includes community disaster management committees and early warning groups. However, the majority of these groups have been functioning in silos in the absence of their vertical connection. The groups which are functioning have their meetings at the community level when required and have funds for emergency purposes.

The knowledge on various types of disaster, which had increased for all types of disaster in the endline (24.5 in the baseline to 32.9 in the endline), also showed sustainability in the PPS study (44.08) in an average. The average changes show that there is an increasing trend in the knowledge among both women and men. However, the overall knowledge is still on the lower side. Similarly,

the average knowledge on the impacts of the disaster (loss of human life and property, epidemic, food and residence problem) was found to have increased in the endline (53.8 in the baseline to 63.1 in the endline), which remained almost the same during the PPS study (62.3). The trend shows that their knowledge regarding the impact of disasters among women and men has somehow been retained. Furthermore, the difference in knowledge between women and men is statistically insignificant.

It is impressive to note that the average knowledge regarding the different reasons for flood followed an increasing trend from the baseline to the PPS study (33.2 in the baseline to 46.3 in endline to 49.9 in the PPS). The knowledge of the reason for the flood is increasing, but it is still on the lower side (49.9%); against the anticipated list. The effect of climate change was expressed only by 15 percent of respondents. The qualitative study also has found lower knowledge on climate change.

Adaptive Capacity: The knowledge of traditional methods to mitigate the effects of disasters has been kept up at a higher side. The findings show that knowledge to mitigate the effects of the flood, prevent fire, mitigate the effect of fire, and knowledge about disaster management have significantly increased. Likewise, both men and women have been found more sensitized towards the needs and protection of the most vulnerable groups. During the FGDs, CDMC members clearly expressed that they are continuing to prioritize the most vulnerable groups during rescue and relief works. However, as there were fewer disaster reduction activities carried out in the schools during the year of PPS, partly caused by COVID-19, the respondents also expressed the need for school-level activities towards DRR activities. The adaptive capacity of the groups formed by VISTAR projects is mixed. The adaptive capacity of almost half of the groups has stayed well.

An overwhelming majority of the respondents in all baseline, endline, and PPS (above 90% each) mentioned there are traditional measures to tackle the effects of each disaster like flood, landslide, fire, and epidemic.

Likewise, the average level of understanding of the various risks and consequences of disasters such as human deaths and injuries, damage/loss of property, crops, infrastructures, etc. has increased over the time between the baseline and PPS study (37 in baseline to 45.7 in endline to 51.5 in the PPS). Similarly, the knowledge about the criteria of vulnerability (people at risk from natural disasters) on average followed an increasing trend from the baseline to the PPS study (47.8 in baseline to 53.8 in endline to 66.4 in PPS). The average knowledge about different flood mitigation measures has increased over time, improving the PPS study (from 17.6 in baseline to 28.2 in endline to 36.4 in the PPS). The increase of knowledge to mitigate the effects of the flood (6.2%) in PPS from the endline is statistically significant. The difference in knowledge between men and women is statistically insignificant, meaning that both genders' awareness level is almost the same. The awareness-raising influences this change, groups formed, and DRR/ DM capacity strengthened during the project and the local governments' work during the flood; based on the interviews.

The need for a household level plan had increased in the endline (35.2) compared to the baseline value (17.6). However, this percentage has declined in the PPS study (24%). Similarly, the knowledge of climate change after the project intervention has increased compared to the baseline. The respondents with medium-level preparedness to tackle disaster impacts have comparatively declined in the PPS study than the endline (83% in the endline to 66% in the PPS). Similarly, the percentage of the respondents who mentioned national government should be one of the firsts to respond to any disaster has markedly decreased in the PPS study (from 38 % in the baseline and 50% in the endline to only 14% in the PPS).

The need for disaster reduction activities at the school level has increased in the endline (93%) compared to the baseline (88%), but it has slightly dropped in the PPS study (89%). Likewise, the proportion of school students sharing DRR knowledge has drastically decreased (with statistical significance) in the PPS (37%) than the baseline (67%) and endline study (86%). Similarly, mock drill practices in schools which were found to have increased almost twice in the endline (79%) than the baseline (42%), have decreased sharply in the PPS study to only 56%, the reason could be the closureof physical classes in school due to the COVID-19 pandemic and the government declaration of lockdown and prohibitory orders to contain the spread of coronavirus.

Absorptive Capacity: Personal efforts to reduce the loss of disasters have remained the same. The qualitative findings show that the availability of disaster preparedness systems and resources has drastically decreased due to the transition of local government, and their attention to COVID-19. The need to provide additional tools and resources to prevent the spread of COVID-19overshadowed the DRR initiatives. However, the local governments have provided some relief and rescue materials for floods. Based on the information from key informants, the absorptive capacity is influenced by the project activities. The project ensured the active participation of all members (including socially excluded groups such as women, children) in all phases of disaster management. The process of risk, hazard, and resources mapping, mock drills, awareness-raising, disaster preparedness plans developed by DMCs helped the communities to improve their absorptive capacity. Some of the DMCs are still functioning at the community levels in different forms and names. One-third (32%) respondents) expressed that CBO/DMC conducted participatory ing planning related to disaster preparedness.

The VISTAR II project interventions were effective as the average individual and/or community efforts to reduce losses/impacts

of disasters (such as planting vegetation, putting gabion wall, identify and shifting hazardous item to a safe place) has increased in endline (24.3) from the baseline (15.4) and also showed sustainability in the PPS (29%). Though the availability of disaster preparedness systems and resources on average has sharply increased in the endline (93.0) compared to the baseline (7.3), it is notably decreased during the PPS (58%).

The percentage of the students in the PPS study who mentioned that schools provided disaster-related education increased in the endline (from 77% to 95%), but has noticeably declined in the PPS (69%).

Transformative: The percentage of the students in the PPS study who mentioned that schools provided disaster-related education increased in the endline (from 77% to 95%), but a marked decrease is seen in the PPS (69%).

Increased level of sensitization towards protection and addressing specific needs of vulnerable people, including children, women, elderly citizens, and low-income families, have been observed from the FGDs and interviews. Very few (8%) respondents mentioned that they had raised their voice for disaster-related issues to influence national-level policy. This might be due to the shorter span of the project and the beginning of the federal system due to which the local governments had to go through transition.

Moreover, the transition of local government has reduced the availability of disaster preparedness system and institutional resources. In addition, students have become unable to share more DRR knowledge among household members as the schools were closed due to COVID-19 which resulted in the lack of mock drill practices.

The project ensured more female engagement in project activities, which was reflected in interactions with different key informants. Women have gained more confidence as a result of interactions in the meetings, and training in the community and other public spaces. Participation in CDMC had helped women gaining knowledge and skills for disaster management and strengthened their leadership quality. Women also became capable of articulating the needs of their community with the government.

Enabling Environment

Rural municipalities/municipalities have started to form the Disaster Management Committees at Palika levels and Ward levels following their Acts and policies. They have been preparing DPRP that focuses more on preparedness for the response as compliance. However, the preparation of LDCRP is yet to be developed. The community-level DMCs (or VDC level formed previously) have yet to be vertically aligned with the rural municipalities/municipalities. There are a few examples that those who were members of community/ DMCs have been nominated in Ward level DMCs of Palika. Master Trainers from the private sector (Chambers of Commerce) were continuously utilizing the skills and sustaining the practices learned from the training and quite determined to mainstream disaster management in their programs and plans at their own, although not being engaged by the local governments. However, Master Trainers from government sectors were not able to utilize their skills properly due to alteration in their roles and responsibilities caused by the requirement to get transferred in other departments on a timely basis. A few of them were willing and motivated to utilize the skills in case the right opportunity is obtained.

One-third (36%) of the respondents expressed that participatory process has been adopted by local DMCs or CBOs. Yet, this is still low, which may reflect the transition process of local governments.

The information from all the key informants revealed that the project fostered the participation of vulnerable groups at every step of planning and implementation. During implementation, firstly, VCA was conducted in the community to identify needs. This has helped to identify the number and location of the most vulnerable people in the community. The project contributed to reduce the vulnerability of community people by increasing their capacities to prepare for, cope, and mitigate the adverse impact of the disaster. .

Half of the respondents (51%) mentioned that there is the availability of stretchers in the organization, followed by first aid box (46%), lifejacket (42%), and hand-mike (41%). Only one out of ten respondents (10%) stated about the availability of rescue and emergency plans designed to reduce potential community risks.

It is found that only one-fifth of the organization (21%) had disaster management plans for the school level. Fortunately, most of the organizations (81%) had been providing humanitarian aids in their community. Nearly one-third of the respondents (31%) mentioned that their organization has a significant role in the disaster response network though the organization that conducts disaster-oriented advocacy is found low (only 20%). It is revealed that the advocacy effort included the demand for safe houses, elevated hand pumps, and matching funds in the locally managed community level DRR fund.

Reducing Drivers of Risk

It is impressive to note that the average proportion of possible disaster mitigating measures such as the formation of rescuer groups, formation of disaster management committees, and conducting village meetings followed by the community has an increasing trend between the baseline and PPS study (from 11.8 in the baseline and 20.4 in the endline to 25.9 in the PPS).

Sustainability

The sustainability of the VISTAR II project has been studied under four major components of sustainability, namely, Sustained linkages, Sustained Resources, and Sustained Capacity and Motivation.

Sustained Linkages: The community-level structure, CDMC formed by the project, was still functioning to some extent. Some of the members were working actively during the time of disaster. Although some other members of the prior task force migrated/were not present in the same community and regular meetings were not conducted, the search and rescue team and early warning team were still operating at the time of disaster with the available human resources and materials. Even though the restructuring of government has a legal framework and provided space to leverage DRR after the federal system, the former CDMCs did not have direct linkages with the local government. VISTAR II also coordinated with other projects like *'Hariyo Ban'* in accomplishing certain project activities in schools and communities. Moreover, other organizations were also working actively in both districts for disaster management.

Sustained Capacity and Motivation: The information from all the key informants revealed that the project fostered the participation of vulnerable groups at every step of planning and implementation. The project contributed to reduce the vulnerability of community people by increasing their capacities to prepare for, cope, and mitigate the adverse impact of the disaster. The coping mechanism has been more effective because people linked their traditional coping mechanism with the skills learned from the project. It also empowered community people, including women to express their needs related to disaster and other problems. The training for CDMC members was found to be effective not only for disaster preparedness but also for empowerment and capacity enhancement of community people which is apparent from their expression about the needs of their community with the government and ability to convince the government on taking the right actions.

Master Trainers (MTs) are playing an important role in mainstreaming disaster in different areas as people from government and private sector were trained through the project. MTs from the private sector were quite active and determined to mainstream disaster management in their programs and plans and were utilizing the skills and sustaining the practices learned from the training.

Sustained Resources: Disaster preparedness materials like life jacket, stretcher, first aid box, boots, mic, etc., which were provided to the community were available in both the districts, not all those materials were in a good condition. Rural municipalities and municipalities were found to capitalize the skills of the master trainer who are residing there. The master trainers were found motivated to tomake efforts for disaster management in their respective fields. The change in designation and roles of MTs from government sector made it difficult to put their skills into practice efficiently.

Rural municipalities and municipalities have allocated funds for bio-engineering works. Some communities were collecting and using their disaster management fund while they were in emergencies. The co-operative division has been continuing to allocate a certain percentage of net profit for disaster management fund.

The bio-engineering (structural mitigation) works completed during VISTAR were found maintained and upgraded. The continuation of interpersonal communication between upstream and downstream communities and active role of CDMC and task force members to utilize available materials in activities related to rescue and relief during the disaster are some examples of the good practices initiated by the project and which were ongoing to the date.

Opportunities and challenges for sustainability: The restructuring of local governments have created an opportunity to scale up the disaster risk reduction works established during the VISTAR II project. Few authorities who were oriented and trained on disaster management, after getting transferred to a new position with new roles and responsibilities in the different structure of the government, and are making the efforts to enhance the disaster risk reduction activities learned from orientation and training as much as they could. .

Though preparing DPRPs is a compliance, the local governments which have formed LDMCs are yet to inform their people and some are yet to form LDMCs in all wards. As a result, only 70 percentage of the surveyed respondents know DM Committee exists in community or ward or Palika level.

Even though e local governments have deep pockets, only limited amounts have been allocated to mitigate disaster risk reductions. With LDCRPs to be prepared, there are opportunities to leverage funds for DRR/ DM. The short duration of the project was also a factor affecting the sustainability of the project as multiple activities were accomplished in a limited time.

Conclusion:

It is admirable to note that the VISTAR II interventions have been sustained to a greater extent for most of the project indicators even after five years in terms of quality, quantity, and delivering benefits to the target groups. The findings of the PPS revealed that there is a remarkable improvement in the knowledge of the respondents regarding various disaster-related issues. However, along with the VISTAR II intervention, this improvement could also be attributed to many other organizations that are currently and continuously working in the field of disaster response in the same program area. In particular, the level of knowledge of types and reasons for disasters, risks and consequences of disasters, disaster mitigation and prevention efforts, disaster preparedness and management, and practice towards disaster reduction has sustained or increased.

Stakeholders view that the project fostered the participation of vulnerable groups at every step of planning and implementation. The community-level structure, CDMCs formed by the project, was functional which is evident from some members who were working actively during the disaster. In terms of empowerment of the communities, the project ensured more female engagement in project activities. Women have become more confident with the increase in interactions in the meetings and training in the community and other public spaces

Conversely, the knowledge and practices of climate change adaptation and mitigation and the availability of a disaster preparedness system and resources (institutional) have declined. Likewise, students have become unable to share more DRR knowledge among household members as the schools were closed due to COVID-19 and their learnings were paused for a long period.

Recommendations

The recommendations are applicable to any future programming in the previous VISTAR-II areas.

Related Stakeholders

- Support to local government to localize the DM Act, Disaster Management Fund Mobilization Guideline, and Emergency Operation Guideline with referring LDCRP to address the actual context and scenario of risk.
- Some RMs/Ms have already allocated budgets for safe infrastructure for the settlements in the high-risk areas (of flood). It would be better to collaborate and provide technical support to build safe infrastructures that can be replicated in other vulnerable areas.
- Support to local government risk-sensitive land-use plan with risk visualization through a digital process to address the multi-hazards possible risk and prevent the emerging risk of haphazard ongoing development.
- Support the district and local governments in Emergency Operation Centres to develop DRR guidelines, assets, and human resources.
- Strengthening the capacity of local governments to access provincial and federal government allocated funds for the disaster.
- Strengthen the local government capacity on shock responsive social protection and for cash-based action.
- Provide technical support to local governments to localize the DRR platform cluster and response framework.
- Provide technical support to the environment and disaster management sector of local government to implement activities to contribute to the human and property losses in an effective and relevant way rather than only prioritizing infrastructure development as well as mainstreaming other sectors of local government.
- With reference to the multi-hazard aspect, provide technical support to local government to utilize the multi- sectoral institution, committee groups' engagement, and coordination collaboration space creation.
- Support local governments to apply acceptable, affordable and applicable science and technology with the fusion of indigenous knowledge and practices.

Local Government

- Establishing vertical and horizontal linkages of the Province, district and local DMCs/groups would be better: they could contribute, and at the same time, the local government (RMs/Ms) can capitalize on the skills of the local people and the resources they have. RMs/Ms are in the process of establishing local emergency operations centres (LEOCs). The establishment of the centres would enrich information systems that include mainstreaming the early warning systems/ groups in their areas.
- National Strategic Plan for DRR (2018-2030)-Clause 5.1 talks about preparing a strategic plan at the provincial and local level, which is also the target of the Sendai Framework for DRR; clause 6.3 is the preparedness target for Local Governments and 6.4

is the capacity of Local Governments to provide disaster information to communities. Given that if there are good legal frameworks to scale up and consolidate the disaster risk reduction measures, then in the future the National Strategic Plan for DRR (2018-2030) has to be harnessed.

- Review the existing capacity and gaps of search and rescue teams and prepare capacity building plans.
- DRR initiatives under LDCRPs should include climate-resilient technologies and adaptations, which need to be promoted by the local governments.
- In the present context, schools could utilize the virtual platform of education to teach the students about different disaster-related issues even during the closure of schools, thus ensuring students are well informed and ready for disaster response whenever needed.

CHAPTER 1

INTRODUCTION

1.1 Background of the project

Nepal is among the 20 most disaster-prone countries globally affected by multiple recurrent hazards due to the diverse topography, complex geography, fragile geology, and highly varying climate. Every year, the country suffers from significant loss of human lives and property due to natural and non-natural disasters/human-induced hazards such as floods, landslides, soil erosion, fire, road accidents, and epidemics. Meanwhile, more than 80 percent of the total population of Nepal is at risk of natural hazards, such as floods, landslides, windstorms, hailstorms, fires, earthquakes, and Glacial Lake Outburst Floods (GLOF). Besides, increasing population, poverty, unemployment, unplanned urban settlement, and lack of risk-informed development activities have further increased disaster vulnerabilities. [1]

Globally, Nepal ranks fourth, eleventh, and thirteenth most vulnerable country to climate change-induced risks, earthquakes, and flood respectively. It is directly linked with poor human development indicators, increased population in urban areas, poor enforcement of building codes, climate change [2] , and the fact that mountains in Nepal are geologically young and fragile, they are sensitive or vulnerable to even minor changes in the climate. More than 90 percent of the population is considered at high risk of death due to two or more types of disasters. [3]

According to the Ministry of Home Affairs, fires caused the most extensive damage – almost 94 percent of the NPR 6.84 billion (USD 57.62 million) from 2017 to 2018, followed by landslides (2.80 percent), heavy rainfall (1.31 percent), flooding (0.89 percent) and windstorms (0.75 percent). [4] The data published by MoHP/EDCD shows that a total of 5,734 natural disasters (climatic events, earthquakes, floods, landslides, others) and 10,824 human-induced events (fire and others) has occurred between 2015 and 2020. Similarly, Ministry of Home Affairs (MoHA) presents that, a total of 6,381 disaster events claimed 968 lives, injured 3,639 people, and affected 27,255 families during 2017-18. Furthermore, it also damaged 20,741 houses and caused economic losses equivalent to NPR 6,838 million. [5] Over time, there has been a steady increase in the frequency of disasters, with the total annual number of occur-

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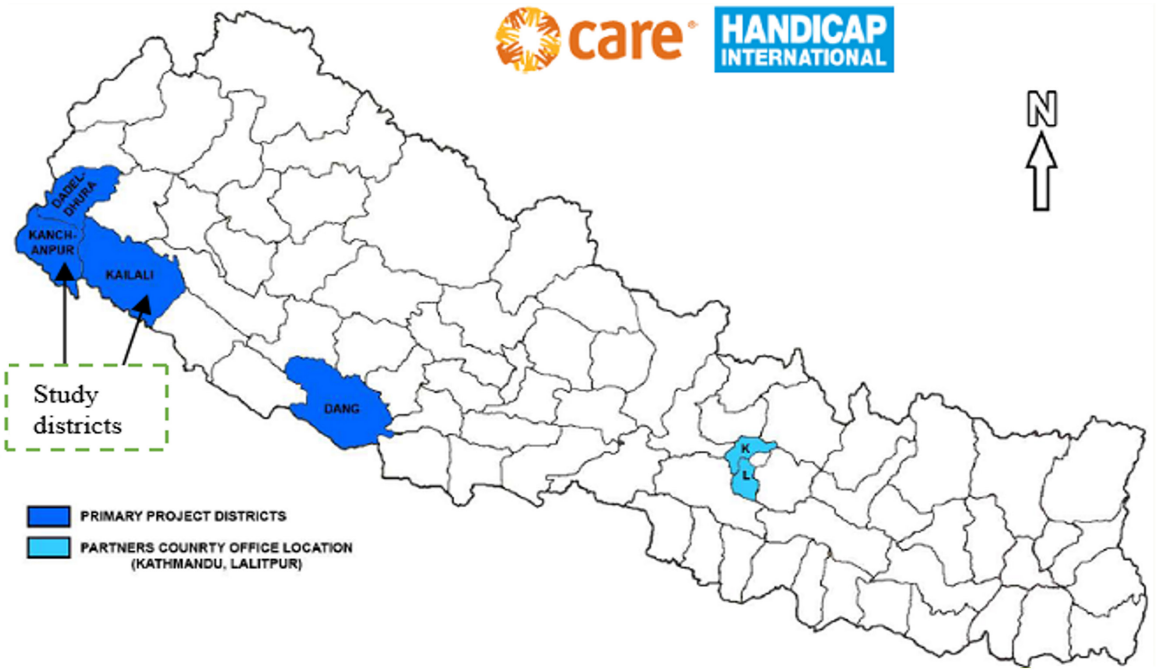
rences having increased threefold between 2015 and 2019. Furthermore, the growing effects of climate change exacerbate disaster risks and disproportionately affect the most vulnerable people, including women, girls, people living with disabilities, people living with HIV/AIDS, gender minorities, single women, senior citizens, and socially excluded groups. [6]

Nepal's far and mid-western regions are more vulnerable to several types of natural disasters, including droughts, floods, landslides, hailstorms, extreme cold spells, epidemics, and forest fires. Further, the Sudurpashchim Province is remote and developmentally challenged; 44 % of people in the Far West Hills and 49% in the Himalayan districts live below poverty. The combination of disasters and extreme poverty lead to damage homes, agricultural land, schools, and roads, further exacerbating food insecurity, debt, poverty, and migration (VISTAR-II Project Need Assessment Report 2014). Thus, to build the resilience of communities and institutions from the impacts of natural disasters in Sudurpashchim and Lumbini Province of Nepal, CARE and Handicap International (HI) jointly implemented the VISTAR II project with a significant focus on standardizing and institutionalizing Community Based Disaster Preparedness (CBDP) model [7] ensuring the engagement of multilevel stakeholders, school and community level preparedness and mitigation, and advocating for inclusive DRM policy.



The project engaged with district and local Disaster Risk Management (DRM) actors for strengthening their capacities, including developing master trainers to facilitate mainstreaming DRM into development, as well as replicating and scaling up of Community Based Disaster Preparedness (CBDP) model, ensuring communities are risk-informed and practice safe and appropriate behaviors to reduce risks. The project built leadership and management capacities from the community to the national level, putting in place a practical Early Warning System (EWS) and advocating for DRM policy development. It also supported developing realistic DRM plans in communities and schools, promoting small mitigation measures, supporting line agencies for DRM mainstreaming, institutional strengthening, and linking vulnerable groups with development programs. The primary beneficiaries of the project were the population of 32 most vulnerable communities identified by the community and local stakeholders of the former 8 Village Development Committees (VDCs). Besides, former 17 VDC/municipality stakeholders (Local Disaster Management Committees (LDMCs), district stakeholders (District Disaster Management Committee (DDMC), District Disaster Response Team (DDRT), master trainers, 44 schools (students, teachers, School Management Committee (SMC), cooperatives and saving groups were benefited through the project.

7 DIEPCHO partners jointly developed an inclusive Community-based disaster preparedness (CBDP) model to increase the resilience of communities sustainably while facilitating a process of replication across the country. As a fundamental requirement, the model has considered carefully to build the capacity of key stakeholders and strengthen their linkages to allocate funds successfully. Further, the model reinforces the linkages between all DRR institutions from the community to the national level, allowing them to share information on available resources for better preparedness for natural disasters.

The key expected results of the project were,

- The CBDP model is consolidated, scaled up, and replicated through integrating into the government's DRR planning and implementation processes.
- Linkages between communities to district DRR institutions is developed and strengthened to carry out coordinated response and mainstream DRR into development.
- Targeted communities linked with functional EWS and District Emergency Operation Centre (DEOC) receives timely inclusive early warning messages in an emergency and undertake prescribed behaviors.
- Formulation/endorsement of DRR policy institutionalization and its implementation is enhanced by coordination, engagement, and evidence-based advocacy to NRRC, NPC, and DPNet.

1.2 Outputs

The outputs of VISTAR II project were broad which can be categorized in four headings: (i) Awareness about the disaster risk; (ii) Strengthening disaster risk governance to manage disaster risk; (iii) Investing disaster risk reduction for resilience; and (iv) Enhancing disaster preparedness (with the lenses of with Sendai DRR priorities). The Outputs are as follows:

Priority 1. Understanding disaster risk

- Development of school disaster management plans, linking Community Based Disaster Preparedness(CBDP) with School Based Disaster Risk Reduction (SBDRR)
- Mass awareness and community mobilization for disaster preparedness and risk reduction
- Community mobilization and confidence building for developing a culture of safety
- Mock drill for fast and effective response
- Engagement with media for advocacy and influence
- Evidence-based documentation
- Inter community Early Warning Needs Assessment and planning with respective DHMs
- Establishment of community-based early warning system linking with DEOC

Priority 2. Strengthening disaster risk governance to manage disaster risk.

- Consolidation of previous cycle activities across 9 VDCs and 45 communities with revision of the LDRMPs and mainstreaming DRR into annual local development planning
- Conducting risk sensitive planning and mainstreaming of DRR and climate risks into development planning and implementation through capacitated district / VDC / community stakeholders
- Support District Development Committee (DDC) to develop district DRM policy
- Exposure visit for government and project team in national and regional platforms/project areas
- Joint national and district launch of the project, day celebrations, final lessons learnt sharing and hand over of DIPECHO projects
- Contribute to the development of DRR and Climate Change Adaptation (CCA) mainstreaming guidelines developed by the GoN.

Priority 3. Investing in disaster risk reduction for resilience

- Capacity building of district DRR resource persons (Master Trainers- MT's) on CBDP model, response assessment tools, and mechanisms for mainstreaming DRR into development
- Technical support for selected sectoral line agencies on mainstreaming DRR into their periodic development plans and programs
- Replication of CBDP framework by internal projects of CARE Nepal.
- Strengthening the capacities of district response service providers including Nepal Red Cross Society (NRCS) on disaster data/information management and coordination mechanisms for an effective response

Priority 4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation, and reconstruction

- Small scale mitigation works to reduce the impacts of disasters
- Formation and capacity building of DMCs (DDMC, LDMC, Psycho social Counselling (PSC), and CDMC) for development of DRR plans (LDRMP, DDMP) in an integrated manner and mainstreaming it into annual development plans
- Task force formation (S&R, EWS, FA, DNA) at VDC and community level, training and provision of equipment
- Act as a watchdog and contribute to the development/endorsement of national DRR strategies/policies
- Support development of better safety nets for vulnerable groups by linking them to cooperatives and groups for dealing with consequences of disasters
- Standardization of CBDP model in coordination with DIPECHO partners, UNDP (CDRMP), AIN TGDM

1.3 Objective of the Study

The overall objective of the study is to examine the sustainability of the project results to better understand whether, how, and why the VISTAR-II project would be able to make lasting impacts to sustain a flow of benefits over time.

Specific objectives of the research study are:

- To examine the nature and extent of the sustainability of impacts generated by the VISTAR II project interventions.
- To generate evidence on the gender transformative approaches that helped reduce disaster-related vulnerabilities and increase the resilience of women and girls.
- To generate evidence and learning on the best practices, lessons learned, and unintended impacts that would inform future program designs, strategies, and policy advocacy on disaster risk reduction (DRR) and resilience at the local, national and regional levels.

1.4 Research Questions

The study seeks to answer the following key research questions based on its conceptual framework.
The research study seeks to answer the following key questions:

- How has the CBDP model adopted in VISTAR II consolidated and scaled up in the local and national government's DRR plans and implementation process?
- What are the approaches, structures, and models that have been effectively integrated and replicated in the government plans? How have these approaches/models been adopted in the new governance structures?
- What are the gender-transformative approaches and outcomes of VISTAR II that were adopted and integrated into the DRR plans and implementation? How has it impacted disaster-related vulnerabilities and resilience of women and girls?
- How has the scaling-up process and mechanisms targeted the most vulnerable groups (women, people with disabilities, children, elderly, and other marginalized groups)? What factors made scalability possible?
- How has the project contributed to reducing disaster-related vulnerabilities and increasing the resilience of women and girls?
- What has been the project's contribution in generating new learning, approaches, and models on community-based disaster preparation at the regional/global level?
- How can the project approaches and strategies aimed at transforming project outcomes be sustained for lasting impacts over a long period? What are the learning and unintended impacts that could inform future program strategies and design?

1.5 Rationale of the Study

The post-project sustainability study report will support exploring what interventions, approaches, and proceedings of the VISTAR-II project have been sustained and identify the key drivers contributing to its sustainability. The study will also support the validation of the GESI focused models, approaches adopted by the project, and their contribution to bringing systematic changes in communities. The findings will help the CARE Nepal team identify and understand factors, models, and interventions that contribute to transforming end-of-project outcomes and how they can be scaled up and institutionalized as a normal process in the community and adopted in other countries in similar projects. The identified sustainable model, GESI focused interventions, and procedures can be built on and replicated in ongoing or future projects by scaling up the successful model and carrying out operational research to further dig out the causes behind the less successful models. This will also support the program team to improve the project planning process for achieving lasting impact during program implementation by understanding what is driving sustainability post-implementation and learning from post-project studies to impact scale significantly. In addition, results will also be used to define a framework to monitor, understand, and achieve post-project impacts.

1.6 Conceptual Framework

VISTAR-II project was designed to strengthen the resilience of communities through i) institutionalization of community-based disaster risk management model; increment of capacities of communities to be risk-informed, and practice safe and appropriate behaviors to reduce the risks, iii) enhancement of linkages between communities and local DRR institutions for coordinated response and mainstreaming DRR, and iv) formulation and institutionalization of DRR policy. Therefore, the project has incorporated all three components of the resilience framework.

The study employs the relevant pillar of the resilience framework to examine the expected outcomes and sustainability of the impact. The framework looks as below:

The conceptual framework for the study based on CARE resilience framework

VISTAR2 - CONCEPTUAL FRAMEWORK

FACTORS

VISTAR-II PROJECT OUTPUT
1. Understanding disaster risk
2. Strengthening disaster risk governance for managing disaster risk reduction
3. Financing in disaster reduction for resilience (focusing public & private entities)
4. Enhancing disaster preparedness for effective response, and to Building Back Better (BBB) in Rapid Response Registry (RRR)

EXTERNAL ENVIRONMENTAL FACTORS
1. Political and Legal
2. Social and Economic
3. Technological
4. Environmental

DIMENSIONS OF RESILIENT COMMUNITIES
1. Organization Base
2. Access in DRR information
3. Risks and Capacity mapping
4. Preparedness & Response team
5. DRR/DM plan
6. DRR fund
7. CM DRR Resources Access
8. Local Risk Reduction Measures
9. CB Radio based Early Warning System

SUSTAINED OUTCOMES/IMPACTS

1. RESILIENCE/CAPACITY OF COMMUNITIES AND INSTITUTIONS (ANTICIPATORY, ABSORPTIVE, ADAPTIVE, TRANSFORMATIVE)
- Comparative awareness on minimum characteristics of resilient communities
- Scaling up process and mechanisms targeted at the most vulnerable groups (women, people with disability, children, elderly and other marginalized groups)
- Gender transformative approaches and outcomes adopted and integrated in the DRR plans and implementation.
- Community level task forces able to understand, assimilate and disseminate the community-based flood early warning system at risk communities.
- Access to inclusive community-based early warning messages

2. REDUCING DRIVER RISK
- Functional intercommunity based early warning communication models scaled up and replicated in targeted districts and communities

3. ENABLING ENVIRONMENT
- Community Based Disaster Preparedness CBDP model (of VISTAR II) consolidated & scaled up in the local and national government's DRR plans and implementation process and transformed into new structure
- Approaches, structures and models that have been effectively integrated and replicated and in the government plans and transformed in new governance structures
- - Reduction in disaster related vulnerabilities and increasing resilience of women and girls, and other vulnerable groups

ANALYSIS

LEVELS OF ANALYSIS
- Households
- Communities
- Institutions

CATEGORIES OF SUSTAINABILITY
- Policy: adopted in strategy, policy, costed implementation plans, transformed into new structure
- Continued service delivery to community and groups
- Empowerment of community (DMC, incl. comparison of 9 dimensions of resilient communities
- Sustained behavioral changes

SUSTAINABILITY
1. Sustained Motivation
2. Sustained Capacity
3. Sustained Resources
4. Sustained Linkages

ENABLERS AND BARRIERS

- New learning, approaches and models on community-based disaster preparation at the regional/global level
- Learning and unintended impacts to inform future strategies

Figure 1 Conceptual Framework: VISTAR II

1.7 Limitation/Delimitation of the study

- All the household questions are adapted from the baseline and endline survey to compare the same metrics and indicators already defined
- This study is delimited with two districts and four Rural municipalities and municipalities
- Result of the qualitative study has been influenced to some extent as informants/participants had difficulty remembering the past events and activities
- Few intended participants/respondents, especially members from the early warning, search and rescue team, were not available in the intervention area due to their temporary migration
- The list of members/groups involved in groups formed during the VISTAR II has not been listed under the Rural municipalities/ municipalities information system. As a result, the influence of the groups at Rural municipalities/ municipalities and wards could not be figured out.

CHAPTER 2
METHODOLOGY

The quantitative-qualitative mixed methodology was applied in this study.

2.1 Study design

The study team adopted a sequential mix method study designed to collect quantitative data in the first phase, analyzed it, and then collected the qualitative data. It helped triangulate and validate quantitative results with qualitative results and also helped exploring the reason behind it.

2.2 Study area

The study was conducted in Kailali and Kanchanpur districts which were purposively selected. Two rural municipalities /municipalities from each district were selected randomly as a study area: Bedkot and Dodhara-Chadani in Kanchanpur; and Joshipur and Lamki Chuha in Kailali.

2.3 Instruments

2.3.1 Quantitative Strand

Household Survey

Structured interviews were carried out with households within the targeted areas. The study team designed household survey questionnaire to collect household-specific information in consultation with ILKA, to elicit information based on the study objectives and research questions. The survey with 403 household selected on multi-stage sampling technique, was capitalized to examine the extent of enhanced knowledge, capacities, and engagement of the vulnerable communities on community-based disaster mitigation efforts. The same quantitative tools used in the baseline and endline data collection with few revisions were used in this Post Project Sustainability.

Municipality level key stakeholders survey

In addition to the household survey, a stakeholders survey was carried out to understand the perception of municipality-level stakeholders. A total of 125 municipality-level stakeholders were interviewed using a semi-structured questionnaire. The following categories of the stakeholders were interviewed to gather necessary information:

- Municipality/Rural Municipality
- Secondary or Primary Level School

- Health Institutions
- Local Club Members
- Disaster Management Committee
- Community Forest Users Groups
- Community-Based Organizations
- Ward Office
- Mothers' Group
- Cooperatives

2.3.2 Qualitative Strand

The FGD guideline and KII checklist were prepared and used for the qualitative study.

Focus Group Discussion (FGD)

A total of 6 FGDs (3 in Kailali and 3 in Kanchanpur) were carried out with community stakeholders (DDMC/CDMC, task forces) and school representatives (School Management Committees) to examine their ownership and sustainability of CBDM efforts. Discussion meetings with the available VISTAR-II project team were organized to understand the information expected from FGDs and candidates to include in the FGD. A smaller group of participants (4-6 participants due to COVID) considering the inclusiveness of gender and caste/ethnicity (Dalits and women) who were part of the project were involved in the discussion. The selection of FGD participants was done with the help of the existing partners' team or volunteers. The FGD data were used to verify and supplement the household survey information.

Key Informant Interview (KII)

Twenty-five key informant interviews (14 in Kailali and 11 in Kanchanpur) were conducted with the selected representatives from various local and national government institutions and networks. The KIIs gathered information on the extent to which DRR has been prioritized and mainstreamed in the government's policies and plans. The KIIs also documented the extent to which the CBDP model has been integrated with the government's DRR plans and implementation process.

Similar to the FGDs, discussion meetings with the available VISTAR-II project team were organized to understand the kind of information expected from KII and identify the informants for discussion during the KII. The same team which conducted the FGDs executed the KII.

2.4 Sample size determination

2.4.1 Quantitative component and Respondents

The total households of the project area constituted the sampling frame/population. The households were considered as the sample unit. The 95% confidence level and 5% margin of error were applied while determining the sample size using the following formula. The sample households were selected by Multistage Stratified Simple Random Sampling procedure.

In the first stage, two districts out of four districts were selected. In the second stage, two rural municipalities/municipalities were

$$n = \frac{Nz^2pq}{Nd^2+Z^2pq}$$

Where,
n= sample size of the study for households (HH) survey
z= value of standard variation given at confidence level (adopted 1.96 for 95% confidence)
d= margin of error (adopted 5%)
p= estimated proportion of the population (assumed 0.5 to maximize sample size);
q= non-probability= 1-p
N=Total households in the study area

selected from the project municipality/rural municipalities list. In the third stage, clusters (ward) were selected. In the last stages (fourth sage), a list of beneficiaries' households was prepared and the required sample households were selected by Multistage Stratified Simple Random Sampling procedure. A total of 403 households (272 female and 131 male) were covered using the above equation.

In addition to the household survey, a total of 125 municipality-level stakeholders (53 female and 72 males) were interviewed using a semi-structured questionnaire.

2.4.2 Qualitative Strand

Key informant interviews and focus group discussion were part of the qualitative component. A total of 25 key stakeholders were interviewed. Similarly, six focus group discussions were done among community people.

Table 2. 1 Sampling Frame for KII and FGDs

SN	Target respondents	Numbers
A	**Key informant interview**	
1	District level stakeholders (Focal person of Disaster management section) DDMC, MT	2
2	DEOC	1
3	Municipality/Rural Municipality level representative (Mayor/dy. Mayor and Ward chairperson/members)	5
4	Local-level government (DRR personnel)	2
5	Cooperative division	2
6	WDMC	2
7	Private sector	2
8	School Management Committee Including Headteacher	4
9	River basin gauge reader	1
10	Partner NGOs representative	2
11	Focal person of the program of CARE	2
	Total KII	25
B	**Focus Group Discussion**	
12	CDMC and Taskforce representative	2
13	Community members: women	2
14	Community members: men	2
	Total FGDs	**6**

2.5 Quality Assurance

2.5.1 Training to Field Researchers

The two-days training in the first phase and one-day orientation training in the second phase were provided to the field researchers by the core team members. During the training, the program objectives and the purpose of the survey along with the sampling methodologies to select respondents were explained. Similarly, researchers under the guidance of the core team, undergone mutual discussion on the tools of the study to identify any shortcomings on the tools. CARE Nepal central and regional teams also took the session during the training.

2.5.2 Data management and analysis

Quantitative data were collected in tablets/mobiles (ODK). Several quality check mechanisms, such as range checks, logical checks, and skip instructions were developed which helped to detect errors during the data collection. All collected data were kept secured in password-protected computers at the office.

Quantitative data were analyzed using descriptive statistics and bivariate analysis. SPSS Software (version 26) was used to analyze the quantitative survey.

Whenever the differences between endline and PPS, and men and women have been examined statistically, the Test of Independence (Chi-square test) has been used at 5 percent significance level.

For the qualitative information, all the data collected from key informant interviews and FGDs were analyzed thematically.

Key findings of the PPS study were compared with baseline and endline data. The theme of qualitative information was identified based on the research questions. The findings from the qualitative study were used to triangulate/supplement the findings of quantitative results.

2.5.3 Other measures for quality assurance

To assure the quality, specific measures were taken by CREHSS before, during, and after the data collection.

Before data collection, intensive training was provided to the researchers. Translation of the questionnaire was done in the Nepali language. Field trials of the tools were done in similar settings. During the pretesting of the tools, acceptability, clarity of the language used, accuracy of the translation, time for each interview, and consent for voluntary participation were assessed. All the skip patterns and logical instruction were fixed in the quantitative tools before the actual data collection.

During the data collection, enumerators were instructed to take interviews only after rapport-building with the respondents. Enumerators explained all the objectives, why and how s/he is selected for the study, and the risk/benefit of the participation. Only after getting verbal and written consent, the researcher took the interview.

Data collection manual (with instruction of each question, skip, probing questions, etc.) was prepared and provided to the enumerators. Final tools (after pretesting of the tools) were uploaded to the tablets. One extra tablet was provided to the enumerator team. Enumerators quickly reviewed the tablet before sending the data to the server. Furthermore, the supervisor was assigned to ensure the selection of the exact respondents and helped enumerators in the initial phase, if needed. The data management officer called every field researcher and confirmed the number of questionnaire they filled and sent to the server.

Data quality was assured after data collection as well. Once the researcher uploaded the filled questionnaire, the data management officer checked the filled questionnaire in the office.

In addition to these, monitoring and supervision were conducted during the data collection. The team leader and study coordinator monitored the data collection. The central and district staff of CARE Nepal monitored the data collection.

2.5.4 Ethical

Ethical approval was taken from the Nepal Health Research Council (NHRC), a national body, to approve the ethical clearance. An advisory committee of three members was formed to provide inputs on the research design and outputs. The committee ensured that the study team adheres to the highest standard of research quality. The study team ensured that the research abides by the highest ethical standards. The team sought verbal consent (as written informed consent is risky due to the COVID-19 pandemic) from research participants for each household-survey, FGDs, and KII. Through the consent form, the participants were informed about the purpose of the research and how the information will be used and disseminated.

During the consent-taking process, respondents were informed that they could skip any questions they feel uncomfortable with or leave the interview anytime. However, they were informed that their information is very important and valuable and a request was made to try to complete the interview with their consent. All interviews were conducted in confidential areas where the respondents could feel comfortable for the interview. No personal identifiers were disclosed anywhere in the study. The enumerators were well-oriented on the approaches and factors that should be obeyed during human subject research. Every individual who is involved in the study was oriented on research ethics policy. The core team ensured data security, and the raw data with an individual identifier of the respondent not be shared with anyone outside the study team. All the data are stored in password-protected laptops.

CHAPTER 3
RESPONDENTS' PROFILE

A total of 403 households were covered in the PPS study. Out of the total respondents, more than two-thirds (67.5%) of the respondents were female.

More than a tenth of respondents were young aged below 25 years. The mean age of the respondents was 39.6 years, with ranges of 18 to 79 years. In regards to qualification, one fifth were illiterate while only 3 percent had a bachelor or above level of academic degree.

Table 3. 1 Gender of respondents according to districts

District	Gender of respondent		Total
	Female	Male	
Kailali	136	67	203
	67.0%	33.0%	100.0%
Kanchanpur	136	64	200
	68.0%	32.0%	100.0%
Total	272	131	403
	67.5%	32.5%	100.0%

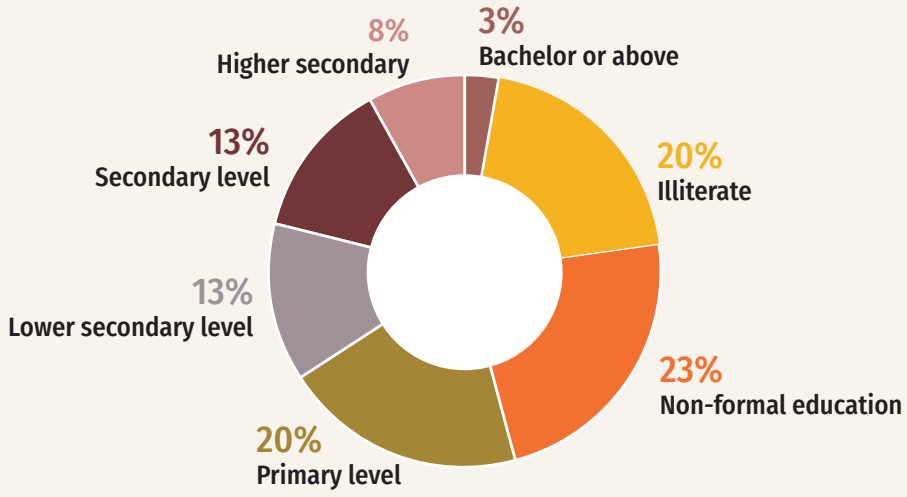


Figure 2 Level of Education of Survey Respondents (N=403)

Table 3. 3 Number of RM/M level stakeholders according to districts and RM/M

As the table shows that the highest proportion of the respondents were engaged in agriculture (51.4%), followed by housewives (19.4%, who did not specifically mention about the occupation) and daily wages (14.6%). The largest proportion of the respondents was Brahmin/Chhetri (40%) followed by Dalit (35%), Janajati (24%) combining the ethnic groups of hill and Terai.

Table 3. 2 Background characteristics

Characteristics		Gender of respondent		Total
		Female	Male	
Age group	Less than 25 years	16.5	7.6	13.6
	25-34	34.6	13.0	27.5
	35-44	25.7	23.7	25.1
	45-54	13.2	21.4	15.9
	55-64	7.0	22.1	11.9
	65 or above	2.9	12.2	6.0
Marital status of respondents	Unmarried	7.0	6.1	6.7
	Married	84.6	92.4	87.1
	Widow	8.1	0.0	5.5
	Widower	0.4	1.5	0.7
Ethnic Group	Terai Dalit	8.5	8.4	8.4
	Hill Dalit	28.7	24.4	27.3
	Terai Janajati	21.3	16.8	19.9
	Hill Janajati	4.4	2.3	3.7
	Other marginalized Janajati	0.0	0.8	0.2
	Brahmin/Chhetri	36.8	46.6	40.0
	Others	0.4	.8	0.5
Main occupation	Job	0.4	4.6	1.7
	Local leader	0.4	0.0	0.2
	Social Service/ Civil Society	0.4	1.5	0.7
	Business	2.2	6.9	3.7
	Agriculture	52.2	49.6	51.4
	Daily wages	8.1	28.2	14.6
	Unemployment	1.5	3.1	2.0
	Housewife	28.7	0.0	19.4
	Student	6.3	5.3	6.0
	Others	0.0	0.8	.2
Type of family	Nuclear family	68.8	60.3	66.0
	Joint family	31.3	39.7	34.0
Total	**%**	**100.0**	**100.0**	**100.0**
	N	**272**	**131**	**403**

A total of 125 stakeholders participated in the survey: 63 from Kanchanpur and 62 from Kailali, representing from Municipality/ Rural Municipality, Schools, Health Institutions, Local Club Members, Disaster Management Committee, and Community Forest Users' Groups. Approximately Forty-five percent of the respondent from Kailali and 40 percent from Kanchanpur were female.

Sex of the respondents	Kailali			Kanchanpur		
	Joshipur	Lamkichuwa	Total	Bedkot	Dodhara Chadani	Total
Male	53.3	56.3	54.8	76.7	45.5	60.3
Female	46.7	43.8	45.2	23.3	54.5	39.7
Total %	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Total N	**30**	**32**	**62**	**30**	**33**	**63**

CHAPTER 4

FINDINGS ON OUTCOMES AND IMPACT

The section of findings on outcomes and impact has been organized in three headings: 1) Resilience or capacity of communities and institutions, 2) Reduction of drivers of risk, and 3) Enabling environment, following CARE's resilience framework; as outlined in the conceptual framework of the study.

4.1 Resilience/ Capacity of Communities and Institutions

The goal indicator *"percent of women, girls, boys, men, and older people are risk-informed and practice DRR activities to reduce their vulnerability"* aims to measure the changes in overall resilience of individuals and communities. The below table shows that the status of this indicator in three different timelines. The baseline value of this indicator was 16.5 (16.5 scores out of 100) which increased to 64.7 in endline and dropped to 49.8 in the PPS. Though there was a statistically significant rise (by 33.3 %) in the goal indicator value in the endline than the baseline, the value showed a statistically significant drop in the PPS (by 14.9%) compared to endline.

The findings from the qualitative study revealed that almost half of the groups formed during the times of the project, such as community disaster preparedness committees, early warning systems, and rescue teams are existing and functional to some extent. The knowledge of the respondents regarding the DRR measures which had increased in the endline has sustained in the PPS due to the dissemination effect of the group formed during the VISTAR II project. The findings from the qualitative strand also show an increase in knowledge about disasters and measures to mitigate the effect of the disaster, thus converging with the findings of the quantitative strand.

The community attitude towards disaster reduction was found low during the PPS, as the score for this indicator was just 34.4 while comparing to the baseline, it has slightly risen. FGDs participants mentioned that the actions of the local network for disaster response were still at low levels; only about half of them were currently functioning. The FGD participants also expressed that the local committee has less authority and fewer roles and responsibilities compared to the local governments in disaster risk reduction.

Table 4. 1 Indicator wise comparison of PPS compared to Endline and Baseline

I/ S.I.	Indicator	Base-line	Endline	PPS	CI of 95%	PPS-End-line Change	PPS-Base-line change
1	Women, girls, boys, men, and older people are risk-informed and practice DRR activities to reduce their vulnerability *(aggregate score, out of 100)*	16.5	64.7	49.8	45.0-54.7	(14.9)*	33.3*
1a	**Communities' knowledge towards DR:**	**33.0**	**43.0**	**54.8**	**49.9-59.6**	**11.8 ***	**21.8***
	Types of disasters:	24.5	32.4	85.4			
	Communities' knowledge towards DR	24.5	32.9	44.1			
	Impact of disaster:	53.8	63.1	62.3			

	Reasons of flood:	33.2	46.3	49.9			
	Reasons of landslide	38.1	44.0	40.3			
	Reasons of drought:	35.0	44.5	55.9			
	Risk and consequences of disasters:	37.0	45.7	51.5			
	Most vulnerable groups:	47.8	53.8	66.4			
	Methods of mitigating the effects of floods:	17.6	28.2	36.4			
	Methods of mitigating the effects of landslides:	18.7	27.0	32.0			
	Meaning of disaster preparedness:	32.0	42.1	56.7			
	Meaning of disaster management:	33.6	56.4	76.5			
1b	**Communities' attitude towards disaster reduction**	**26.7**	**41.2**	**34.4**	**29.8-39.0**	**(6.8)***	**7.7***
	On cause of disaster (man-made)	15.7	32.1	26.8			
	On cause of disaster (natural)	70.2	62.9	70.0			
	Strongly agreeable attitude towards prevention of disasters	8.4	33.4	12.9			
	Strongly agreeable attitude towards the importance of raising awareness to reduce the impact of disasters	10.4	33.7	20.3			
	Strongly agreeable attitude towards the importance of CBEWS and networks to reduce the impacts of disasters	17.0	35.0	15.9			
	Strongly agreeable attitude towards the importance of LDRMP to reduce the impacts of disasters	13.3	34.2	66.9			
	Strongly agreeable attitude towards the need for special protection to the most vulnerable groups	52.0	57.2	28.0			
1c	**Communities' practice towards disaster reduction**	**18.5**	**41.6**	**38.2**	**33.5-42.9**	**(3.4)**	**19.7***
	Personal and/or community efforts to reduce losses/impacts of disasters during the last 5 years	15.4	24.3	28.6			
	Availability of disaster preparedness system and resources	7.3	93.0	58.3			
	Supports received by the communities from the disaster mitigation authorities and institutions	39.4	28.8	40.0			
	Measures taken by the community to mitigate possible disaster risks	11.8	20.4	25.9			
3	Households with increased understanding and are aware of 9 minimum characteristics of resilient communities and practice at least 2 new preparedness activities on their own	2.2	98.8	60.9	56.1-65.7	(37.9)*	58.8*
3a	**Communities meeting 9 minimum characteristics of resilient communities, as perceived by households**	**4.3**	**97.7**	**63.5**	**58.8-68.2**	**(34.1)***	**59.2***
	Organization based at VDC (now rural municipality/Palika) and community level	18.5	96.1	69.0			
	Access to DRR information:	15.4	93.0	22.6			
	Multi-hazard risk and capacity assessment	-	100.0	100.0			
	Community preparedness/response teams	2.9	94.8	73.2			
	Disaster Risk Reduction/Management Plan at Village Development Committee	-	100.0	100.0			
	Disaster Risk Reduction (DRR) Fund	-	100.0	35.7			
	Access to community-managed resources	-	100.0	100.0			

	Local -level risk/vulnerability reduction measures:	-	100.0	23.9			
	Community-based EWS	2.3	95.0	47.5			
3b	**Practice towards new preparedness activities, at least two**	**-**	**100.0**	**58.3**	**53.5-63.1**	**(41.7)***	**58.3***
2	Percentage of targeted districts, VDC, and community level taskforces have increased capacity to understand, assimilate and disseminate the community-based flood EWS to -risk communities	-	100.0	31.0	26.5-35.5	(69.0)*	31.0*
4	Percentage of targeted community members that have increased understanding and access to inclusive CBEW messages	-	100.0	47.5	42.6-52.4	(52.5)*	47.5*

Notes:
1. Unit of measurement is scored out of 100 for all baseline, endline, and PPS
*2. * significance at 5% for a test of association, which means the changes are significant in the two different times of measurement.*

Indicator 3 *"Household with increased understanding and are aware of 9 minimum characteristics of resilient communities and practice at least two new preparedness activities on their own"* comprises of two components: (3a) *"Communities meeting nine minimum characteristics of resilient communities, as perceived by Households"* and (3b) *"Practice towards new preparedness activities at least two."* The current status of the household communities in this regard is moderate (60.9). This underwent a decline from the endline, but it is still higher than the baseline, contributed by 3a and 3b in the same pattern. The major declines include a) *organization base:* as the old organization base is supposed to be replaced by the new organization due to change in the legal framework; and b) access to DRR fund, due to structural transition, where COVID-19 response overshadowed the priorities for DRR.

The resilience capacity has been further discussed in terms of Anticipatory, Adaptive, Absorptive, and Transformative Capacities.

4.1.1 Anticipatory Capacity

Anticipatory capacity is the ability of individuals and groups to foresee risks of disasters that are likely to occur and stay alert for an unexpected event. Based on the quantitative findings, the individuals' ability has increased significantly compared to the end-line survey. Similarly, based on the qualitative findings, the capacity of the groups formed during the VISTAR projects has increased. Almost half of the groups are functioning well. This includes community disaster management committees and early warning groups. However, the majority of these groups have been functioning in silos in the absence of their vertical connection with other entities. The groups which are functioning are holding meetings at the community level when required and have maintained the fund for emergency purposes.

4.1.1.1 Knowledge of the types of disaster

The knowledge of the respondents on the types of the disaster was assessed post the VISTAR II intervention. The PPS findings revealed that the respondents' knowledge on various types of disaster, which had increased for all types of disaster in the endline (24.5 in the baseline to 32.9 in the endline), also showed sustainability in the PPS study in an average.

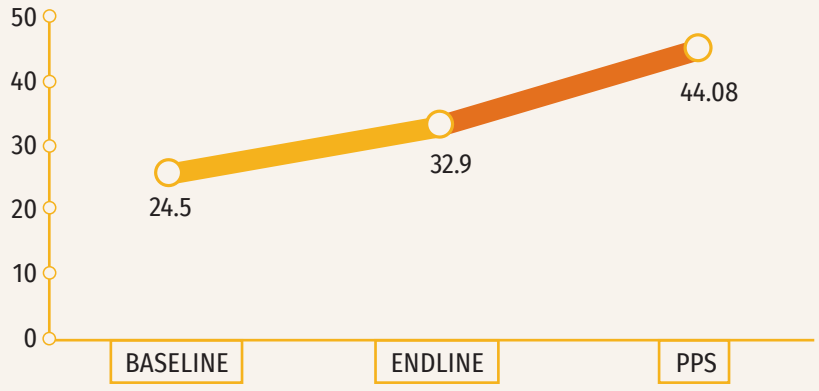


Figure 3 Average knowledge of the respondents on types of disaster

However, the percentage of respondents in PPS knowing about landslides and earthquake declined than the endline by 13% and 9% respectively,.

The average changes show that there is an increasing trend in the knowledge of both women and men. However, the overall knowledge is still on the lower side, as the respondents did not list out the possible disasters, evidenced by an average of 44.1 percent against the anticipated list. This could be the reason that the respondents' responses were influenced by frequently and recently occurring disasters.

4.1.1.2 Knowledge on impacts of disaster:

The average knowledge on the impacts of disaster was found to have increased by 9 points in the endline, which remained almost the same during the PPS study.

The respondents who knew the loss of human lives and property as the impacts of disasters have increased nearly twice in the PPS (87%) compared to the endline (49%). However, the knowledge of the respondents regarding the other impacts of disasters such as epidemic, food and residence problems has decreased in the PPS when compared to the endline (55% to 53%, 76% to 58%, and 73% to 54% for epidemic, food and residence problem respectively).

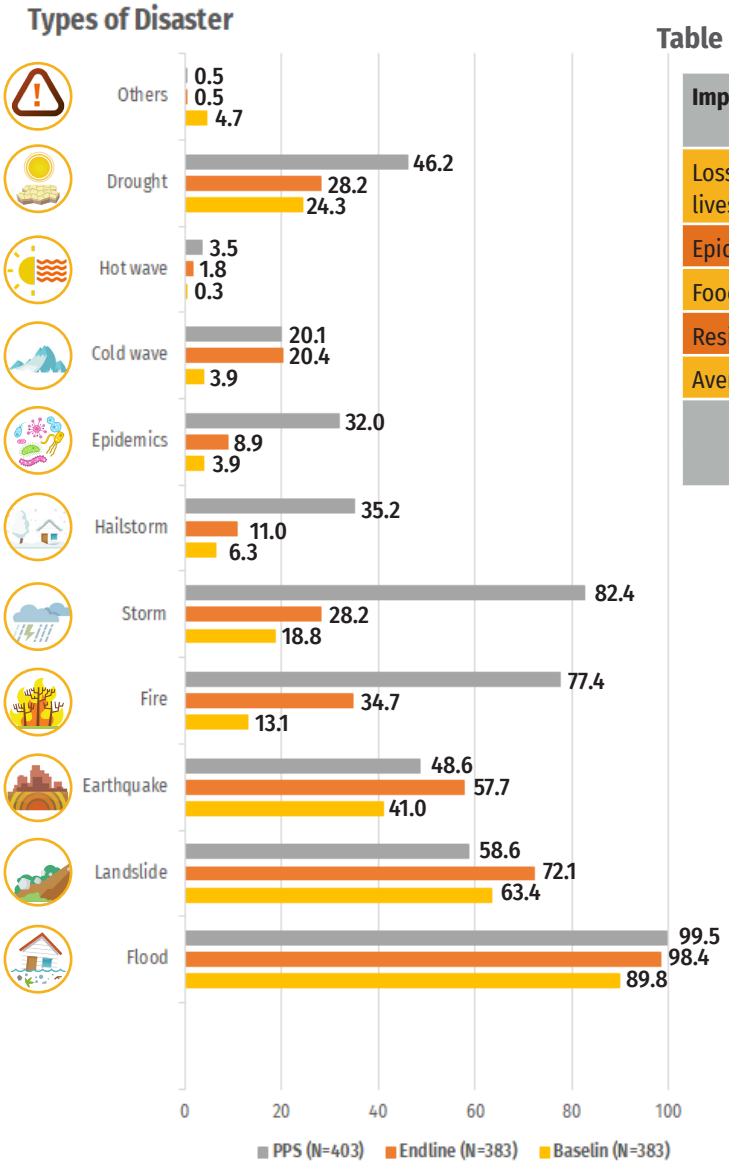


Figure 4 Knowledge on types of disaster

Table 4. 2 Knowledge on the impacts of disaster

Impact of disaster	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Loss of human lives and property	23.0	48.8	86.8
Epidemic	45.4	55.4	53.1
Food problem	79.6	75.7	58.1
Residence problem	67.4	72.6	53.8
Average	53.8	63.1	62.3
		Women	**62.1**
		Men	**62.9**

The table shows that the knowledge of men and women regarding the impact of disasters has somehow retained. The slight difference in endline value compared to the PPS study is statistically insignificant. Likewise, the difference in knowledge between women and men is statistically insignificant.

4.1.1.3 Knowledge on reasons for the flood

It is impressive to note that the average knowledge of respondents regarding the various reasons for flood followed an increasing trend from the baseline to the PPS study (33.2 in the baseline to 46.3 in endline, to 49.9 in the PPS). In particular, the understanding between the period of endline and PPS study of respondents about siltation in the river as a reason for flood increased by 38%, deforestation by 15%, and effect of climate change by 7%.

Though the knowledge of the reason for the flood is increasing, it is still on the lower side (49.9%) against the anticipated list. The effect of climate change was mentioned only by 15 percent of respondents. The qualitative study has found lower level of knowledge on climate change.

Table 4. 3 Knowledge about reasons of floods

Reasons of flood	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Deforestation	64.2	70.5	85.4
Heavy rain	92.7	98.7	99.8
Siltation in river	4.7	7.6	45.7
Effect of climate change	3.7	8.4	15.1
Others	0.5		3.5
Average	**33.2**	**46.3**	**49.9**

4.1.1.4 Knowledge on reasons for landslides

The level of knowledge of the respondents about the reasons for landslides on average has increased in the endline (44) compared to the baseline value (38.1). This knowledge, though slightly decreased in the PPS study (40), is not statistically significant (chi-square value of 1.10, $p<0.05$).

Moreover, the respondents knowing deforestation as the cause of landslide increased by 12%, loss soil by 19%, and lack of hard rock by 8% in the PPS study compared to the endline. The percentage of respondents knowing heavy rain as a cause of the landslide, though had increased in the endline, has slightly decreased in the PPS study (99% in the endline to 97% in PPS).

Since both the study areas are in flood-prone (plain) areas as opposed to the landslide-prone (hill) areas, the knowledge of respondents about landslides is based on their knowledge rather than their experience or observation.

Table 4. 4 Knowledge about reasons landslides

Reasons of Landslide	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Deforestation	64.5	76.0	87.6
Heavy rain	96.3	99.2	97.0
Loose soil	24.5	42.3	61.3
Lack of hard rock	5.0	1.6	9.9
Others	0.3	0.8	2.5
Don't know	-	-	2.5
Average	**38.1**	**44.0**	**40.3**

4.1.1.5 Knowledge on reasons for the drought

The knowledge of the respondents about various causes of drought was explored in the study. The percentage of respondents having average knowledge about reasons for drought is augmented in between the period of baseline to the PPS study (35 in baseline to 45 in the endline to 55.9 in the PPS).

Furthermore, the findings showed a considerable increment in the respondents who knew heavy rainfall as a cause of drought, from only 2% in the endline to 98% in the PPS study. Quite the reverse, respondents knowing other causes of drought, such as the effect of climate change (70% in endline to 54%) and deforestation (88% in endline to 68%), have declined in the PPS study.

Knowledge of the reason for drought has increased to a moderate level. Yet, the respondents could not associate very well with climate change.

Table 4. 5 Knowledge about the reasons of drought

Reasons of drought	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Effect of climate change	58.5	70.0	53.8
Deforestation	77.0	88.0	68.0
Lack of rain	2.9	2.1	98.3
Others	1.6	18.0	1.5
Don't know	-	-	1.5
Average	**35.0**	**44.5**	**55.9**

4.1.1.6 Knowledge on reasons for fire

It is of note that the average knowledge of respondents regarding different reasons for fire followed an increasing trend from the baseline to the PPS study (46 in baseline to 50 in the endline to 54 in the PPS).

The PPS findings revealed that there had been a slight decrease in knowledge some of the reasons for the occurrence of fire, such as negligence in handling fire, careless disposal of burning cigarette butts, negligence in the handling of candle and *Tuki* (traditional candle) and mishandling of firecracker if compared to the endline. The percentage of respondents knowing electrical short circuits as a cause of fire has increased by 22%, the LPG gas cylinder and kerosene stove bursting by 39%, and heavy storm/wind increased by 54%.

The present level of knowledge about the reasons of fire is moderate. The change is statistically significant from the endline. Since people no longer use *Tuki*/ candle, it is obvious that fewer people mentioned about it.

Table 4. 6 Knowledge about reasons of fire

Reasons of fire	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Negligence in handling fire	91.1	94.0	90.8
Careless disposal of burning cigarette butts	91.9	95.0	93.1
Electrical short circuit	54.3	57.4	79.9
Negligence in the handling of candle and *tuki*	19.8	36.0	19.1
Mishandling of firecracker	12.0	27.2	16.6
Bursting of the LPG gas cylinder and kerosene stove	21.1	6.8	45.9
Heavy storm/Wind	29.2	34.7	88.6
Others	-		0.5
Average	**45.6**	**50.1**	**54.3**

4.1.1.7 Knowledge on reasons of epidemics

The respondents' knowledge regarding the reasons of epidemics was also explored in the study. The average value of knowledge of the respondents regarding the causes of epidemics had increased in the endline (55) compared to the baseline (51.8) and further increased in the PPS study (65.2).

The percentage of respondents knowing polluted drinking water as a reason for the epidemic made a cheerful mark from 91% in the endline to 97% in the PPS study. Similarly, knowledge of other reasons for the occurrence of epidemics such as poor personal hygiene, eating rotten foods, and partially cooked meat items have also increased in the PPS study compared to endline. However, people knowing contaminated food items as a cause of epidemics has decreased even than the baseline value (97% in the baseline to 87% in the endline). This might have been influenced by the COVID-19 risk behavior message which emphasized on personal hygiene than refraining from rotten food items.

Table 4. 7 Knowledge about reasons of epidemics

Reasons of Epidemic	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Polluted drinking water	90.9	91.4	97.3
Contaminated food items	96.9	94.3	87.6
Poor personal hygiene	59.3	70.5	89.6
Partially cooked meat items	13.3	18.5	29.5
Rotten food items	50.1	55.4	83.9
Others	0.3	0.0	3.2
Don't know	-	-	0.5
Average	**51.8**	**55.0**	**65.2**

The change of knowledge about reasons for epidemics from the endline (12.2%) to PPSis statistically significant.

4.1.2 Adaptive Capacity

Adaptive capacity is the ability of community to apply appropriate adjustments in terms of well-being and risk of losing livelihoods. Based on the quantitative findings, the knowledge of traditional methods to mitigate the effects of disasters has been kept up at a higher side. The findings show that knowledge to mitigate effects of the flood, prevent fire, mitigate the effect of fire, and knowledge about disaster management have significantly increased. Likewise, both men and women were found more sensitized towards the needs and protection of the most vulnerable groups. During the FGDs, CDMC members expressed that they are continuing to prioritize the most vulnerable groups during rescue and relief works. However, as only fewer disaster reduction activities were carried out in the schools during the year of PPS, partly caused by COVID-19, the respondents highlighted on the need of school-level activities towards DRR activities. The adaptive capacity of groups formed by VISTAR projects is mixed. To sum up, the adaptive capacity of almost half of the groups has stayed well.

4.1.2.1 Knowledge on traditional methods to mitigate the effects of disasters

The information regarding the knowledge of traditional methods to mitigate the effects of different types of disasters was assessed in the study. The average value of knowledge on the traditional methods to mitigate the effect of disasters has increased from 87 in baseline to 96 in endline and further increased to 97 in PPS, though statistically insignificant.

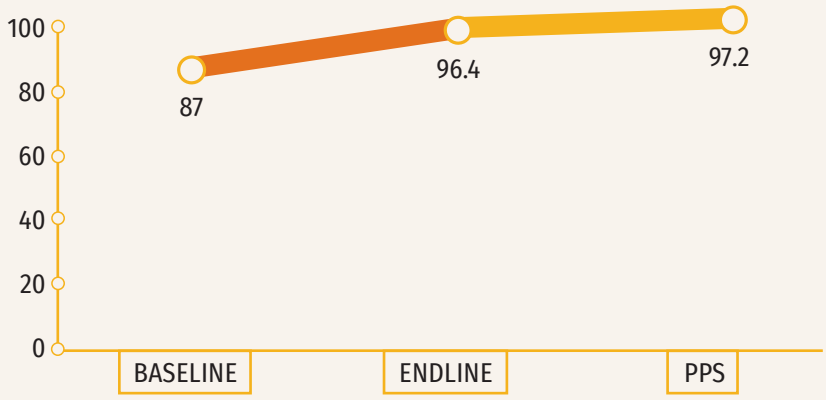


Figure 5 Average knowledge on the traditional methods to mitigate the effects of disasters

An overwhelming number of respondents in all baseline, endline, and PPS mentioned 'yes', i.e. there are traditional measures to tackle the effects of each disaster like flood, landslide, drought, fire, and epidemic., The knowledge level has increased in the PPS compared to the endline for flood and epidemic while for rest of the disasters, there have been some decline in the PPS (97% to 94% for landslide, 91% to 66% for drought and 99% to 98% for fire).

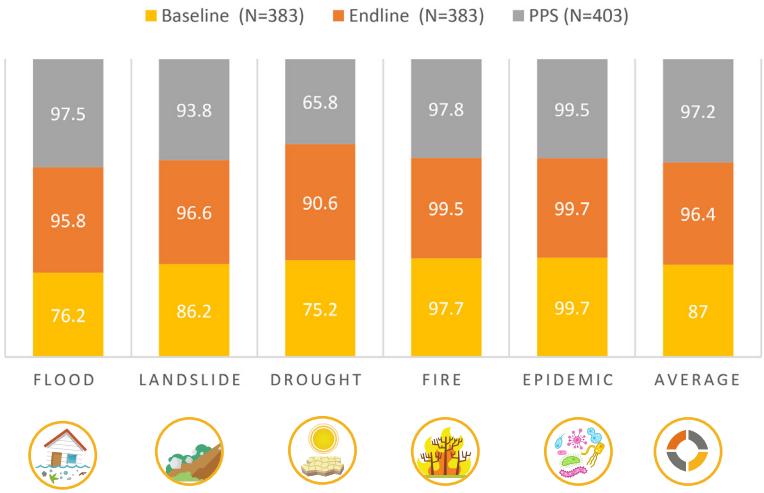


Figure 6 Knowledge on the traditional methods to mitigate the effects of disasters

The present level of knowledge in traditional methods to mitigate the effects of disasters is considered 'very high'.

However, the responses appear to be influenced by *desirability* bias in the PPS and previous studies; and the methods might not be all "traditional". For example, the response on traditional methods to mitigate the effects of an epidemic (97.2%) raises a question mark. The qualitative findings did not find much about this evidence, although they do have some knowledge on mitigating the effect of disasters such as elevated *bhakari* (storage of grain) and access to fund managed by the community. A few CDMCs have constructed safe shelters.

4.1.2.2 Knowledge of risks and consequences of disasters

The average level of understanding on various risks and consequences of disasters has increased between the baseline and PPS study (37 in baseline to 45.7 in endline to 51.5 in the PPS).

In particular, the respondents who reported damage and losses of houses as major consequences of disasters increased by 10%, loss of livestock increased by 18%, human deaths and injuries increased by 3%, and damage/ loss of crops increased by 34% in the PPS compared to the endline. In the meantime, respondents who knew the loss of property due to disaster has decreased by 18% in the PPS study compared to the endline.

The level of knowledge of men and women regarding risks and consequences of disasters has increased, but it requires attention, as the respondents could not list out all the risks/ consequences as anticipated. The responses are inclined towards immediate or direct individual consequences (on houses, humans, property) and less on secondary or community level consequences (such as infra-structure, epidemic). Furthermore, the difference of knowledge between men and women is statistically insignificant.

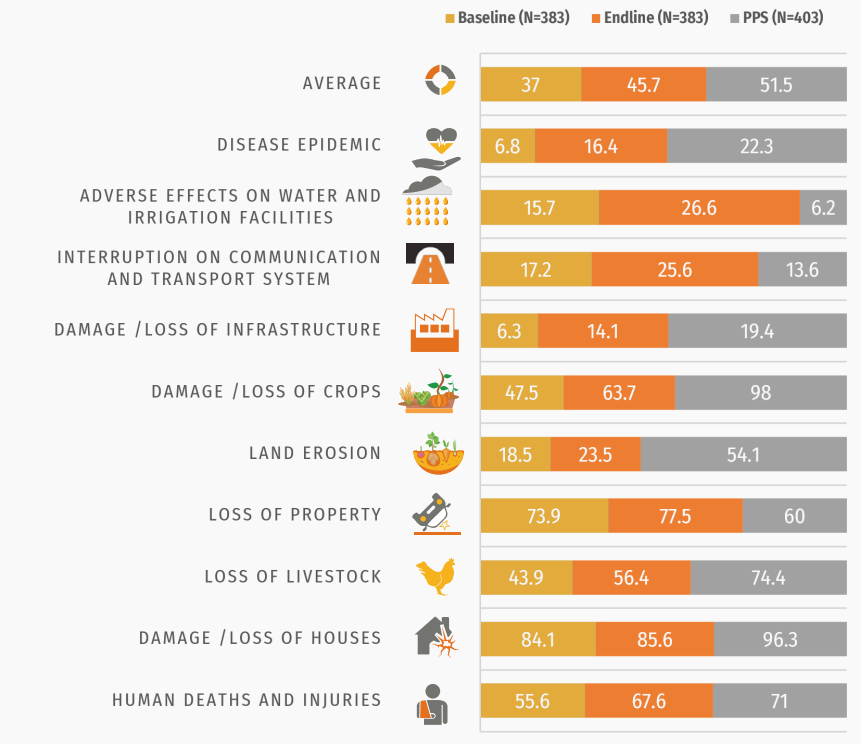


Figure 7 Knowledge about the risks and consequences of disaster

4.1.2.3 Knowledge about most vulnerable groups

The respondents' opinion regarding their understanding about what type of people are the most vulnerable/at risk from natural disasters was assessed. it is found that the respondents' knowledge about the criteria of vulnerability followed an increasing trend from the baseline to the PPS study (47.8 in baseline to 53.8 in endline to 66.4 in PPS).

Moreover, the respondents who mentioned senior citizens as the most vulnerable group has increased by 3%, children by 31%, pregnant women by 35%, lactating mothers by 32%, and disabled persons by 41% in the PPS compared to the endline. However, respondents recognizing sick people as vulnerable has decreased by 5% and people living in disaster-prone areas by 11% in the PPS study.

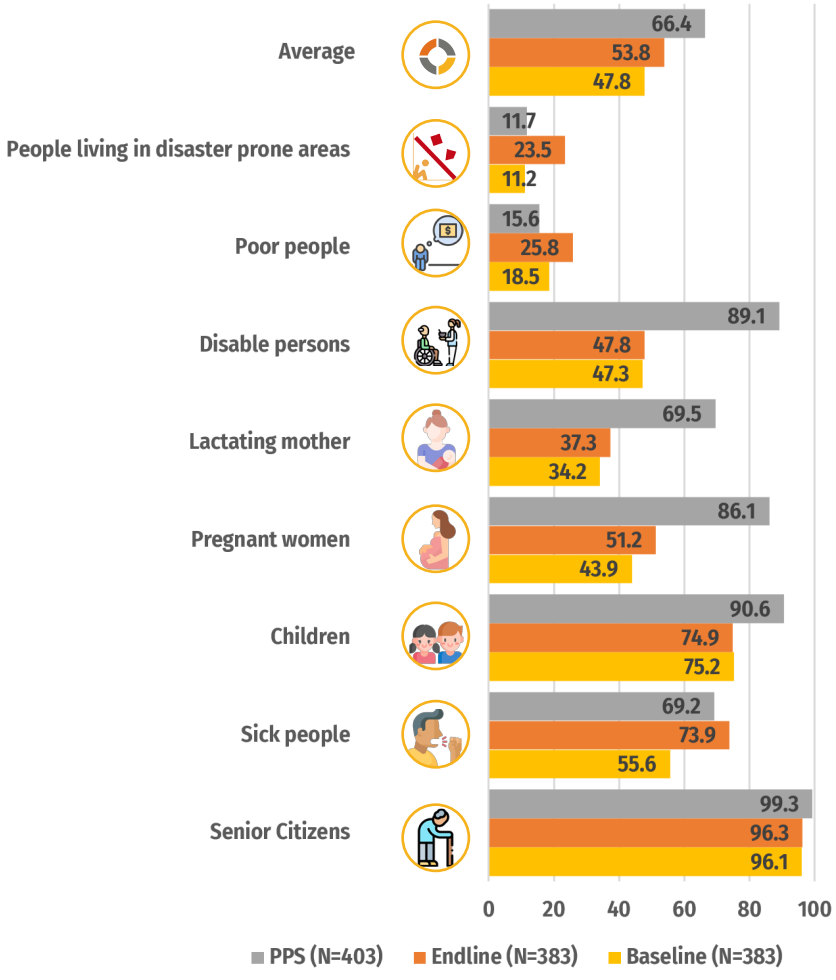


Figure 8 Knowledge about the most vulnerable groups

The level of knowledge of men and women regarding the most vulnerable groups has significantly increased. The difference of knowledge between men and women is statistically insignificant which can be interpreted in a way that both men and women are equally aware about it.

The study revealed that respondents' ability to recognize that most people are living in vulnerable places has increased in the endline (52%) compared to the baseline (44%) which is further increased during the PPS study (93%).

Table 4.8 Knowledge about people living in a vulnerable place in the community/ neighborhood

Vulnerable neighbors	Baseline(N=383)	Endline (N=383)	PPS(N=403)
Know most	44.4	51.7	93.5
Know some	38.6	35.8	5.5
Know a little	16.7	11.2	0.7
Don't know	**0.3**	**1.3**	**0.2**

4.1.2.4 Knowledge about prevention and mitigation of flood

The respondents' knowledge about ways to mitigate the effects of the flood was also assessed in the study. The respondents' average knowledge about mitigation measures of flood has increased, showing improvement in the PPS study (from 17.6 in baseline to 28.2 in endline to 36.4 in the PPS).

Notably, the knowledge regarding some of the mitigation measures, such as making people aware of the preparedness plan, has decreased in the PPS compared to the endline (89% to 60%), establishing EWARS (43% to 36%), and identifying and shifting from hazardous to safe places (57% to 54%).

Table 4.9 Knowledge about mitigating the effects of floods

Mitigating methods of effects floods	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Making people aware of a preparedness plan	90.3	89.3	60.3
Establishing Early Warning System	26.9	42.6	36.2
Identifying and shifting hazardous to safe places	25.6	56.9	54.3
Constructing shelter homes	3.9	8.4	15.4
Preparing raised base of house and hand pump/tap	23.2	33.7	79.4
Making people aware about the spread of epidemics after the flood	18.3	21.9	22.3
A buffer stock of food materials	2.1	5.0	27.8
Stock and mobilization of rescue materials	0.3	20.1	53.6
Mobilization of trained volunteers	0.3	5.0	38.0
Storage of equipment and medicines	1.6	15.9	27.5
Coordination	1.0	11.2	19.1
Others	-	-	2.7
Average	17.6	28.2	36.4
		Women	**35.1**
		Men	**39.1**

The knowledge to mitigate the effects of flood (6.2%) has statistically increased from the endline to PPS . Based on interviews, this change is influenced by awareness-raising, groups formed, and DRR/ DM capacity strengthened during the project and the local governments' work during the flood.. Additionally, the difference of knowledge between men and women is statistically insignificant which informs that the awareness level of both gender is almost the same.

4.1.2.5 Knowledge on prevention and mitigation of landslide

The average knowledge of respondents about various measures to mitigate landslide has an increasing trend in the period between baseline and PPS study (from 18.7 in the baseline to 27 in the endline to 32 in the PPS study).

Knowledge on preventing measures such as planting vegetation, maintaining surface drainage, construction of gabion wall, maintaining stock and mobilization of rescue materials, mobilization of trained volunteers, storage of equipment and medicines and identification and shifting from hazardous to safe places have increased in the PPS study, if compared to the endline. On the other hand, respondents' knowledge about establishing Early Warning and Risk sensitization (EWARS), checking dams, plantation, and construction of shelter homes have decreased compared to the endline. It is found that knowledge regarding raising awareness among people about preparedness plans has shrinked in the PPS, even below the baseline value (74% in baseline to 55% in PPS).

The knowledge about the prevention of landslide has increased from the endline, nonetheless overall knowledge is on the lower side. Flood is more important issue compared to landslides in the study areas since they fall in the plain area.

Table 4.10 Knowledge about mitigating measures of effects of landslide

Mitigating measure of effects of landslide	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Making people aware of preparedness plan	73.9	80.4	55.1
Establishing early warning systems	21.9	42.0	27.5
Motivating people	16.4	23.8	0.0
Plantation	54.3	68.7	64.5
Vegetation	22.2	28.5	69.7
Surface drainage	32.9	13.8	37.0
Check dam	29.8	36.3	19.9
Gabion wall	12.5	34.5	53.3
A buffer stock of food materials	1.6	10.4	11.4
Stock and mobilization of rescue materials	0.5	13.3	29.5
Mobilization of trained volunteers	0.0	8.9	18.9
Storage of equipment and medicines	0.8	11.2	13.9
Identifying and shifting hazardous to safe places	8.9	21.7	45.7
Constructing shelter homes	2.6	11.5	1.0
Others	1.6	0.0	1.2
Average	**18.7**	**27.0**	**32.0**

4.1.2.6 Knowledge about the prevention of fire

When assessed the knowledge about the measures to prevent fire, the study revealed that the respondents' level of knowledge about all preventive measures of fire has increased. The average knowledge level regarding the prevention of fire was 50.2 in the baseline, 55.6 in the endline and 70.5 in the PPS study.

The percentage of the respondents knowing careful disposal of burning cigarette butts has increased by 5%, proper wiring increased by 25%, putting the fire off before going to bed increased by 35%, and keeping matchbox and lighter out of children's reach increased by 29% in the PPS compared to the endline.

Table 4.11 Knowledge about the prevention of fire

Methods for prevention of fire	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Proper handling of fire	93.5	94.5	86.4
Careful disposal of burning cigarette butts	84.3	83.8	89.3
Proper wiring	35.0	44.1	68.7
Storage of kerosene/petrol and highly inflammable materials away from fire	12.3	20.1	23.8
Putting the fire off before going to bed	23.5	31.9	67.2
Keeping matchbox and lighter out of children's reach	53.0	59.3	87.8
Average	**50.2**	**55.6**	**70.5**

Table 4.12 Knowledge about mitigating the effects of fire

Methods to mitigate the effects fire	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Making people aware of proper handling of fire	97.9	96.1	63.3
Safe storage of food materials	42.3	52.0	44.2
Immediate rescue of children, elders, pregnant women, and lactating mothers	22.5	39.4	73.4
Safe storage of important documents	23.2	41.0	80.1
Immediate rescue of livestocks	2.9	15.9	50.6
Storage of valuable ornaments, jewelry, and cash at a safe place	7.0	24.8	61.5
Stock and mobilization of rescue materials	1.3	11.5	44.9
Mobilization of trained volunteers	1.6	3.1	19.9
Storage of equipment and medicines	0.3	2.1	15.6
Identifying and shifting hazardous to safe places	11.7	20.4	33.3
Constructing shelter homes	2.6	0.5	0.7
Average	**19.4**	**27.9**	**40.7**

The level of knowledge on mitigating the effect of fire has drastically increased from the endline. The difference (12.8%) is statistically significant.

4.1.2.8 Knowledge on preparing for flood/landslide (disaster)

The average knowledge of the respondents about the flood/landslide preparedness followed an increasing trend from the baseline to the PPS study (32 in baseline to 57 in the PPS study).

The findings revealed that the understanding of respondents on few preparedness and management measures such as developing plans and methods on reducing the loss/damage of property during the disaster (from 21% to 44%) and maintaining EWS (from 24% to 32%) has increased compared to the endline value.

On the other hand, the percentage of people who mean disaster preparedness as making people aware of how to reduce the loss/damage of property during the disaster has decreased to some extent in the PPS compared to the endline (84% to 79% in PPS).

Table 4.13 Knowledge on preparing for flood/landslide (disaster)

Meaning of flood/landslide (disaster) preparedness	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Making people aware of how to reduce the impact of disaster	72.8	80.7	71.7
Making people aware of how to reduce the loss/damage of property during a disaster	57.7	84.3	79.2
Developing plans and methods for reducing the loss/damage of property during a disaster	11.7	20.9	43.9
EWS (Early Warning System)	17.0	24.2	32.0
Others	0.8	0.3	0.0
Average	**32.0**	**42.1**	**56.7**
		Women	**55.2**
		Men	**59.9**

4.1.2.9 Knowledge about disaster management

Table 3.17 demonstrates that the VISTAR II project interventions were found effective in increasing the understanding the meaning of disaster management which remained constant post the intervention. The knowledge of the respondents regarding the meaning of disaster was found to have increased between the baseline and PPS study (from 34 in baseline to 56 in endline to 77 in the PPS).

The percentage of respondents who reported disaster preparedness plan means disaster management has increased from 58% in the endline to 85% in the PPS.

Similarly, 84% of the respondents who mentioned property/damage reduction plan means disaster management in the endline has increased to 85% in the PPS.

Table 4.14 Knowledge about disaster management

Meaning of flood/landslide (disaster) management	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Implementing a disaster preparedness plan	43.9	57.7	67.5
Property/damage reduction plan	50.4	83.6	85.4
Others	6.6	27.9	-
Can't say/don't remember	-	-	4.7
Average	**33.6**	**56.4**	**76.5**
		Women	**74.8**
		Men	**79.8**

Knowledge about the disaster management has significantly increased from the endline to PPS. The difference (22.1%) is statistically significant. The difference on the level of knowledge between women and men is statistically insignificant which shows that the level of awareness is almost the same.

4.1.2.10 Knowledge on need for household-level plan

The respondents' opinion regarding the need to develop a household-level plan to mitigate the effects of disasters was assessed in the study. The percentage of respondents highlighting the need for a household level plan had increased in the endline compared to the baseline value. However, this percentage has declined in the PPS study by 11%. Similarly, the respondents' knowledge about the types of plan/preparedness to be prepared at the household level has increased between the baseline and PPS study (23 in baseline to 32 in endline to 42 in the PPS).

The findings showed that 68% of the respondents reported a need for construction in the endline, which sharply increased to 93% in the PPS study. Similarly, the percentage of respondents mentioning 'filling up the pit around the house to mitigate the effect of disaster' has also increased from 32% in the endline to 85% in the PPS study. On the contrary, respondents' knowledge about the requirement of the household plan for vulnerable family members (33% in baseline to 22% in PPS) and preparation of *Jatpat Jhola* (go-to-bag) (35% in baseline to 23% in PPS) as a measure to tackle effects of disaster has notably decreased in the PPS study than the baseline value.

Table 4.15 Knowledge about the requirement of the household level plan to mitigate the effects of disasters

Need of household-level plan	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Yes (%)	17.6	35.2	24.2
Types of plan/preparedness among those who said "Yes"			
Household plan for vulnerable family members	33.1	50.1	21.9
Constructing elevated house	66.9	68.1	93.2
Filling up the pit around the house	24.5	32.4	85.4
Toilet construction	30.6	35.2	33.0
Constructing improved stove/Gobar Gas	4.7	13.8	51.6
Preparation of *Jhatpat Jhola*	35.0	71.0	23.4
Coordination with disaster-related organizations	2.8	12.5	19.1
Escape plan	2.2	0.3	-
Others	5.2	3.1	1.0
Average	**22.7**	**31.8**	**41.1**
		Women	**39.5**
		Men	**43.1**

Knowledge about the requirement of a household level plan to mitigate the effects of disaster has significantly increased from the endline. The difference (22.1%) is statistically significant. The difference in the level of knowledge between women and men is statistically insignificant and shows that the level of awareness is almost the same.

However, only one-fourth (24.2) of the respondents realized the need for a household -level plan to mitigate the effect of disaster. This has been a significant decline from the endline, although it has risen from baseline. Key informant from Lamkichuha mentioned that people's awareness about the need of household-level plan has increased in certain households, especially in the highly flood-prone areas, but may not be equally applicable for the people of those areas where the frequency of occurrence of flood is comparatively less.

4.1.2.11 Knowledge on climate change

The percentage of respondents' knowledge of climate change has increased after the project intervention compared to the baseline survey. However, the PPS study faced a slight decrease in this knowledge (from 73% in the endline to 70% in the PPS).

About one-third (30.3%), women (34.6%) and men (21.4%), have not heard about the climate change which is evident from the data. The knowledge about climate change is seen low compared to other aspects such as reasons for drought and flood.

Table 4.16 Knowledge about climate change

Knowledge of climate change	Baseline (N=383)	Endline (N=383)	PPS (N=403)
No knowledge (not heard)	39.7	27.2	30.3
Heard about climate change	60.3	72.8	69.7

4.1.2.12 Attitude towards main cause of disasters

The attitude of the respondents towards the reason for the disaster was assessed in the survey. The percentage of respondents who believed disaster is a natural phenomenon had slightly decreased in the endline which gained an an increment in the PPS study, corresponding to the baseline value (70% each). Likewise, the percentage of respondents who believed disasters are man-made decreased in the PPS (27%) compared to the endline (32%). And the percentage of the respondents who perceived disaster results due to divine intervention followed a decreasing trend from 14% in baseline to 5% in the endline, which further decreased in the PPS study (3%).

Table 4.17 Attitude towards the main cause of disasters

Perception about the main cause of disasters	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Divine intervention	13.6	5.0	3.2
Man made	15.7	32.1	26.8
Natural phenomena	70.2	62.9	70.0
Others	0.5	0.0	-

4.1.2.13 Attitude on prevention of disasters

The percentage of respondents who strongly agreed that disaster can be prevented increased by 10% in the endline, which almost remained sustained in the PPS.

Table 4.18 Attitude towards the prevention of disasters

Disasters can be prevented	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Strongly agree	8.4	33.4	12.9
Agree	77.5	62.9	81.6
Cannot say	8.4	3.7	1.5
Disagree	4.2	0.0	4.0
Strongly disagree	1.6	0.0	-

4.1.2.14 Attitude on importance of raising awareness to reduce the impact of disasters

Raising awareness about risks and creating an understanding of the underlying factors in the community is crucial in reducing the adverse impacts of disasters. Considering this affirmation, respondents' perception of 'importance of raising awareness to reduce the impacts of disasters' was assessed in the study. Almost all respondents in both the baseline and endline strongly agreed that raising awareness is very important to mitigate the impacts of the disaster, which reached 100 percent in the PPS study.

Table 4.19 Attitude towards the importance of raising awareness to reduce the impacts of disasters

"Impacts of disasters can be reduced by raising awareness in the community."	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Strongly agree	10.4	33.7	20.3
Agree	88.5	65.0	79.7
Cannot say	0.0	1.3	-
Disagree	0.8	0.0	-
Strongly disagree	0.3	0.0	-

4.1.2.15 Attitude on importance of EWS and networks to reduce the impacts of disasters

Establishing early warning systems may alert people and provide time to the community people for evacuation resulting to the lowering the impact of disaster. Thus, the attitude towards the importance of the early warning systems and networks to reduce the impacts of disasters was assessed in the study. The percentage of respondents who strongly agreed on the statement "Early warning systems and networks as a means of mitigating the effects of natural disasters" has increased by 6% in the endline compared to the baseline; the value was, however, a little decreased ,in the PPS study (99% in endline and 98% in the PPS).

Table 4.20 Attitude towards the importance of the early warning systems and networks to reduce the impacts of disasters

"Early warning systems and networks are means of mitigating the effect of natural disasters."	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Strongly agree	17.0	35.0	15.9
Agree	75.7	64.2	81.9
Cannot say	5.7	0.8	2.2
Disagree	0.8	0.0	0.0
Strongly disagree	0.8	0.0	0.0

4.1.2.16 Present-day level of preparedness in the community

In the assessment of current level of preparedness in the community to mitigate the impact of disasters, it was found that the respondents with medium-level preparedness to tackle the impacts of disaster was declined in the PPS study than the endline (83% in the endline to 66% in the PPS) .

Table 4.21 Present-day level of preparedness in the community to mitigate impacts of disasters

The current level of preparedness	Baseline (N=383)	Endline (N=383)	PPS (N=403)
High	0.8	1.3	0.7
Medium	4.7	83	66.2
Low	78.3	11.0	28.3
Do not know	16.2	4.7	4.7

4.1.2.17 Attitude on need of special protection for the most vulnerable groups

The most vulnerable groups require special protection during the disaster. Such groups include pregnant women, lactating women, children, senior citizens, and differently abled persons, etc. This statement was strongly agreed by nearly all respondents in all phases of study, baseline, endline, and PPS study. (99% each).

Table 4.22 Attitude towards the need of special protection to the most vulnerable groups

Need of special protection to the most vulnerable groups	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Strongly agree	52.0	57.2	28.0
Agree	47.3	42.3	71.0
Cannot say	0.3	0.5	0.7
Disagree	0.5	0.0	0.2
Strongly disagree	0.0	0.0	0.0

4.1.2.18 Attitude on need for safety of the respondents' residence

The attitude of respondents towards the safety of their residence from the risk of disaster was assessed in the study. More than half of the respondents (74%) during the baseline study had supposed that they had an unsafe (danger or very dangerous) residence, which is decreased in the PPS study to 60%.

Table 4.23 Attitude towards the safety of the respondents' residence

Safety of the respondents' residence	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Very safe	1.6	10.7	1.0
Safe	17.5	29.5	15.4
Little safe	7.3	39.2	23.3
Dangerous	56.7	11.5	50.1
Very dangerous	17.0	9.1	10.2

4.1.2.19 Attitude on first responder to any disaster

The PPS study also explored the attitude of respondents about who should be the first responder to any disaster. The respondents saying, the neighborhood/community should be the first responder to any disasters has increased by 14% in the endline compared to the baseline which is further increased by 10% in the PPS study (56% in baseline, 70% in endline and 80% in PPS). However, the percentage of respondents who mentioned that the national government should be the first to respond to any disaster has markedly decreased in the PPS study (from 38 % in the baseline and 50% in the endline to only 14% in the PPS study).

Table 4.24 Attitude towards the first responder to any disaster

First responding authority to any disaster	Baseline (N=383)	Endline (N=383)	PPS (N=403)
National government	38.1	50.4	13.9
Police (Armed Police Force and Nepal Police) and Nepal Army	5.2	13.8	4.5
Affected community	0.5	1.6	0.5
Neighborhood community	56.1	70.2	79.7
UN and INGOs	0.0	8.1	0.0
Civil Societies	0.0	0.8	0.0
CDRMC	0.0	13.1	0.0
Youth and other groups	0.0	1.8	0.5
Local governments	0.0	0.0	1.0

4.1.2.20 Attitude on need of school-level disaster reduction activities

In the assessment of the need of disasters reduction activities in schools, it was found that the percentage of the respondents highlighting the need of disaster reduction activities at the school level has increased in the endline (93%) compared to the baseline (88%) which was dropped a little in the PPS study (89%).

Table 4.25 Need of school level disaster reduction activities

Need of school-level activities	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Yes	87.7	93.2	89.3
No	12.3	6.8	4.5

4.1.2.21 Practice towards climate change adaptation

The percentage of respondents who were practicing the measures for climate change adaptation has been increased by 11% in the PPS study compared to the baseline. However, the proportion has significantly decreased in the PPS study (43%) compared to the endline survey (70%).

The decrease of practice in climate change adaptation is significantly decreased from the end-line (26.8%) is significant. The current present day level of climate change adaptation practice (40.4%) is low. The adaptation practices expressed by women and men are not significantly different.

Table 4.26 Practice on climate change adaptation

Adaptation of climate change practices	Baseline (N=383)	Endline (N=383)	PPS (N=403)
No	67.5	30.1	56.9
Yes	32.5	69.9	43.1
		Women	44.6
		Men	40.4

4.1.2.22 Disaster related education for school children

Disaster-related education in schools

The information about the school providing disaster-related education was gathered in the study. The percentage of students who mentioned that schools provided disaster-related education was decreased by 9 % and 26% in the PPS study than in the baseline and endline study.

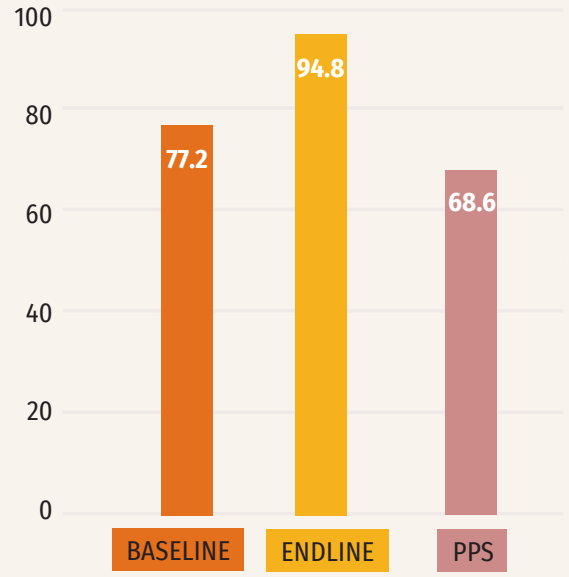


Figure 9 Disaster-related education in schools (%)

Sharing of DRR knowledge in-home/community

It is beneficial to raise awareness among the community people if the knowledge about the DRR gained in school is shared by the student. The PPS study shows that the proportion of school students sharing DRR knowledge has decreased by almost 30 percent and 49 percent than the baseline and endline study.

Table 4.27 Sharing of DRR knowledge gained in the school to home/community

Sharing the DRR knowledge inhome/community	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Yes	66.7	85.7	37.2
No	33.3	14.3	62.8

Mock drill practices in school

Various organizations working in the field of DRR used to conduct mock drill practices in the schools in their respective working areas. They also train school teachers to conduct regular mock drill practices for students in schools as a safety measure to protect oneself from physical injury and death.

The information regarding the school students performing mock drill practices in schools as a safety measure to protect themselves from possible disasters was gathered in the study. The percentage of school children who did mock drill practices in schools was found to have increased almost twice in the endline (79%) compared to the baseline (42%). This percentage has decreased sharply in the PPS study to only 56%. It might have happened due to the closure of physical classes in schools during the prohibitory order and lockdown which was declared by the government as a preventive measure of COVID-19.

Sharing of mock drill practices in-home/ community

The study also assessed whether the mock drill practices learned in schools are shared in-home/community. The percentage of school students who reported that their learning are shared had notably increased in the endline (80%) compared to the baseline (44%). This percentage is dramatically declined to only 51% in the PPS study.

Table 4.28 Sharing of learned mock drill practices in-home/community

Sharing of mock drill practices in-home/community	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Yes	43.9	79.5	51.4
No	56.1	20.5	48.6

4.1.3 Absorptive Capacity

Absorptive capacity deals with the ability of individuals or groups to take intentional protective action and coping with the known shocks. Based on the quantitative findings, personal efforts to reduce the loss of disasters have remained the same. Qualitative findings show that the availability of disaster preparedness systems and resources has drastically decreased due to the transition of local government and the emphasis address the COVID-19 which overshadowed the DRR initiative. However, emergency and rescue materials were provided to address the COVID-19 situation and floods. Based on the information obtained from key informants, the absorptive capacity is influenced by the project activities. The project ensured the active participation of all members (including socially excluded groups such as women, children) in all phases of disaster management. The process of risk, hazard, and resources mapping, mock drills, awareness-raising, disaster preparedness plans developed by DMCs helped the communities to improve their absorptive capacity. Some DMCs are functioning till the date in the community levels in different forms and names. Based on the surveys, one-third (32%) respondents expressed that CBO/DMC conducted participatory planning related to disaster preparedness.

4.1.3.1 Personal and/or community experience to disasters during last 5 years

The personal and community experience on the various types of disasters was assessed in the survey. The respondents having faced the disaster experience (such as the experience of floods, fire, storm, hailstorm, epidemics, drought, etc.) in an average was 22.7 in the baseline, which slightly decreased in the endline to 17.0 and again raised to 31.9 in the PPS study. This indicates that the intensity of disaster has increased by almost twice compared to the endline.

Table 4.29 Personal and/or community experience on disasters

Experience on disasters	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Flood	85.4	90.3	99.5
Landslide*	29.5	26.6	8.7
Earthquake	54.6	14.9	3.7
Fire	12.5	16.4	55.6
Storm	25.1	3.4	71.0
Hailstorm	7.3	2.6	31.0
Epidemics	3.9	5.0	17.4
Cold wave	4.7	21.4	17.6
Hot wave	0.5	1.3	0.5
Drought	25.8	5.0	34.5
Others	0.5	0.3	0.0
Pandemic such as COVID-19	0.0	0.0	11.7

**Note: includes cutting of the river bank and shifting channels by river in Terai and some areas adjoining with Chure*

4.1.3.2 Personal and/or community efforts to reduce losses/impacts of disaster

The study analyzed the personal and/or community efforts to reduce losses and impacts of disasters. The VISTAR II project interventions were found effective as the average personal and/or community efforts to reduce losses/impacts of disasters has increased in endline (24.3) from the baseline (15.4) and further increased in the PPS study (29%).

The effort to reduce losses/impacts of disasters such as planting vegetation, putting gabion wall, identifying and shifting hazardous to safe place has increased by 51%, 8%, and 19%, respectively from endline to the PPS study.

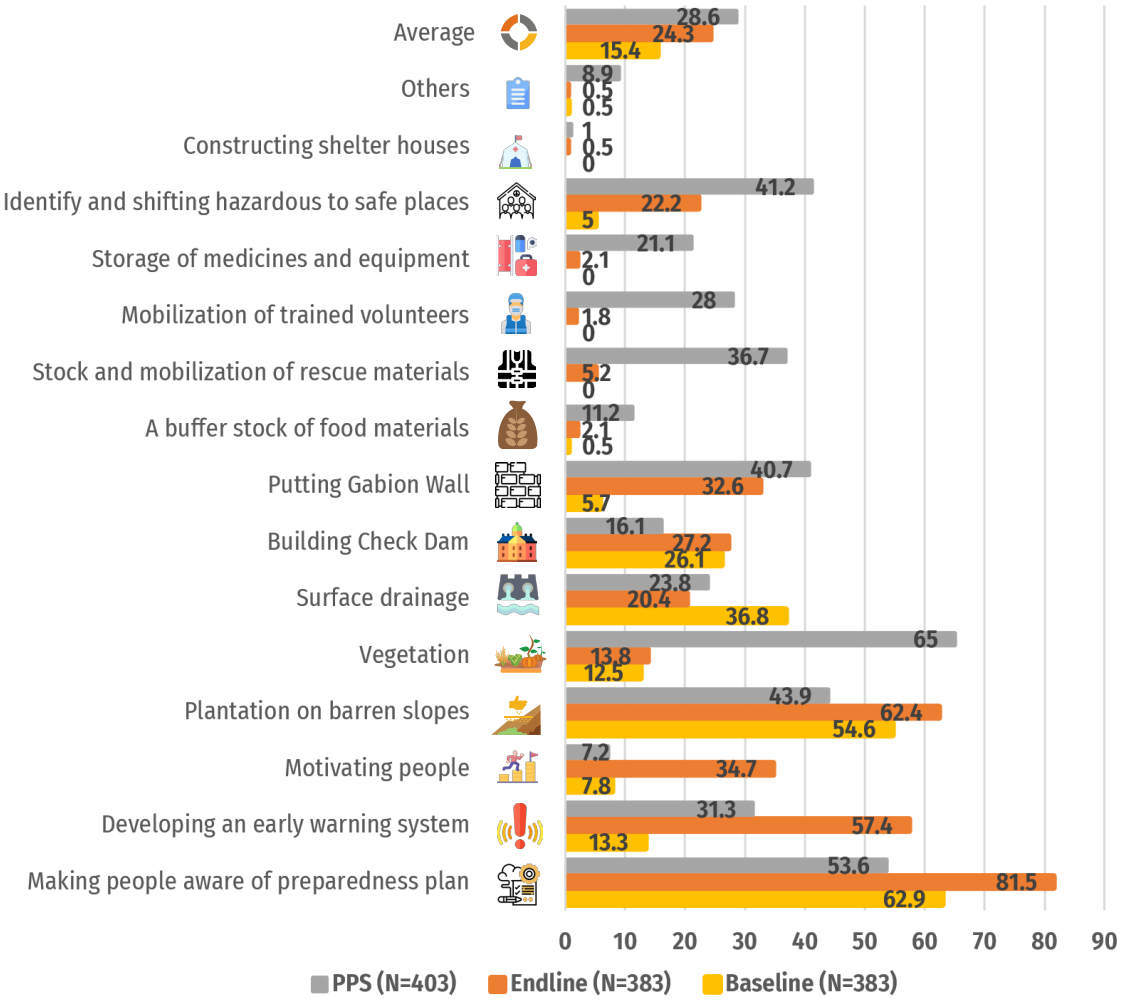


Figure 10 Personal and/or community efforts to reduce losses/impacts of disasters

Personal efforts to reduce the loss of disasters is not only maintained in the PPS compared to endline, but an increase (4.3%) is seen. Furthermore, the difference between men and women is statistically insignificant.

4.1.3.3 Availability of disaster preparedness system and resources

The percentage of respondents reporting that the availability of disaster preparedness systems and resources has sharply increased in the endline compared to the baseline (from 7.3 to 93.0). However, a notable decrease in availability of disaster preparedness system and resources was seen in the PPS study.

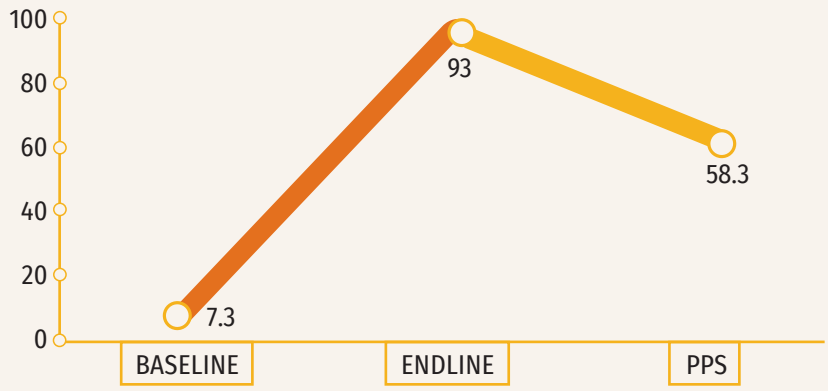


Figure 11 Response on availability of disaster preparedness system and resources

The percentage regarding the availability of institutions/authorities to mitigate disaster, availability of awareness and public information projects in the community, availability of helping groups and rescue materials has decreased in the PPS compared to the endline.

Table 4.30 Availability of disaster preparedness system and resources

Categories	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Availability of institutions/ authority to mitigate disaster in the community	18.5	96.1	69.0
Availability of the awareness and public information projects in the community	0.8	95.3	75.2
Availability of Disaster Management Plan	2.6	84.3	19.6
Circulation of the early signs of disasters in the community	15.4	93.0	22.6
Availability of the Evacuation and Contingency Plan in the VDC and/or in the community	1.3	83.8	16.6
Helping group	10.4	95.3	75.2
Rescue materials	3.4	94.5	90.1
Early warning information on floods or landslides	2.3	95.0	
Availability of search and rescue groups to save from flood or landslides	2.9	94.8	71.5
Availability of trained persons to rescue from flood or landslide	6.8	94.8	73.2
Availability of trained persons to provide first aid treatment during flood or landslide	15.9	95.6	70.0
Average	**7.3**	**93.0**	**58.3**

During FGDs, it was opined that the notion on the availability of institutions, DM plans, public information was not realized to the fullest extent due to the transformation of local structures from VDC/ Municipality to *Palikas* (Rural/ Municipalities which have almost five times greater geographic territory), At present, rural municipalities/municipalities are at the early stage of preparing LDCRPs at ward level/ rural municipalities/municipalities level through the VCA process.

4.1.4 Transformative Capacity

Transformative capacity deals with the ability of communities or individuals to make intentional changes towards preventing or reducing the drivers of vulnerability, poverty, and inequalities. The qualitative findings suggest that the project contributed to reduce the disaster-related vulnerabilities and increased the resilience of women and girls. The survey respondents (46%) converged with the same expression.

FGDs and interviews revealed that the level of sensitization towards protection and addressing specific needs of vulnerable people, including children, women, elderly citizens, and low-income families has been increased.

Notably, very few (8%) respondents mentioned they had raised their voice for disaster-related issues to influence national-level policy. The short span of the project and the transition of the local governments from old to new could be the reason behind this.

Moreover, the transition of local government from one form to another has decreased the availability of disaster preparedness systems and institutional resources. Likewise, there has been less sharing of DRR knowledge among household members by the school children in the absence of continuous awareness (closure of schools due to COVID context) and lack of mock drill practices in the schools.

4.1.4.1 Raising the voice in influencing national policy

Stakeholders were asked if their organization had raised voice to influence the disaster-related national policy. Very few, (8%) of respondents mentioned they had raised their voice to influence the disaster-related national-level policy .

One of the interviewees from Lamkichuha (Ward-9), previously community DMC members and currently elected in the ward level DMC (LDMC) mentioned that she raised voices for the proper management of settlements at risk.

4.1.4.2 Representation of marginalized communities, excluded groups, and women

Community-Based Organizations were asked if they have ensured the representation of all types of marginalized communities, excluded groups, and women in their organizations. It is found that almost three-fourth of the organizations (74%) have representation of such groups. Nearly one-third (32%) of the respondents mentioned that they are in planning phase to involve above-mentioned groups for disaster mitigation. Three-fifth of the stakeholders (58%) reported that they have included the most vulnerable groups in the DRR related service delivery. Out of total, above one-tenth of the stakeholders (11%) stated that they had managed special provisions for the most vulnerable groups.

Table 4. 31 Representation of marginalized communities, excluded groups, and women in CBOs

	PPS
Representation of all types of marginalized communities, excluded groups, and women in CBO	
Yes	73.6
No	26.4
Total	**100.0**
N	125
Participatory planning done by CBO/DMC	
Yes	32.0
No	68.0
Total	**100.0**
N	125
Inclusion of the most vulnerable groups in service delivery related to DRR	
Yes	58.4
No	41.6
Total	**100.0**
N	125
Special provisions done for the most vulnerable groups	
Yes	11.0
No	89.0
Total	**100.0**
N	73

4.1.4.3 Increment in the resilient power of women and girls

The contribution of the VISTAR II project to reduce disaster-related vulnerabilities and increase the resilience of women and girls were also assessed in the study. Nearly half of the respondents (46%) mentioned that the project contributed to reduce the disaster-related vulnerabilities and increased the resilience of women and girls.

Similarly, nearly two-fifths of the respondents (38%) mentioned that the project contributed to community disaster preparation.

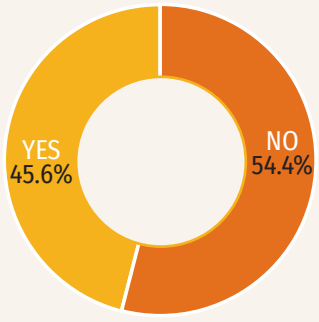


Figure 12 Contribution of the project to reduce disaster-related vulnerabilities and increase resilience of women and girls

4.1.4.4 Contribution of the project in women empowerment

The project ensured female engagement in project activities which was reflected in interactions with different key informants. Women have become more conscious about their rights and entitlements with the increase in interactions in the public spaces for meetings and trainings in the community. Participation of women in CDMC had not only helped to gain knowledge and skills for disaster management, but also strengthened their leadership quality. Women have also became capable of articulating the needs of their community with the government.

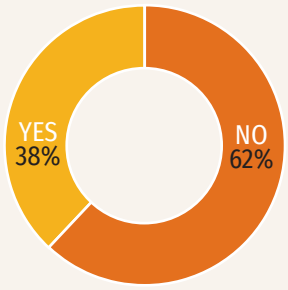


Figure 13 Contribution of the project in community disaster preparation

On the other hand, some women felt that they were not provided equal opportunities as men even when they were equally capable and confident to take the responsibility. This has discouraged and resulted to the loss of enthusiasm of women for continuing their efforts and participation in the community.

4.2 Enabling Environment

This section deals about the legal framework related to enabing conditions to the people who are vulnerable to disasters provisioned in the government and DRR/DM plans and local institutions. The new administrative structure has empowered local governments with the resources and power to frame policy related to disaster management and disaster risk reduction. Rural municipalities and municipalities have started to form the Disaster Management Committees at Palika levels and Ward levels as provisioned in the Acts and policies. They have been preparing DPRP with a special focus on preparedness for response, as a compliance. But preparation of LDCRP are yet to be developed. The community level DMCs (or VDC level formed previously) is yet to be vertically aligned with the Rural municipalities / Municipalities. A few members of community/DMCs have also been nominated in Ward level DMCs of Palika. Master Trainers from the private sector (Chambers of Commerce) were utilizing the skills and sustaining the practices learned from the training and determined to mainstream disaster management in their programs and plans, even if they are not engaged by the local governments. However, Master Trainers from government sectors could not utilize their skills properly due to alternation in their roles and responsibilities, mainly due to transfers to other areas or departments. However, a few of them were willing and motivated to utilize the skills if they obtained the right opportunity.

> **"Before the training, we lacked proper knowledge on how to express the disaster management needs and other issues of our community and convince the government to fulfill those needs, but now we have become more knowledgeable on these issues."**
> ***- CDMC Chairperson (woman), Bauniya, Kailali***

One third (36%) of respondents expressed that participatory process has been adopted by local DMCs or CBOs. This is however, still low, that may reflect to the transition process of local governments.

The information obtained from key informants revealed that the project fostered the participation of vulnerable groups in every step of planning and implementation. Firstly, VCA was conducted in the community to identify needs during the implementation. This has helped to identify the number and location of the most vulnerable people in the community. The project contributed to reduce the vulnerability of community people by increasing their capacities to prepare for, cope, and mitigate the adverse impact of disasters.

Most stakeholders (74%) recognized that there is the representation of all types of marginalized communities, excluded groups, and women in the institutions. Most stakeholders (58%) also reported that the most vulnerable groups are included in the service delivery related to DRR. However, special provisions for the most vulnerable groups are low (11%).

4.2.1 Legal provisions and framework for DRM

There has been a better defined legal framework in the country. The Constitution of Nepal 2072 provisions disaster management as the concurrent power of federal, provincial and local government. Thus, preparing and operating disaster risk reduction and management practice is a shared responsibility of the federal, provincial and local governments. The Disaster Risk Reduction and Management Act, 2017 and Disaster Risk Reduction and Management Rules, 2019 mandates federal, provincial and local government to establish DRRM institutions in respective government and facilitate their interlinkages.

Ministry of Federal Affairs and General Administration (MoFAGA), responsible for building the capacity of local governments have prepared and provided a sample Local DRRM Act and a sample Local Disaster Management Operations Guidelines to all local levels in 2018 as a guide to prepare their local DRRM Acts and Guidelines. MoFAGA has also provided the guidelines for preparing Local Disaster Reduction and Climate Response Plan (LDCRP) to local government to prepare the similar document for them. Likewise, Ministry of Home Affiars (MoFA), the nodal ministry for disaster response has provided Guidelines for Disaster Preparedness and Response Framework and for Operation of Local Emergency Operations Centre to strengthen disaster preparedness and response mechanisms at all local levels.

FGDs and Interviews showed that the Districts and Local Government (*Palikas*) are preparing DPRP (Disaster Preparedness and Response Plan), as they are mandated to prepare and review each year.

LDCRP has a longer term and bigger scope of DRR including the climate change which is required to be conducted through a participatory process like VCA (Vulnerability and Capacity Assessment). The Rural municipalities and municipalities (*Palikas*) are at the initial stage of preparing LDCRP. The guidance of MoFAGA for LDRCP is yet to be finalized after the re-structuring of the government. (previously, there was LDCRP).

Although local government (municipality) had a positive response towards the CBDP model, there were no specific plans or mechanisms to integrate and implement the CBDP model in their disaster planning and implementation process. It is because the government authorities who were oriented and motivated from the project got transferred with the change in structure of government. Nevertheless, the changed structure of government has ample opportunities for the continuation of project outcomes.

Joshipur Rural Municipality of Kailali district has prepared Disaster Management Fund Operating Guideline 2075 (2020) in line with the guideline given by the Government of Nepal, in order to regulate the fund for disaster management. Similarly, Lamkichuha Municipality of Kailali district has prepared COVID-19 Crisis Management Ordinance for effective management of COVID-19 situation. The master trainers from the Chambers of Commerce, though not engaged by local government, were utilizing the skills and sustaining the practices learned from the training and determined to mainstream disaster management in Chamber's programs and plans. On the other hand, MTs among the civil servants could not utilize their skills properly due to alternation in their roles and responsibilities. However, a few of them were willing and motivated to utilize the skills to obtain the right opportunity.

The DPRP of Dodhara Chadani Municipality of Kanchanpur district has five objectives: (1) Mitigate the damages and loss of people and assets due to flood, landslide; (2) Strengthen the preparedness work to effectively respond any kind of disaster; (3) Support Water Sanitation and Hygiene (WASH); 4) Operate alternative education during pandemic; (5) Protect women, children and people with disability from violence, exploitation and abuse; and (6) Support livelihoods of the affected households. Similarly, Bedkot Municipality has prepared an Act for DRR and DM in 2075 (2019). This has provisioned to form Rural municipalities and municipalities level and Ward level Disaster Management Committees.

Thus, influenced by the previous DRR works in the VDCs and adhering to the federal guidelines, there are some remarkable progress towards preparedness in rural municipalities and municipalities and Ward level (at least through guidelines and formation of committees in Rural municipalities and municipalities). However, it is necessary to ensure that awareness has reached the community level and the LDCRP process to are conducted and completed in a participatory process.

4.2.2 Disaster risk reduction plan

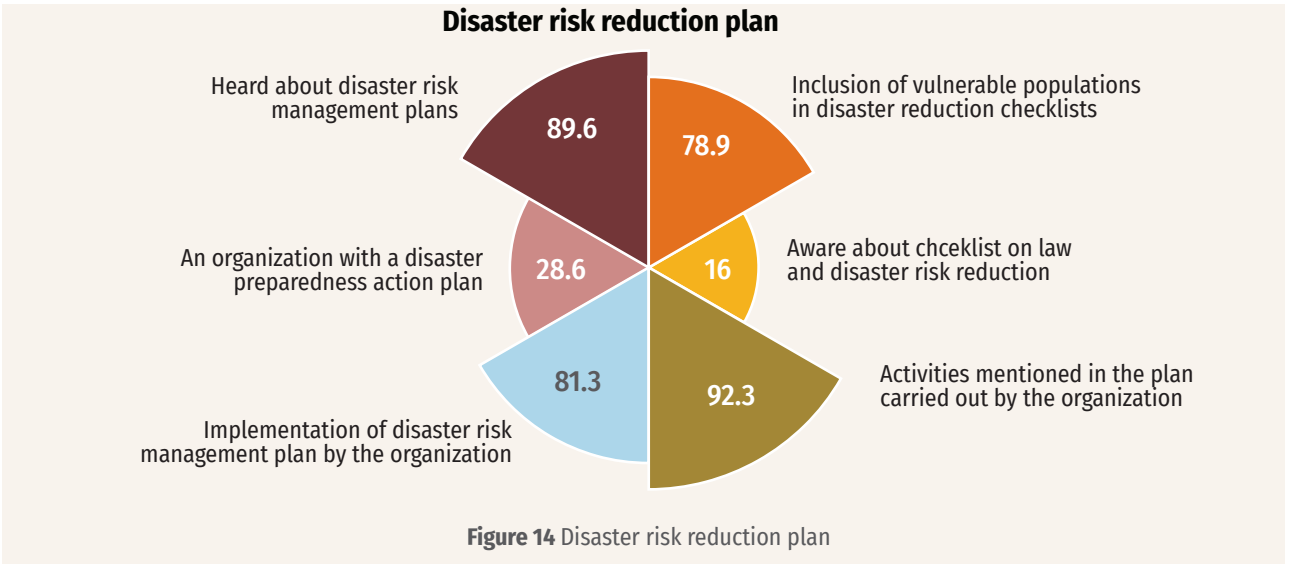


Figure 14 Disaster risk reduction plan

The knowledge regarding the disaster risk reduction plan among stakeholders was assessed in the study. The majority of the respondents (90%) mentioned that they had heard about disaster risk management plans. Approximately over one-fourth (29%) of the respondents stated that their organization had formed a disaster preparedness action plan. Those having the disaster risk reduction plan in their organization were asked about its implementation, majority of them (81%) mentioned that their organization implemented a disaster risk management plan. Among them, an overwhelming proportion of the respondents (92%) reported that their organization had carried out the activities as mentioned in the plan.

Similarly, it was found that only 16% respondents were aware about the checklist on law and disaster risk reduction. Among them, four out of five respondents (79%) were aware about the need to include vulnerable populations in the disaster reduction checklists.

4.2.3 Measures to mitigate possible future disaster risk

The study analyzed the knowledge about the measures to mitigate possible future disaster risk in the community. Most of the respondents (90%) mentioned that they have heard about measures carried out to mitigate possible disaster risk in the community.

The same group of respondents were asked about the types of measures carried out at the community level to tackle disaster risk. Above half of the respondents reported about the plantation of trees/vegetation (52%) followed by training on awareness (49%), street drama (39%), and establishment of emergency and maintenance fund (36%).

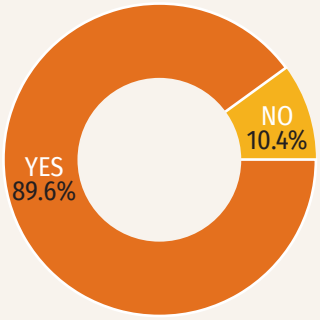


Figure 15 Heard about measures to mitigate possible future disaster risk in the community

Table 4. 32 Knowledge about the measures to mitigate possible future disaster risk

	PPS
Heard about measures to mitigate possible future disaster risk in the community	
Yes	89.6
No	10.4
Total	**100.0**
N	125
Measures to mitigate possible disaster risk in the community+	
Street Drama	39.3
Door to Door campaigns	23.2
Formation of rescuer group	32.1
Develop action plan	19.6
Training on awareness	49.1
Formation of Disaster Management Committees	28.6
Formation of youth rescue clubs	11.6
Prepare disaster preparedness plan	9.8
Establishment of emergency and maintenance fund	35.7
Wall painting	3.6
Awareness by posters	11.6
Publication of booklets	2.7

Conduct community meeting	17.0
Plantation of trees/vegetation	51.8
Rescue materials stock	30.4
Early warning system	12.5
Others	15.2
Total	**100.0**
N	112

+ Multiple responses

4.2.4 Availability of rescue materials

The availability of rescue materials for disaster management in the organization was also assessed in the study. One-half of respondents (51%) mentioned that there is the availability of stretchers in the organization, followed by first aid box (46%), life jacket (42%), and hand mic (41%). One out of ten respondents (10%) mentioned about the availability of rescue and emergency plans designed to reduce potential community risks. More than three-fifths of the respondents (62%) highlighted that helping hands/persons are available to reduce potential community risks. More than half respondents (54%) mentioned that ten or more helping hands/persons are available for disaster management or to reduce potential community risk.

Rural municipalities/Municipalities have allocated some fund for DRR purposes on an *ad hoc* basis; their expenditure is made on the basis of need. Some community groups have managed their DRR funds. A new organization has reformed a group of Lamkichuha (Sonpur) dismantled the previous committee and fund and have started a new committee and new fund.

Table 4. 33 Types of rescue materials available in the organization

	PPS
Available rescue materials	
Stretchers	51.2
First aid box	45.6
Hand mic	40.8
Whistle	28.8
Life jacket	41.6
Radio	3.2
Belcha	24.8
Fauro	19.2
Carpet	12.8
Helmet	29.6
Rope	28.8
Tent	16.0
Gumboot	32.8
Headlight	20.8
Box	4.8
Others	48.0
N	125
Availability of rescue and emergency plans designed to reduce potential community risks	
Yes	9.6
No	90.4

Total	**100.0**
N	125
Availability of helping hands/persons to reduce potential community risks	
Yes	62.4
No	37.6
Total	**100.0**
N	125

+ Multiple responses

Only 9.6 percent of total respondent mentioned about the availability of the rescue and emergency plans to reduce the risk of disaster. Two-third (62.4 %), mentioned about the availability of helping hands such as DMC members, rescue team, and local governments to reduce the potential risk in the community.

4.2.5 Availability and accessibility of hand pump and safe shelter

The availability of hand pump or big tap facility in the community/organization was examined in the study. More than one-fifth of respondents (21%) mentioned that hand pump/big tap facilities were available in their organization/community in case adverse effects on water and irrigation facilities is faced. Those respondents were further asked about the accessibility of those hand-pump/taps to vulnerable groups. More than one-fourth of them (27%) said that hand pump or big tap facility is accessible to the community, especially among the vulnerable group. It is also noted that very few respondents (6%) mentioned about the availability of elevated buildings as a provision of safe shelter during a disaster/flood.

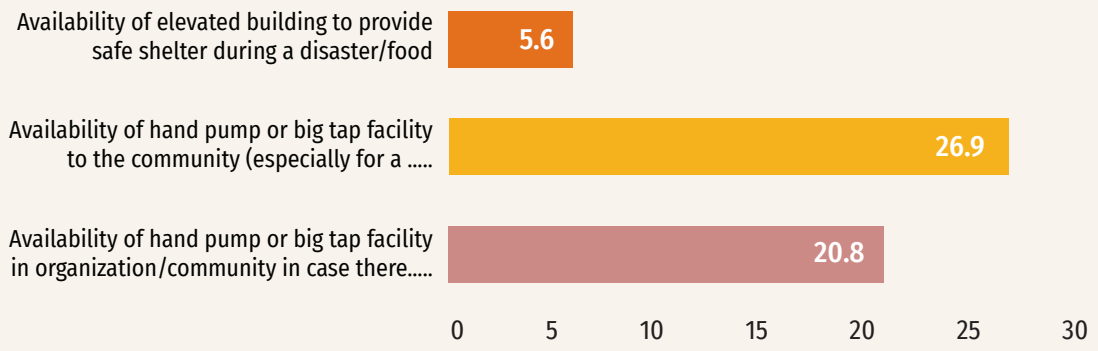


Figure 16 Availability and accessibility hand pump and safe shelter (Yes %)

4.2.6 Disaster management plans for the school level

VISTAR II project has helped to develop a disaster management plan at the school level. Stakeholders were asked if their organization have disaster management plans for the school level. In response to this question, one-fifth of respondents (21%) mentioned that they have disaster management plans for the school level. The schools that participated in interviews had not updated the disaster management plan since last 2 years due to COVID-19 and other factors. In an interview with principal of one of the schools of Lamkichuha, it is found that they used to update DRR into annual SIP before that.

Table 4. 34 Availability of disaster management plans for the school level

Availability of disaster management plan for the school level	PPS
Yes	20.9
No	79.1
Total	**100**

4.2.7 Organizations providing humanitarian aid

The arrangement of humanitarian aid by organizations was also explored in the PPS study. The majority of the respondents (81%) mentioned that organizations providing humanitarian aids were available in their community.

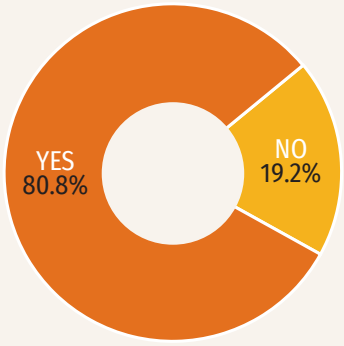


Figure 17 Organizations providing humanitarian aid

4.2.8 Role of organizations in disaster response network

In regards to the disaster response network, nearly one-third of respondents (31%) mentioned that their organization has a major role in the disaster response network. Due to the presence of INGOs in some area such as World Vision, former networks have been reactivated.

The community organisations including community DMCs are playing roles in disaster response work. For example, providing fund to the affected people from the fund collected and being operated, helping to stay in the safe shelter, informing the Red Cross Society and *Palikas* about the situation created by flood or fire, early warning for possible flood etc. The meetings are held on need basis. As mentioned earlier, only half groups formed, are functional. A few people were found to influence the local government in Palika/ ward level plans, however exact number could not be known.

Table 4.35 Organizations have a major role in disaster response network

Organization having a major role in disaster response network	PPS
Yes	30.4
No	69.6
Total	**100.0**
N	125

4.2.9 Organization performing disaster-oriented advocacy

Organization conducting disaster-oriented advocacy is low. Interview showed that one-fifth of respondents (20%) mentioned that their organization provided disaster-oriented advocacy. The advocacy efforts included the demand for safe houses, elevated hand pumps, and matching funds in the locally managed community level DRR funds.

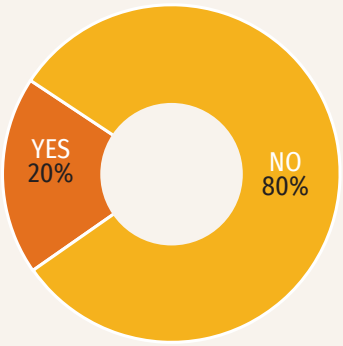


Figure 18 Organization performing disaster-oriented advocacy

4.3 Reducing Drivers of Disaster Risk

The communities, local governments and NGOs are making effort to reduce the drivers of disaster risks.

Chairperson of Bhairab tole Committee, Dodhara-Chadani- Mahakali Rural municipality Ward -3 of Kanchanur district said that Nepal National Social Welfare Association (NNSWA) provided awareness on disaster risk and disaster management. Chairperson told, "We formed Disaster Management Committee about 5/6 years ago, we do not call it as DM Committee, but we operate as a multi-functional committee such as farmers committee, users committee for construction works. This committee is providing awareness about reducing disaster risks and early warning. We have a local fund to use for urgent needs of groups or individuals. We are registered as a group in Rural municipality/Municipality. However, we are not invited to any formal meetings by Wards or Rural municipality/Municipality. Most importantly, we have built a safe house which can accommodate 30-40 people in the community. We use it as a temporary shelter for people affected by floods or fires" (from Interaction Note).

4.3.1 Measures taken to mitigate possible disasters

It is impressive to note that the average proportion of possible disaster mitigating measures followed by the community has an increasing trend between the baseline and PPS study (from 11.8 in the baseline and 20.4 in the endline to 25.9 in the endline).

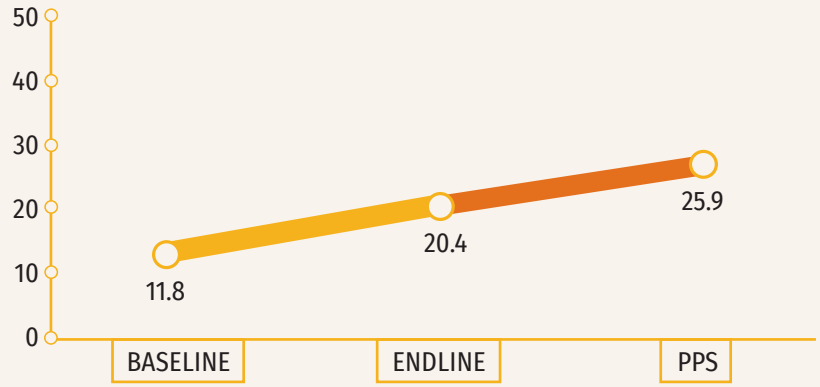


Figure 19 Measures taken to mitigate possible disaster risks in the community

The percentage of respondents adopting measures to mitigate the possible risks in the community, such as the formation of rescuer groups, formation of disaster management committees, and conducting village meetings, were increased in the PPS study compared to the baseline. However, the percentage of other measures to mitigate for the possible disaster has decreased in PPS than endline survey.

Table 4.36 Measures taken to mitigate possible disaster risks in the community

Measures to mitigate possible disasters	Baseline (N=383)	Endline (N=383)	PPS (N=403)
Street drama	1.9	73.4	62.0
Door-to-door campaigns	21.2	67.1	13.4
Formation of Rescuer groups	6.4	43.9	56.6
Development of Action plan	2.6	8.1	7.7
Awareness training	47.4	43.3	46.9
Formation of Disaster Management Committees	0.6	5.7	48.4
Formation of Youth Rescue Clubs	3.2	3.4	6.5
Formulation of disaster preparedness plan	0.6	2.9	2.7
Establishment of emergency and maintenance fund	0.0	7.3	20.1
Wall painting	0.6	0.8	0.5
Awareness by posters	0.6	1.0	3.7
Distribution of t-shirt	-	1.0	0.2
Publication of booklets	0.0	0.5	1.2
Conduct village meeting	10.3	4.4	25.8
Plantation/vegetation	91.7	31.3	59.8
Rescue materials stock	0.6	36.6	35.7
Establishment of early warning system	1.9	17.5	4.0
Embankment	-	-	7.0
Average	**11.8**	**20.4**	**25.9**

Based on the table, various measures were taken to mitigate possible disaster risk. The most popular were street drama, plantation, rescue groups, DM Committees. On contrary, formal action plan/ DP plan preparation, early warning systems were less followed and carries opportunities to strengthen them in the future.

4.4 Sustainability

Sustainability can be defined as the likelihood of a continuation in the stream of benefits produced by a project/program after the end external support. The sustainability of the VISTAR II project has been studied under four major components of sustainability, namely, Sustained linkages, Sustained Resources, and Sustained Capacity and Motivation.

4.4.1 Sustained Linkages

'Linkages' refers to developing relationships with relevant government or non-governmental agencies in order to access external resources. Linkages, especially between community-based organizations or individuals and existing institutions or entities such as government, NGOs, private sector, commercial entities, or others, are usually critical for successful phase-over of responsibility for activities, formerly supported by the projects.

The community-level structure, CDMC (Community Disaster Management Committee) formed by the project, was functioning to some extent. Some members were working actively during the time of disaster. Although some other members of the prior task force migrated/were not present in the same community and regular meetings were not conducted, the search and rescue team and early warning team were operating at the time of disaster with the available human resources and materials.

Although new structure of the government has legal- framework and provided space to leverage DRR in the days to come, former CDMCs could not have direct linkage with the local government due to structural change. The legal provision of some municipalities (Lamkichuha) requiring at least one representative of CDMC to be included in the member of WDMC can be advantageous for transferring knowledge and skills. Since no interactions, meetings, and trainings were held for newly formed WDMC till the time of survey the actual application of knowledge and skills could not be documented. CDMC members in some communities (Bahunpur, Kailali) complained about the newly appointed members of the local government for their poor co-ordination and support, including delayed response for disaster management issues. . To sum up, the existing status of disaster management initiatives at the municipality level was not so satisfactory. Currently, there is no specific mechanism for establishing linkage with the community for disaster preparedness. The municipality chairperson (Joshipur, Kailali), reaffirmed that they are being able to sustain and integrate the project initiatives effectively.

Furthermore, some key informants added that although some government stakeholders are committed to prioritizing disaster management in government plans and programs, not all government stakeholders are sincere and co-operative towards it. They further mentioned that the changed structure of government is also hindering the co-ordination within government authorities. They also pointed that the newly appointed local representatives was reluctant to participate in DDMC meetings since such meetings are still chaired by the Chief District Officers (CDOs), similar to the practice existed in the unitary system and the confrontment of hierarchical issues.

Some municipalities of Kanchanpur (Bedkot) brought up an issue of lack of proper vertical co-ordination i.e. co-ordination with the province level during disaster response and management. Whereas the situation was different in the case of Kailali, where Joshipur rural municipality had sound vertical co-ordination with district and province level.

Different organizations were working actively in both districts for disaster management. Organizations like Nepal Red Cross Society (NRCS), World Vision International Nepal (WVIN), BASE, and Prayog Nepal were working in Kailali. In the case of Kanchanpur, organizations like Nepal Scout and NRCS were working for disaster management in good co-ordination with the private sector like the Chambers of Commerce. Traces of horizontal co-ordination between non-governmental organizations were also found; CARE Nepal had well coordination with the pre-existing organiza-

"VISTAR II project changed the view towards disaster management. Previously, all we knew was the distribution of food and necessary commodities to the victims of the disaster. But now the most important thing we learned from the training is that co-ordination between different agencies (governmental and non-governmental) is a must for effective disaster response."
-Executive Director, Chamber of Commerce (MT), Kailali

tions working in the field of disaster in the project area. There was good linkage and co-ordination between implementing partner and NRCS during the implementation of the project, as a result community people are benefitted to date. NRCS is continuing to implement EWS with the help of gauge readers in different stations. The gauge reader first provides early warning information to NRCS then NRCS disseminates it to government authorities and also to early warning task forces in the community. Hence, NRCS is playing an important role in complementing and continuing the activities of the project.

Similarly, VISTAR II also coordinated with other projects like 'Hariyo Ban' in accomplishing certain project activities in schools and communities. This has helped to increase the effectiveness and nourish the project continuously, as 'Hariyo ban' was actively working in that area in Disaster Management initiatives like afforestation since June 2021. Equally, other organizations working in the field of disaster (WVIN) also utilized some members of CDMC formed by the VISTAR II in their new project/committee (Pratapur ward 9), which can also be useful for the transfer and enhancement of knowledge and skills.

Good practices were initiated by local stakeholders too, which were also continued as a result of training provided by the project. Executive director of Chamber of Commerce, Kailali mentioned that they started incorporating contents of disaster management in other business training after obtaining training from the project, and she also expressed the determination and willingness to continue the culture in the upcoming days too. Adding to the effectiveness of the training, she mentioned, "...After the training, I started viewing things through the lens of disaster, and it is important because simple management can also prevent the heavy loss from a disaster." The Chamber of Commerce, Kailali was found committed to incorporate disaster management in their upcoming strategic plans.

In regards to the co-ordination between government and private sector, it was found that although the accessibility and opportunities to interact with the government has increased, there was no satisfactory support from the governmental sector when the private sectors were in actual need. The private sector expressed dissatisfaction that government bodies were reluctant to provide support and relief materials to business enterprises affected by the disaster.

4.4.2 Sustained Capacity and Motivation

Sustainability is greatly affected by the empowerment of community people, with respect for and integration of socially diverse groups. Similarly, the recognition of a tangible and immediate benefit for beneficiaries can provide the most effective motivation to continue making use of services or applying practices learned during the project.

"Before the training, we lacked proper knowledge on how to express the needs related to disaster management of our community and convince the government to fulfill those needs and other issues, but now we have become more knowledgeable on these issues."
- CDMC chair (woman), Bauniya, Kailali

The information obtained from key informants revealed that the project fostered the participation of vulnerable groups in every step of planning and implementation. During implementation, VCA was done in the community to identify the needs. This has helped to identify the number and location of the most vulnerable people in the community. The project contributed to reduce the vulnerability of community people by increasing their capacities to prepare for, to cope and to mitigate the adverse impact of the disaster. The coping mechanism has been more effective because people linked their traditional coping mechanism with the skills learned from the project. According to key informants, the project fostered the active participation of all members (including socially excluded groups such as women, children, People with disabilities) of the community in all phases of disaster management. It also empowered community people, including women enabling them to express their needs related to disaster and other areas. The training for CDMC members was found effective not only for disaster preparedness but also for empowerment and capacity enhancement of community people as they have become able to express needs of their community with the government and also convince the government on taking right actions.

Similarly, it has also sensitized concerned stakeholders to become mindful about the inclusion of different needs of vulnerable groups during disaster response and management.

Master trainers (MTs) are playing an important role in mainstreaming disaster in different areas as people from diverse fields, including both government and private sector were trained through the project. Master trainers (MTs) from the private sector were active and determined to mainstream disaster management in their programs and plans and utilize the skills and sustain the practices learned from the training. However, due to restructuring and transformation in prior roles and responsibilities and unavailability of an appropriate platform, Master trainers (MTs) from the government sector have not been able to utilize their skills to the fullest . Their meaningful participation involvement in local level planning and capacity building has not been evidenced.

After the Master training, we learned that disaster management is a multi-faceted issue; there are different groups of people like women, aged people, people with disabilities etc., and they have different needs which should be considered during disaster response.
-ED, Chamber of Commerce (MT), Kailali

Moreover, findings suggest that the project contributed for capacity enhancement and the development of a sense of ownership among partner NGOs. In the interview, the chairperson of implementing partner of Kailali, CSSD, mentioned, *".....Working on these projects has helped to enhance our knowledge and capacity. As we remain in this community even after the term of the project and end of external support, we feel responsible and are curious on the status of programs. So, we follow up and extend the support we can."*

One of the participants, who was in CDMC in Lamkichuha has been elected in Ward level LDMC in the new government structure. She was nominated from her community. She said, *"The community is motivated to stay continue our work. We stay motivated as we don't want to see people lose their lives or properties due to flood. Our community is at risk of flood".*

4.4.3 Sustained Resources

A sustained source of resources for each input previously provided by the project is required for sustainability. The availability of resources for disaster preparedness varied at different levels. Disaster preparedness materials like a life jacket, stretcher, first aid box, boots, mic etc., which were provided to the community by the project, were still available at the community in both the districts, but not all of those materials were in good condition.

RMs/Ms were found yet to capitalize on the skills of the master trainer who are still living there. For example, master trainer of the Kailali Chamber of Commerce is still providing her skills for the DM-related works initiated by the Chamber. The trained people of the civil servants were transferred to a new role already.

Some communities still had disaster management funds, and they were collecting and using the fund while they were in need in emergencies. On the other hand, the disaster management fund in some communities (Pratapur, ward number 9) was not in operation due to some dispute among community people. But at the ward and municipality (palika) level, fewer resources than necessary were available for disaster preparedness, based on the interviews.

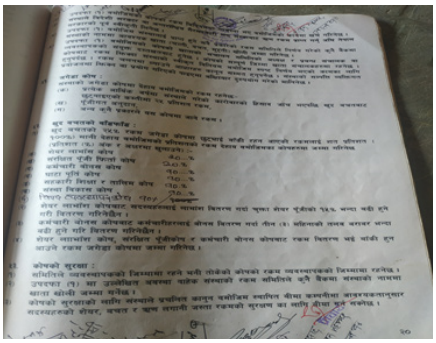
".....Previously, there was no any information system to let people know about the upcoming disaster. But nowadays, due to EWS, people know about the disaster before it affects, so they can prepare to minimize the loss. So, the VISTAR II project has a positive impact on the community."
- Teacher, Kailali

There was no specific disaster/emergency fund in operation at the time of study in Joshipur, Kailai, whereas there was the availability of disaster funds in the Bedkot municipality of Kanchanpur district. Community people also expressed dissatisfaction on not getting any support on disaster preparedness materials from the respective municipality. Similarly, the availability of disaster preparedness materials also varied in different schools. Some schools had availability of disaster preparedness materials while others did not.

Palikas have allocated some funds for bio-engineering works. The bio-engineering (structural mitigation) works completed during VISTAR were found still maintained and upgraded.

VISTAR II project involved multiple sectors in its intervention. The project also worked and advocated with the Co-operative division to start allocating a certain percentage of net profit for disaster management fund. The provision was made compulsory for every new co-operative to be registered, which was a commendable initiative. Nevertheless, in the present context, due to the changed structure of government, there was no existence of co-operative division and no clear structure and plan in the municipality for the guidance of co-operatives, and hence, the provision was not continued. Nevertheless, the good part is, the co-operatives, which amended their action plan to allocate a certain percentage for DM, were continuing the practice.

In summary, the DMCs that collected funds and established funds during VISTAR II have been functional to some extent. Nevertheless, the purpose and mode of operating funds differed from one community to the others. The DMCs formed during VISTAR II, and the funds are not well connected with the RM/M and Ward level DMCs formed by the local government. RM/M has the provision of some funds for relief, including the COVID-19 response. Some of them (for example, Dodhara Chaadani Mahakali Municipality) have guidelines for LDMCs, and some (for example, Joshipur) have guidelines for DM Fund to be established and created at the Palika level. In a similar manner, the master trainers trained through the project were still found motivated to continue making efforts for disaster management in their respective fields. However, changes in the designation and roles of MTs from the government sector made it difficult to put their skills into practice efficiently.



Similarly, the early warning system against floods established by the project was still functioning to some extent. The Intercommunity Communication Channel was operating, and so there was continued communication between upstream and downstream communities. On the other hand, the gauge meter was functional in some areas, while in other areas, it was washed away by the flood. The gauge meter was functional in Pratapur, Kailali, while washed away by flood in some other communities (Bahunpur, Kailali, and Bedkot ward 4 in Kanchanpur). Similarly, it was found that there was a lack of follow-up mechanisms to ensure regular communication in some communities. The gauge reader (Bauniya) was not able to disseminate early warning messages to the task forces in the communities due to the loss of contact numbers. But, an organization like NRCS was also working in the same community and hence, complementing and fulfilling the gap of the project.

Some of the good practices initiated by the project and that were continuing till date are as follows:

- Continued afforestation through schools and communities after the initiation by the project. In some areas (like Bedkot Ward 4), other projects like Hariyo Ban were also working in the same direction for disaster management, hence complementing the project activities and contributing to sustainability.
- The continued active role of available CDMC and task forces members for rescue and relief during a disaster by utilizing the available materials.
- Continuation of interpersonal communication between upstream and downstream communities.

4.4.4 Opportunities and challenges for sustainability

The restructuring of local government has created an opportunity to scale up the disaster risk reduction works established during the VISTAR II project. A few of the authorities, who were oriented and trained on disaster management, shifted to a new position in the new structure of the government, resulting in a change in their roles and responsibilities and hence affecting the efforts they could make.

Only 70 percent of the surveyed respondents know DM Committee exists in community or ward or Palika level. This is because, despite preparing DPRPs as compliance, the Local Governments who have formed LDMCs have yet to inform their people and some have yet to form LDMCs in all wards.

Similarly, due to their competing priorities, including COVID-19, the local governments have yet to carry out Vulnerability and Capacity Assessment and prepare LDCRPs at Ward Levels and RM/M levels. As LDCRP is expected to come as mandatory for all RM/M from MoFAGA, it is expected that the RM/M will prepare in a few years to come.

The short duration of the project was also a factor affecting the full sustainability of the project as multiple activities were accomplished in a limited time and there's less focus on sustainability and, people won't get enough time to become motivated to continue the practice in a shorter period.

The local governments have been provided with many financial resources, yet limited amounts have been allocated to mitigate disaster risk reductions. With LDCRPs to be prepared, there are opportunities to leverage funds for DRR/ DM.

CHAPTER 5

LESSONS LEARNED, CONCLUSIONS AND RECOMMENDATIONS

5.1 Lessons learned

1. Both the qualitative and quantitative findings have shown that the method of working in community approach (formation of local DMCs, rescue team, early warning) has sustained the knowledge about causes of the disaster, ways to mitigate risks and consequences of disaster has sustained to a great extent.
2. Collaboration and coordination with the government is a necessary prerequisite for an effective project implementation as well as sustainability. During the project implementation, CARE and other partners worked closely with the district and local level government bodies. The local governments were provided a legal framework and compliances (from the federal governments to get the grant), and at present, the local governments have the authority and resources to prepare and implement Acts, Bylaws, and guidelines. Local Government Operation Act, 2074 requires NGOs to inform and work in coordination with them. Working with the local government also ensures sustainability and long-term relationships between the duty bearers and right holders.
3. It has been noticed/known that the local government has learned a lot in terms of emergency management and relief distribution by handling the COVID-19 crisis. They are good at managing the disaster, and now they have also realized how important it is to maintain/manage information management systems (e.g., list of people who are vulnerable, early warning system, use of Mobile Apps for information dissemination). The local governments and I/NGOs introduced cash/ voucher programming (during COVID and also for flood-affected people) to recover the livelihood of affected persons. MoFAGA is preparing a policy for cash programming which can be helpful for effective disaster management in the future.
4. The approach of working in a group was found helpful. It is likely that almost half of the groups such as DMC, CDMC, DDRT etc. formed for capacity building during the endline are functioning even after five years. Teamwork can be beneficial for the effectiveness of any program. Similar to this, a team of CDMC was working effectively to achieve the intended results.
5. One of the crucial learnings of this study is that the short-duration of the VISTAR II intervention is insufficient to measure the long-term effect.

5.2 Conclusions

Outputs

The outputs of the VISTAR II project were comprehensive, which can be categorized into four parts: Awareness about the Disaster Risk; Strengthening Disaster Risk Governance to Manage Disaster Risk; Investing Disaster Risk Reduction, and Enhancing Disaster Preparedness (from the lens of Sendai DRR priorities).

External factors:

Two external factors affected the sustainability of project outcomes. The first is the effect of COVID-19, because of which the functionality of the community groups, activities, and the government was affected. The local governments had to prioritize their works for managing the COVID-19 issues, providing services to the affected people, relief distribution, and preventive works. This overshadowed the DRR work in a significant manner. The local governments (*Palikas*) had to pay more attention to manage emergencies and prepared for COVID-19. Similarly, the communities were affected. COVID-19 has increased their understanding of the disasters including epidemic but at the same time the economic and social resilience of individuals and communities were jeopardized.

The second factor is the implementation of federalism. Following the elections at the three levels, there are substantial changes in the role of the three tiers of government. The VDCs/ Municipalities were transformed into a larger structure Palika (Rural/ Municipalities). The district and local governments are mandated to prepare DPRP. Similarly, there are legal provisions to form DMCs at Rural municipalities /Municipalities and ward levels. Local Disaster Risk Management and Climate Resilient Plans (LDCRPs) are supposed to be prepared by the rural municipalities /municipalities but they are in the initial stages. MoFA is going to finalize the guideline for LDCRPs soon. This means that the local governments are gradually taking up the roles of formulating the policies, plans, systems, and structures relating to DRR/DM and climate change.

In the process, the VDC level structure, mechanism, and process previously established were dismantled, affecting previously formed VDCs and Disaster Preparedness/ Management Plans (which were called LDRPs).

Similarly, fast growth in information technology has fostered faster and smarter communications, virtual platforms provided an opportunity to communicate and contributed as a solution during the COVID-19 pandemic. However, the use of technology for information systems like early warning systems access to DRR is in the initial phase.

Impacts with regards to continued resilience and capacity of communities and institutions

The overall status of resilient communities (as perceived for nine minimum standards of Flagship -4) has slightly declined but stayed at a moderate level. The reasons for a decline compared to the endline are less information of DRR, less functionality of DRR fund and less functionality of committees/ task forces formed during the project. During FGD, it was also due to the transition of the local government from VDC structure to rural municipalities /municipality structure.

Nonetheless, newly formed rural municipalities /municipalities have initiated risk assessments and DPRP plans. Some CDMCs formed by the project have been functioning to some extent as some members were found working actively during the disaster andsome of them are still in contact with the Nepal Red Cross Society.

Anticipatory capacity: Anticipatory capacity, is the ability of the community to foresee and to reduce the impact of potential hazards. This capacity has increased, as evidenced by the increase in knowledge about disasters; reasons for flood, fire, drought, and epidemic. Women were found to have an equal anticipatory capacity as men. However, the respondents could not associate the effect of climate change on drought, flood and landslide. The early warning systems at the flood risks areas are effective and operated locally. Some people were trained as master trainer, and trained on search and rescue, first aid are still functional. However, the local governments have yet to prepare data about such people and harness their capacity.

Adaptive capacity: Knowledge of traditional methods to mitigate the effects of disasters has stayed at a high level. The current level of knowledge of both men and women regarding the most vulnerable groups has significantly increased. The knowledge to mitigate the effects of the flood, prevent fire, mitigate the effect of fire, and knowledge about disaster management has significantly increased. Furthermore, the current level of preparedness has improved, almost all respondents agreed on the need for special protection for most vulnerable groups, and the need for disaster reduction activities at the school level has increased in the PPS compared to the baseline.

However, the perceived requirement of household level plan has decreased which is attributed to a lack of proper follow-up. About one-third have not heard about the climate change and women's understanding of climate change is significantly lower than men. Similarly, there is a decrease of practice in climate change adaptation from the endline, although higher than baseline.

Only two out of five households follow adaptation practice which is lower than anticipated. The proportion of school students sharing DRR knowledge has drastically decreased due to COVID-19 and lack of follow-up.

Overall, the adaptive capacity was also found moderate due to the presence of social networks, which are accessible, equitable and there has been strong and diverse participation from farmers and saving groups.

Operation of safe shelter, elevated hand pumps, bhakari system adopted by the communities are also imparting adaptive capacity at community level. The concept of LDCRPs has included climate change related components. The *Palikas* who are in process of formulating LDCRPs have potential to impart people and institutions in adaptive capacity.

Absorptive capacity: According to key informants, the project fostered the active participation of all members (including socially excluded groups such as women, children, and people with disabilities) of the community in all phases of disaster management. It fostered absorptive resilience. The process of risk, hazard and resources mapping, mock drills, awareness raising, disaster preparedness plans developed by DMCs helped the communities to improve their absorptive capacity.

Personal efforts to reduce the loss of disasters have remained the same. Availability of disaster preparedness systems and resources has drastically decreased due to the transition of local government, and the need to pay attention to COVID-19 overshadowed the DRR initiatives. However, they provided more emergency materials due to COVID-19 and some rescue materials for floods.

Transformative capacity: Nearly half of respondents (46%) mentioned that the project contributed to reduce disaster-related vulnerabilities and increase the resilience of women and girls. However, very few (8%) respondents mentioned that they had raised their voice for disaster-related issues to influence national-level policy. Similarly, the availability of disaster preparedness systems and resources (institutional) has declined. Likewise, there has been less sharing of DRR knowledge among household members by the school children in the absence of continuous awareness (closure of schools due to COVID context) and lack of mock drill practices in the schools. Above all, there is increased sensitization towards protection and addressing specific needs of vulnerable people, including children, women, elderly citizens, and low-income families.

Impacts with regards to continued reduction of drivers of risk:

In terms of personal and/or community efforts to reduce losses/impacts of disasters, developing an early warning system exists among at least one-third of communities (31%), this is three times greater than baseline (13%). The communities which are at risk of flood have well-established early warning in both study districts. Due to the absence of knowledge management or information systems at Palika level, system to mainstream and scale-up early warning system is a bit lower. Based on the VISTAR model, early warning task force, search and rescue task force and first aid task force worked closely with local DMCs. Interview found out that early warning task force in the risk areas are most effective. However, due to migration of trained people, lack of regular meetings, and absence of vertical linkage brought by the change in local government structure, only half DMCs, first aid and search and rescue teams are functional.

Nonetheless, the communities retain a positive attitude towards the need for an early warning system to reduce the impact of disasters (98%). The qualitative information affirms the same attitude.

Impact with regards to enabling environment:

The information obtained from key informants revealed that the project fostered the participation of vulnerable groups at every step of planning and implementation. During implementation, firstly, VCA was conducted in the community to identify the needs. This has helped to identify the number and location of the most vulnerable people in the community. The project contributed to reduce the vulnerability of community people by increasing their capacities to prepare for, cope, and mitigate the adverse impact of disaster.

Stakeholders (74%) recognized that there is the representation of all types of marginalized communities, excluded groups, and women in the institutions. Likewise, most stakeholders (58%) reported about the inclusion of the most vulnerable groups in the service delivery related to DRR. However, survey found that special provisions for the most vulnerable concern are low (11%).

Sustainability

Impact with regards to sustained linkages: The community-level structure, CDMCs formed by the project, were functioning to some extent. Some members were working actively during the time of disaster. Although some members of the prior task force migrated/

were not present in the same community and regular meetings were not conducted, the search and rescue team and early warning team were operating at the time of disaster with the available human resources and materials.

However, after the restructuring of government, the linkage between communities and different levels of government could not be maintained. It is because new structures/committees were formed at the ward and municipality level for disaster management following the change in government structure, and those committees were yet to be trained. Moreover, CDMC members in some communities (Bahuniya, Kailali) mentioned about poor coordination and support, including delayed response from the newly appointed members of the local government for disaster management issues. In addition to this, the existing status of disaster management initiatives at the municipality level was not very satisfactory.

There was no specific mechanism for establishing linkage with the community for disaster preparedness. The coordination between municipality (Palika) and district level committees and with province varies in different scenario as the functional linkages have to be established by the system. There was good collaboration with NRCS during project implementation, and it is continuing to implement EWS with the help of gauge readers in different stations. Thus, NRCS is playing an important role in complementing and continuing the activities of the project.

Impact on empowerment of the communities: As the project ensured more female engagement in project activities, women have become more confident due to more interactions in the public spaces for meetings and training in the community. Participation of women in CDMC had helped gain knowledge and skills for disaster management and strengthened their leadership quality. Women have also become capable of articulating the needs of their community with the government.

On the other hand, some women felt that they were not provided with equal opportunities as men even when they were equally capable and confident to take the responsibility. This has discouraged and resulted to the loss of their enthusiasm for continuing their efforts and participation in the community.

Sustained resources: Compared to the baseline, the availability of disaster preparedness systems and resources is not t bad (58%). However, this has decreased from the endline (93.0). The availability of resources for disaster preparedness varied at different levels. Disaster preparedness materials like life jackets, stretchers, first aid boxes, boots, mic, etc., were available in the community in both the districts, but not all of those materials were in good condition. Some communities had disaster management funds in operation and they were collecting and using the fund when they need.

5.3 The recommendations are applicable to any future programming in the previous VISTAR-II areas.

Related Stakeholders

- Support to local government to localize the DM Act, Disaster Management Fund Mobilization Guideline, and Emergency Operation Guideline with referring LDCRP to address the actual context and scenario of risk.
- Some RMs/Ms have already allocated budgets for safe infrastructure for the settlements in the high-risk areas (of flood). It would be better to collaborate and provide technical support to build safe infrastructures that can be replicated in other vulnerable areas.
- Support to local government risk-sensitive land-use plan with risk visualization through a digital process to address the multi-hazards possible risk and prevent the emerging risk of haphazard ongoing development.
- Support the district and local governments in Emergency Operation Centres to develop DRR guidelines, assets, and human resources.
- Strengthening the capacity of local governments to access provincial and federal government allocated funds for the disaster.
- Strengthen the local government capacity on shock responsive social protection and for cash-based action.
- Provide technical support to local governments to localize the DRR platform cluster and response framework.
- Provide technical support to the environment and disaster management sector of local government to implement activities to contribute to the human and property losses in an effective and relevant way rather than only prioritizing infrastructure development as well as mainstreaming other sectors of local government.
- With reference to the multi-hazard aspect, provide technical support to local government to utilize the multi- sectoral institution, committee groups' engagement, and coordination collaboration space creation.
- Support local governments to apply acceptable, affordable and applicable science and technology with the fusion of indigenous knowledge and practices.

Local Government

- Establishing vertical and horizontal linkages of the Province, district and local DMCs/groups would be better: they could contribute, and at the same time, the local government (RMs/Ms) can capitalize on the skills of the local people and the resources they have. RMs/Ms are in the process of establishing local emergency operations centres (LEOCs). The establishment of the centres would enrich information systems that include mainstreaming the early warning systems/ groups in their areas.
- National Strategic Plan for DRR (2018-2030)-Clause 5.1 talks about preparing a strategic plan at the provincial and local level, which is also the target of the Sendai Framework for DRR; clause 6.3 is the preparedness target for Local Governments and 6.4 is the capacity of Local Governments to provide disaster information to communities. Given that if there are good legal frameworks to scale up and consolidate the disaster risk reduction measures, then in the future the National Strategic Plan for DRR (2018-2030) has to be harnessed.
- Review the existing capacity and gaps of search and rescue teams and prepare capacity building plans.
- DRR initiatives under LDCRPs should include climate-resilient technologies and adaptations, which need to be promoted by the local governments.
- In the present context, schools could utilize the virtual platform of education to teach the students about different disaster-related issues even during the closure of schools, thus ensuring students are well informed and ready for disaster response whenever needed.

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