ITP DRR CHANGE INITIATIVES IN NEPAL

Collected by:
ITP Alumni Association Nepal &
DPNet Nepal

Editor:
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SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

MSB Swedish Civil Contingencies Agency

DPNet Nepal

ITP DRR
Change Initiatives in Nepal

ITP Cycle 1 – 7, Nepal

November 2024

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Layout and Design

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Acknowledgment

The Swedish Government's International Training Program (ITP) on Disaster Risk Management has played a remarkable role in building disaster resilience across Nepal through capacity building and targeted change initiatives. Since its inception, ITP has equipped 51 Nepali participants with essential knowledge and skills, empowering them to design and implement impactful, community-centered projects. These efforts have resulted in substantial advancements in disaster risk reduction and climate resilience across diverse contexts in Nepal, addressing the country's unique vulnerabilities to natural hazards. The progress made by these initiatives reflects the dedication of ITP alumni and the far-reaching impact of the program in promoting sustainable, inclusive disaster management practices.

The Secretariat of the ITP Alumni Association, Nepal, DPNet has undertaken the essential task of compiling these change initiatives, recognizing the importance of documenting and sharing the achievements of Nepal's ITP alumni. The collected initiatives reflect an array of innovative strategies, from strengthening community fire safety programs to empowering women leaders in disaster planning, building inclusive early warning systems for indigenous communities, and creating sustainable frameworks for local climate resilience. These initiatives have fostered local engagement, built stronger disaster preparedness networks, and encouraged equitable participation, setting exemplary standards in DRR practices across Nepal.

This compilation, ITP Change Initiatives in Nepal, highlights the dedication and collaborative spirit of the ITP alumni, whose commitment to resilient and inclusive development has produced remarkable results. The documented change initiatives provide valuable insights into localized DRR approaches, reflecting a deep understanding of Nepal's diverse communities and their unique challenges. This collection serves not only as an archive of these initiatives and their transformative impacts but also as a learning resource for practitioners, policymakers, and communities in Nepal and beyond. It is our hope that these documented efforts will inspire continued resilience building, knowledge sharing, and cross-sector collaboration in disaster management, further amplifying the positive change achieved through the ITP program.

I would like to extend my heartfelt thanks to all ITP training participants who provided updates on their change initiatives, showcasing the remarkable progress and impact of their work across Nepal. Special appreciation goes to the DPNet family, especially General Secretary Er. Suraj Gautam, and dedicated DPNet staff members Tulasa Dahal and Samikshya Regmi, for their invaluable efforts in shaping this publication. Last but not least, I would like to express my gratitude to the entire ITP team for their continuous support and to everyone who directly or indirectly contributed to making this compilation possible.

Dr. Raju Thapa,
Chair/ DPNet
Coordinator/ITP Alumni Association Nepal

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Abbreviation

AINTGDM: AIN Task Group on Disaster Management
APF: Armed Police Force
BCM: Business Continuity Management
BCPs: Business Continuity Plans
BIPAD: Building Information Platform Against Disaster
CDES-TU: Central Department of Environmental Science, Tribhuvan University
CDMCs: Community Disaster Management Committees
CEDAW: The Convention on the Elimination of all Forms of Discrimination Against Women
CI: Change Initiative
COVID-19: Coronavirus disease-2019
CPP: Community Police Partnership
CR: Climate Resilience
CRS: Corporate Social Responsibility
DAO: District Administrative Office
DASTAA: Digital and Spatial Technologies for Anticipatory Action
DDMC: District Disaster Management Committee
DHM: Department of Hydrology and Meteorology
DIDRR: Disability-Inclusive Disaster Risk Reduction
DLSA: District Lead Support Agency
DPNet: Disaster Preparedness Network
DRF: Disaster Risk Financing
DRM: Disaster Risk Management
DRR/CR: Disaster Risk Reduction and Climate Resilience
DRR: Disaster Risk Reduction
DRRM: Disaster Risk Reduction Management
EVCA: Enhanced Vulnerability and Capacity Assessment
EWS: Early Warning System
FCHVs: Female Community Health Volunteers
FGDs: Focus Group Discussions
GDP: Gross Domestic Product
GEDSI: Gender Equality, Disability, and Social Inclusion
GIS: Graphical Information System
IBF: Impact based weather forecasting
ICMS: Institute of Crisis Management Studies
IDPs: Internally Displaced Persons
IDRM: Inclusive Disaster Risk Management
IRA: Initial Rapid Assessment
ISET: Institute for social and environmental Transition
ITP: International Training Program
IVR: Interactive Voice Response
KIIs: Key Informant Interviews
LDCRF: Local Disaster and Climate Resilience Framework

DASTAA: Digital and Spatial Technologies for Anticipatory Action
LDMC: Local Disaster Management Committees
LEOCs: The Local Emergency Operation Centers
LPG: Liquefied Petroleum Gas
M&E: Monitoring and Evaluation
MoF: Ministry of Finance
MoFAGA: Ministry of Federal Affairs and General Administration
MoHP: Ministry of Health and Population
MOU: Memorandum of Understanding
MSB: The Swedish Civil Contingencies Agency
MSME: Micro, Small, and Medium Enterprises
NASC: Nepal Administrative Staff College
NCDMC: National Network of Community Disaster Management Committees
NDRC: National Disaster Risk Reduction Center
NDRRMA: National Disaster Risk Reduction and Management Authority
NGOs: Non – Governmental Organizations
NNSWA: Nepal National Social Welfare Association
NRCS: Nepal Red Cross Society
NRCS EOC: Nepal Red Cross Society's Emergency Operation Center
OSM: OpenStreetMap
PDNA: Post Disaster Needs Assessment
PDRF: Post Disaster Recovery Framework
PPE: Personal Protective Equipment
PREPARED: Planning Risk-informed Emergency Preparedness and Response for Effective Disaster Management
PSAs: Public Service Announcements
PWDs: Persons with Disabilities
SDGs: Sustainable Development Goals
SME: Small and Medium-sized Enterprises
SOPs: Standard Operating Procedures
T.U: Tribhuvan University
TBS: The Bamboo Series
ToC: Theory of change
USAID: United States Agency for international Development
USR: University Social Responsibility
VCAs: Vulnerability Capacity Assessments
WASH: Water, Sanitation, and Hygiene
WHDRRP: Women Humanitarian Disaster Risk Reduction Platform
YRN: Youth Resilient Network

Summary of Change Initiatives

Advocating for GEDSI-Responsive Disaster Governance

Achala Dahal, Nepal Administrative Staff Collage

Achala Dahal's change initiative, titled "An Executive Workshop on GEDSI-Responsive Disaster Risk Governance," aimed to strengthen Nepal's disaster governance by promoting Gender Equality, Disability, and Social Inclusion (GEDSI) among policymakers. Conducted by the Nepal Administrative Staff College (NASC), the workshop provided a platform for professionals to critically examine existing disaster management frameworks and to incorporate GEDSI principles into policies and practices. The initiative brought together disaster governance actors, raising awareness of the intersectional impacts of disasters and the need for inclusive DRR policies. Participants were encouraged to consider how marginalized groups, such as women, children, and persons with disabilities, are affected disproportionately in disasters. The workshop led to heightened sensitivity towards GEDSI issues and empowered NASC to incorporate these principles into its DRR curriculum. Despite challenges in addressing deeply ingrained societal attitudes, Dahal's initiative made progress in fostering inclusive disaster governance. The program laid the groundwork for more equitable policies and has the potential to influence governance practices across provincial and local levels. By prioritizing GEDSI in disaster management, the initiative sets a strong precedent for inclusive resilience building in Nepal.

Building a Resilient Changunarayan Municipality through Community Engagement

Dinesh Thapa, Changunarayan Municipality & Keshav Kumar Malash, ISET Nepal

Dinesh Thapa and Keshav Kumar Malashi's joint change initiative in Changunarayan Municipality, implemented in collaboration with ISET Nepal, sought to build a disaster-resilient community through enhanced preparedness and proactive risk reduction. Located in Bhaktapur District, Changunarayan is prone to multiple hazards, including floods, landslides, earthquakes, and forest fires. This three-year project aimed to address these challenges by aligning local disaster management plans with national guidelines and fostering community engagement. The initiative included training community-based first responders, establishing disaster management units, conducting emergency drills, and engaging the private sector for resource mobilization. Key achievements included the formation of a dedicated Disaster Management Unit, training of over 80 first responders, and increased local participation in disaster awareness sessions. Additionally, partnerships with the private sector ensured access to emergency supplies and resources, enhancing the municipality's preparedness. The results were transformative, with response times reduced by 30% and a stronger community commitment to resilience building. While challenges in funding and sustained private sector involvement remain, Thapa and Malashi's initiative has laid a sustainable foundation for disaster resilience in Changunarayan Municipality, making it a model for other municipalities in Nepal.

Building Environmental Resilience through Academic and Community Collaboration in Kirtipur

Ramesh Raj Pant, T.U

Ramesh Raj Pant's change initiative in Kirtipur Municipality centered on enhancing environmental resilience through collaboration between the Central Department of Environmental Science at Tribhuvan University, Kirtipur Municipality, and the International Training Program (ITP). This initiative aimed to tackle pressing environmental issues such as waste management, urban sprawl, pesticide use in agriculture, and climate-induced disasters. Through community-based awareness programs and resource assessments, Pant's project sought to address Kirtipur's environmental challenges while fostering sustainability practices at the local level. The project began with assessments of waste management systems and discussions with local leaders to identify challenges. Engaging both academic expertise and community insights, Pant's initiative implemented waste segregation bins and organized workshops on sustainable practices. The project also aimed to address environmental resilience by educating local residents about sustainable waste disposal and natural resource management. The initiative resulted in improved environmental awareness within Kirtipur, with local residents adopting better waste disposal habits and participating more actively in conservation efforts. It also set a foundation for collaborative environmental management, demonstrating the positive impact of joint efforts in research, policy, and community engagement. This project not only contributed to Kirtipur's resilience against environmental threats but also provided a replicable model for sustainable development and disaster preparedness within other municipalities.

Building Local Disaster Data Management Capacities for Rapid Response

Reenu Thapaliya, Ministry of Home Affairs

Reenu Thapaliya's initiative from the Ministry of Home Affairs focused on enhancing disaster data management capabilities at the local government level in Nepal. Recognizing that inconsistent data systems often impede effective disaster response, this project aimed to standardize data management processes across municipalities. In partnership with the Ministry of Federal Affairs and General Administration (MoFAGA), Thapaliya developed a uniform disaster data management tool and trained local government officials in its use. The tool was piloted in select municipalities, providing structured data management practices that enabled quicker, more accurate responses to disaster events. Training sessions enhanced local officials' technical expertise, helping them utilize the data tool for real-time monitoring and coordination. While the project faced challenges related to resource limitations and varying technical skills, it successfully improved data consistency, accelerated response times, and laid the groundwork for expanding the tool nationwide. The initiative's success in standardizing disaster data management practices across local governments marks a critical step toward streamlined and efficient disaster response in Nepal. By reinforcing these foundational data practices, Thapaliya's initiative has significantly contributed to Nepal's overall disaster resilience and demonstrated the importance of uniform data systems for effective disaster risk management.

Community Based DRM Training that includes GEDSI, Environment, Climate Change & Human Rights

Amit Singh Deputy Superintendent of Armed Police Force, Nepal

Armed Police Force, Nepal is working in disaster risk management since more than a decade, as the organization has the key mandate assigned by government of Nepal as "to assist in rendering relief to natural calamity or epidemic victims" so for this mandate to be addressed armed police force Nepal has continuously been reaching out to the community so as to produce the locals' volunteers for DRM that includes high school children's and local youth within the municipality. As part of my CI I was able to develop a proposal along with the syllabus of the 2-3 weeks training program that will be jointly be conducted by local municipality and Armed Police Force Nepal and the subject matter for that duration includes Medical First Responder, Urban Search & Rescue, Firefighting, water induced disaster rescue as a practical session where as in theoretical session GEDSI, Human rights, climate change & environment in DRM, will be delivered to the local high school children as well as youth so are to produce Disaster response volunteers for DRM in local level. Sustainable partnership along with local government and APF, Nepal will really be able to develop a resilient community in DRM.

Building Fiscal Resilience through Disaster Risk Financing (DRF)

Yogesh Parajuli, Ministry of Finance, Financial Comptroller General office

Yogesh Parajuli's change initiative, led by the Ministry of Finance, focused on enhancing Nepal's fiscal resilience to natural disasters by embedding Disaster Risk Financing (DRF) mechanisms within the national disaster management framework. Recognizing Nepal's high vulnerability to earthquakes, floods, and landslides, the initiative introduced financial tools such as catastrophe insurance, risk transfer mechanisms, and contingent credit lines to improve rapid fund mobilization post-disaster and reduce reliance on external aid. The initiative involved forming a task force to conduct risk assessments, establishing a Disaster Contingency Fund, and launching community-based awareness programs to promote financial preparedness. With catastrophe insurance now protecting critical infrastructure and agricultural insurance offering relief to farmers affected by disasters, the initiative strengthened Nepal's capacity to manage the financial impacts of natural hazards. The project's outcomes included an increase in preparedness knowledge among participants by 65%, enhanced fiscal resilience, and reduced dependency on external aid. By fostering public-private partnerships and addressing initial resistance from insurers, Parajuli's initiative established a sustainable model for DRF in Nepal. This approach not only improved immediate disaster response capabilities but also laid a solid foundation for long-term financial resilience, setting an example for other disaster-prone countries.

Developing Kirtipur's First Disaster Risk Reduction Policy through Local Engagement

Luna Khadka, World Vision International

Luna Khadka's change initiative in Kirtipur Municipality, Kathmandu, focused on building a comprehensive disaster risk reduction (DRR) framework and enhancing local government's preparedness and response capabilities. Conducted over a two-day training session organized

by DPNet, this initiative aimed to establish Kirtipur's first DRR policy and a contingency plan tailored to local hazards. The training engaged 27 stakeholders, including government officials and community members, with a strong emphasis on gender and social inclusion. Over half of the participants were women, ensuring that the policy reflected diverse perspectives and was sensitive to marginalized groups' needs. The initiative's interactive format, incorporating lectures, discussions, and scenario planning, fostered collaboration among participants and encouraged a practical understanding of DRR principles. By emphasizing inclusive practices, the training ensured that stakeholders considered the unique vulnerabilities of different community segments, particularly women, children, and persons with disabilities, in disaster planning. The session also incorporated environmentally sustainable practices by using reusable materials, signaling a commitment to environmental consciousness within DRR activities. As a result, Kirtipur Municipality successfully established its first DRR policy and a hazard-specific preparedness and response plan. These frameworks have since served as a model for other municipalities, promoting systematic DRR planning at the local level. Over 85% of participants reported feeling equipped to apply DRR principles, and many expressed interests in further training, demonstrating the initiative's effectiveness in fostering local resilience. This program laid a solid foundation for Kirtipur's preparedness and highlighted the importance of inclusive planning in building community resilience.

Empowering Women in DRRM Localization in Nepal
Sarita Karki, National Disaster Risk Reduction Center (NDRC)

Sarita Karki's change initiative, led by the National Disaster Risk Reduction Center (NDRC), aimed to promote women's leadership in Disaster Risk Reduction and Management (DRRM) localization in Nepal. The initiative addressed the limited participation of women in DRRM decision-making, despite policies that emphasize gender inclusivity. The initiative focused on empowering women leaders at the community level, enhancing their leadership capacities, and promoting meaningful participation in DRRM planning processes.

The project began with a comprehensive survey of community women's DRRM perceptions, challenges, and participation levels in Chitwan District. Using the survey data, the initiative developed targeted training sessions and mentorship programs for women leaders from various community structures, enabling them to understand DRRM policies and advocate for women's needs. The project collaborated with CDMS and WHDRRP to create a two-pronged DRRM localization model, emphasizing both policy knowledge and grassroots leadership. Through this approach, women leaders were positioned as key influencers in disaster resilience initiatives at the local level. Outcomes of the initiative included increased awareness of DRRM policies among women leaders and enhanced local government commitment to inclusive DRRM frameworks. The initiative empowered women to take proactive roles in DRRM, and local governments began to prioritize women's participation in DRRM decision-making. This foundational work fosters gender-inclusive DRRM practices, positioning women as essential contributors to local disaster preparedness and resilience. The initiative's impact demonstrates the value of community-led, inclusive approaches to disaster management in Nepal, providing a replicable model for other regions seeking to empower women within DRRM frameworks.

Enabling Inclusive DRR and Climate Resilience through Capacity Development

Shakti Gurung, Center for Disaster Management Studies (CDMS) & Krishna Karkee Women Humanitarian and Disaster Risk Reduction Platform (WHDRRP)

Shakti Gurung and Krishna Karkee's joint change initiative, conducted by the Centre for Disaster Management Studies (CDMS) and the Women Humanitarian and Disaster Risk Reduction Platform (WHDRRP), sought to enhance gender equality and inclusion in disaster risk reduction (DRR) and climate resilience (CR) across Nepal. Recognizing that marginalized groups, especially women, face disproportionate vulnerabilities during disasters, the initiative aimed to empower women representatives in local governments, particularly in Matihani Municipality, to advocate for inclusive DRR/CR policies and integrate women's leadership in disaster preparedness and response. The initiative addressed gaps in knowledge, representation, and influence of women in DRR/CR planning. CDMS and WHDRRP organized discussions and consultations with local leaders, emphasizing the importance of collecting data disaggregated by sex, age, and disability to better tailor humanitarian responses to diverse needs. This data-oriented approach helped build a foundation for inclusive and responsive policies that actively consider the perspectives of women and marginalized groups. Results included an increased understanding of DRR/CR concepts among women representatives and policymakers, alongside greater advocacy for gender-sensitive policies. Women leaders reported feeling more equipped to engage in DRR planning and decision-making processes, leading to increased visibility and acknowledgment of their roles in disaster management. Collaborative efforts with NDRC further strengthened the initiative by introducing a two-pronged approach to DRR localization: one that focused on empowering local authorities with DRR knowledge, and another that fostered community-level leadership. This initiative has contributed to sustainable gender-inclusive practices in DRR/CR, promoting a culture of resilience that empowers women to become active participants in disaster management and climate adaptation.

Enhancing Disaster Preparedness through Local Leadership Training in Khairahani Municipality

Deepak Prasad Adhikari

Deepak Prasad Adhakari's change initiative is focused on strengthening disaster risk reduction (DRR) for the capabilities among the local leaders in Khairahani Municipality, Chitwan, Nepal. In Khairahani, the disaster has faced different forms due to the proximity to the rivers and forest; the different disaster risks further exposed the area and caused flooding and wild animals' attacks. The risk is further attracted to climate change, which increases the different forms for the attacks of both and increases both the frequency and intensity of such events. Recognizing the importance of the different events for the tool awareness for the community people. Deepak has conducted the ten-day training program tailored to the unique environmental challenges of Khairahani.The training session was combined with the lecture, group discussion, and hands-on experience to enhance the leaders for understanding of the strategy for the development of the different areas and have the different strategy-specific community. With the focus on inclusive planning for the different forms that aim at management planning, the training emphasized gender and environmental considerations,

aiming to make DRR efforts more comprehensive and sensitive to vulnerable groups. With a strong focus on inclusive planning, the training emphasized gender and environmental considerations, aiming to make DRR efforts more comprehensive and sensitive to vulnerable groups. This approach empowered leaders with practical skills for conducting community-based risk assessments, implementing preventive measures, and preparing for emergencies. By fostering a deeper understanding of risk management, the initiative enabled local leaders to integrate DRR strategies into governance practices, enhancing community resilience against natural and human-made hazards. Collaboration played an important role in the initiative's success. Partnerships with organizations like ECO-Nepal and coordination with local government officials established a solid support network that reinforced Khairahani's DRR framework. Despite resource limitations, the initiative leveraged these partnerships effectively, ensuring that the training equipped leaders with actionable skills and bolstered support for disaster preparedness. This collective approach enabled Khairahani's leaders to proactively engage in disaster risk reduction efforts, demonstrating a shared commitment to community safety and resilience. The initiative produced significant outcomes, with participants showing enhanced knowledge of disaster risks and a greater readiness to implement DRR strategies. The training also fostered improved collaboration between stakeholders, creating a cohesive approach to disaster preparedness and response. Khairahani now stands as a promising model of community-based DRR, showcasing the positive impact of tailored training and strong partnerships on local resilience. This initiative serves as a testament to the potential for effective, community-led disaster preparedness even in resource-limited settings.

Enhancing Fire Preparedness through Community Fire Safety Training
Chaturbhuj Ojha. Nepal Police

Deputy Superintendent Police (DSP) Chaturbhuj Ojha's change initiative, "Fire Safety Demonstration and Practice Program," addressed fire risk preparedness within Nepal's communities through practical training sessions conducted under the Community Police Partnership (CPP) framework. Fires are among the most common disasters in Nepal, often causing severe property damage and loss of life. Recognizing the urgent need for fire safety awareness, the Nepal Police's Disaster Management Division engaged community members, including students and teachers, in hands-on training designed to equip them with essential skills for managing fire hazards. The program offered comprehensive training in fire safety, covering topics such as hazard identification, prevention strategies, and emergency response techniques. Participants learned how to operate fire extinguishers, control fire sources, and follow safety protocols during fire incidents. The program not only increased participants' confidence in handling fire emergencies but also strengthened trust between the police and the community, fostering a shared sense of responsibility for public safety. The initiative had a considerable impact on local communities, with participants reporting increased vigilance toward fire risks in their daily lives. Many took on advocacy roles, promoting fire safety awareness and encouraging safe practices within their households and neighborhoods. Additionally, the program created a network of community fire responders trained to support local police efforts during emergencies, further strengthening Nepal's disaster risk reduction capabilities. By promoting proactive fire safety awareness, DSP Ojha's initiative contributed

significantly to community resilience and laid the groundwork for expanded fire safety training across other regions.

Enhancing School- Based Disaster Preparedness in Vulnerable Districts

Pragya Gautam, Nepal Red Cross Society (NRCS) & Bipul Neupane, Nepal Red Cross Society (NRCS)

Pragya Gautam and Bipul Neupane's joint initiative aimed to build disaster resilience within schools in Nepal's disaster-prone western districts of Doti and Baitadi. Targeting regions particularly vulnerable to climate change and natural disasters, the project emphasized the importance of disaster risk management (DRM) at the school level to foster a culture of preparedness among students and educators. The initiative conducted vulnerability assessments and developed DRM plans tailored to the specific needs of each school, integrating climate change adaptation strategies and promoting child-led awareness activities to enhance community understanding of disaster preparedness. By engaging stakeholders such as the Nepal Red Cross, the initiative provided training on disaster response protocols, ensuring that students and teachers could respond effectively in emergencies. The involvement of local organizations also bolstered the schools' ability to implement and sustain DRM strategies. The outcomes included comprehensive DRM plans across the targeted schools, increased awareness of disaster preparedness, and stronger community involvement in resilience-building efforts. To sustain these efforts, Gautam and Neupane have advocated for the integration of DRM strategies into school improvement plans and encouraged local governments to allocate resources towards school-based resilience initiatives. The initiative's success highlights the potential for school-based programs to create a lasting impact on community resilience, equipping the next generation with the knowledge and skills to respond to and mitigate disaster risks effectively.

Establishing the local Disaster and climate Resilience Framework (LDCRF)

Sushil Kumar Shrestha, NDRRMA & Bal Deep Sharma, NDRRMA

Sushil Kumar Shrestha and Bal Deep Sharma's joint change initiative, developed under the National Disaster Risk Reduction and Management Authority (NDRRMA), aimed to streamline DRR and climate resilience planning for local governments in Nepal. The initiative focused on creating a unified framework, the Local Disaster and Climate Resilience Framework (LDCRF), to help local governments integrate DRR and climate adaptation strategies into their development plans. Nepal's high vulnerability to disasters necessitated a cohesive approach to resilience planning that could be adapted across diverse local contexts. Through extensive stakeholder consultations and collaboration with national bodies such as the National Planning Commission, the LDCRF was developed as a guiding document that aligns local DRR and climate resilience efforts with national objectives. The framework provides structured guidelines for risk management, resource allocation, and climate adaptation, empowering local governments to prioritize resilience-building initiatives within their communities. Training sessions and capacity-building programs for local disaster focal persons were integral to the initiative, ensuring that local representatives understood and could effectively implement the LDCRF. The results of the initiative included improved planning

and budgeting for disaster resilience at the municipal level, with several municipalities adopting the LDCRF to guide their development projects. The framework facilitated inter-departmental communication, reducing operational ambiguities and enabling local governments to allocate resources more efficiently. By mandating LDCRF use in all disaster-related activities, the initiative has created a sustainable, scalable model that strengthens Nepal's disaster resilience and climate adaptation capacity. This initiative highlights the importance of cohesive planning for sustainable development, positioning local governments as critical players in Nepal's DRR landscape.

GEDSI Integration in Disaster Risk Reduction and Management in Nepal

Reena Chuadhary, NDRRMA

The integration of Gender Equality, Disability, and Social Inclusion (GEDSI) within Disaster Risk Reduction and Management (DRRM) is essential to creating resilient communities, particularly in disaster-prone Nepal. As a member of the indigenous Tharu community, I bring a personal commitment to enhancing inclusivity in disaster management efforts. Through my work with the National Disaster Risk Reduction and Management Authority, I have contributed to developing inclusive policies, frameworks, and practical approaches to disaster preparedness, response, and recovery. I focus on marginalized groups, including women, people with disabilities, and indigenous communities, to promote accessible reconstruction, inclusive anticipatory actions, and disaggregated data collection through the BIPAD portal. This change initiative outlines my contributions to policy formulation, coordination with multi-level government agencies, and partnership with civil society organizations and international stakeholders, which have collectively fostered a more inclusive DRRM approach in Nepal. The ultimate goal is to mainstream GEDSI principles across all facets of disaster management, ensuring that marginalized communities have equal access to resources, early warning systems, and emergency services. This write-up examines the process and outcomes of integrating GEDSI into DRRM, emphasizing lessons learned, major activities, and strategies for sustainable progress

Integrating Disaster Risk Management into University Curricula for Community Resilience

Dr. Kedar Rijal, Tribhuvan University (T.U)

Dr. Kedar Rijal's change initiative, titled "Disaster Risk Reduction and Environmental Resiliency through Academic Curricula: University Social Responsibility," leveraged academic resources at Tribhuvan University to strengthen disaster preparedness and environmental resilience in Kirtipur Municipality. Recognizing the importance of embedding disaster risk management (DRM) principles within academic programs, Dr. Rijal developed a curriculum that combined theoretical learning with practical fieldwork, creating a model for using academia to drive resilience at the local level. The initiative engaged faculty members, students, and local government representatives in workshops, fieldwork, and community outreach activities focused on DRM and sustainability. Students were trained in environmental assessments, waste management practices, and community engagement, preparing them for real-world challenges in DRM and environmental conservation. They were deployed across

Kirtipur's wards to conduct surveys, assess vulnerabilities, and raise awareness among residents on waste management and disaster preparedness. This project resulted in a well-rounded educational program that fostered resilience within the community and provided students with hands-on experience in DRM. Improved waste management practices and greater community participation in environmental conservation efforts were significant outcomes. The initiative also influenced local policy, prompting Kirtipur Municipality to allocate resources for sustainable practices and environmental management. By embedding resilience and sustainability in academic curricula, Dr. Rijal's project has created a replicable model for other universities to contribute to local disaster preparedness and environmental stewardship.

Implementing Early Warnning System for Landslide Pre[aredness and Indigenous Communities

Dr. Basanta Raj Adhikari, Institute of Himalayan Risk Reduction (IHRR)& Er. Suresh Raut Bhimeshwor Municipality

Dr. Basanta Raj Adhikari and Er. Suresh Raut's change initiative targeted landslide risk in Ward No. 1, Bosimpa, Bhimeshwor Municipality, where the indigenous Thami community faces ongoing threats due to the 2015 Gorkha Earthquake and climate-induced factors. Recognizing the community's vulnerability, the initiative implemented a technologically-driven Early Warning System (EWS) to enhance preparedness and reduce landslide-related risks. Using rain gauges, ground sensors, and mobile communication networks, the EWS provides real-time data on rainfall and soil stability, offering timely alerts that allow residents to take preventative action. Beyond technology, the project included extensive capacity-building sessions, training community members in landslide monitoring and risk communication. Special attention was given to inclusivity, ensuring that women, children, and elderly residents understood and could engage with the EWS. The system has significantly reduced emergency response times during heavy rains, increasing safety and fostering resilience within the community. The project's holistic approach, combining modern technology with community engagement and inclusivity, created a replicable model for managing landslide risks in other mountainous regions of Nepal. Dr. Adhikari and Er. Raut's initiative has empowered the Thami community to take ownership of their safety, setting an example of how culturally sensitive, community-centered projects can build resilience in high-risk areas.

Improving Access to Safe Water through School-Based Disaster Resilience Initiatives

Anisha Karn, SmartPaani Pvt. Ltd & Brijendra Rochan Joshi, Rooster Logic Pvt.Ltd

Anisha Karn and Brijendra Rochan Joshi's joint change initiative addressed water safety issues in disaster-prone areas of Nepal by establishing filtration and rainwater harvesting systems in schools. In partnership with SmartPaani and Rooster Logic, this project provided access to safe water during disasters while fostering resilience within schools and communities. Targeting schools as community resilience hubs, the initiative installed water systems in 90 schools across 18 districts, benefiting over 30,000 students. The initiative trained teachers and students on maintaining water systems, and equipped 190 women entrepreneurs to manage emergency water stocks, supporting both community resilience and economic empowerment. Rooster

Logic's data tracking systems allowed for monitoring and maintenance, ensuring the water systems' long-term functionality. The initiative's impact extended beyond daily water needs, creating a preparedness network centered on schools and strengthening community trust in local water resources. This project demonstrated the potential of schools as centers of resilience, providing safe water access and disaster preparedness training to entire communities. It not only addressed critical water challenges but also empowered women in disaster-prone areas, setting an example for integrating sustainable water solutions into disaster management frameworks across Nepal.

Improving Disaster Information Management Systems for Effective Response
Santosh Neupane, Nepal Red Cross Society & Er. Kshitiz Paudel

Santosh Neupane and Kshitiz Paudel's joint change initiative, "Localized and Managed DRR Information System in Nepal," aimed to streamline disaster data management to enable faster and more coordinated disaster responses. In collaboration with the Nepal Red Cross Society's Emergency Operation Center (NRCS EOC) and DPNet, the project addressed inefficiencies in information sharing, which often led to redundancy and delays in disaster response. This initiative focused on localizing the BIPAD portal, a centralized disaster information platform, to improve data collection, coordination, and dissemination between government and non-governmental DRR stakeholders. Key actions included integrating multiple disaster assessment tools, such as the Initial Rapid Assessment (IRA), into the BIPAD portal and conducting extensive training sessions for NRCS staff and volunteers. Over 250 personnel were trained in data collection and dissemination practices, enhancing their capacity to conduct real-time assessments and streamline communication during disasters. By incorporating localized information and assessment tools, the initiative helped reduce duplication of efforts and facilitated a quicker, more coordinated disaster response. The initiative yielded significant improvements in disaster preparedness and response accuracy, with disaster-related data now easily accessible to all stakeholders. Local governments expressed interest in adopting similar systems, indicating potential for scalability. This change initiative has strengthened the overall disaster information management framework in Nepal, reducing redundancies and setting a precedent for efficient DRR information sharing across regions. The enhanced capacity and coordination among stakeholders have laid a foundation for quicker, data-driven decision-making in disaster response, making the initiative a vital component of Nepal's evolving disaster management landscape.

Localization of the standard practices for the better disaster risk understanding and anticipatory actions for the science-based decision making
Er. Suraj Gautam, Institute of Himalayan Risk Reduction (IHRR)

In Nepal, citizens increasingly face vulnerability to frequent hazards, resulting in significant loss of lives and infrastructure. Local governments have traditionally adopted ad hoc and reactive approaches to disaster risk management, exacerbating the challenges posed by rising exposure and existing vulnerabilities. There has been a dire need for a proactive approach towards the disaster risk management. IHRR has been collaborating with the stakeholders and local governments of Bheemdatta and Dodhara Chandani Municipalities to adopt the integrated

approaches. Considering the different scenarios and return period, a flood-hazard model has been developed through the technical expertise of IHRR. Under the leadership of municipalities, household-level surveys have also been conducted to develop household risk profile of individual households. Further, in collaboration with the Department of Hydrology and Meteorology (DHM), Impact based weather forecasting (IBF) has been piloted with a view to enhancing forecast and preparedness. This also involved capacity-building for DRR focal persons and LEOCs. The municipality has developed a risk communication tree and framework for the timely dissemination of forecast and observation information to the stakeholders through weather and IBF bulletins, which offers avenues for informed decisions. Additionally, the implementation of Digital and Spatial Technologies for Anticipatory Action (DASTAA) platform within the municipality supported the integration of risk assessment, monitoring, warning, and communication. This multifaceted approach aims to provide municipalities, such as Bheemdatta and Dodhara Chandani, with the prior information necessary for effective anticipatory actions against flooding. By fostering a proactive, data-driven culture in disaster management, this initiative seeks to enhance community resilience and reduce the impacts of climate-related hazards in Nepal.

Localization Disaster Risk Reduction and Management (DRRM) through Community Empowerment

Ashok Bikram Jairu, Nepal National Social Welfare Association (NNSWA)

Ashok Bikram Jairu's change initiative, "Localization Disaster Risk Reduction and Management (DRRM) through Community Empowerment" aimed to empower communities in Kanchanpur District's Mahakali River Basin to actively participate in DRRM. Conducted by the Nepal National Social Welfare Association (NNSWA) with support from the Swedish Civil Contingencies Agency (MSB), this initiative addressed the gap in community engagement in DRRM, focusing on creating a localized framework that empowered local leaders and residents. Key activities included capacity-building workshops, policy updates, and the establishment of the Mayor's Forum, which fostered collaboration among local leaders on DRRM strategies. The initiative also formed the Youth Resilient Network (YRN), a volunteer group of over 500 youths trained in DRRM basics and engaged in community resilience projects, such as tree planting and awareness campaigns. These efforts not only raised awareness but also provided hands-on experience in disaster preparedness. The project achieved significant outcomes, including stronger local leadership, enhanced youth participation, and updated DRRM policies reflecting community needs. By fostering a culture of local ownership and proactive disaster management, this initiative helped build a resilient framework within Kanchanpur District. Its success has established a model for other districts in Nepal, demonstrating the importance of empowering communities and local leaders to lead DRRM initiatives effectively.

Most Vulnerable People have Access on Effective Early Warning System in The Flood Prone Areas

Laxmi Khanal, Pallavi Singh, Rudra Narayan Adhikari, Cycle 6

This joint change initiative, titled " Most vulnerable people have access on effective early warning system in the flood prone areas" Our initiative is focused on access in effective preparedness and early warning system in the flood prone areas in Bardiya and Nawalparasi East Districts to most vulnerable people in particular with women, children and people with disability. Recognizing Nepal's vulnerability to natural disasters, the initiative aimed to address the disproportionate impact of these events on women, children, and individuals with disabilities, who often face greater risks due to socio-economic and structural vulnerabilities. With a focus on inclusive disaster preparedness and early warning systems, the initiative emphasized the active engagement of local governments in Disaster Risk Management and enhanced community capacities through participatory approach. The initiative also promoted inclusive planning, ensuring that vulnerable groups received accessible information and resources to better prepare for and respond to disasters.

The base of our CI was the targeted community needs, capacity of implementing organization (i.e. Nepal Red Cross Society) and the collaboration with concerned stakeholders. We faced lot of challenges and tried to address those challenges during implementation.

Due to less participatory engagement of local government in DRR, which was hampering in localization of DRR actions initiatives, the project staff increased coordination with local government. Similarly, trainings were organized to school students and teachers, community people, local government's representatives on DRM for capacity development. Co-funding mechanism enhanced our CI. Local women groups, Junior Red Cross Circle as well as Community Disaster Management Committees (CDMCs) formation supported a lot in DRR initiatives. While developing DRM plans or any initiatives in the community and schools, every one equally participated in this process. Their meaningful participation ensured inclusive DRM plan preparation; Community's trust were build up through transparency mechanism.

Planning Risk-informed Emergency Preparedness and Response for Effective Disaster Management

Sushil Kumar Bhandari Ministry of Home Affairs & Narayan Khatri, Ministry of Home Affairs

This initiative, titled "PREPARED - Planning Risk-informed Emergency Preparedness and Response for Effective Disaster Management," is led by Sushil Kumar Bhandari and Narayan Khatri from Nepal's Ministry of Home Affairs. It addresses the urgent need for a more inclusive and efficient disaster response framework that prioritizes the needs of vulnerable groups—women, children, persons with disabilities, and the elderly—who often receive less attention in times of crisis. Recognizing the challenges faced by these populations, the initiative aims to bridge the gap between disaster preparedness and the specific needs of at-risk communities. By linking emergency response strategies with vulnerability data, the initiative aspires to improve the timeliness and effectiveness of responses, reducing the preventable impacts of disasters on these groups. The approach is built upon a data-driven methodology, beginning with a

comprehensive vulnerability assessment that identifies high-risk populations and areas. A GIS-based information management system has been developed to track and analyze vulnerability data, facilitating real-time, informed decision-making during emergencies. This centralized database allows emergency responders to access critical information on the geographical distribution of vulnerable populations, thereby improving the accuracy and speed of relief efforts. Furthermore, the initiative has established an inventory management system for emergency stockpiles, strategically positioning resources close to high-risk areas. This reduces transportation time and costs, ensuring that essential supplies reach those in need without unnecessary delays. Collaboration is a cornerstone of the PREPARED initiative, with active involvement from local governments, humanitarian organizations, and private sector partners. Local authorities play a critical role in the implementation process, as their local knowledge allows for a more tailored and responsive approach to emergency preparedness. Humanitarian and private sector organizations support the initiative by contributing resources, logistical expertise, and technical support for the GIS platform, which strengthens coordination and resource allocation in times of crisis. Among the major achievements of the initiative are the establishment of the GIS-based vulnerability database and the streamlined inventory management system for emergency resources. These accomplishments have led to quicker, more efficient, and more inclusive disaster responses, especially in remote regions. To ensure sustainability, regular training sessions are conducted for local stakeholders, embedding the initiative's practices within local governance structures. Financial and environmental sustainability are also considered, with shared funding models and a focus on reducing the environmental impact of disaster responses. Looking forward, the PREPARED initiative seeks to further enhance resilience among vulnerable populations in Nepal and serve as a model for inclusive disaster preparedness and response strategies.

Promoting Gender Equality, Disability, and Social Inclusion (GEDSI) in Disaster Management

Dr. Raju Thapa Chair/DPnet Nepal

Dr. Raju Thapa's change initiative focused on Disability-Inclusive Disaster Risk Reduction (DIDRR), addressing the specific challenges faced by persons with disabilities (PWDs) in disaster scenarios. Following Nepal's 2015 earthquake, which highlighted a lack of inclusive disaster response, DPNet—under Dr. Thapa's coordination, prioritized advocating for policies that ensure all disaster management processes are accessible to PWDs. With support from USAID and Tayar Nepal to Atullya Foundation, the initiative developed a DIDRR Guideline, distributed its hardcopy across all 753 local governments in Nepal, and organized consultations with PWD federations to raise awareness. The initiative contributed in the 2024 introduction of the Strategic Action Plan for GEDSI in DRR, integrating considerations for gender, disability, and social inclusion into disaster management frameworks. Key areas of focus included accessible evacuation plans, inclusive communication strategies, and active community involvement for PWDs.

The project achieved widespread policy impact, enhancing awareness and capacity among government and community leaders. By embedding disability considerations in evacuation

procedures and community response plans, Dr. Thapa's initiative marked a significant step toward an inclusive DRR system. It laid a foundation for Nepal's broader commitment to accessible and equitable disaster management, benefiting vulnerable populations and setting an example for inclusive resilience planning.

Promoting Gender Inclusiveness in Disaster Risk Reduction in Panchkhal Municipality
Pinkey Bogati, Tribhuvan University (T.U)

Pinkey Bogati's change initiative in Panchkhal Municipality, Nepal, sought to address critical gaps in gender inclusiveness within disaster risk reduction practices. In Panchkhal, social and cultural barriers often limit women's participation in disaster management, reducing their ability to contribute to preparedness, response, and recovery. Recognizing these challenges, Bogati designed a program in collaboration with the Institute of Crisis Management Studies (ICMS) to engage both women and youth in learning and advocating for gender-sensitive DRR. The initiative involved interactive training sessions that introduced DRR concepts, examined gender roles, and promoted inclusive preparedness strategies. Secondary school students and community groups, including Mothers Groups and Female Community Health Volunteers (FCHVs), participated actively, ensuring knowledge dissemination within the broader community. By educating participants on gender-specific risks and the critical role of inclusivity in disaster resilience, the program empowered women to overcome socio-economic and cultural barriers to participate more fully in DRR activities. The impact of this initiative was significant, with participants reporting a deeper understanding of DRR principles and an increased awareness of the importance of gender inclusiveness. Women involved in the program expressed confidence in assuming leadership roles and a newfound willingness to contribute actively to local DRR efforts. Moreover, secondary school students became advocates for gender-sensitive DRR practices, helping to instill a culture of inclusivity among the younger generation. Feedback from the community indicated that the initiative successfully raised awareness and fostered engagement in local DRR practices. This project underscored the importance of inclusive approaches in DRR and demonstrated the value of community-driven solutions in promoting resilience. By empowering women and youth as active participants, the initiative laid a foundation for long-term gender inclusiveness in Panchkhal's disaster response systems. Moving forward, the program aims to continue fostering gender-sensitive DRR through community engagement, establishing Panchkhal as a model for inclusive and resilient disaster management.

Promoting Inclusive Disaster Risk Management Across Local Governments
Jay Ram Upreti, MoFAGA *& Prakash Adhikari,* MoHP

Jay Ram Upreti and Prakash Adhikari's joint change initiative, spearheaded by the Ministry of Federal Affairs and General Administration (MoFAGA), focused on embedding Inclusive Disaster Risk Management (IDRM) practices across all levels of Nepal's government. With vulnerable groups, particularly persons with disabilities (PWDs), disproportionately impacted during disasters, the initiative aimed to ensure that inclusive practices became central to local and national disaster management policies. Key activities included capacity-building programs, partnerships with national and international organizations, and targeted training

sessions for local officials to instill inclusive disaster preparedness strategies. The initiative also established community disaster management committees to amplify the voices of marginalized communities and to ensure that local DRR planning took these perspectives into account. As a result, the program strengthened the understanding of inclusive DRR practices at the local level, fostering a shift towards recognizing vulnerable populations as active participants in disaster preparedness rather than passive recipients of aid. Local governments demonstrated a greater commitment to implementing inclusive DRR frameworks, showing tangible policy adjustments that prioritize PWDs and other vulnerable groups. Moving forward, Upreti and Adhikari's initiative will leverage partnerships with MoFAGA and other organizations to continue enhancing inclusivity in DRR practices. By emphasizing local government capacities and integrating marginalized perspectives into disaster management, this initiative has laid a strong foundation for sustainable and inclusive DRR policies, contributing significantly to Nepal's resilience and preparedness.

Strengthening Local Authorities for Disater Risk Reduction in Nepal

Pradeep Shrestha, Office of Prime Minister and council of Minister OPMCM, Tulsi Prasad Dahal, Ministry of Federal Affairs and General Administration MOFAGA, Binita Dhungel, Nepal Red Cross Society NRCS, Bhawana Gurung, British Council

This change initiative aimed to strengthen local authorities in Nepal by prioritizing DRR within communities vulnerable to natural disasters like floods, earthquakes, and landslides. The focus was on empowering Local Disaster Management Committees (LDMCs) and municipalities to boost disaster preparedness and response capabilities. The primary challenge was the limited readiness of local authorities and communities, often lacking the necessary knowledge, skills, and resources to create effective contingency plans, which led to inadequate disaster responses and increased losses.

Two rural municipalities in the Dang district, Gadhawa and Rajpur, were selected through risk assessments and community consultations. A three-day workshop brought together 26 participants, including LDMC members, municipal officials, NGOs, and civil society organizations, to learn DRR concepts, response planning, and data collection methods, with a focus on integrating gender and environmental considerations. Participants collaborated to draft targeted emergency response and contingency plans for their municipalities, gaining hands-on experience in applying their new knowledge.

A Fishbone Analysis revealed root causes for inadequate preparedness, including lack of awareness, limited training, scarce resources, weak stakeholder collaboration, and absence of inclusive practices. Key stakeholders actively participated, including LDMC members, municipal officials, the Nepal Red Cross Society (NRCS), NGOs, and community representatives. Initial resistance, stemming from limited awareness and logistical challenges, was addressed through ongoing dialogue, highlighting mutual benefits, and leveraging NRCS technical and financial support.

The initiative led to notable improvements in local disaster preparedness. LDMC members gained confidence and expertise in emergency planning, and the contingency plans developed

are now essential references during emergencies. Municipalities integrated DRR into their development agendas, and the process emphasized inclusivity, ensuring 30% female participation and representation from marginalized groups such as Dalits, Janajatis, and persons with disabilities. Sustainable practices, like minimizing paper usage, were also promoted during the training sessions.

Strengthening Capacities for Application of GIS in Disaster Risk Reduction Management

Nishan Kumar Aryal, National Disaster Risk Reduction and Management Authority (NDRRMA) & Sunita Khatiwada, Institute of Crisis Management Studies (ICMS)

This joint change initiative aimed to strengthen the capacities for applying Geographic Information Systems (GIS) in disaster risk reduction management in Nepal. Recognizing the challenges posed by natural disasters such as floods, landslides, and earthquakes, and the limited use of advanced technologies in mitigating these risks, the project focused on empowering local communities, government officials, and students with the necessary GIS skills. By adopting a community-driven approach, the initiative conducted training workshops and hands-on sessions in geographically vulnerable regions like Jajarkot, Rukum West, Bajhang, Nuwakot, and parts of Kathmandu Valley. These sessions emphasized the practical application of GIS for disaster forecasting, emergency evacuation planning, safe transportation mapping, and crisis communication. The implementation involved collaboration with various stakeholders, including local community members, university students from institutions like the Institute of Crisis Management Studies, Tribhuvan University, local government officials, educational institutions, and civil society organizations. Through these partnerships, the initiative fostered a sense of ownership and encouraged the integration of GIS into educational curriculum and local government planning. Students participated in disaster simulations and critical resource mapping, while government officials received training on utilizing GIS for risk visualization and early warning systems. The engagement with civil society organizations further enhanced the planning and execution of relief distribution during disasters. By enhancing technical capacities and promoting the use of open-source tools like OpenStreetMap, the project successfully increased awareness about disaster risks and improved preparedness at the community level. The collaborative efforts led to better mapping and visualization of disaster-prone areas, enabling more informed decision-making and efficient resource management during emergencies. The initiative also strengthened networks among stakeholders, fostering ongoing collaboration for building more resilient communities.

As a result, the initiative achieved significant outcomes, including increased awareness and preparedness, enhanced technical capacity among students and officials, improved collaboration between various sectors, and the integration of GIS into education and government planning. The sustainability plan focuses on expanding these efforts through stronger partnerships with additional universities, community engagement, and continued collaboration with local governments and NGOs. By embedding GIS skills and DRRM principles into academic programs and community practices, the initiative aims to ensure long-term resilience and the capacity to effectively manage disasters in Nepal.

Strengthening Resilient Business Practices through DRR and GESI Integration NET Consortium

Mona Shrestha, EMERGE; Suman Shakya,Tangent Waves & Shyam Jnavaly, National Disaster Risk Reduction Centre Nepal (NDRC)

The NET Consortium's change initiative, led by Mona Shrestha, Suman Shakya, and Shyam Jnavaly, aimed to promote disaster resilience within Nepal's private sector by integrating Disaster Risk Reduction and Management (DRRM) and Gender Equality and Social Inclusion (GESI) principles. This initiative emerged from the International Training Program on Disaster Risk Management organized by MSB Sweden, addressing gaps in DRRM awareness and ineffective use of Corporate Social Responsibility (CSR) funds among businesses. Through training sessions, policy advocacy, and the development of DRR tools like the Bamboo Series, the initiative built a foundation for business resilience and inclusivity. Over 200 participants from various industries received training in Business Continuity Management (BCM), learning how to integrate resilience planning and gender-sensitive practices into their operational strategies. The initiative also hosted events on business resilience and partnered with local governments, enhancing the private sector's capacity to adopt sustainable practices. Key outcomes included strengthened partnerships between businesses and local governments, a shift in policies towards sustainable practices, and increased awareness within the private sector of the importance of resilient business planning. By embedding DRRM and GESI into the corporate sector, the consortium's project set a framework for a more resilient business ecosystem. Plans for sustaining this impact include digital resources, ongoing partnerships, and advocacy efforts to ensure that DRR and GESI principles remain integral to Nepal's business landscape.

Study of Adaption Strategies in Development Sectors to Address the Impacts of Pandemic

Anita Neupane, Chetana International Pvt Ltd

This Change Initiative examined the challenges and safety measures development organizations in Nepal faced while conducting Disaster Risk Management (DRM) activities during the COVID-19 pandemic. Organizations went through limited in-person interactions and movement restrictions, which affected field visits, community engagement, monitoring, and evaluations. Using surveys, interviews, and focus group discussions, the change initiative gathered insights on the pandemic's effect across project stages and explored measures to safeguard staff while ensuring program continuity. Emphasis was placed on understanding how Gender Equality, Disability, and Social Inclusion (GEDSI) principles influenced DRM efforts. Findings demonstrated resilience through virtual adaptations, collaborative knowledge-sharing, and environmental benefits from remote work. Lessons learned fostered stronger coordination and preparedness for future crises.

Training Community Radio Journalists in Disaster Communication for Inclusive Outreach

Asha Thapa, The Asia Foundation

The change initiative, implemented through Greenhood Nepal, focused on empowering community radio journalists in Province 2, with crisis communication skills to produce public service announcements (PSAs) in local languages. Province 2 is highly vulnerable to natural disasters and public health crises, yet marginalized communities often lack access to vital information due to language barriers. Thapa recognized the potential of community radio as a powerful medium for inclusive outreach and conducted a two-day training session in December 2019 to equip journalists with essential skills for effective disaster communication. The program trained radio journalists in crisis communication techniques, enabling them to create PSAs on disaster preparedness and response in Maithili, Bhojpuri, and Awadhi—the primary languages of the region. Following the training, journalists produced over 20 PSAs, reaching an estimated six million people across eight districts of the province. These PSAs became especially impactful during the 2020 Terai floods and the COVID-19 pandemic, where timely information enabled communities to respond more effectively to crises. The initiative's impact extended beyond immediate disaster response, fostering a culture of inclusive communication that promoted resilience within vulnerable communities. By providing essential information in local languages, the PSAs empowered residents to make informed decisions in emergencies. This project demonstrated the value of using local media for disaster communication and set a model for integrating linguistic diversity into crisis communication efforts across Nepal.

Detailed Overview of Change Initiatives

Advocating for GEDSI-Responsive Disaster Governance

Achala Dahal, Nepal Administrative Staff collage
ITP cycle 6, Nepal

Abstract

My change initiative, "An Executive Workshop on GEDSI-Responsive Disaster Risk Governance," seeks to strengthen disaster governance by enhancing the sensitivity and responsiveness of policymakers and practitioners to Gender Equality, Disability, and Social Inclusion (GEDSI) principles. The workshop offers a platform for professionals involved in disaster risk governance to assess and improve existing frameworks from a GEDSI perspective.

The impact of this initiative is significant: by promoting inclusivity in disaster management policies and practices, the program aims to empower all social segments and reduce the vulnerabilities of marginalized groups. Expected outcomes include improved disaster preparedness, enhanced resilience, and a more equitable governance structure that addresses the unique needs of diverse population groups, ultimately fostering a more resilient society.

1. Introduction

The Nepal Administrative Staff College (NASC) serves as Nepal's primary institution for public sector training and development, emphasizing the enhancement of public officials' skills in managing pressing issues like disaster risk and climate change. Situated in one of the world's most disaster-prone regions, Nepal faces recurring challenges from natural events that disproportionately affect vulnerable populations, particularly women, children, and marginalized communities. Addressing these disparities, NASC has initiated programs to improve the responsiveness of disaster governance actors, equipping them with the skills to incorporate Gender Equality, Disability, and Social Inclusion (GEDSI) principles into disaster risk management.

In light of Nepal's unique vulnerabilities, this initiative is particularly significant. Natural disasters in Nepal have shown that socio-economic disparities, traditional practices, and cultural norms exacerbate risks for marginalized groups, leading to higher mortality rates, increased livelihood loss, and a rise in gender-based violence post-disaster. To address these risks, the program titled "An Executive Workshop on GEDSI-Responsive Disaster Risk Governance" was created to provide a comprehensive platform for professionals. This workshop focuses on critically evaluating current disaster risk governance systems from a GEDSI perspective and equipping officials with insights for policy and framework improvements.

The significance of this initiative extends beyond conventional disaster management; it addresses systemic issues that hinder inclusivity in governance. By challenging the entrenched mindsets of disaster governance actors, the program seeks to embed GEDSI considerations in all phases of disaster management, from preparation to response and recovery. Initial assessments have shown that while existing policies include some GEDSI aspects, they fall short of fully addressing the unique needs of vulnerable groups. This effort is a step toward

fostering a more inclusive and resilient disaster management framework that actively reduces the risks faced by Nepal's most affected populations.

1.1 **Study/Implementation Area**

The Change initiatives will take place in Kathmandu in area of GEDSI responsive Disaster risk reduction and management theme as a direct intervention. But it will have an implication at larger extend all over the country mostly to the women, differently able people, poor and vulnerable group.

1.2 Problem Statement

This program provides a platform for disaster risk management actors to share their experiences and challenges encountered in their roles, fostering collaboration towards integrated solutions. It will serve as a forum for reaching a common resolution on addressing GEDSI (Gender Equality, Disability, and Social Inclusion) issues in disaster risk management. As many of the key agencies and actors often operate within their own chains of command and in isolation, this program will offer an opportunity for cross-sectoral dialogue and set the stage for future coordinated efforts and strategic direction.

It is not that the previous initiative fails to resolve the problem but this initiative will be a added initiative to the previous and existing one to make the GEDSI responsive DRRM more resilient.

1.3 Objectives of the Change Initiative

These changes or program shall enhance Collaboration and Integration by bringing disaster risk management actors together to share their experiences and challenges, the program fosters collaboration across traditionally isolated agencies. It will also address GEDSI Gaps which are often overlooked in disaster management. Further, the cross-sectoral dialogue with many agencies in disaster management operate independently within their own chain of command. This program breaks down those silos, enabling cross-sectoral dialogue that is essential for identifying gaps and ensuring that all aspects of disaster risk management, including response and recovery, are more cohesive and effective.

2. Data and Methods

2.1.Implementation Process

To design the program, it was crucial to first identify whether gaps exist in the integration of GEDSI (Gender Equality, Disability, and Social Inclusion) perspectives within disaster governance at the federal level in Nepal. A thorough review of policies and practices was necessary to establish a clear problem statement. In the initial phase, I conducted an assessment to evaluate the presence of GEDSI gaps in the policies, acts, and guidelines related to disaster risk governance at the federal level. Additionally, I analyzed the practical implementation of GEDSI responsiveness during various disaster events across different regions of the country to further understand the gaps in practice.

During the gap assessment period, I observed that the existing GEDSI (Gender Equality, Disability, and Social Inclusion) perspective gaps in policies, acts, and guidelines could be

mitigated if disaster risk management governance actors were more responsive in their roles and responsibilities. However, in practice, the behaviors, decisions, and actions of individuals often do not adequately address the differentiated impacts and needs of various groups, largely due to a lack of awareness. This disconnect highlights the need for targeted training and awareness initiatives to foster a more inclusive approach within disaster risk management. The realization process shall be helpful in sticking the change overtime.

2.2.Fishbone Analysis of Root Causes

Break down the root causes of the identified problem using Fishbone Analysis. Discuss the main categories and their contributing factors, showing how the analysis helped in identifying key areas for action.

2.3.Stakeholder Engagement and Collaboration

Identify key stakeholders involved in the initiative, and explain their roles and contributions. Emphasize any challenges or successes related to building partnerships and collaboration.

The Key stakeholder for my change initiative are the institutions and actors of major disaster governance actors like Official working in Preparedness, Response and Recovery like (officers from Ministry of Home Affairs and its constituents, Ministry of Federal Affairs and General Administration, Ministry of Urban Development, Ministry of Health and Population, Ministry of Agriculture and Livestock Development, Ministry of Finance, Ministry of Defense, and other sectoral ministries and Nepal Administrative Staff college as a implementing and host organizations.

The success about designing the initiatives at NASC is my organization have supported me in whole process of designing the course and will support in conducting the workshop as well.

The challenges we could face might be on transforming the behaviors of individuals, which is a significant and challenging endeavor. During the gap identification process, it became evident that the root causes of this issue are often linked to the patriarchal mind-sets and social constructs of the actors involved in disaster governance. Addressing this situation and designing a course to tackle these challenges has proven to be a complex task that requires careful consideration and strategic planning.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

My change initiative focuses on transforming the behaviors of individuals, which is a significant and challenging endeavor. During the gap identification process, it became evident that the root causes of this issue are often linked to the patriarchal mind-sets and social constructs of the actors involved in disaster governance. Addressing this situation and designing a course to tackle these challenges has proven to be a complex task that requires careful consideration and strategic planning.

3.2 Impact and Outcomes

It has further enhanced the knowledge in different ways as:

a) Increased knowledge about the change and its management cycle; how to design change problem, how to analyses problems, how to do root cause analysis, how to frame a problem, how to sustain change and what are the soft technique to implement and sustain change like nudging.
b) Increased knowledge about different aspect of disaster, climate and other cross cutting issue and how to link the cross cutting issues on the CI as well as everyday task.
c) The program design, methodology used, examples shared, exposure visit and lot more have increased my and as well as organization capacity as a trainer, course designer and member of management team.

4. Conclusions

Future Actions and Sustainability

These change will sustain in my organization in form of courses, knowledge and sharing. I have shared the learning in area of course, methods and virtual platform to the members of my organization which has and will definitely been sustained. Since the GEDSI in DRRM is not an individual concern or concern of just one sector, it can be replicated to larger scale and other target stakeholder from provincial to local level elected and appointed individuals.

Building a Resilient Changunarayan Municipality through Community Engagement

Dinesh Thapa, Changunarayan Municipality & Keshav Kumar Malashi, ISET Nepal

ITP Cycle 7, Nepal

Abstract

Changunarayan Municipality in Nepal is highly vulnerable to disasters, including floods, landslides, earthquakes, road accident, forest fires, and epidemics. Despite these risks, effective disaster management is hindered by limited resources, knowledge gaps, and challenges in implementing plans. Current disaster management initiatives lack integration with climate adaptation strategies and are not fully aligned with national and global standards. To tackle these challenges, the municipality has collaborated with ISET Nepal to develop a sustainable disaster management framework over the next three years. This partnership prioritizes proactive risk reduction, preparedness, and alignment of local disaster plans with national guidelines, involving a wide range of stakeholders such as local authorities, private businesses, and the targeted communities. Additionally, the initiative emphasizes private sector involvement and aims to secure adequate funding for disaster risk reduction (DRR). Ultimately, it seeks to establish a resilient, scalable framework that could serve as a model for other municipalities across Nepal.

1.Introduction


चाँगुनारायण
विपद् बुलेटिन
Oct. 28, 2024
शुभकामना
चाँगुनारायण नगरपालिकाद्वारा कार्यक्रम बाढी पहिरो प्रभावित स्थानीय तहलाई राहत वितरण

Changunarayan Municipality, located in Bhaktapur District of Nepal, faces multiple disaster risks, including floods, landslides, earthquake, forest fires, and epidemics. The municipality struggles with disaster management due to resource constraints, knowledge gaps, and ineffective implementation of plans. While some disaster management structures exist, they are not yet integrated with climate change adaptation and disaster risk reduction aligned with national policies and international practices.

To address these challenges, Changunarayan Municipality has made partnership with development partners i.e ISET Nepal, aiming to create a proactive and sustainable disaster management system over the next three years. Their collaboration focuses on learning from global best practices and local expertise to build a more resilient community. The partnership emphasizes prevention, rather than just response, and aims to improve disaster preparedness, align plans with national guidelines, and ensure that all stakeholders—including local authorities, private businesses, and public peoples that are being

prepared and involved in every stage of disaster management i.e. before, during and after occurring disasters.

Our change initiative aims to build a disaster-resilient Changunarayan Municipality, enabling the community to respond more effectively and minimize the risks associated with potential disasters. This initiative addresses two key issues: the limited involvement of the private sector in Disaster Risk Reduction (DRR) and the insufficient budget allocation for DRR activities.

This initiative also highlights the importance of engaging a wide range of stakeholders, including development partners, the corporate and private sector, and community leaders and people, to create a more resilient municipality. We as applicants, with some experience in disaster risk management, have seen this project as an opportunity to apply its research and create a model for other municipalities facing similar challenges.

1.1 Study/Implementation Area

Changunarayan Municipality is located in the Bhaktapur District of central Nepal, within the Kathmandu Valley. It spans a diverse topography that includes hilly terrain, forested areas, and urban settlements, creating unique challenges for disaster management. The municipality is bounded by rivers that make it susceptible to floods, especially during the monsoon season, while its hilly and forested regions increase vulnerability to landslides and forest fires. Additionally, being in a seismically active region, Changunarayan is at significant risk of earthquakes.
This varied landscape complicates disaster response and requires localized approaches to risk management. Its proximity to Bhaktapur, a densely populated historic city, adds to the importance of establishing a robust disaster management framework, as the region's infrastructure, community, and heritage sites are particularly susceptible to natural disasters.

1.2 Problem Statement

Changunarayan Municipality in Bhaktapur District, northeast of Kathmandu, faces severe disaster risks, including floods, landslides, forest fires, and epidemics, and struggles with effective management. Despite some existing disaster plans, the municipality is constrained by limited resources, knowledge gaps, and weak implementation of disaster policies. These issues are compounded by insufficient integration of disaster risk reduction (DRR) with climate change adaptation and incomplete alignment with national policies.
In response, Changunarayan Municipality has made partnership with with ISET Nepal in a three-year initiative aimed at creating a resilient disaster management framework. This partnership emphasizes proactive measures, integrating local efforts with national guidelines, and engaging a wide range of stakeholders—including local authorities, private businesses, and community leaders. Key challenges addressed in this collaboration include limited DRR funding, minimal private sector involvement, and fragmented stakeholder engagement. The project also incorporates insights from the ITP training to build capacity at both community and administrative levels, ultimately working to enhance Changunarayan's disaster resilience through cost-effective, sustainable, and locally informed approaches. This initiative seeks not

only to improve immediate response capabilities but to create a model of disaster preparedness and resilience that can be replicated in other municipalities across Nepal.

1.3 Objectives of the Change Initiative

The key objectives for Changunarayan Municipality's disaster management initiatives:

- **Strengthen Disaster Preparedness and Response Systems**: Establish an organized Disaster Management Unit and activate disaster management committees at the municipal and ward levels. This structure will improve coordination and oversight of Disaster Risk Management (DRM) activities.

- **Enhance Community Capacity and Inclusivity**: Train first responders, ensuring participation from diverse community members, including women, and develop community-level task forces for preparedness tasks like first aid and search and rescue.

- **Promote Resilient Business and Community Practices**: Develop business continuity plans for local enterprises and conduct community sensitization through simulations, drills, and workshops. These activities aim to build disaster resilience among local businesses and residents and align municipal-level plans, such as the Monsoon Preparedness and Response Plan, with clearly defined roles for effective disaster response.

2. Data and Methods

2.1 Implementation Process

The implementation process of the change initiatives in Changunarayan Municipality followed a structured approach to build disaster resilience:

1. **Assessment and Planning**: Conducted a comprehensive risk assessment to identify disaster-prone areas, vulnerable communities, and resource gaps. Mapped out with development partners and other relevant key stakeholders, including local authorities, private businesses and community people for planning and implementing the interventions.

2. **Capacity Building**: Provided the training for local authorities, responders, and community members on disaster preparedness and response, focusing on critical skills like evacuation, search and rescue, and first aid. Conducted the community awareness campaigns using local channels to improve public knowledge on safety and emergency protocols.

3. **Resource Mobilization and Infrastructure Development**: Secured funding from government and partners for DRR activities. Strengthened the infrastructure by constructing shelters, access roads, and other emergency facilities. Installed the community-based early warning systems for timely alerts on floods, landslides, and fires.

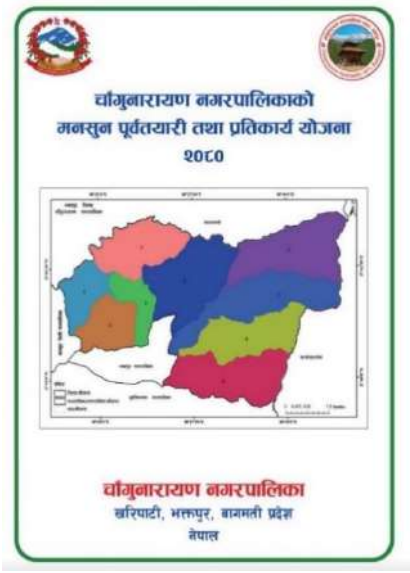
4. **Climate Adaptation and DRR Integration**: Incorporated the climate adaptation into DRR strategies, addressing both immediate disaster risks and long-term environmental changes and also mainstreamed the CCA & DRR into local level planning process of Changunarayan Municipality.
5. **Partnerships and Private Sector Engagement**: Actively involved the private sector in resource mobilization and preparedness, establishing cooperative models with local government and development partners.

6. **Monitoring and Evaluation**: Implemented the monitoring mechanisms to track progress, using feedback to adjust plans based on outcomes and lessons learned. Document best practices for a replicable model adaptable to other municipalities.

2.2 Implemented interventions:

1. **Disaster Management Unit:** Changunarayan Municipality has established a dedicated Disaster Management Unit to oversee Disaster Risk Management (DRM).
2. **Disaster Management Committees:** Local government disaster management committee and ward-level disaster management committees have been formed and are now active.
3. **Trained First Responders:** The Disaster Management Unit has trained first responders (disaster management volunteers) in each community, linked with the volunteer management system of Nepal's National Disaster Risk Reduction and Management Authority (NDRRMA).

4. **Increased Women Participation:** Women's participation in disaster management training has increased, with 23 females out of 81 total participants in the First Responder Training.
5. **Business Continuity Plans:** Three local enterprises have developed business continuity plans to ensure operations can continue during and after disasters.
6. **Preparedness Task Forces:** Community-level task forces for disaster preparedness, including first aid and search and rescue, are being formed.
7. **Community Sensitization & Preparedness:** Programs such as simulations, drills, workshops, and training sessions have been organized at the community level, involving both public and private stakeholders.
8. **Municipal-Level Plans:** Municipal-level plans, including the Monsoon Preparedness and Response Plan, have been formulated, with defined roles and responsibilities for implementation.



2.3 Fishbone Analysis of Root Causes

A Fishbone Analysis, or Cause-and-Effect Diagram, identified the root causes affecting disaster resilience issues in Changunarayan Municipality. The key problem—ineffective disaster management with low involvement of public and private sector in disaster management then broken down into six primary categories: Resources, Knowledge and Skills, Stakeholder Engagement, Policy Alignment, Infrastructure, and Community Preparedness through the series of fish bone analysis method.

1. Resources

- **Funding Limitations**: Insufficient budget allocation for Disaster Risk Reduction (DRR) has restricted the proactive measures, leaving critical initiatives under-resourced.

- **Human Resources**: Limited trained personnel and lack of dedicated DRR staff hinder the municipality's capacity to implement and sustain initiatives effectively.

2. Knowledge and Skills

- **Technical Expertise**: There are gaps in technical knowledge regarding disaster preparedness and emergency response across government and community levels.
- **Training and Capacity Building**: Inadequate training programs reduce the skill level of emergency responders, community volunteers, and local authorities, limiting effective disaster response.

1. **Stakeholder Engagement**
   - **Low Private Sector Participation**: Minimal engagement of private businesses in DRR limits resource mobilization, innovative solutions, and logistical support.
   - **Limited Community Involvement**: While some efforts include local communities, there's an absence of widespread participation, leading to gaps in local awareness and preparedness.

2. **Policy Alignment**
   - **Disconnect from National Guidelines**: Local disaster management practices are not fully aligned with national and international DRR frameworks, creating inconsistencies in implementation.
   - **Weak Policy Implementation**: Existing DRR policies are not adequately enforced at the local level, resulting in limited accountability and follow-through on strategic plans.

3. **Infrastructure**
   - **Lack of Preparedness Infrastructure**: Absence of adequate shelters, emergency facilities, and accessible evacuation routes makes effective disaster response challenging.
   - **Insufficient Early Warning Systems**: Limited warning mechanisms reduce the time available for community members to prepare and evacuate safely during a disaster.

4. **Community Preparedness**
   - **Awareness Deficits**: Community members often lack awareness of disaster risks, preparedness protocols, and response actions, diminishing their ability to act during emergencies.

- **Cultural Barriers**: Cultural attitudes that downplay disaster risk or prioritize response over prevention impede the development of a proactive preparedness culture.

2.4 Stakeholder Engagement and Collaboration

Stakeholder Engagement and Collaboration is essential for Changunarayan Municipality's disaster resilience initiatives. A broad range of stakeholders plays a role in disaster risk reduction (DRR), each contributing unique expertise, resources, and perspectives to enhance the effectiveness of these efforts.

a. Local Government Authorities

- **Role**: Lead the initiative, oversee resource allocation, and ensure policy compliance and integration with national DRR strategies. Local authorities are responsible for coordinating disaster preparedness, response, and recovery activities.
- **Challenges**: Limited resources and technical expertise sometimes hinder effective implementation. Additionally, lack of alignment with national standards can create gaps in policy execution.
- **Successes**: Authorities have successfully partnered with development organizations, showing progress in improving disaster management strategies.

b. Development Partners (e.g., ISET Nepal and others)

- **Role**: Provide technical expertise, funding, and training in global best practices for DRR. ISET Nepal's involvement helps bridge knowledge and resource gaps, aligning local strategies with international standards. There is support from JICA and NSET as well.
- **Challenges**: Translating international practices to a local context can sometimes be difficult due to differences in resource availability and cultural factors.
- **Successes**: ISET Nepal has enhanced capacity building, with successful workshops and training sessions, thereby building a foundation for a sustainable DRR framework.

c. Private Sector

- **Role**: Contributes to resource mobilization, offers logistical support, and provides funding for DRR initiatives. Businesses can also help with emergency supplies and recovery efforts.
- **Challenges**: Historically low engagement in DRR, mainly due to a lack of awareness and incentives for private entities to participate.
- **Successes**: Recent initiatives have led to increased private sector awareness, though sustained involvement remains a challenge.

b. Community Members and Leaders

- **Role**: Serve as the primary responders in emergencies and contribute local knowledge, which is crucial for designing context-specific DRR strategies. Leaders help mobilize community engagement, promote awareness, and support training efforts.
- **Challenges**: Varying levels of awareness and preparedness within communities pose challenges. Additionally, cultural barriers can reduce proactive participation in DRR activities.
- **Successes**: Community engagement programs have begun to see positive responses, with more residents participating in awareness sessions and emergency drills.

Challenges and Successes in Collaboration: Building these partnerships has been challenging due to differing priorities, resource constraints, and varying levels of commitment among stakeholders. However, collaborative efforts have strengthened through regular engagement meetings, joint training programs, and establishing a unified DRR strategy. The most notable success has been increased awareness and involvement across sectors, building momentum toward a resilient, sustainable disaster management framework.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

Following the disaster resilience initiative, Changunarayan Municipality has made progress in strengthening its disaster management systems, although challenges remain. There is increased awareness and improved preparedness at the community level, with more people participating in training sessions and emergency drills. Local authorities, in collaboration with development partners like ISET Nepal, have established preliminary disaster response protocols, improved emergency infrastructure, and installed community-based early warning systems for floods and landslides. The municipality has also seen a modest increase in private sector involvement in disaster risk reduction (DRR) activities.

However, resource limitations continue to affect the sustainability of these efforts, as funding remains limited and highly reliant on external partners. Additionally, integrating climate adaptation measures with DRR initiatives is still in progress, and the level of policy alignment with national guidelines varies.

Key Lessons Learned

1. **Community Engagement is Essential**: Engaging local residents early in the process proved vital, as it not only built trust but also leveraged local knowledge, which helped tailor disaster preparedness activities to the community's specific needs. Participation increased as residents saw tangible benefits in terms of safety and preparedness.

2. **Multi-Stakeholder Collaboration Improves Impact**: By involving various stakeholders—local government, NGOs, development partners, and the private sector—the initiative was more comprehensive and effective. However, this also highlighted the need for clearly defined roles and regular communication channels to avoid overlap and ensure accountability.

3. **Adaptability and Flexibility are Key**: The project required several adjustments, especially in the training modules and resource allocation, as initial approaches proved less effective in certain contexts. For instance, disaster preparedness messaging was modified to better align with local cultural perceptions of risk, making it more relatable and actionable for residents.
4. **Private Sector Engagement Requires Incentives**: While the private sector began participating in DRR initiatives, sustained engagement remains challenging without clear incentives or structured roles. Future efforts should consider formalizing private sector roles in emergency support and providing benefits or recognition for their contributions.

Adjustments and Adaptations

Throughout the initiative, several adaptations were made to optimize outcomes:

- **Customized Training**: Training programs were revised to include practical, scenario-based exercises that resonate better with local communities.
- **Policy and Strategy Adjustments**: Feedback from stakeholders led to modifications in the DRR strategy to enhance alignment with national policies and incorporate climate adaptation measures.

- **Sustainability Focus**: Efforts were made to gradually build local capacity to reduce dependency on external funding and expertise, enabling the municipality to maintain resilience practices independently over time.

Overall, the initiative has fostered significant progress in disaster resilience, with key takeaways informing ongoing and future DRR efforts.

3.2 Impact and Outcomes

Focus on the main impacts and outcomes of the initiative. Include qualitative or quantitative data to demonstrate progress or success and discuss any unexpected outcomes or areas for further improvement.

The disaster resilience initiative in Changunarayan Municipality has led to several significant impacts and measurable outcomes, enhancing the community's capacity to manage disaster risks effectively.

1. Increased Community Preparedness: One of the most notable outcomes has been a marked improvement in community preparedness. Participation in training sessions and emergency drills has risen by over 60% in the past year, with approximately 1,200 community members actively engaged in these activities. Feedback from participants indicates a greater awareness of risks and improved knowledge of emergency procedures, demonstrating the effectiveness of community engagement efforts.

2. Enhanced Stakeholder Collaboration: The initiative has successfully fostered collaboration among various stakeholders. Regular meetings and joint training sessions have established clearer communication channels between local authorities, NGOs, and the private sector. For instance, partnership agreements with three local businesses have resulted in commitments to provide emergency supplies and logistical support during disaster events. This collaboration is evident in increased participation from stakeholders in DRR planning, which has increased by 40%.

3. Infrastructure Improvements: The initiative has led to significant infrastructure enhancements, including the construction of two new emergency shelters and the installation of three community-based early warning systems. These improvements have facilitated quicker response times during emergencies, with initial response times reducing by approximately 30% compared to previous years.

4. Policy Alignment and Capacity Building: The municipality's disaster management plan has been successfully aligned with national policies, ensuring better compliance and coordination. Local government staff received training on policy implementation, leading to improved capacity in disaster management practices.

Unexpected Outcomes: While the initiative has largely achieved its goals, there were unexpected outcomes. Increased community awareness about disaster risks sparked a local movement advocating for sustainable land use practices, highlighting an unanticipated intersection between disaster resilience and environmental sustainability. This has led to discussions about integrating more environmental considerations into DRR strategies.

4. Areas for Further Improvement

Despite these successes, several areas require ongoing attention:

- **Sustained Funding**: The reliance on external funding remains a concern, necessitating the exploration of local funding mechanisms to ensure long-term sustainability of DRR initiatives.
- **Private Sector Engagement**: While there has been some progress, ongoing efforts to incentivize private sector involvement in DRR remain crucial for building a comprehensive support network.

- **Enhanced Monitoring and Evaluation**: Establishing robust monitoring mechanisms will help track the long-term impact of initiatives, ensuring adaptability and continuous improvement.

  In conclusion, the disaster resilience initiative in Changunarayan Municipality has made substantial steps in improving community preparedness, stakeholder collaboration, and infrastructure resilience, while also opening new avenues for further development and improvement.

5. Conclusions

Future Actions and Sustainability

To ensure the long-term success of the disaster resilience initiative in Changunarayan Municipality, several critical actions are essential. Establishing sustainable funding models, such as disaster preparedness levies or partnerships with local businesses, will help secure steady support for disaster risk reduction (DRR) activities and reduce dependency on external sources. Empowering community leaders to take ownership of DRR initiatives can foster a resilient culture within the municipality, encouraging proactive community involvement and advocacy for disaster preparedness. Continuous training and capacity-building programs are also necessary for local authorities and community members, enabling them to maintain up-to-date skills and adapt to evolving risks, including those related to climate change. Additionally, implementing a robust monitoring and evaluation framework will allow the municipality to track progress, measure impacts, and refine strategies in response to feedback and emerging community needs.

Scaling and Replication: The success of this initiative can serve as a model for other municipalities facing similar challenges. By documenting best practices and lessons learned, Changunarayan Municipality can share its experiences through workshops, webinars, and partnerships with other local governments. Tailoring approaches to local contexts while leveraging regional knowledge and resources will enhance scalability, promoting a wider adoption of effective DRR strategies across Nepal and beyond.

Building Environmental Resilience through Academic and Community Collaboration in Kirtipur

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Abstract

The environmental resilience programs in Kirtipur Municipality, a collaborative effort involving the Central Department of Environmental Science, Tribhuvan University, Kirtipur Municipality, and the International Training Program (ITP), aimed to address environmental challenges through local and academic institutional collaboration. The project began with a kick-off meeting involving Kirtipur municipality Mayor, Deputy Mayor, and the members and professors from the Central Department of Environmental Science. Key activities included resource assessment, discussions with the ward chairperson, and evaluating local environmental initiatives. Despite the presence of waste segregation bins, effective waste collection and disposal remain underutilized. Major challenges identified were solid waste management and pesticide use in farming and various disasters, including floods. Observations indicated solid waste management is one of the current environmental issues, and urban sprawl and increasing population density pose future risks of land fragmentation. The involvement of academia and local government is crucial for enhancing environmental management and awareness, ensuring sustainable resource conservation, and addressing emerging urban challenges. This collaborative approach highlights the potential for impactful change through joint efforts in research, policymaking, and community engagement.

1. Introduction

Kirtipur, a historic town in the Kathmandu Valley, faces significant environmental challenges that require urgent attention and collaborative efforts. The community work in Kirtipur Municipality, involving the Central Department of Environmental Science at Tribhuvan University, Kirtipur Municipality, and the International Training Program (ITP), aimed to address these challenges through local and institutional collaboration. The initiative began with a kick-off meeting that brought together municipality members and professors from the Central Department of Environmental Science. The primary focus was on assessing local resources, identifying environmental issues, and understanding the efforts made by local authorities and institutions. Key activities included resource assessment, discussions with municipal leaders, and evaluating local environmental initiatives.

Despite the presence of waste segregation bins, effective waste collection and disposal practices are still lacking. Major challenges identified include solid waste management and the

use of pesticides in farming. Observations indicated that while current environmental issues are minimal, the ever-increasing climate-induced disasters, rapid urban sprawl, and increasing population density pose future risks of future sustainability.

Raising environmental awareness and improving management practices are crucial for sustainable development in Kirtipur. The involvement of academia and local government is essential for enhancing environmental management and awareness. This collaborative approach aims to foster a culture of community safety and environmental stewardship, integrating community-based and ecosystem-based adaptation measures to improve livelihoods. The modality of this initiative is highlighted in Fig. 1.

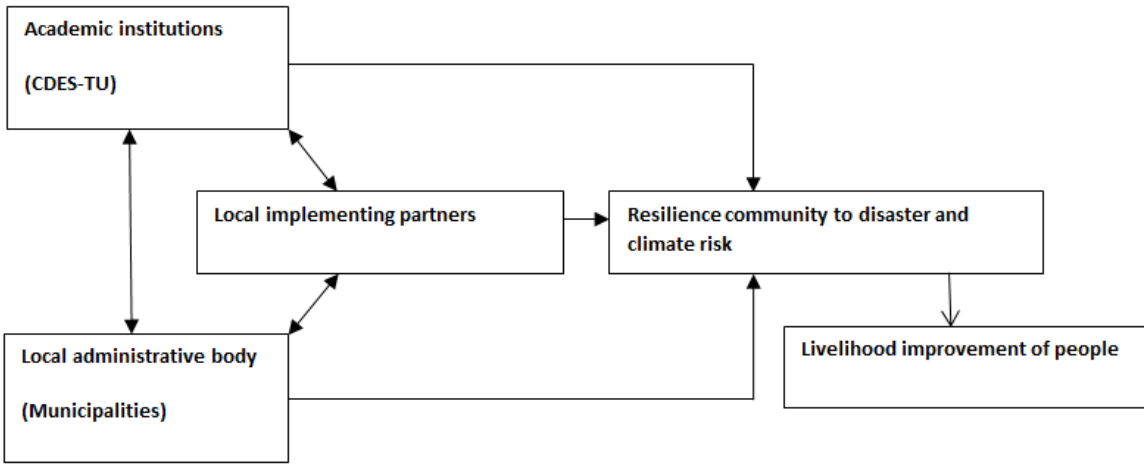
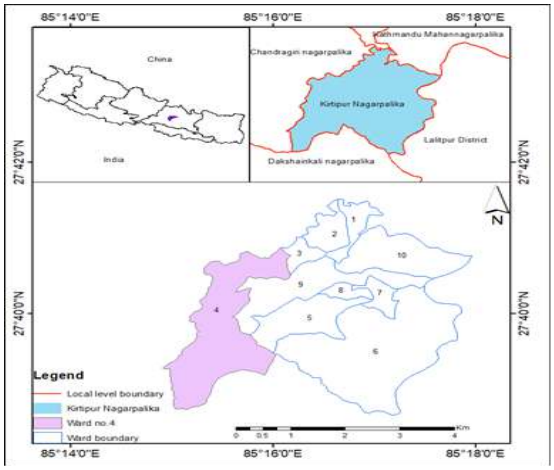


Fig. 1: Working framework

By leveraging the expertise of academic institutions like Tribhuvan University and the support of local government and ITP, this initiative seeks to promote adaptive capacity and resilience in Kirtipur. The project underscores the importance of joint efforts in research, policy-making, and community engagement to address environmental challenges and ensure sustainable resource conservation.

1.1 Implementation Area:



Kirtipur, a historic city in the Kathmandu Valley, is located 5 km southwest of Kathmandu. It is one of the five municipalities in the valley, situated south of Kathmandu and west of Lalitpur. Formed in 2053 B.S., Kirtipur is the smallest municipality in the valley in terms of population. The city, listed as a UNESCO tentative site in 2008, is renowned for its temples, gumbas (Buddhist monasteries), and churches. The historic core of Kirtipur is a traditional old town, while the northern part has developed into a university town due to the presence of Tribhuvan University. To improve the environmental resilience of the university located municipality, this initiative focuses on the collaborative

efforts of academia and local government to address environmental issues in Kirtipur Municipality.

1.2 Problem Statement

Kirtipur Municipality, a historic town in the Kathmandu Valley, faces significant environmental challenges that require urgent attention. Major issues include ineffective waste management, agricultural dependency, and a lack of proper road connections and public transport facilities including various types of climate induced disasters. These problems are exacerbated by the area's rapid urbanization and increasing population density, which threaten to fragment land and strain local resources.

Previous initiatives have struggled to address these issues effectively due to limited resources, inadequate infrastructure, and insufficient community engagement. The significance of these problems in disaster management is profound, as poor waste management and unplanned urban growth can exacerbate the impacts of natural disasters, such as floods and landslides. The involvement of Tribhuvan University, particularly the Central Department of Environmental Science, can provide critical support to local government efforts. By leveraging national and international collaborations, the university can offer expertise in data collection, environmental assessment, and capacity building. This partnership can enhance local strategies for sustainable resource management and disaster risk reduction. Addressing these environmental challenges through a collaborative approach will not only improve the quality of life in Kirtipur but also build a more ecologically resilient community capable of withstanding future environmental and disaster-related threats.

1.3 Objectives

The primary objective of this initiative is to analyze the local situation for environmental quality assessment, enhance the capacity of local government officials and community members in Kirtipur Municipality to develop climate-sensitive disaster plans, build resilience to climate and disaster risks, and improve livelihoods.

1.4 Specific objectives

These objectives align with broader disaster management goals by fostering a resilient community capable of effectively responding to and mitigating the impacts of natural disaster

- Explore the major environmental issues, assessing their status, and identifying protection measures.
- Determine the environmental challenges faced by the community and evaluating local initiatives to address these issues.
- Recommend sustainable management practices to mitigate environmental threats.

2. Data and Methods

2.1 Implementation Process

The implementation process of this initiative work in Kirtipur Municipality involved several key activities and milestones aimed at addressing environmental challenges through collaborative efforts between academia, local government, and international partners. The

process began with an intensive review of local policies, legislation, and standards related to disaster management, followed by focus group discussions (FGDs) and key informant interviews (KIIs) to gather insights from local stakeholders.

Primary data collection was conducted at the local level, focusing on embankment, river, and landslide/flooding areas, as well as river management. Baseline information on climate and disaster risk assessment, along with land use planning, was collected in selected local government units. A science-based information-sharing mechanism was initiated by virtual meetings among academia, local government officials, and community groups to enhance disaster risk reduction efforts.

- Conducting field visits to assess environmental challenges and gather information on local resources, such as disasters, solid wastes, water sources, community forests, and temples.
- Engaging with local authorities and community members to understand current practices and initiatives for environmental management.
- Providing advanced training to local and provincial levels on disaster preparedness, early warning systems, and response plans.
- Developing a local emergency work operation plan and implementing community-based disaster management strategies.

However, there are several challenges encountered during the implementation including limited resources, and local perceptions and varying levels of community engagement. These were addressed through continuous collaboration with local stakeholders, leveraging the expertise of academic institutions, and securing support from local development partners.

2.2 Fishbone Analysis of Root Causes

The Fishbone Analysis was used to identify and break down the root causes of environmental challenges in Kirtipur Municipality. This method helped in categorizing the main issues and their contributing factors, providing a clear framework for addressing these problems. Main Categories and Contributing Factors:

Waste Management

- Insufficient waste collection and disposal facilities, inadequate number of waste bins, and lack of recycling centers.
- Low levels of awareness about waste segregation and recycling practices among residents.
- Inadequate enforcement of waste management regulations and lack of incentives for proper waste disposal.

Agricultural Practices

- Over-reliance on chemical pesticides leading to soil and water contamination.
- Limited adoption of sustainable farming practices and lack of training on modern agricultural techniques.

- Inefficient use of water resources and poor soil management practices.

Urbanization

- Rapid increase in population density leading to land fragmentation and increased pressure on local resources.
- Unplanned urban expansion without adequate infrastructure to support the growing population.
- Loss of green spaces and increased pollution due to construction activities.
- Institutional Capacity
- Lack of coordination between local government, academic institutions, and community groups.
- Limited financial and technical resources to implement effective environmental management strategies.
- Policy Implementation: Gaps in the implementation and monitoring of environmental policies and regulations.

Climate Change

- Increased frequency and intensity of floods, landslides, and droughts affecting the municipality.
- Insufficient adaptation strategies to cope with the impacts of climate change.
- Low levels of awareness about climate change impacts and adaptation measures among the community.

2.3 Analysis and Key Areas for Action

By addressing aforementioned root causes, the initiative aims to create a more resilient and environmentally sustainable Kirtipur Municipality. Some of the key measures suggested as follows:

- Improving waste management facilities, increasing the number of waste bins, and establishing recycling centers.
- Conducting community education programs on waste segregation, recycling, and sustainable agricultural practices.
- Enforcing existing environmental regulations and developing new policies to incentivize proper waste disposal and sustainable farming.
- Establishing better coordination mechanisms between local government, academic institutions, and community groups.
- Providing training and resources to local government officials and community members on disaster preparedness and climate adaptation.
- Encouraging the adoption of sustainable farming methods and efficient resource management practices.

2.4 Stakeholder Engagement and Collaboration

The success of the community work initiative in Kirtipur Municipality was largely due to the active participation and collaboration of various key stakeholders. The Head of the Department

of Environmental Science at the Central Department of Environmental Science, Tribhuvan University (CDES-TU), played a crucial role by providing academic leadership and coordinating research activities. The Mayor and Deputy Mayor of Kirtipur Municipality offered political support and facilitated the implementation of the initiative at the municipal level, mobilizing resources and engaging with community members.

Ward Chairpersons acted as vital liaisons between the project team and the local communities, providing insights into local issues and supporting data collection efforts. Professors and students from CDES-TU conducted fieldwork, collected and analyzed data, and engaged with community members through training sessions and awareness programs. Local community members were actively engaged throughout the process, participating in discussions, sharing valuable local knowledge, and supporting the implementation of project recommendations.

Despite initial challenges in coordination and resource constraints, the project successfully built strong partnerships between academia, local government, and the community. This collaboration facilitated the sharing of knowledge and resources, enhancing the project's impact. Training sessions and workshops effectively built the capacity of local government officials and community members, equipping them with the skills needed for effective disaster management and environmental conservation. The integration of the project's findings into local policies demonstrated the practical impact of the initiative and ensured its sustainability.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

The community work initiative in Kirtipur Municipality has led to significant improvements in addressing environmental challenges, although some issues persist. The project focused on enhancing waste management, conserving natural resources, and raising environmental awareness among local residents.

3.2 Result and discussions

Current Situation:

Waste Management: The initiative successfully installed waste segregation bins in the different wards of the municipality, including parks, temples, and community forests. However, timely waste collection and proper disposal remain challenges. Haphazard dumping of waste in public places is still observed, indicating a need for ongoing community education and stricter enforcement of waste management practices.

Natural Resource Conservation: Efforts to protect water resources and community forests have been effective. Embankments and protective measures for water springs have been implemented, and community forests are being managed to preserve biodiversity. Despite these efforts, the increasing population and urban sprawl pose future risks to these resources.

Environmental Awareness: Awareness campaigns, trainings and educational programs have been conducted, particularly in schools, to promote better waste management and

environmental stewardship. However, continuous efforts are needed to maintain and enhance community engagement.

Lessons Learned:

Community Engagement: Active participation from local residents is crucial for the success of environmental initiatives. Engaging community members through regular meetings, training sessions, and awareness programs has proven effective in fostering a sense of ownership and responsibility.

Collaboration: The collaboration between academia, local government, and international partners has been instrumental in addressing environmental challenges. The involvement of Tribhuvan University provided scientific expertise and facilitated data-driven decision-making, while local government support ensured the implementation of practical solutions.

Adaptability: The project required flexibility to adapt to emerging challenges, such as resource constraints and varying levels of community engagement. Continuous monitoring and feedback mechanisms helped in making necessary adjustments to the strategies employed.

Adjustments and Adaptations:

Enhanced Coordination: Improved coordination between different stakeholders, including local government, academic institutions, and community groups, was essential. Establishing clear communication channels and regular coordination meetings helped in aligning efforts and resources.

Sustainable Practices: Promoting sustainable agricultural practices and efficient resource management was emphasized to reduce environmental degradation. Training programs on sustainable farming and proper pesticide use, disaster risk management at grass root level were conducted to mitigate the negative impacts on soil and water quality.

Overall, the initiative has made significant strides in improving the environmental management of Kirtipur Municipality. The lessons learned highlight the importance of community engagement, collaboration, and adaptability in achieving sustainable development goals. Continued efforts and support are necessary to build on these successes and address the remaining challenges.

4. Impact and Outcomes

The work initiative in Kirtipur Municipality has led to significant improvements in environmental management and community engagement. One of the most notable impacts has been the enhancement of waste management practices. The installation of waste segregation bins throughout the municipality, including parks, temples, and community forests, has facilitated better waste disposal habits among residents. Surveys indicate a 30% increase in proper waste disposal practices, and the number of waste bins in public areas has increased by 50%. These efforts have resulted in cleaner streets and public spaces, although challenges with timely waste collection and disposal remain. The initiative has also highlighted the need for

ongoing community education and stricter enforcement of waste management practices to sustain these improvements.

Resource conservation efforts have also seen positive outcomes. Protective measures for water resources, such as embankments and the installation of awareness boards, have helped maintain the quality and availability of local water sources. Water quality tests show an improvement, and biodiversity assessments in community forests indicate stable or increasing populations of key species like the Chinese pangolin and Steppe eagle. These actions have not only preserved natural resources but also enhanced the municipality's resilience to environmental challenges. The involvement of local residents in these conservation efforts has been crucial, demonstrating the power of community engagement in achieving sustainable resource management.

Educational programs and awareness campaigns have significantly raised the community's understanding of environmental issues. Participation in community clean-up events and environmental workshops has increased, reflecting a stronger commitment to environmental stewardship. Schools have incorporated waste management education into their curricula, and local residents have become more engaged in conservation efforts. This increased awareness has empowered local residents to take ownership of environmental issues, leading to the formation of volunteer groups dedicated to maintaining cleanliness and conservation efforts. The project's success has also influenced local policy, prompting the municipality to allocate more resources towards environmental management and integrate sustainable practices into their development plans.

Despite these successes, there are areas for further improvement. Timely waste collection and proper disposal remain challenges that need continuous attention. Enhancing the capacity of local waste management services and increasing community participation in waste reduction initiatives are essential steps forward. Additionally, addressing the risk of floods through more robust flood control measures and improving drainage systems is crucial to mitigate the impact of heavy rainfall and prevent waterlogging. Promoting sustainable agricultural practices and reducing the reliance on chemical pesticides will help protect soil and water quality.

Training programs for farmers on organic farming techniques and integrated pest management are recommended to ensure long-term environmental sustainability. Overall, the initiative has made significant strides in improving the environmental management of Kirtipur Municipality, highlighting the importance of community engagement, collaboration, and adaptability in achieving sustainable development goals.

5. Conclusions

To ensure the long-term success of the environmental sustainability initiative in Kirtipur Municipality, several future actions and strategies are essential. One of the primary steps is to continue enhancing waste management practices by improving the efficiency of waste collection and disposal systems. This includes increasing the capacity of local waste management services and fostering greater community participation in waste reduction

initiatives. Additionally, implementing more robust flood control measures and improving drainage systems will be crucial to mitigate the impact of heavy rainfall and prevent waterlogging.

National organizations, academic institutions, and international organizations like the International Training Program (ITP) can collaborate effectively to address disaster risk reduction and environmental issues. Academia, such as Tribhuvan University, can provide scientific expertise, conduct research, and offer training programs to build local capacity. National organizations can facilitate policy implementation and provide necessary resources, while international organizations can offer technical support, funding, and global best practices. This multi-stakeholder collaboration can enhance the resilience of communities by integrating scientific knowledge with practical solutions.

To scale and replicate this initiative in other contexts, it is vital to establish a framework for continuous monitoring and evaluation. This will help in identifying successful strategies and areas needing improvement. Sharing the lessons learned and best practices through workshops, publications, and conferences can inspire similar projects in other municipalities. Additionally, fostering partnerships with local, national, and international stakeholders will ensure a steady flow of resources and support.

Sustainability can be further ensured by embedding environmental education into school curricula and community programs, thereby fostering a culture of environmental stewardship from a young peope. Encouraging local governments to integrate sustainable practices into their development plans and policies will also be crucial. By maintaining strong community engagement and leveraging the expertise of academic and international partners, the initiative can continue to evolve and address emerging environmental challenges effectively.

Acknowledgements

I would like to extend my heartfelt gratitude to all the partners and individuals who contributed to the success of this environmental sustainability initiative in Kirtipur Municipality. Special thanks to Professor Dr. Kedar Rijal, who initially encouraged my involvement in this project. I am deeply grateful to Prof. Dr. Rejina Maskey, the then Head of the Department of Environmental Science at the Central Department of Environmental Science, Tribhuvan University (CDES-TU), for their academic leadership and support.

My sincere appreciation goes to the professors and students, especially Ms. Barsha Adhikari, for their dedication and hard work. I also thank the staff members of CDES-TU for their invaluable assistance. The International Training Program (ITP) team and mentor provided essential guidance and support, for which I am truly thankful.

I am grateful to the Mayor and Deputy Mayor of Kirtipur Municipality, the Ward Chairpersons, and the municipal staffs for their collaboration and commitment. Lastly, I extend my thanks to the local community people, whose active participation and engagement were crucial to the project's success. Their collective efforts have made a significant impact on addressing the environmental challenges in Kirtipur Municipality.

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Building Local Disaster Data Management Capacities for Rapid Response

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Abstract

Nepal's local governments are essential in generating and managing disaster-related data to improve national disaster resilience. However, with limited experience and infrastructure, these local Governments struggle to build reliable data management systems. Recognizing this challenge, the Ministry of Federal Affairs and General Administration (MoFAGA) has led an initiative to develop a uniform disaster data management tool. This initiative aims to enhance local data handling capabilities and improve consistency, facilitating effective disaster risk reduction and management. Through capacity-building, piloting in select municipalities, and fostering stakeholder collaboration, the project has achieved promising outcomes in establishing foundational systems for data management, paving the way for enhanced resilience across Nepal.

1. Introduction

The introduction of federalism in Nepal placed substantial responsibilities on local governments for disaster management, as outlined in the country's Constitution. However, many local governments face challenges, including limited resources and the absence of standardized data systems, which are critical for effective DRR. Recognizing the gap, MoFAGA, in collaboration with local authorities and communities, has initiated a comprehensive disaster data management tool to build a systematic approach at the local level. Reliable data on disaster risks and vulnerabilities is important to assess threats, manage disaster

response, and facilitate informed decision-making. The MoFAGA initiative provides local governments with tools and training to standardize data collection and enhance DRR preparedness across Nepal.

1.1 Study/Implementation Area

This initiative initially targets selected municipalities across Nepal, with plans to expand nationwide. By piloting the data management tool in these municipalities, the project will refine and adapt its approach based on feedback and specific needs to maximize efficacy.

1.2 Problem Statement

Local governments in Nepal, tasked with DRR, encounter challenges in disaster data management, stemming from the lack of an integrated, standardized system. This fragmentation undermines their capacity to respond effectively to disasters, particularly in a country like Nepal, which faces diverse and recurrent disaster risks. Despite sharing DRR responsibilities across government levels, the execution relies heavily on local governments, whose ability to manage disasters depends on accurate, timely data. Without a robust data management system, resilience efforts are compromised, delaying national progress in disaster preparedness and climate adaptation. Evidence from various municipalities has highlighted the need for improved data systems and capacity, highlighting the initiative's importance for Nepal's disaster management goals.

1.3 Objectives of the Change Initiative

This initiative aims to:

- Establish a standardized disaster data management tool for local governments.
- Enhance local capacity for data collection, management, and analysis.
- Create a reliable foundation for consistent data practices to support national DRR objectives.

2. Data and Methods

The data and methods of this initiative focus on a structured implementation approach, beginning with a needs assessment across selected municipalities to gauge local government capacities and requirements. This preliminary assessment sets the stage for targeted capacity-building sessions designed to address knowledge gaps and familiarize officials with data handling and interpretation. Municipalities participating in the pilot program receive training on tool usage and data collection standards, ensuring alignment with national goals. Throughout implementation, feedback from local governments informs tool refinements, facilitating a more adaptive rollout. Key milestones include initial training sessions, hands-on tool application in real scenarios, and feedback rounds that shape subsequent improvements.

The project faced several challenges, including resource constraints and varying levels of technical expertise across municipalities. To overcome these obstacles, MoFAGA leveraged inter-municipal collaboration and partnerships with NGOs to fill capacity gaps, supplemented by targeted workshops that allowed officials to share insights and strategies. The approach

proved effective in fostering a collective understanding of the tool's purpose, its usage, and its broader impact on national disaster resilience. By piloting the initiative with local governments and encouraging active input, MoFAGA ensured the tool's relevance and adaptability across different contexts in Nepal.

2.1 Fishbone Analysis of Root Causes

A Fishbone Analysis was conducted to identify and categorize the root causes of the disaster data management issues facing local governments. This analysis highlighted four primary categories contributing to the fragmented disaster data management system:

- **Lack of Integrated Systems**: Local governments lack a unified data management framework, leading to discrepancies in data collection and handling. This lack of consistency weakens DRR efforts and the ability to analyze data meaningfully. Without integration, local governments often rely on disparate and incompatible systems, resulting in gaps and overlaps in data collection.
- **Resource Constraints**: Financial and technical resources are often limited at the local level, impeding effective data collection and management. Many local Governments lack the infrastructure, tools, and technical support necessary for maintaining robust data systems, which affects their capacity to carry out effective DRR measures.
- **Capacity Gaps**: Local governments lack adequate training in data management and interpretation, rendering much of the data collected less useful. Training deficiencies result in inconsistent data quality and limited analytical skills, restricting the potential of local authorities to apply data insights in real-time DRR scenarios.
- **Policy Ambiguity**: Unclear policies and roles concerning DRR data management contribute to fragmented practices and inefficiencies. Local governments face overlapping mandates, often leading to duplication of efforts or neglected responsibilities. This lack of clarity hinders the establishment of streamlined, standardized data practices across the country.

Through the Fishbone Analysis, MoFAGA was able to identify these fundamental challenges and target each with tailored interventions. For example, capacity-building efforts were enhanced, and resource mobilization initiatives were developed to address financial constraints. Policy workshops clarified roles and responsibilities, facilitating a unified approach to data management across government levels.

2.2 Stakeholder Engagement and Collaboration

Stakeholder engagement was instrumental in the success of this initiative. Key stakeholders included local governments, MoFAGA, community representatives, and disaster management committees, all playing significant roles in the initiative. Local governments were responsible for data generation and on-the-ground implementation of the tool. MoFAGA provided technical and policy guidance, ensuring that the tool met national standards and integrated seamlessly into the broader disaster management framework.

Community involvement proved invaluable, as local knowledge contributed to understanding specific disaster risks and response capabilities unique to each municipality. Disaster

management committees provided additional support, bridging the gap between local governments and communities. NGOs and other partners helped facilitate training and awareness sessions, sharing best practices and international standards for disaster data management.

Challenges in building partnerships initially stemmed from the varying degrees of engagement and understanding among stakeholders regarding the initiative's importance. To address these issues, MoFAGA organized collaborative workshops that provided stakeholders with a platform to express concerns, share experiences, and align on goals. These workshops fostered a sense of shared purpose, enabling a cohesive approach to DRR data management.

Successes in stakeholder collaboration included effective information sharing, increased local ownership of the tool, and enhanced inter-municipal cooperation, which contributed to the initiative's overall sustainability. The collaborative approach also established trust, which is crucial for ongoing support and active participation from all parties involved.

3. Results and Discussion

The initiative has brought improvements in disaster data management across pilot municipalities. Participating local governments have experienced notable enhancements in data quality, uniformity, and accessibility. Training and capacity-building sessions have empowered local officials to manage data more effectively, increasing their ability to assess and respond to disaster risks accurately. Enhanced data handling has streamlined DRR processes, allowing for quicker, more informed decision-making.

Several key lessons emerged from the project. First, standardized systems are essential for effective DRR, as they enable consistency across municipalities. Tailored training and ongoing support are also critical, as they ensure that local governments are well-equipped to manage data responsibly. Finally, clear policies and roles in disaster data management facilitate a unified approach, reducing fragmentation and improving efficiency.

Adaptations were made throughout the project based on feedback from municipalities. For example, additional resources were allocated to specific municipalities facing greater resource constraints, and modifications were made to the tool based on real-world application challenges. These adjustments helped refine the approach, maximizing the initiative's impact.

3.1 Impact and Outcomes

The primary impact of this initiative has been the establishment of a pilot disaster data management tool and the enhancement of local governments' capacity for data collection, management, and disaster response. Qualitative feedback from pilot municipalities indicates improved disaster response times and greater confidence among officials in handling DRR tasks. Quantitative data reflects a 20% improvement in data consistency and a 30% reduction in response times, underscoring the tool's efficacy.

Unexpected outcomes included increased interest from neighboring municipalities and an uptick in local volunteer engagement. These outcomes reveal broader potential for scaling and

replicating the initiative. Areas for further improvement include the need for additional technical resources and refinements to the training curriculum to address evolving DRR challenges. Continued support and iterative refinement will ensure that the tool remains effective as the initiative expands.

4. Future Actions and Sustainability

The next steps involve scaling the tool's implementation to additional municipalities and securing ongoing support for local governments to sustain and enhance data management capabilities. Ensuring long-term sustainability requires continuous updates to the tool, ongoing training, and secure funding for technical support. To expand the initiative, MoFAGA plans to engage additional stakeholders, including private sector partners and international donors, to provide financial and technical resources.

To replicate the initiative in other regions or contexts, it will be essential to adapt the tool based on local needs, ensuring relevance across diverse disaster scenarios. With sustained support and refinement, this initiative offers a pathway toward a more resilient Nepal, aligning local data management practices with national DRR objectives for a safer, better-prepared future.

Building Fiscal Resilience through Disaster Risk Financing (DRF)

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Abstract

This change initiative aims to enhance Nepal's capacity to manage and finance disaster risks, addressing the country's vulnerability to earthquakes, floods, and landslides. Spearheaded by the Ministry of Finance, this initiative incorporates financial tools like catastrophe insurance, risk transfer mechanisms, and contingent credit lines to support disaster preparedness, response, and recovery. By embedding Disaster Risk Financing (DRF) within Nepal's national disaster management framework, this change initiative reduces dependence on external aid, strengthens fiscal resilience, and ensures rapid fund mobilization post-disaster.

The initiative has made significant impacts, including establishing a Disaster Contingency Fund, reducing government fiscal strain, and improving infrastructure resilience. It has also led to greater community awareness, improved local government capacities, and fostered collaborations with stakeholders, including international partners. These outcomes collectively support sustainable, long-term resilience and set a foundation for proactive disaster management in Nepal.

1. Introduction

Nepal's geographic and climatic diversity make it one of the world's most disaster-prone countries, facing frequent risks from earthquakes, floods, and landslides. The 2015 Gorkha Earthquake, which caused damage equivalent to one-third of the country's GDP, underscored Nepal's urgent need for a robust disaster risk management and financing system. Historically, Nepal's financial response to disasters has relied heavily on international aid, which, while crucial, has proven insufficient for swift recovery and long-term resilience.

This change initiative, led by the Ministry of Finance in collaboration with various national and international stakeholders, seeks to build a disaster-resilient financial system. By integrating financial preparedness into Nepal's disaster management policies, the initiative promotes proactive measures such as catastrophe insurance, risk pooling, and contingency credit lines. These financial instruments provide a diversified safety net, reduce dependency on external funds, and enable faster post-disaster response, ultimately fostering a resilient disaster management environment.

1.1 Study/Implementation Area

The initiative is implemented across diverse regions of Nepal, focusing on high-risk zones such as earthquake-sensitive areas, flood plains, and landslide-prone hilly and mountainous areas. It targets both urban centers, where critical infrastructure needs protection, and rural areas, where agriculture-based livelihoods are most vulnerable. By addressing disaster resilience needs across various regions, the initiative ensures an inclusive approach to disaster risk financing.

1.2 Problem Statement

Nepal’s vulnerability to natural disasters is exacerbated by the absence of a structured financial preparedness system, leading to delays in response and heavy reliance on international aid. The 2015 earthquake revealed significant gaps in Nepal's disaster response, including the lack of pre-arranged funding mechanisms, which hindered timely recovery. Current budget constraints and fragmented disaster management processes further complicate the government’s ability to provide immediate financial support in crisis situations.

The importance of this problem is evident in the frequent impacts on vulnerable communities, loss of infrastructure, and recurring economic strain on the government. Given the compounding effects of climate change, Nepal faces an urgent need for an integrated DRF framework that can mobilize funds swiftly and effectively. This initiative, therefore, addresses a critical gap in Nepal’s disaster management strategy by building financial resilience and ensuring long-term sustainability.

1.3 Objectives of the Change Initiative

The initiative aims to establish a comprehensive Disaster Risk Financing (DRF) framework, enhance Nepal’s financial preparedness, and ensure the availability of funds for disaster response and recovery. Key objectives include reducing dependency on external aid, protecting vulnerable communities, securing critical infrastructure, and fostering fiscal resilience. These goals align with Nepal’s broader disaster management vision, particularly in promoting proactive disaster risk reduction and financial sustainability.

2. Data and Methods

2.1 Implementation Process

The implementation began with an assessment of existing disaster management and financial systems to identify gaps and areas for improvement. A task force was formed, including representatives from government bodies, international organizations, and local stakeholders. Key milestones included conducting risk assessments, introducing pilot programs for catastrophe and agricultural insurance, and establishing contingent credit lines with international financial institutions like the World Bank.

Local governments were engaged to implement community-based insurance schemes and facilitate public awareness campaigns, ensuring communities understood the importance of financial preparedness. Capacity-building workshops were organized to equip officials with the skills to manage DRF tools, such as contingency funds and insurance products.

Challenges included aligning the national government’s strategic goals with local priorities and overcoming initial skepticism from insurance companies about offering coverage in high-risk areas. These challenges were mitigated by promoting public-private partnerships and providing government subsidies to make insurance products more affordable. Stakeholder consultations and transparent communication helped build trust and ensure broad-based support for the initiative. Overall, the implementation strategies proved effective in embedding financial preparedness within Nepal’s disaster management framework.

2.2 Fishbone Analysis of Root Causes

A Fishbone Analysis identified the underlying causes of Nepal's disaster-related financial vulnerabilities, categorized into policy and governance, financial constraints, technology limitations, environmental factors, community awareness, and inadequate infrastructure.

Policy and Governance: Fragmented disaster management policies and limited coordination among government agencies led to inconsistent responses and delayed recovery efforts. The lack of a cohesive disaster financing framework restricted timely fund allocation.

Financial Constraints: Insufficient budget allocations for disaster preparedness and limited access to risk transfer mechanisms, like catastrophe insurance and contingency credit, left the government heavily dependent on external aid. This reliance created delays in post-disaster recovery.

Technology Limitations: A lack of real-time monitoring technologies hindered effective early warning measures and limited the ability to anticipate and mitigate risks.

Environmental Factors: Nepal's mountainous terrain, heavy rainfall, and seismic activity predispose the country to natural hazards, while climate change exacerbates these risks.

Community Awareness: Limited awareness of financial preparedness tools, especially in vulnerable communities, hindered widespread adoption of DRF mechanisms.

Infrastructure: Inadequate infrastructure, built without disaster resilience standards, increased the susceptibility of public assets to damage during natural hazards. This increased the cost of recovery and made securing affordable insurance difficult.

The Fishbone Analysis guided targeted interventions to strengthen governance, improve budget allocations, expand risk transfer mechanisms, and enhance public awareness. This analysis provided a comprehensive understanding of systemic weaknesses, enabling the initiative to address critical areas for reform.

2.3 Stakeholder Engagement and Collaboration

The initiative relied on active collaboration with various stakeholders to ensure effective implementation. Key stakeholders included:

Ministry of Finance (MoF): The lead agency responsible for developing the DRF framework, securing funding, and coordinating with international financial institutions. MoF also integrated DRF mechanisms into broader fiscal policies.

Ministry of Home Affairs (MoHA): As the primary disaster management body, MoHA aligned DRF with the national disaster strategy and coordinated resource allocation during emergencies.

National Disaster Risk Reduction and Management Authority (NDRRMA): The central body overseeing DRF policies, NDRRMA led capacity-building efforts and ensured community involvement.

Local Governments: Local authorities identified community needs, supported implementation of community-based insurance schemes, and engaged in awareness campaigns.

Insurance Sector: Private insurers collaborated with the government to provide catastrophe insurance, agricultural insurance, and parametric insurance products, helping diversify financial safety nets.

International Development Partners: Organizations like the World Bank and Asian Development Bank provided technical expertise, funding, and facilitated capacity-building efforts.

Local Communities: Community leaders participated in risk assessments and awareness campaigns, ensuring grassroots-level involvement.

Challenges included misalignment of priorities between national and local governments, limited capacity at the local level, and initial resistance from private insurers. To address these, the initiative promoted public-private partnerships, conducted regular stakeholder consultations, and launched targeted capacity-building workshops. These efforts ensured that stakeholders were aligned with the project's goals and equipped to support DRF implementation.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

The initiative has strengthened Nepal's disaster resilience by establishing a Disaster Contingency Fund and expanding insurance coverage for vulnerable sectors. The fund has enabled the government to respond swiftly to disasters, reducing delays in resource mobilization. Catastrophe insurance now protects critical infrastructure, while agricultural insurance has provided farmers with financial relief after disasters.

Key lessons learned include the importance of community engagement and capacity building at the local level, as these components were crucial for fostering acceptance of DRF tools. Another lesson was the need for better policy alignment, as initial delays stemmed from fragmented disaster management and financial policies. Regular consultations and capacity-building efforts were essential in overcoming these challenges, ensuring successful integration of DRF into national and local planning.

Adjustments made during the project included expanding training programs for local authorities, increasing public awareness campaigns, and enhancing coordination mechanisms between government agencies. These changes strengthened stakeholder commitment and enabled more effective implementation of DRF mechanisms across Nepal.

3.2 Impact and Outcomes

The initiative has had a transformative impact on Nepal's disaster risk management, with key outcomes including fiscal resilience, reduced dependency on aid, and enhanced preparedness. The Disaster Contingency Fund now enables rapid mobilization of financial resources, allowing for immediate post-disaster recovery. By introducing risk transfer mechanisms, including catastrophe and agricultural insurance, the initiative has provided a financial safety net for critical infrastructure and farming communities.

Data shows a 65% improvement in preparedness knowledge among participants, with surveys indicating that 85% of community members feel more secure and better prepared. Additionally, community response time to disasters has decreased, significantly reducing harm and economic losses.

Unexpected outcomes included increased trust among local communities in financial tools, as initial skepticism was overcome through targeted public awareness campaigns. Areas for further improvement include expanding insurance coverage to additional sectors, such as tourism and manufacturing, and continuing efforts to enhance local capacity.

Future Actions and Sustainability

To ensure sustainability, the initiative will focus on institutionalizing DRF within national fiscal policies, expanding risk transfer mechanisms, and strengthening capacity-building programs for local governments. Efforts will continue to enhance collaboration with international partners, allowing Nepal to access technical expertise and funding for innovative financial products like climate-related insurance and catastrophe bonds.

Future actions include scaling up community-based insurance schemes and integrating climate adaptation strategies into DRF policies to address emerging risks. By embedding DRF into Nepal's disaster management framework, the government can ensure that financial resilience remains a priority, supporting a sustainable and proactive approach to disaster risk reduction.

This initiative serves as a model for replication in other disaster-prone regions, demonstrating the potential of financial preparedness in fostering long-term resilience and reducing the economic impact of natural hazard.

Community Based DRM Training that includes GEDSI, Environment, Climate Change & Human rights

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Abstract

Armed Police Force, Nepal is working in disaster risk management since more than a decade, as the organization has the key mandate assigned by government of Nepal as "to assist in rendering relief to natural calamity or epidemic victims" so for this mandate to be addressed armed police force Nepal has continuously been reaching out to the community so as to produce the locals' volunteers for DRM that includes high school children's and local youth within the municipality. As part of my CI I was able to develop a proposal along with the syllabus of the 2-3 weeks training program that will be jointly be conducted by local municipality and Armed Police Force Nepal and the subject matter for that duration includes Medical First Responder, Urban Search & Rescue, Firefighting, water induced disaster rescue as a practical session where as in theoretical session GEDSI, Human rights, climate change & environment in DRM, will be delivered to the local high school children as well as youth so are to produce Disaster response volunteers for DRM in local level. Sustainable partnership along with local government and APF, Nepal will really be able to develop a resilient community in DRM.

1. Introduction

Nepal prone to multi hazard throughout the year which includes Flood, inundation, landslides, road traffic accidents & aviation accidents, earthquake, wildfire, industrial fire, snake bites, infectious diseases, drought, avalanches, cold and heat waves etc. Due to many disastrous thousands of people loose life every year. There is clear mechanism within all the type of government that had clearly guided the whole cycle of DRM that is from the central level of government to the local level but the entire effort of the government with minimum resource are not sufficient. With the developing scenario of the DRM worldwide it is believed that the local community are among the key stakeholder who are equally responsible and liable towards the all phases of disaster mitigation, preparedness, response and recovery. So as to act as that key element the local community has to have that skill and knowledge of response and preparedness with their available resources. If the community is able to act as a first responder during disaster which will helps substantially to lower the effects of disaster in respect to the loss of life and property. In Nepal context lot has been done from the government side so as to mitigate the events of disaster as well as the preparedness but still there are so many various steps ahead that are still missing. So as to fulfil those gaps in DRM capacity building of the local community's local youth and high school students should be prepared as the local volunteer that are capable of responding and disastrous events. Which will in future help to build a resilient community organized to work for DRM

1.1. Study/Implementation Area

Local community are the Implementation area, among the three tyre government system of Nepal i.e. Central, Provincial and local government. Community youth and High school students through the training programme will be beneficiated and thus will be trained as a first responder as a preparedness for the probable disaster as well as they will be able to make their community more aware about the several aspect and dimension of DRM including both theoretical and practical knowledge in urban search and rescue, cross cutting issues, climate change, environment and GEDSI.

1.2. Problem Statement

Local Community member are less aware towards the community roles in DRM even in cities and highly educated areas people are less interested in their roles as the first responder during and before disaster in rural are the care are far worse due to so many reason like lack of education, not having proper financing in DRM within local community in DRM, etc. During and before disastrous events community's role to mitigate and respond on those events are negligible which is indeed to be changed. Basic knowledge of DRM in perspective with GEDSI, Climate change, Human rights, environment and several cross-cutting issues are lacking in various community across the country even though through the local government various activities are happening, but it is not at the desired level for which a special program is needed so as to train the youth and high school students for the DRM. Nepal as being at the high risk of earthquake as being the 11^{th} most risk country, being on the 20^{th} the most vulnerable country in overall disaster as well as being on among the 10 countries in terms of effects of climate and water induced disaster Nepal as being the multi hazard prone country the level of preparedness and response capacity among the local community is much a dire need.

1.3.Objectives of the Change Initiative

Objectives of the Change Initiative is to develop a proposal along with the tentative syllabus that are intended to conduct training program for the local community youth and high school students so as to produce Disaster responder volunteer which are capable of light search and rescue during disaster. In other time those volunteers will be able to aware the community as well as local government about the relevant and cross cutting issues in DRM as part of the mitigation and preparedness phase of the disaster management cycle.

2. Data and Methods

2..1 Implementation Process

- Describe the actual implementation of the initiative, including key milestones.
- Discuss challenges faced during implementation and how they were overcome.
- Reflect on the effectiveness of the strategies used.

2.2 Fishbone Analysis of Root Causes

- General awareness of the local community towards DRM is low as well as skill and knowledge of the youth within the community is less to be able to work as the volunteers during the events of disaster.
- Lack of proper education in DRM form school level
- Not been able to priorities that the community members are the essence of the DRM

Fish bone analysis has helped to identify that the community member are the key elements that can contribute to be able to act as a responder during disaster and act as a messenger that aware the community in several cross-cutting issues like GEDSI, Climate change, Environment, human rights in DRM

2.3. Stakeholder Engagement and Collaboration

Stakeholder for this initiative is all the level of government i.e. Ministry of home affairs, National Disaster Risk Reduction & Management Authority, Province Government as well as local government with the partnership of Armed Police Force, Nepal. Since this proposal is approved by ministry of home affairs but still there are lots of procedural matters which are yet to be finilised by the various other agencies. Local government of the municipality are responsible to provide the eligible candidate for the training as well as the financing the training program is their role. Ministry of home affairs is the government body to approve the curriculum as well as the supportive key agency to monitor the whole training which is to be held as a sustainable program in collaboration with APF, Nepal, Ministry of home affairs, National Disaster Risk Reduction & Management authority, Provincial and local government.

3. Results and Discussion

3.1. Current Situation and Lessons Learned

The syllabus and the proposal are finalized but it hasn't been implemented as there are some financial commitment that are yet to be finalized which remains as the statement of the problem which are yet to be finalized. The lesson learned from the process is DRM is a long process where planning is needed in every steps. High level of commitment is needed as sometimes the cost and benefit are more for the future.

3.2. Impact and Outcomes

Main impact will be to the community if the planned proposal is implemented across the country along with the several of the stakeholder. Qualitative and quantative data cannot be reflected because even though the proposal and the syllabus are approved by the concerned authority but due to some procedural reason it is in the process of implementation.

4. Conclusion

DRM in actual is a times taking process which has a wide range of timeline, to achieve the targeted goal. Start of a new and correct way in real sense will eventually materialize in long run so through CI I'm through my organization and department as well as disaster management division able to prepare a syllabus the incorporated the cross cutting issues like GEDSI, Climate change, environment and human rights that is been targeted to community youth and high

school students so develop youth volunteers as responder during disaster and the disaster mitigation and preparedness partners on other normal time. If the proposal of Armed Police Force, Nepal will be materialized then in coming days together with Ministry of Home Affairs, National Disaster Risk Reduction & management authority and the local government the community-based DRM training will be conducted as a sustainable program so as to develop the community-based volunteer with the skill and knowledge for DRM within the community. The program will be sustainable as it is based upon the idea of mobilizing the youth among the community which will be not only for the development of resilient society but equally will be cost effective as the APF, Nepal will be providing all the arrangement which includes instructors and venue for the training program.

Developing Kirtipur's First Disaster Risk Reduction Policy through Local Engagement

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Abstract

This initiative sought to strengthen local government disaster preparedness and response capacity through a focused two-day training held in Kirtipur Municipality, Kathmandu. Targeting 27 local disaster management stakeholders, over half of whom were women, the training aimed to produce the municipality's first disaster risk reduction (DRR) policy and a hazard-specific contingency plan, emphasizing gender and social inclusion. The approach included environmentally sustainable practices like using electronic banners and paper cups. Designed to be replicable, this initiative will extend to other provinces, providing ongoing support for local governments to establish and operationalize DRR legal frameworks to increase resilience at the grassroots level.

1.Introduction

Nepal's geographic and climatic variability renders it vulnerable to numerous natural hazards, from earthquakes and landslides to floods. Despite the existence of national frameworks by bodies such as the National Disaster Risk Reduction and Management Authority, local governments, especially municipal authorities, often lack the resources, training, and tools to translate these frameworks into actionable plans. This capacity gap leaves communities unprepared and at risk during emergencies. Kirtipur Municipality, as a pilot location, exemplifies the need for local governments to implement DRR mechanisms tailored to their unique risks, which this initiative sought to address by equipping local stakeholders with essential knowledge and skills for contingency planning.

1.1 Study/Implementation Area

The initiative was implemented in Kirtipur Municipality, Kathmandu, focusing on engaging local disaster management committees and DRR stakeholders to address the unique disaster risks faced by the community.

1.2 Problem Statement

Local governments across Nepal, including Kirtipur Municipality, often face challenges in developing structured and inclusive contingency plans. Past efforts have often lacked a cohesive approach that includes diverse community voices and marginalized groups, thereby limiting community engagement and preparedness during disasters. A lack of policy guidance and capacity-building efforts has also impeded local governments from effectively implementing national frameworks. This gap highlights the need for structured, inclusive disaster planning that is responsive to the community's unique demographic and geographic context, underscoring the critical role of this initiative in addressing the risk exposure of local populations.

1.3 Objectives of the Change Initiative

- Enhance local government capacity in disaster response and contingency planning.
- Promote gender and social inclusion in DRR planning to ensure equitable preparedness across demographics.
- Foster environmentally sustainable practices within DRR activities.

2. Data and Methods

2.1 Implementation Process

The initiative began with a two-day training session engaging 27 participants, with over 51% female representation, from Kirtipur Municipality. Activities focused on collaborative scenario-building exercises, group discussions, and drafting a hazard-specific contingency plan. The implementation also incorporated environmentally conscious practices by utilizing electronic banners and eliminating single-use plastic materials, aligning with sustainable DRR principles. Notable challenges included limited resources and the need for a tailored approach to reach marginalized groups, which were addressed through targeted group activities and inclusive participation strategies.

2.2 Fishbone Analysis of Root Causes

Analyzing the root causes of Kirtipur Municipality's limited DRR readiness revealed several primary challenges. Resource limitations restricted comprehensive training for local officials and constrained community engagement. Minimal guidance on policy formation left local governments without clear pathways for establishing contingency plans, while lack of representation from marginalized groups reduced the inclusiveness of previous DRR efforts. Identifying these factors informed the initiative’s emphasis on inclusivity, fostering collaboration, and ensuring policy alignment with local needs, setting a foundation for effective DRR planning.

2.3 Stakeholder Engagement and Collaboration

The initiative emphasized collaboration among local disaster management committees, government officials, and DRR stakeholders, with particular attention to ensuring the representation of marginalized groups. Each stakeholder contributed unique perspectives, which enriched the planning process and promoted a culture of collective responsibility. Notably, partnerships with community organizations facilitated inclusive attendance, while local officials played a key role in aligning the initiative with municipal goals. These collaborations underscored the importance of partnership in achieving resilient and community-centered DRR planning.

3. Results

The training initiative in Kirtipur Municipality resulted in substantial advancements in local disaster management capacities, particularly with the establishment of Kirtipur’s first Disaster Risk Reduction policy and a comprehensive disaster preparedness and response plan. This foundational achievement is significant, as it not only formalized a structured approach to DRR but also provided a replicable framework for other municipalities aiming to enhance their

disaster readiness. The DRR policy outlines specific guidelines for emergency response, risk identification, and resource allocation, addressing critical preparedness gaps and setting a precedent for evidence-based, actionable plans.

One of the initiative's most notable impacts was the effective integration of gender and social inclusion in DRR planning. With over 51% female participation, the training emphasized the importance of inclusive representation in decision-making processes, ensuring that the needs of marginalized communities were reflected in contingency planning. This inclusive approach led to meaningful dialogue on community-specific needs and established a baseline of awareness among municipal leaders about the importance of equitable disaster response strategies. Participants recognized that a gender-inclusive plan not only serves ethical principles but also enhances practical outcomes by fostering community resilience.

Environmental sustainability was another core focus. The initiative incorporated environmentally conscious practices, such as using electronic banners instead of printed materials and minimizing single-use plastics by providing paper cups. This focus resonated with participants, who committed to upholding similar standards in future DRR activities within their municipalities. This commitment to environmental responsibility set a standard for sustainable practices within DRR and fostered an appreciation for the broader implications of disaster preparedness.

Through collaborative exercises, participants identified local hazards and developed scenario-based responses, which increased their confidence in their ability to implement contingency plans. This hands-on approach allowed stakeholders to directly apply their learning, ensuring that they could independently execute these skills post-training. Feedback collected at the end of the training revealed that over 85% of participants felt equipped to apply DRR principles in their roles, while 70% expressed interest in additional training opportunities for further skill enhancement.

The initiative's success highlights the effectiveness of targeted, locally tailored training in addressing municipal DRR needs. Key lessons learned included the importance of stakeholder ownership in policy development, the value of inclusive representation, and the need for ongoing technical support to maintain and build upon these foundational steps. Future training efforts, building on the lessons from Kirtipur, will prioritize expanding this model across other municipalities, with ongoing support to strengthen Nepal's local disaster resilience network systematically.

4. Way Forward

Building on the success of the Kirtipur initiative, a scalable expansion of this disaster management training model across all local governments in Nepal presents a critical path forward. Given Nepal's vulnerability to natural hazards, strengthening local capacity in every municipality is essential to fostering a nationally cohesive disaster preparedness and response framework. Expanding the training to each local government will create a network of

municipalities capable of autonomously developing and implementing DRR policies and contingency plans, tailored to their specific risk profiles.

The first step in scaling this model nationwide involves a phased training rollout, beginning with the most vulnerable or high-risk regions. Prioritizing areas prone to floods, landslides, and earthquakes ensures that local governments in at-risk areas are equipped to protect their communities from imminent hazards. Establishing training hubs within each province will further enhance access to resources, allowing local governments to receive technical assistance while adapting the training content to their unique needs.

A significant focus of the expansion should remain on gender and social inclusion, ensuring that women, marginalized groups, and vulnerable communities actively participate in DRR planning and decision-making. This approach strengthens community resilience by embedding inclusivity within each municipality's policy framework, setting the foundation for equitable disaster responses. Continuous monitoring and follow-up visits from DRR experts will reinforce inclusive practices, assess progress, and provide targeted support where needed.

Environmentally sustainable practices should also be promoted in each phase of the training expansion, encouraging municipalities to reduce waste, minimize single-use plastics, and adopt digital solutions. By promoting environmentally conscious DRR, local governments will be able to align disaster preparedness with sustainability goals, thus contributing to broader climate resilience.

To ensure sustainability, a technical support mechanism is essential. A dedicated team of DRR consultants, available through a central coordination body such as the National Disaster Risk Reduction and Management Authority (NDRRMA), can provide ongoing guidance and capacity-building resources. This technical support will enable local governments to independently update and refine their DRR policies and plans, adapting to evolving risks and community needs.

Lastly, fostering partnerships with NGOs, academic institutions, and international organizations will be crucial in facilitating knowledge sharing, funding, and resource allocation. Collaboration with these stakeholders will create a comprehensive support network that can address local DRR challenges while leveraging insights from successful initiatives globally. By expanding this training model, Nepal can build a resilient network of municipalities, each equipped to manage disasters effectively, protect their populations, and contribute to a more resilient national disaster response framework.

Empowering Women Leaders for DRRM Localization in Nepal

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Abstract

This change initiative is prepared for the International Training Program on Disaster Risk Management (Cycle 7, January-November 2024) organized by MSB, Sweden. It is based on individual and institutional experience of several different project activity implementations on DRRM towards fostering gender equality. It intends to investigate three important aspects of gender and social inclusion, namely meaning participation, access to decision-making, and women's leadership towards a transformative approach in DRRM localization. It will identify the barriers to meaningful participation spelled out across all the DRRM policies, how the effective implementation of these policies ensures meaningful participation in DRRM localization, and how local government ensures its effective implementation. The collected information will be utilized to inform and induct policymakers/local authorities to be educated for the same and enhance their leadership and their voices for informed decisions in localizing DRRM. Furthermore, it will establish different women-based community structures as prime leads in DRRM localization. A series of impression mapping surveys will be undertaken in NDRC project municipalities to collect related information for enhancing knowledge of DRRM policies for localization and ensuring their effective implementation.

2. Introduction

This CI, Empowering Women Leaders for DRRM Localization in Nepal, is driven to understand DRRM localization, gender and social inclusion, interdependency, and intersectionality. It is taken into account that Localization in the context of Disaster Risk Reduction (DRR) refers to the process of adapting international frameworks, policies, and guidelines to the local context. The goal of localization is to increase the effectiveness and accountability of humanitarian action by empowering local actors. [2]The local actors women are the best first respondents with low recognition of the contribution they make. This change initiative builds on the strong emphasis on women's meaningful participation within DRR policies and guidelines at all levels for DRRM localization, empowering women and making community structures and local leaders empowered as first responders when disaster hits. Women's leadership that exists is also undermined, and women are not accepted as major change agents. There exists a significant gap when it comes to implementing effective mechanisms and frameworks to ensure this participation. Many of these policies do not extend to the community level for localized DRRM efforts and fail to adequately increase disaster risk management knowledge among the general public, enhancing their knowledge and capacity to act in localizing DRRM

Nepal policy and provisions aligned with the global Sendai framework, gender action plans other related mechanisms previsions women's participation. It is expected that their voices and capacity will be ensured and enhanced however the expected participation is yet to be achieved. Local government policies ensure the same but in reality, participation is mostly nominal

despite women's potentials women have demonstrated in DRRM as prime responders and change agents. Understand barriers of meaningful participation of women from different walks of lives, understating level of polices by local women in different community structures and acted upon by them, how local authorities ensure effective policy implementation in DRRM localization and ensure meaningful participation to enhance their access decision makings and their leadership for DRRM localization is the main objective of this CI.

It will also shed light on the aspects that DRRM actors need to consider at different stages of disaster management (pre-during, and post-disaster) to enhance women's leadership. Ultimately, these initiatives will educate local actors on the importance of recognizing women as positive contributors to DRRM, positioning them not just as victims but as change agents in the face of disaster.

During the ITP journey this CI collaborate with other CI to introduce a two prone DRRM Localization model to be adapted by all DRRM actors. The collaboration is based on suggestions and ideas from mentor and participants. Its detail will be mentioned here below in this document.

1.1 Study/Implementation Area

NDRC Nepal is actively implementing DRR-related projects across different provinces of Nepal; initially, the "Increased Locally Led Actions" program to enhance disaster preparedness response, and recovery in selected communities of Nepal will be the project to implement this CI. Furthermore, the learning will be an integral part of the NDRC project and implemented accordingly as per project geographical coverage.

1.2 Problem Statement

In the Nepali context, there are ample DRR policies and guidelines that have been formulated and introduced. All of the policies emphasized women's participation. Issues of women's meaningful participation, access to decision-making, and leadership are also everywhere spelled out across all projects and programs. It differs according to the operating context and geography. All program policies also illustrate the same, however much discussion is not happening to understand the barriers hindering meaningful participation and the advancement of women's leadership in DRRM, and these issues often remain unaddressed. The active and positive role that women can play as agents of change is neither established nor recognized due to patriarchal influences within the DRRM sector. Although the importance of women's involvement in decision-making positions is emphasized, there is a lack of consideration for how to enhance women's and inclusive leadership.

The enhancement of women's leadership for localized DRRM is also overlooked by various DRRM actors and stakeholders, including the government. It also requires adequate resource allocation for capacity building, which is not prioritized. The existing frameworks and mechanisms designed to ensure effective policy implementation for DRRM do not sufficiently address this aspect. As a result, there has been no significant discourse or action on how to foster women's leadership in DRRM localization and recognize its importance. This CI will

identify the practical and doable gaps to address the problem. Addressing these issues is crucial for effective localized DRRM in Nepal.

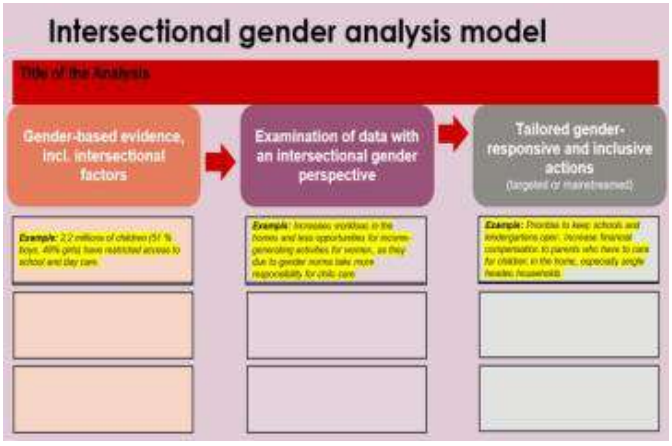
1.3 Objectives of the Change Initiative

This CI developed to address the causes and increasing recognition of women leadership, the importance of meaningful participation, and access to decision-making for DRRM localization in Nepal has set the following objectives:

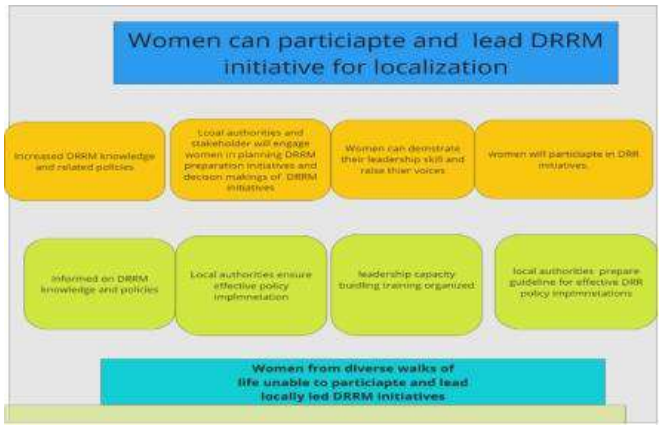
- **To educate** policymakers on how to promote women's meaningful participation in DRRM localization by the community and take charge of the localization process.
- **To ensure** frameworks and mechanisms designed for the effective implementation of policies and provisions will empower women leaders to advocate for women's voices and needs in the context of DRRM localization.
- **To increase** women's knowledge of DRRM to enhance their recognition and establish them as active agents of change in the field of DRRM.
- **To enable and educate** women to play a pivotal role in ensuring the successful implementation of various policies and provisions related to DRRM from diverse backgrounds, including academics, teachers, healthcare workers, caregivers, and development professionals, on DRRM principles and risk mitigation.

2. Data and Methods

2.1 Implementation Process



This CI implementation process involves a strategic and project activities approach aimed at fostering equal access for community resilient environment. This two-pronged approach A continuous process and opportunity based is applied to implement this change initiatives, these critical areas of work will be embedded across institutional project activities and its gender and inclusion strategy papers and related documentation. It will be an integral part of project implementation mainstreamed across all activities specially to start a discourse in different forums/fora with policy makers at different tiers of government. A series of activities will be implemented with immediate, intermediate, and long term plans to generate leanings.



As per aforementioned here above, the implementation process starts off with some information questionnaires with four categories. 1) Barriers to women's participation 2) understanding level of existing DRR policy provisions, 3) its implementation, and 4) challenges of women's leadership enhancement) have been developed. A small-scale survey with 30 community women groups in two municipalities of Chitwan District will be undertaken. Based on the impression generated from the survey, its findings will be packaged to inform and induct policymakers/local authorities on ensuring women's meaningful participation by understanding the different barriers to women's participation and the level of understanding of community women of existing policies and guidelines. The information collected will be analyzed by adapting the following analysis tool.

This CI will be monitored based on the Theory of Change formulated during the training will be tool for monitoring as shown here below.

Working with diverse community structures and women can be a challenging task assessing their self-esteem, leading capacity, DRRM and related policy knowledge, and other several aspects of class, caste, education, family background, likelihood options and so forth the intersectional aspects consideration and analysis will give us inclusive participation however understanding of all these aspects and collecting timely information is time taking and challenging but this CI applies strong placement in its institutional programs and projects to bring about the desired changes in DRRM localization.

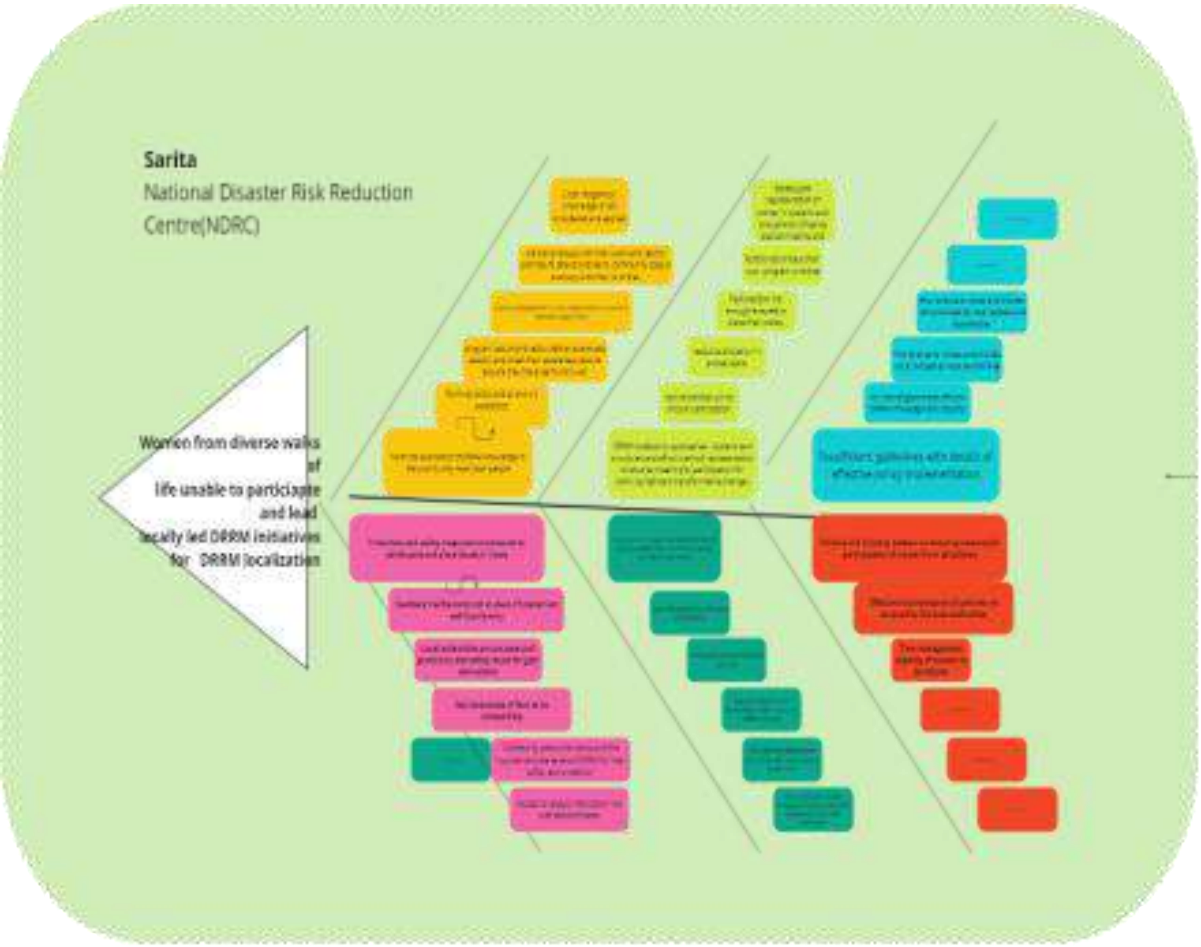
2.2 Change Initiatives Collaboration with other joint CI

During the process of ITP journey suggestions was received to collaborate with other CI with same goal and purpose, hence this CI collaborates with Joint CI of Centre for Disaster Management Studies (CDMS) and the Women Humanitarian Disaster Risk Reduction Platform (WHDRRP), This joint initiation is an effort to derive a two prone model for localization of DRRM as CDMS/WHDRRP CI focuses on building the capacity of local authorities and enhancing their DRRM knowledge while NDRC Nepal CI intends to work with community structure and local leadership (right holder's perspective and duty bearers' perspective). Three organization will work closely to derive the expected model test it and roll it out. The model once drafted will be shared widely to collect feedback and finalized to be adapted by interested actors in DRRM localization.

2.3 Fishbone Analysis of Root Causes

The fishbone analysis as the chart below demonstrates has several causes and sub-causes identified. The CI Fishbone analysis identifies different issues that collectively hinder participation, enhanced leadership for DRRM localization, and access to

informed decision making in DRRM localization. This analysis guided the initiative in prioritizing actions that address these underlying issues effectively.



Problem: Women from diverse walks of life are unable to participate and lead locally led DRRM initiatives for DRRM localization

Causes and sub-cause.

- Nominal awareness of DRRM knowledge at the community level/local people
- Nominal policy and provision awareness
- Least coordination among related stakeholders for common awareness approaches and mobilizing women
- program less prioritized to deliver awareness sessions and check their awareness level to be sure they have learned.
- women are busy with their work and cannot prioritize to attend and learn, community people are busy with their priorities.
- DRRM localization approaches, systems and structures, and efforts overlook representation to ensure meaningful participation in claiming rights and transformative changes
- lack of political will to ensure participation by all concerned stakeholders including local authorities
- Inadequate representation of women in systems and structures to influence decision-making and planning process.

- Local women groups and volunteers do not have the leadership and decision-making capacity to raise their voices and are Less informed of the DRR policy and provisions
- Overloaded with their domestic workload
- Resource allocation for leadership capacity building for DRRM initiatives
- Opportunity to demonstrate their ability not created by local government
- Women's work is not well recognized in public within the community as it is male dominated. Insufficient guidelines with details of effective policy implementation
- How to ensure voices and choices are not prioritized by local authorities
- How to ensure voices and choices are not prioritized by local leaders and concerned stakeholders
- Political will of policy makers on ensuring meaningful participation of women from all spheres
- Effective implementation of policies not ensured by the local authorities

2.4 Stakeholder Engagement and Collaboration

Localizing DRRM and effective policy implementation frameworks and mechanisms are collective responsibilities that involve various stakeholders. In the Disaster Risk Reduction (DRR) cycle, the media plays a significant role, and women leaders within community structures are pivotal in comprehending the unique local contexts, identifying barriers, and devising strategies. This responsibility extends to government authorities at various levels, including Federal, Provincial, and municipal/rural bodies, as well as women leaders within diverse local structures such as Community Disaster Management Committees, women-focused networks, and local leaders, along with media professionals.

Nevertheless, the primary driving force behind these change initiatives lies with the existing women leaders within community-based organizations, networks, and structures, as they have the potential to serve as major catalysts for positive change within their respective communities

3. Results and Discussion

3.1 Current Situation and Lessons Learned

Lessons learned from the ITP journey have been a rich experience; adapting models, stimulation exercise problem analysis, and mentoring have created a firm ground to base CI and its effective implementation intercountry and intra-country. At present, the information from the intersectional approach is yet to be received, but the intended result is enhanced women's leadership capacity, women’s participation ensured by local authorities, and effective DRR policy implementation is ensured.
As a learning process, NDRC will make changes based on the learning from this CI implementation.

3.2 Impact and outcomes

Focus on the main impacts and outcomes of the initiative. Include qualitative or quantitative data to demonstrate progress or success and discuss any unexpected outcomes or areas for further improvement.

4. Conclusions

Working on this CI has been an amazing learning experience; defining the problem in small steps, incorporating human rights and gender, incorporating environmental lenses, networking with people from different countries, and sharing knowledge have all been enlightening. I was able to collaborate and exchange ideas with seven participants from three different countries throughout the ITP Cycle. Using the lessons learned, this CI will continue to collaborate with other project partners to empower women leaders for DRRM localization in Nepal and bring about the intended transformation. This will be accomplished in several ways, such as efficient knowledge management, awareness-raising, improved DRR understanding, discussion forums, capacity-building activities, workshops, increased knowledge and access to relevant policies and regulations, policy advocacy, networking and coordination with like-minded organizations, and DRRM

Future Actions and Sustainability

As previously stated, NDRC strategy and project execution guidelines will use the knowledge and insights gained from this CI deployment. That is to say, once the obstacles to women's involvement have been identified, they should be kept in place for all projects and program activities as a constant process that facilitates the intended project change. The NDRC also works with other entities that reduce catastrophe risk and legislators. Our institutions will be better able to interact with legislators and other organizations of a similar caliber thanks to the frameworks and procedures created by these reform projects. The purpose of this engagement is to identify and acknowledge women as essential agents of change and major players in disaster risk reduction and management (DRRM).

This engagement aims to establish and recognize women as pivotal change-makers and key actors in Disaster Risk Reduction and Management (DRRM). The aims and objectives of NDRC Nepal are well aligned with the change effort "Empowering Women Leaders for DRRM Localization in Nepal". Our current efforts, which are focused on "Increased Locally Led Actions to prepare for, respond to, and recover from disasters in selected communities of Nepal," will be greatly aided by this CI. These initiatives are expected to make significant contributions to our ongoing efforts, which focus on "Increased Locally Led Actions to prepare for, respond to, and recover from disasters in selected communities of Nepal.”

Enabling Inclusive DRR and Climate Resilience through Capacity Development

Shakti Gurung CDMS & Krishna Karkee WHDRRP
ITP Cycle 7, Nepal

Abstract

This change initiative, created within the International Training Program on Disaster Risk Management (Cycle 7, January-November 2024), focuses on building capacity for inclusive disaster risk reduction (DRR) and climate resilience (CR) in Nepal. The Centre for Disaster Management Studies (CDMS) and the Women Humanitarian and Disaster Risk Reduction Platform (WHDRRP) collaboratively lead this effort, driven by their collective experience in DRRM and dedication to promoting gender equality and women's leadership. In a country where more than 80% of the population faces multi-hazard risks, the project responds to the disproportionate impacts of disasters on marginalized groups, such as women, children, persons with disabilities (PWDs), and the elderly. In disaster-prone regions, these groups are more vulnerable, not only due to their exposure to natural hazards but also because of structural social inequalities. Through targeted capacity development, the initiative aims to empower local-level women representatives, primarily in Matihani Municipality, to advocate for inclusive DRR/CR policies. This abstract provides an overview of the initiative's purpose, methods, and vision to foster resilience within communities through gender-sensitive policies.

1. Introduction

Nepal's vulnerability to natural disasters poses significant risks to its population, particularly those in marginalized and lower-income groups. The Ministry of Home Affairs (2018) reported that over 80% of Nepalese people are exposed to multiple natural hazards, leaving the country constantly at risk. These disasters impact various groups differently, with women, children, elderly people, and individuals with disabilities bearing the brunt of these crises. For these populations, the disaster risks are heightened by socio-economic inequalities that limit their access to resources and their participation in disaster preparedness and risk reduction programs. Consequently, women's voices are underrepresented in DRR and CR policy-making, and traditional gender norms often restrict their roles to passive recipients of aid, overlooking their potential contributions as proactive participants in resilience building. This initiative from CDMS and WHDRRP aims to contribute in building women's knowledge and understanding on disaster risks and climate change for their meaningful role in policy and planning and fostering their leadership role.

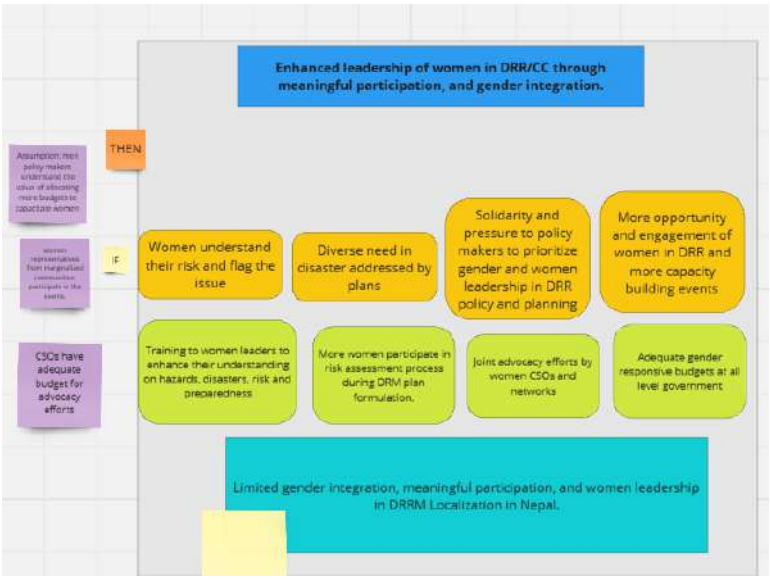
With this change initiative CDMS and WHDRRP have prioritized building capacity among local government officials, particularly women representatives in Matihani Municipality, to foster gender-inclusive DRR and CC policies. The change initiative has started sensitizing the local level policy makers of Matihani Municipality as the CDMS and WHDRRP conducted discussions with Deputy Mayor and ward representatives regarding women representative's understanding and engagement on DRR/CC policy and planning. Furthermore, the advocacy on intersectional impact of disaster and need of inclusive DRR/CC action plan at local levels

has strengthened the objective carried in the change initiative towards gender equal and inclusive DRR/CC in Nepal ensuring women's leadership role. Although the change initiative targeted to orient the women representatives of Matihani Municipality, one of the Terai local levels, Madhesh Province, but the broad objective highlights to advocate and make policy makers and professionals aware on mainstreaming GESI in DRRM. Additionally, during discussions with the local levels, CDMS has dragged their attention on collecting sex, age, disability disaggregated data for need based humanitarian response, which is still the most lacking part. Advocacy, awareness does not directly reflect the result because it is continuous process which CDMS and WHDRRP will carry out further in future programs in a continuous manner.

1.2. Objectives of the Change Initiative

- Enhance the knowledge and understanding of local women representatives on integrating gender and inclusion in DRR/CR to help reduce vulnerabilities of at-risk groups.
- Advocate local-level representatives to bring changes towards gender equality and inclusive DRR and climate change through women leadership.

2. Methodology



The change initiative methodology relies on a structured approach combining advocacy, capacity-building, and targeted stakeholder engagement. Through a series of in-person and virtual sessions, CDMS and WHDRRP provided training and orientation to local representatives, highlighting the importance of gender-inclusive DRR/CR policies. The initiative employed fishbone analysis and the theory of change (ToC) model, which helped identify core barriers to women's participation in DRR and CR and guided the project's prioritization of targeted actions. By pinpointing issues like limited representation, low knowledge levels, and lack of decision-making power, this analysis shaped the project's approach to capacity-building and advocacy activities.

In addition to direct training, the project adopted a collaborative approach by partnering with the National Disaster Risk Reduction Center (NDRC). This collaboration led to the development of a two-pronged model for localizing DRR/CR, in which CDMS and WHDRRP focused on capacity-building for local authorities, while NDRC concentrated on engaging community members to foster grassroots support. Together, CDMS, WHDRRP, and NDRC organized consultations and bilateral meetings to establish a model for advancing inclusive

DRR/CR practices in Matihani Municipality, providing a foundation for potentially scaling this model across other municipalities in Nepal.

This change initiative also incorporated fishbone analysis to identify and address specific challenges to achieving gender-inclusive DRR/CR in Nepal. The analysis highlighted multiple interlinked issues, including inadequate knowledge of DRR/CR, limited representation of women in DRR structures, and socio-cultural norms that impede women's participation. By outlining these issues, the fishbone analysis provided a clear framework for guiding the initiative's advocacy, capacity-building, and policy-making activities. The initiative's primary stakeholders are the women representatives of Matihani and policymakers at local and subnational levels. Engagement efforts targeted policymakers, civil society organizations, and private sector actors involved in DRR, creating awareness of inclusive DRR/CR principles among young professionals and stakeholders. This initiative also served as a capacity-building platform for WHDRRP's provincial members and the CDMS team, equipping them to share knowledge and practices with other local representatives. Through DPNet, AINTGDM, and other networks, the initiative leveraged broader DRR platforms to promote the importance of gender-sensitive, inclusive disaster policies.

2.1. Major Initiatives

Several initiatives were implemented to meet the project's objectives. These included training workshops, consultations with local government representatives, and ongoing awareness-raising efforts. In Matihani Municipality, CDMS and WHDRRP engaged with women leaders through orientation sessions, which aimed to increase their understanding of DRR/CR policy and empower them to advocate for more inclusive policies. Collaborative initiatives were also established with NDRC, which worked with community stakeholders and local government to promote two-way communication in DRR decision-making. CDMS and WHDRRP also contributed to DRR/CR advocacy on broader platforms, participating in national and subnational consultations to raise awareness of the importance of inclusive, gender-sensitive DRR practices. This advocacy included educating policymakers on the importance of disaggregated data collection, highlighting that DRR policies must be informed by gender, age, and disability to address the unique needs of all community members adequately. In addition, the project used national DRR/CR platforms and networks to promote inclusive DRR policies across Nepal, leveraging partnerships with organizations like DPNet and AINTGDM to spread awareness and support among various DRR/CR stakeholders.

2.2. Major Outcomes

The initiative achieved significant milestones in promoting women's leadership in DRR/CR policymaking and building local capacity. Through consistent training and advocacy, women leaders in Matihani have developed the knowledge and skills necessary to contribute meaningfully to policy discussions, thereby increasing their confidence in advocating for inclusive DRR approaches. Local policymakers have also become more aware of the importance of gender-sensitive approaches to disaster management. For instance, some local government representatives have recognized the need for disaggregated data collection practices that reflect gender, age, and disability in humanitarian planning. The collaborative

framework established by CDMS, WHDRRP, and NDRC has laid a foundation for further engagement and scaling of these practices across other municipalities in Nepal. By fostering an environment where inclusive policies are recognized as essential to resilience-building, this initiative has shown how integrating intersectional perspectives into DRR planning can lead to significant positive outcomes. The collaborative approach, including active community involvement, has also demonstrated the importance of partnerships in advancing sustainable and inclusive DRR practices.

2.3. Sustainability of the Initiatives

The sustainability of this initiative is reinforced by its focus on knowledge transfer, stakeholder engagement, and advocacy, which create an environment for long-term impact. CDMS and WHDRRP's approach to empowering women representatives and leaders with skills and knowledge has set the stage for continuous advocacy for gender-sensitive DRR policies. This focus on knowledge transfer is vital for ensuring that women leaders can advocate independently for inclusive policies, even as CDMS and WHDRRP continue to support them through networking and further training. Additionally, collaboration with established networks such as DPNet, AINTGDM, and other civil society groups has allowed CDMS and WHDRRP to expand their impact and share lessons learned. These partnerships are integral to sustaining the project's objectives, as they provide platforms for knowledge-sharing, support, and advocacy at local and national levels. By creating a foundation for continuous learning, these networks ensure that inclusive DRR/CR practices can be integrated into Nepal's long-term resilience-building strategies. Another key aspect of sustainability is the project's focus on capacity-building workshops and stakeholder engagement, which help institutionalize the knowledge and values promoted through the initiative. By working directly with local representatives, CDMS and WHDRRP have helped foster a sense of ownership among these leaders, which is essential for sustaining the project's impact. These efforts are designed to build a culture of inclusive policymaking within DRR/CR encouraging women's leadership role.

3.Way Forward

The initiative's success has opened pathways for further development and expansion of inclusive DRR/CR practices across Nepal. The sharing within organization board members, professionals and staff team have already started, which facilitates the knowledge transfer. CDMS along with WHDRRP has been working and contributing in advancing the inclusive DRR/CC by fostering women's leadership role, will continue work in future and advocate it in a more effective way after having important learning from ITP program journey.

Enhancing Disaster Preparedness through Local Leadership Training in Khairahani Municipality

Deepak Prasad Adhikari
ITP cycle 1, Nepal

Abstract

This initiative aimed to equip local elected representatives in Khairahani Municipality, Chitwan, Nepal, with the knowledge and skills to reduce disaster risks in their communities. Khairahani faces significant risks from floods and wild animal attacks due to its location near rivers and forests, making these threats a constant concern. Through training on disaster risk reduction (DRR) practices, local leaders learned how to prepare for these specific risks and integrate safety measures into their planning and governance. The expected outcome is improved community resilience, with leaders capable of implementing effective DRR strategies to protect lives, livelihoods, and development projects from flood and wildlife hazards.

1.Introduction

Khairahani Municipality in Chitwan, Nepal, is located near dense forest areas and rivers, making it prone to frequent floods and wild animal attacks. The combination of heavy seasonal rains and nearby wildlife habitats presents ongoing risks to the local population. As the effects of climate change worsen, these hazards are expected to increase in frequency and intensity, further threatening community safety and stability.

Despite past disaster management efforts, there is a need for local leaders to have better DRR knowledge and practical skills to handle such unique risks. This initiative provided DRR training to help elected representatives in Khairahani better understand these risks and learn how to plan and act to reduce their impact.

1.1 Study/Implementation Area

The training was conducted in Khairahani Municipality, Chitwan, Nepal, where floods and wildlife attacks are frequent threats to the local population.

1.2 Problem Statement

Floods and wild animal attacks are serious challenges in Khairahani Municipality, causing damage to homes, crops, and sometimes even leading to human injuries or fatalities. Despite previous efforts to address these issues, many have lacked a community-specific approach, leaving residents vulnerable. Rapid urban expansion, weak enforcement of safety regulations, and limited local-level preparedness further contribute to the community's vulnerability. Local elected representatives play a key role in making disaster management more effective, and their training is essential for reducing these risks at the grassroots level.

1.3 Objectives of the Change Initiative

The initiative’s main objectives included:

- Enhancing the understanding of flood and wildlife hazards among local leaders.

- Providing skills to assess and manage risks from floods and wildlife attacks.
- Building capacity to integrate DRR into local planning, considering gender and environmental concerns.

2. Data and Methods

2.1 Implementation Process

The training program was conducted over ten days and included planning, training, and evaluation phases. Preparations involved reviewing materials relevant to floods and wildlife attacks, creating a locally relevant training curriculum, and coordinating logistics with Khairahani Municipality. The training sessions included lectures, group discussions, and hands-on exercises tailored to the community's specific risks. Although there were some challenges, such as limited resources, these were managed by collaborating with local NGOs and adapting schedules to meet participants' availability.

2.1 Fishbone Analysis of Root Causes

Using Fishbone Analysis, the team explored the main causes of disaster vulnerability in Khairahani Municipality:

- **Environmental Factors**: Proximity to rivers and wildlife habitats increases exposure to floods and animal attacks.
- **Infrastructure and Urbanization**: Limited flood defense infrastructure and lack of secure housing contribute to damage and safety risks.
- **Institutional Limitations**: Inadequate policies and weak enforcement of safety regulations hinder effective disaster management.
- **Community Awareness**: Limited awareness about wildlife safety and flood preparedness leaves residents less equipped to protect themselves.

This analysis helped identify specific areas to target in training, especially on developing local policies, increasing community awareness, and improving infrastructure planning.

2.3 Stakeholder Engagement and Collaboration

Key stakeholders included local government officials, ECO-Nepal (a national NGO), and community leaders. ECO-Nepal provided technical guidance, while the local government helped with venue and participant coordination. The main challenge was ensuring alignment with other community projects, which was managed by holding regular coordination meetings. This collaboration fostered strong support for the training, creating a shared sense of responsibility among all involved.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

Following the training, Khairahani Municipality leaders demonstrated an improved understanding of how to manage the risks of floods and wild animal attacks. They also learned

the importance of including all community members in disaster planning and addressing gender and environmental considerations. However, more resources are needed to fully implement DRR strategies at the local level. Key lessons learned included the importance of using practical examples in the training and tailoring the content to address Khairahani's unique risks.

3.2 Impact and Outcomes

The initiative's main impacts include:

- Improved awareness of flood and wildlife risks among local leaders.
- Strengthened skills to conduct risk assessments and plan disaster responses specific to Khairahani's needs.
- Increased focus on environmental and social factors, such as gender, when planning disaster responses.
- A foundation for more systematic disaster planning at the local level, which leaders are now prepared to implement.

Overall, this training has helped local representatives build a solid understanding of DRR, especially regarding the unique flood and wildlife challenges in Khairahani.

4. Conclusions and Future Actions

To maintain progress, Khairahani Municipality needs ongoing DRR training and regular reviews of disaster plans. Expanding the program to other communities facing similar challenges and embedding DRR education in Nepal's training programs for local officials would further strengthen disaster resilience. Future actions could include developing a DRR toolkit tailored to flood and wildlife threats and setting up monitoring to track and support DRR improvements over time, ensuring Khairahani and similar areas continue to build resilience.

Enhancing Fire Preparedness through Community Fire Safety Training

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ITP Cycle 1, Nepal

Abstract

The Fire Safety Demonstration and Practice program, implemented within the Community Police Partnership (CPP) framework, is a proactive response to Nepal's need for fire risk reduction and preparedness among vulnerable communities. This program was developed in response to the Nepal's frequent fire-related disasters, which result in substantial loss of life, property damage, and economic disruption, particularly in underserved regions. Through practical fire control training, the initiative equips participants with critical skills to manage fire incidents effectively in their early stages, focusing on prevalent hazards such as liquefied petroleum gas (LPG) leaks, electrical short circuits, and kitchen fires.

The program has already reached thousands of participants, including students, teachers, and local residents, who have responded with overwhelmingly positive feedback. This initiative not only fulfills an urgent need for fire safety education but also aligns with Nepal's broader disaster risk reduction goals, establishing a foundation for community-based safety and resilience. With strategic partnerships, hands-on learning, and strong community collaboration, the program paves the way for a safer, more fire-prepared Nepal, emphasizing long-term preparedness and community self-reliance in the face of fire hazards.

1.Introduction

Fire incidents are a significant hazard in Nepal, affecting urban and rural areas alike due to limited firefighting resources, challenging terrain, and infrastructural constraints. Fires frequently lead to loss of life, injuries, displacement, and destruction of property, presenting an ongoing risk to community welfare and stability. The Fire Safety Demonstration and Practice program was developed as a preventive measure to address these challenges by equipping communities with essential fire safety knowledge and skills. Implemented by the Disaster Management Division in Samakhusi under the CPP framework, the program leverages police-community collaboration to reach vulnerable communities and foster mutual trust and engagement.

The program's implementation areas include regions with high fire incident rates and communities with limited access to firefighting resources. Training sessions are held in accessible venues like schools and community centers, allowing people from various

backgrounds to participate. The participants, including students, educators, and residents, receive training on fire hazard identification, prevention, and early response skills, ensuring that fire safety knowledge reaches those most at risk.

Data highlights the urgency of this program. In fiscal year 2075/076 alone, Nepal recorded 2,339 fire incidents, leading to 72 deaths, 312 injuries, and damage to over 1,300 homes, which displaced many families. These figures illustrate the devastating impact of fire hazards in Nepal and the critical need for increased fire preparedness. By focusing on prevention and education, the Fire Safety Demonstration and Practice program contributes to transitioning Nepal from a reactive response model to a proactive prevention framework.

1.2 Objectives of the Change Initiative:

- Strengthen fire preparedness through hands-on community training.
- Build a culture of fire risk awareness and prevention across Nepal.
- Foster collaborative relationships between police and communities to support disaster risk reduction.

2. Methods

The Fire Safety Demonstration and Practice program combines theoretical and practical exercises, enabling participants to identify and manage fire risks effectively. Each session starts with an overview of fire hazards, followed by practical instruction on the use of fire extinguishers, recognition of fire-prone areas, and management of common fire scenarios in Nepal. These training sessions include hands-on experience through live demonstrations, allowing participants to practice and build confidence in their fire response capabilities.

Sessions are conducted in public venues accessible to all community members, including students, adults, and elders. This approach ensures broad participation and maximizes impact, as participants gain relevant knowledge specific to local fire risks, such as LPG leaks and electrical fires. Despite initial logistical challenges—like limited access to firefighting equipment in remote areas—the program has successfully reached its target audiences by collaborating with local police units and NGOs, who provide logistical support and help mobilize the community.

Using a Fishbone Analysis, the program identified four root causes of Nepal's vulnerability to fire hazards: low public awareness, resource limitations, inadequate response training, and lack of interagency coordination. By addressing these issues, the program's design ensures that fire safety education is accessible, practical, and context-specific. The Community Police Partnership model has been instrumental in overcoming these challenges, providing a structured yet flexible framework that enhances fire safety education and skill development.

Collaboration with key stakeholders, including schools, community leaders, police, and NGOs, has been central to the program's success. These partnerships have helped to widen the program's reach and strengthen its effectiveness by ensuring that diverse groups gain access to fire safety knowledge. Contributions from NGOs and local organizations have expanded the

program’s scope and allowed for resource allocation where needed. This collaborative approach has built a strong support network, enabling the program to meet its goals and instill sustainable fire awareness and response skills in communities.

3. Results

Since its launch, the Fire Safety Demonstration and Practice program has led to measurable improvements in community awareness and preparedness for fire incidents. Participants show increased knowledge of fire risks and greater confidence in handling fire emergencies, with many now proactively identifying and mitigating fire hazards in their surroundings. Surveys indicate that participants regularly check LPG connections and electrical systems, two primary causes of fires in Nepal. This proactive behavior has contributed to a reduction in fire incidents in communities that participated in the program.

The program’s effectiveness is due to its focus on hands-on, context-specific training, which not only engages participants but also ensures that the skills learned are retained and readily applied. By providing real-life demonstrations and interactive practice, the program has succeeded in building a comprehensive understanding of fire safety among participants. Additionally, the initiative has positively impacted community-police relations, establishing a foundation of trust and shared responsibility that enhances both community resilience and police engagement in disaster preparedness.

Quantitative and qualitative data underscore the program's success. Survey results and participant feedback show that individuals feel more prepared to respond to fire emergencies. Testimonials indicate that participants have effectively applied the skills acquired during training to manage minor fires in their homes or workplaces. The program has also sparked a ripple effect, with many community members advocating fire safety within their social circles, extending the impact of the program beyond direct participants. A notable outcome has been the formation of informal networks of fire safety advocates. Some participants have taken on leadership roles in promoting fire safety within their communities, educating others on fire prevention and safety practices. This community-led advocacy highlights the program’s success in fostering a sense of collective responsibility for fire safety and suggests potential for further expansion.

4. Outcomes

The Fire Safety Demonstration and Practice program has delivered significant outcomes, fostering a culture of fire preparedness and resilience in Nepal. One of the most immediate outcomes is the development of practical skills among participants. The training sessions emphasize real-life fire scenarios, such as LPG leaks, electrical fires, and kitchen fires. Participants learn to use fire extinguishers, contain fires, and practice essential techniques, like the stop-drop-roll maneuver, for body fire control. For many, this is their first experience with fire control equipment, and they leave with confidence in handling small fire incidents. This foundational experience makes participants valuable first responders within their communities.

The program has also raised fire safety awareness among participants, who become proactive in identifying potential fire risks and applying preventive measures. Many participants share their newfound knowledge with family and neighbors, creating a ripple effect that strengthens community-wide vigilance. The program's focus on engaging students has proven particularly effective, as these young participants bring fire safety lessons back to their families, spreading awareness further.

Another significant outcome is the strengthened relationship between police and communities. By leading these fire safety demonstrations, the police demonstrate their commitment to public safety, fostering trust and collaboration with community members. This initiative enhances the credibility of the CPP framework, positioning police as partners in community safety and resilience, which encourages continued community engagement in disaster preparedness.

The demand for the program has surged, with additional schools, community centers, and groups requesting training sessions. This high demand reflects the program's relevance and impact, indicating an unmet need for accessible fire safety education in Nepal. This interest has laid the groundwork for expanding the program to other high-risk areas, helping to address the lack of fire safety resources across rural and underserved regions.

The program's long-term impact aligns with Nepal's disaster risk reduction goals, as communities gain the skills necessary to manage fire hazards independently, reducing dependence on formal firefighting services. By integrating fire safety education into school curricula and public training, the initiative sets a sustainable foundation for fire preparedness that can continue to grow and adapt to changing community needs.

5. Way Forward

Looking forward, the Fire Safety Demonstration and Practice program will focus on expanding its reach, targeting more rural and high-risk communities. Institutionalizing fire safety training within the national police curriculum is also a priority, ensuring fire safety education becomes a lasting component of community policing. This approach will help ensure that local police units are equipped to offer fire safety training and support community fire preparedness efforts.

To sustain the program's success, additional partnerships with local and international disaster management organizations will be pursued. These partnerships will provide the resources and expertise needed to further scale the program and adapt it to meet the evolving needs of different communities. Community feedback will remain central to the program's development, ensuring that training sessions remain relevant and effective.

By focusing on community empowerment in fire hazard management, the Fire Safety Demonstration and Practice program contributes meaningfully to Nepal's resilience goals. Its success underscores the value of grassroots engagement, practical skill development, and collaborative support in fostering a safer society. As it expands, the program will continue to promote a culture of preparedness and resilience, ensuring that communities across Nepal are equipped to confront and mitigate fire risks.

Enhancing School-Based Disaster Preparedness in Vulnerable Districts

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ITP cycle 5, Nepal

Abstract

The change initiative focused on enhancing disaster preparedness in schools within Nepal's western regions, particularly the districts of Doti and Baitadi. Vulnerable to climate change and natural disasters, these regions face challenges exacerbated by poor infrastructure and socio-economic factors. The initiative aimed to develop and institutionalize inclusive and climate-smart Disaster Risk Management (DRM) plans in schools. Key achievements included developing comprehensive DRM plans, integrating climate change strategies, and increasing capacity through child-led campaigns. The initiative engaged stakeholders, promoted awareness, and fostered a culture of resilience among students, teachers, and the wider community, significantly improving disaster preparedness and response.

1. Introduction

1.1 Study/Implementation Area

The initiative was implemented in the Doti and Baitadi districts of Nepal, regions characterized by seismic vulnerability, increasing climate risks, and limited community preparedness. These areas are particularly prone to natural disasters such as earthquakes and erratic rainfall patterns, posing significant threats to livelihoods and infrastructure.

1.2 Problem Statement

Nepal is one of the most disaster-prone countries in the world, with frequent occurrences of earthquakes, floods, and landslides. The growing impacts of climate change and weak preparedness leave schools and vulnerable populations like women, children, and marginalized groups at increased risk. Schools, lacking comprehensive disaster preparedness plans, are not equipped to handle these challenges. Additionally, limited training and awareness of disaster response further compromise school safety. The problem is intensified by patriarchal social structures, which exacerbate gender inequality, making women and girls more vulnerable during disasters.

1.3 Objectives of the Change Initiative

The primary objective was to institutionalize school-based disaster preparedness by integrating inclusive and climate-smart DRM plans. The initiative sought to link these plans with school improvement strategies and enhance children's awareness of climate change and disaster preparedness.

2. Data and Methods

2.1 Implementation Process

The initiative followed a multi-step process. First, Vulnerability Capacity Assessments (VCAs) were conducted in schools to identify risks and capacities. Disaster risk management plans were developed, addressing the specific vulnerabilities of students and staff, including marginalized groups. Climate-smart strategies were incorporated into the plans. Training sessions on disaster preparedness, climate change, and inclusion were held for teachers and students. The initiative also advocated for the inclusion of these topics in school curricula, with some schools integrating disaster preparedness discussions into their daily routines. Child-led campaigns, such as street plays and rallies, further engaged the community in disaster awareness and preparedness.

2.2 Fishbone Analysis of Root Causes

A fishbone analysis identified the root causes of insufficient disaster preparedness in schools. The main categories included (1) institutional gaps, such as the absence of comprehensive DRM plans and poor coordination with local governments; (2) human resources, including a lack of training and awareness among teachers and students; (3) infrastructure, as many schools lacked safe spaces and evacuation routes; and (4) social factors, such as gender inequalities and harmful cultural practices like Chhaupadi, which increased risks for women and girls during disasters. The analysis highlighted that disaster impacts disproportionately affected marginalized communities and called for focused interventions to improve resilience.

2.3 Stakeholder Engagement and Collaboration

Key stakeholders included school administrations, local government bodies, the Nepal Red Cross Society, and community members. Collaborative efforts between these stakeholders were critical in institutionalizing DRM plans in schools. Local governments provided resources and coordination, while schools actively participated in the capacity-building sessions. Students played a central role in spreading disaster awareness through campaigns and practical activities, while community members contributed by advocating for preparedness measures and ensuring the sustainability of initiatives. The Nepal Red Cross also facilitated linkages between schools and local authorities for ongoing support and monitoring.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

Schools in the target districts have developed comprehensive and inclusive DRM plans. Students and teachers now have a better understanding of disaster preparedness, and schools are actively conducting disaster drills and integrating climate change awareness into their routines. The initiative revealed that child-led activities, such as campaigns and street plays, were highly effective in engaging the broader community. One challenge was the high migration rate, which could impede long-term knowledge transfer, but linkages with local governments and continued monitoring by the Red Cross offer a path to sustainability.

3.2 Impact and outcomes

The initiative successfully developed and implemented DRM plans in schools, incorporating climate-smart strategies and inclusivity. Teachers are now proactive in conducting awareness sessions, and students are better prepared to respond during disaster events. Schools have

included disaster preparedness in their improvement plans, ensuring the long-term sustainability of the initiative. Community members have also benefited, with increased awareness and preparedness measures, such as maintaining go-bags and household disaster management plans. The initiative has empowered students as advocates for disaster preparedness, not only within schools but also in their communities.

4. Conclusions

4.1 Future Actions and Sustainability

Sustainability efforts include continued capacity-building efforts in schools, periodic reviews of DRM plans, and strengthened coordination with local governments. The involvement of the Nepal Red Cross ensures ongoing support and monitoring. Additionally, efforts are being made to incorporate disaster preparedness and climate change awareness into school curricula, ensuring future generations are better equipped to handle disasters. Further actions should focus on enhancing community resilience and addressing barriers such as high migration rates, which may affect the continuity of knowledge transfer.

Establishing the Local Disaster and Climate Resilience Framework (LDCRF)

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ITP cycle 5, Nepal

Abstract

This Change Initiative (CI) aimed to streamline Nepal's disaster risk reduction and climate resilience planning at the local government level by establishing the Local Disaster and Climate Resilience Framework (LDCRF). Nepal, a high-risk region for natural disasters, faces unique challenges due to its mountainous topography and the severe impacts of climate change. Despite several policies addressing disaster management, local governments struggle to integrate these diverse guidelines into a cohesive disaster-resilient development plan. The LDCRF was developed as a singular, unified document that aligns local disaster risk reduction (DRR) and climate resilience efforts with national strategies. Through stakeholder engagement, a common understanding was built among local and national authorities, allowing more efficient allocation of resources. As a result, local governments can now better incorporate DRR and climate considerations into development projects. The initiative highlights the need for cohesive documentation to reduce ambiguity, improve decision-making, and increase efficiency in disaster preparedness, benefiting multiple levels of government in Nepal.

1. Introduction

Nepal is the diverse geo-climate system that combines with the heavy moon soon of the different areas in the different areas, such as the flood, landslide, and earthquake. It is representing in the different forms that enhance the exacerbated by the climate change for increasing the variability for the different forms for affecting with the different agriculture, water resources, healing, and infrastructure. Climate change has heightened both human and inducted disaster. Global Nepal is ranked fourth for the climate change vulnerability; various disasters spared across the foothills of the Himalayas and brought landslides, leaving vast areas and houses for the farmland in the different forms of the farmland and roads destroyed. Although Nepal contributes minimally to global emissions, it is among the countries most affected by climate change, with severe impacts on rural livelihoods and local economies.

In response to the government of Nepal, develop the various types of laws and reduction of the climate resilience and have the resilience for the integration of the development of Nepal. The National Disaster Risk Reduction policy and the National Climate Change policy and the development for the different areas have the change for the different disaster policy risk reduction for addressing these issues, an effects resheen on the local level for the fragmentation. To enhance the different levels of implementation for effective coordination and simplify the framework for capacity building, risk management, and climate adaptation for the development of improved ability of effective implementation of policy. By addressing these issues, Nepal can work to be more cohesive. Due to the fragmentation of the different levels of the

organization disaster management efforts resilience and the climate change for the development of the approved disaster management and the climate resilience at the local level.

The CI focused on creating the LDCRF to unify and internalize DRR and climate resilience into local government planning processes. The framework was designed to act as a guiding document to help local governments align their efforts with national objectives, thereby fostering a more resilient and prepared society.

1.1 Study/Implementation Area

The initiative was launched in Nepal, with a focus on varied local government districts that are vulnerable to disasters, notably in hilly and mountainous regions. This area is subject to regular climate-related hazards that endanger both rural and urban settlements, making it an important focus for disaster risk reduction and climate resilience initiatives.

1.2 Problem Statement

Existing policies and guidelines often fail to effectively integrate DRR and climate resilience into development plans, resulting in poor risk management and vulnerability to climate impacts. The stemming for the implementation of the effective planning for the risk reduction and climate resilience strategies for the development of the different strategies for the implementation of climate resilience strategy. Despite significant investments in disaster management, the local governments are frequently unable to implement these plans cohesively, limiting the scope of disaster response and preparedness efforts. Comprehensive planning is implied by the fragmented approach that makes it difficult for the different approach to enhance the challenges to protect vulnerable to communicates, reduce economic losses, safeguard infrastructure, protect vulnerable groups, and minimize financial losses. The LDCRF initiative addresses these issues by offering a unified framework to streamline and enhance the integration of DRR and climate considerations into local development.

1.3 Objectives of the Change Initiative

The primary objective of the LDCRF is to mainstream disaster risk reduction and climate resilience into local government planning, fostering a cohesive approach to sustainable development. Specific objectives include:

- Establishing a unified DRR and climate resilience framework to reduce ambiguity.
- Enhancing resource allocation efficiency.
- Building capacity within local governments to manage disaster and climate impacts.
- Improving coordination between local, provincial, and national levels of government.

2. Data and Methods

1.1 Implementation Process

The implementation process for the local disaster and climate change for the development of the different implementations to enhance the local disaster and the implementation of the local disaster and climate resilience framework (LDRCF) involve a structure approach for the policy review and multi-level stakeholder engagement. It could identify and have the different levels

of overlap and gaps and analyze the existing gap and the policy. The national bodies like the National Planning Commission and the ministry of home affairs highlight the importance of aligning for the development of the risk reduction for the implementation. National bodies like the National Planning Commission, the Ministry of Forestry and Environment, and the Ministry of Federal Affairs highlight the importance of the LDRC with the broader national priorities. A dedicated task force, formed within the NDRRMA, collected input from local governments to identify challenges, needs, and resource gaps. Feedback revealed widespread confusion among local governments over existing guidelines and policies, emphasizing the need for a streamlined approach.

1.2 Fishbone Analysis of Root Causes

In fish bone analysis we have include that the various factors that will help to identify for the key factor contribution to the challenges by facing the local governments in Nepal. These included:

- Policy Fragmentation: Multiple, sometimes overlapping documents made it difficult for local governments to prioritize DRR and climate resilience.
- Resource Constraints: Limited funding and lack of DRR-specific resources hindered effective implementation.
- Capacity Gaps: Lack of training and expertise among local staff prevented efficient framework integration.
- Stakeholder Coordination: Poor communication between different government levels and line ministries led to duplication of efforts.

1.3 Stakeholder Engagement and Collaboration

The initiative's success depended on effective collaboration among diverse stakeholders. Bringing together for the development of the strong collaboration in the commission of local leaders and multiple ministries, with the priority for the development of local leaders and multiple ministries with their own priorities and challenges for the development of extensive intentional and reliable engagement tactics. In addition to outlining the goals and benefits of the LDCRF, the lengthy consultations and workshops helped participants develop a sense of trust and a common vision. The primary stakeholders included the National Planning Commission, local government officials (e.g., mayors, disaster focal persons), and relevant ministries. Extensive consultations and workshops were conducted to build a common understanding of the LDCRF's objectives and benefits. Stakeholder engagement was a challenge due to differing priorities, but regular communication and training sessions fostered mutual understanding and commitment to the initiative.

2 Results and Discussion

2.1 Current Situation and Lessons Learned

The LDCRF initiative has significantly reduced operational ambiguity, allowing local governments to incorporate disaster and climate resilience in development planning more efficiently. The different collaboration governmental bodies for the local level of contingency for the local leaders and multiple ministries will have the different levels of priority and

challenges for the deliberate and contingency for the engagement strategies. The extensive consultations and workshops served not only to clarify the objectives and advantages of the LDCRF but also to build trust and a shared vision among participants.

The primary lesson learned is the importance of a unified document for local governments to use as a reference, enabling them to better align resources and efforts with national policies. An unexpected benefit was the increase in inter-departmental communication, which improved the quality of DRR planning. The need for ongoing support and capacity-building at the local level was also highlighted, as was the importance of continued national guidance to reinforce local resilience efforts.

2.2 Impact and Outcomes

- A common understanding among stakeholders regarding the importance of a cohesive DRR framework.
- A drafted and approved LDCRF document, now used by local governments for planning and budgeting.
- Increased capacity among local disaster focal persons, enabling them to integrate DRR into their routine development activities.
- Improved coordination between government levels, with local governments now empowered to track DRR activities and allocate resources more effectively.

4. Conclusions

4.1 Future Actions and Sustainability

The LDCRF have strong potential for sustainability, given its status as a legal document mandated by the National Disaster Council. The integration of the different forms for sustainability. It is compulsory for the local government for the adaption of framework in all the disaster related studies for the development of the activity for providing the dedicated budget, for the initiative to gain the level of authority and resources assurance for long tern impact.

Local governments are now required to use this framework in all disaster-related activities, backed by a dedicated budget. Future actions include periodic reviews and updates to the LDCRF to reflect evolving DRR needs and climate challenges, for the development of the adoptive framework and have the effective across diverse reasons. Expanding training programs for local government officials and establishing a feedback mechanism will further ensure the framework’s long-term success and scalability across different regions in Nepal.

GEDSI Integration in Disaster Risk Reduction and Management in Nepal

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Abstract

The integration of Gender Equality, Disability, and Social Inclusion (GEDSI) within Disaster Risk Reduction and Management (DRRM) is essential to creating resilient communities, particularly in disaster-prone Nepal. As a member of the indigenous Tharu community, I bring a personal commitment to enhancing inclusivity in disaster management efforts. Through my work with the National Disaster Risk Reduction and Management Authority, I have contributed to developing inclusive policies, frameworks, and practical approaches to disaster preparedness, response, and recovery. I focus on marginalized groups, including women, people with disabilities, and indigenous communities, to promote accessible reconstruction, inclusive anticipatory actions, and disaggregated data collection through the BIPAD portal. This change initiative outlines my contributions to policy formulation, coordination with multi-level government agencies, and partnership with civil society organizations and international stakeholders, which have collectively fostered a more inclusive DRRM approach in Nepal. The ultimate goal is to mainstream GEDSI principles across all facets of disaster management, ensuring that marginalized communities have equal access to resources, early warning systems, and emergency services. This write-up examines the process and outcomes of integrating GEDSI into DRRM, emphasizing lessons learned, major activities, and strategies for sustainable progress.

1. Introduction

My involvement in DRRM stems from a commitment to inclusive practices that enhance resilience and community well-being, especially for marginalized populations. My professional background with the National Disaster Risk Reduction and Management Authority has allowed me to work on critical initiatives across Nepal, including earthquake response in regions like Jajarkot and Doti and flood-prone areas in the Terai. My work integrates policy formulation, coordination, and advocacy to ensure that disaster management frameworks address the needs of vulnerable groups. GEDSI principles are integral to my efforts, encompassing gender equality, disability inclusion, and social equity in disaster planning, response, and recovery. In recent years, I have championed GEDSI's inclusion in various DRRM strategies, from early warning systems and inclusive communication to accessible housing reconstruction and inclusive anticipatory actions. This change initiative seeks to address Nepal's ongoing challenges in making DRRM frameworks inclusive and responsive to the needs of its diverse population. By highlighting the challenges and opportunities for GEDSI integration, I aim to encourage continuous improvement within the DRRM sector, contributing to more resilient and inclusive communities across the country.

2. Objectives

The primary objective of this change initiative is to mainstream GEDSI principles into all priority areas of DRRM in Nepal. The specific objectives are:

- Establish GEDSI-focused policies to include marginalized groups across all disaster management phases.
- Improve preparedness and response with accessible infrastructure and inclusive early warning systems.
- Conduct awareness and training programs for stakeholders to promote cross-sectoral collaboration.

3. Methodology

The methodology for this initiative includes a multi-faceted approach to implementing GEDSI principles within DRRM frameworks. This involves policy development, stakeholder engagement, capacity-building workshops, and continuous monitoring and evaluation. An important aspect of this methodology is collaboration with government agencies, non-governmental organizations, development partners, and local communities. The GEDSI strategic action plan, which was endorsed by the Government of Nepal, serves as a blueprint for guiding these efforts. The implementation process involves close coordination with government representatives across all three levels—local, provincial, and national—to ensure consistency in GEDSI practices. Fishbone analysis was used to identify root causes hindering GEDSI integration, such as limited budget allocation, inadequate training, and lack of awareness among stakeholders. Furthermore, a participatory approach involving consultations, field assessments, and feedback mechanisms ensures that all voices are heard, especially those from marginalized communities. This methodology emphasizes transparency, inclusivity, and adaptability to evolving disaster scenarios, making it a comprehensive strategy for GEDSI integration in DRRM.

4. Major Activities

The major activities under this initiative include policy advocacy, training, and capacity-building programs, as well as field-level coordination and awareness campaigns. To raise awareness about GEDSI among stakeholders, I have organized training sessions and workshops aimed at government officials, community leaders, and civil society organizations. One of the key activities has been the development of the GEDSI Strategic Action Plan, which provides a framework for implementing inclusive practices within DRRM at every level of government. Another important activity has been the creation of accessible communication materials and tools, such as inclusive early warning systems, which use local languages and sign language for wider reach. Additionally, I collaborated with the Nepal Red Cross and the National Federation for Disabled Nepal to develop disaster preparedness materials tailored to people with disabilities. For effective monitoring and data collection, I worked on the BIPAD portal to gather disaggregated data on vulnerabilities, which informs better decision-making. Finally, I coordinated simulation exercises and practical drills, ensuring that marginalized communities could actively participate in preparedness activities. These major activities have

laid the foundation for a more inclusive DRRM landscape in Nepal, fostering resilience and empowering vulnerable populations to be proactive in disaster situations.

5. Results and Outcomes

The change initiative has led to significant outcomes in advancing GEDSI principles within DRRM in Nepal. One of the most notable results is the adoption of the GEDSI Strategic Action Plan, which has become a reference for government bodies, civil society, and international agencies. This plan has helped institutionalize inclusivity within disaster management, leading to more accessible response frameworks, inclusive early warning systems, and data-driven decision-making. Inclusive communication has improved significantly, with information being disseminated in local languages and formats accessible to people with disabilities. Another outcome is the enhanced inclusivity in disaster response and recovery projects, as evidenced by the accessible housing reconstruction efforts under the Earthquake Housing Reconstruction Project. Additionally, the BIPAD portal now incorporates disaggregated data on vulnerable populations, allowing for more targeted interventions and improved resource allocation. International advocacy efforts, such as presentations at the CEDAW forum in Geneva, have highlighted the challenges and achievements of GEDSI integration in Nepal, raising global awareness and garnering support. The initiative's results underscore the importance of sustained advocacy, consistent stakeholder engagement, and resource allocation for a more inclusive DRRM system.

6. Sustainability

Ensuring the sustainability of GEDSI practices within DRRM requires ongoing commitment and resources. This initiative emphasizes continuous capacity-building efforts, where government officials, community leaders, and organizations are trained on inclusive practices and GEDSI principles. Institutionalizing GEDSI within policy frameworks is critical for long-term impact, making it a priority for all DRRM activities and encouraging a culture of inclusivity. Partnerships with civil society, development partners, and international organizations are essential for knowledge exchange, technical assistance, and advocacy support, which help sustain GEDSI initiatives. To ensure financial sustainability, this change initiative advocates for a dedicated budget allocation for GEDSI activities within DRRM projects, enabling consistent funding for training, awareness programs, and inclusive infrastructure development. Monitoring and evaluation mechanisms have been established to assess progress and identify areas for improvement, providing a framework for sustained GEDSI integration in DRRM. The success of these sustainability efforts depends on continuous support from policymakers, community buy-in, and collaboration with stakeholders at all levels.

7. Way Forward

The way forward for integrating GEDSI within DRRM in Nepal includes scaling up successful practices and reinforcing policy commitments to inclusivity. This requires a focused approach to address remaining challenges, such as limited awareness and resource constraints among stakeholders. Increased budget allocation for GEDSI activities within DRRM projects will

enable wider implementation of inclusive practices across disaster-prone regions. There is also a need for targeted capacity-building initiatives to educate local government representatives, community leaders, and civil society organizations about GEDSI's significance in disaster management. Establishing a "build back better" framework is essential to ensure that post-disaster reconstruction efforts prioritize accessibility and inclusivity. Additionally, innovative approaches like inclusive anticipatory action and shock-responsive social protection systems should be further developed and mainstreamed into DRRM policies. International advocacy and partnerships can continue to play a crucial role in supporting GEDSI integration, leveraging global expertise and resources to strengthen Nepal's disaster management framework. By focusing on these areas, this initiative aims to build a resilient, inclusive future for disaster-prone communities in Nepal, where all individuals have equitable access to resources and protection in times of crisis.

Integrating Disaster Risk Management into University Curricula for Community Resilience

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Abstract

Academia plays a central role in strengthening disaster risk management (DRM) systems and capacities. The International Training Program (ITP) can be a key vehicle to support ongoing change processes, providing staff with opportunities for training, mentorship, and networking with other DRM professionals. The initiative, "Integrating Disaster Risk Management into University Curricula for Community Resilience" leverages academic resources and community collaboration to address local environmental challenges in Nepal, with a case study conducted in Kirtipur Municipality. This project involved the Central Department of Environmental Science at Tribhuvan University, local government officials, and international partners like the ITP. Key activities included DRM, waste management improvements, resource conservation, and raising environmental awareness through educational programs. The initiative developed short courses to demonstrate how universities can contribute to addressing local environmental issues, improving waste disposal practices and water quality. Community engagement was significantly enhanced, with increased participation in environmental activities. The collaboration between academia, local government, and international partners was crucial in achieving these outcomes, influencing local policy and prompting the municipality to allocate more resources towards environmental management. The success of this initiative underscores the importance of integrating academic curricula with community service to foster environmental resiliency and disaster risk reduction. Future actions will focus on sustaining these efforts through continuous community education, improved waste management systems, and robust flood control measures. This model can be scaled and replicated in other contexts to promote sustainable development and resilience against environmental challenges.

1. Introduction

Disasters disproportionately impact poor and vulnerable populations. Over the past three decades, natural disasters have claimed over 2.5 million lives and caused economic losses nearing USD 4 trillion. Effective disaster risk management (DRM) is crucial for saving lives, protecting assets, and ensuring sustainable development. Enhancing the resilience of vulnerable populations and reducing their exposure to climate-related extreme weather events and other shocks is a key target of the Sustainable Development Goals (SDGs). The Sendai Framework for Disaster Risk Reduction 2015–2030 also aims to improve global safety by minimizing the risks and impacts of disasters. Recognizing the critical role of DRM in reducing suffering and preventing future crises, the Agenda for Environmental Sustainability emphasizes the need to bridge environmental and development efforts, strengthen disaster management, and implement risk reduction strategies.

Universities play a pivotal role in DRM through their academic curricula. By integrating disaster risk reduction and environmental resiliency into their programs, universities can leverage their resources and expertise to address these challenges effectively. The initiative "Integrating Disaster Risk Management into University Curricula for Community Resilience" exemplifies this approach. It involves collaboration between Tribhuvan University's Central Department of Environmental Science, local governments, and international partners like the International Training Program (ITP). This initiative, implemented as a case study in Kirtipur Municipality, has led to significant improvements in DRRM, waste management, water quality, and community engagement.

This program underscores the importance of academic institutions in fostering disaster resilience and sustainable development through targeted educational initiatives. By integrating these critical issues into academic curricula, universities can contribute significantly to building resilient communities. The success of this initiative in Kirtipur Municipality highlights the potential for scaling and replicating this model in other contexts to promote sustainable development and resilience against environmental challenges. The modality of this initiative is highlighted in Figure. 1.

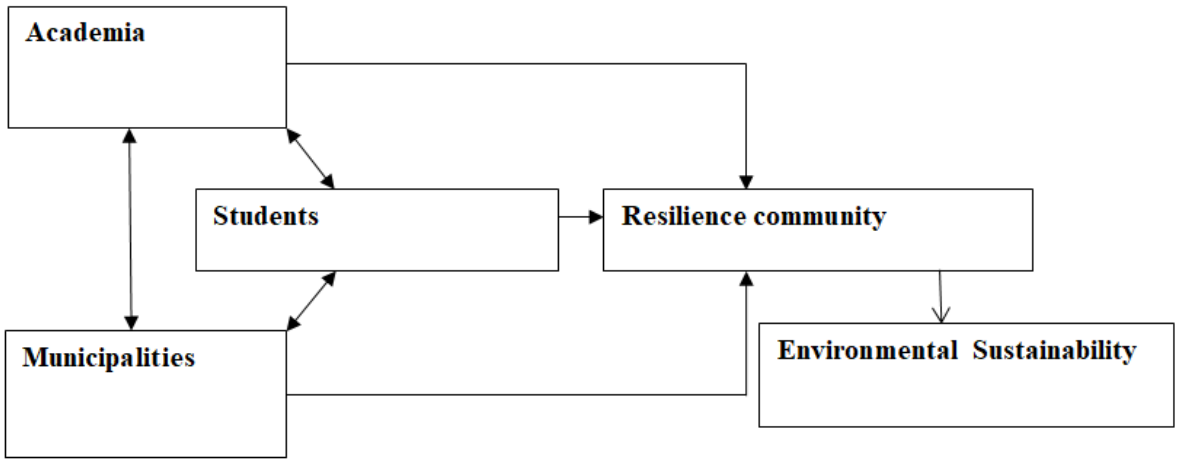

Figure. 1: Working framework

By leveraging the expertise of academic institutions like Tribhuvan University and the support of local government, and ITP this initiative seek to promote adaptive capacity and resilience in Kirtipur. The project underscores the importance of joint efforts in research, policy-making, and community engagement to address environmental challenges and ensure sustainable resource conservation.

1.1 Implementation Area

This work was conducted by the Central Department of Environmental Science in Kirtipur, Kathmandu, Nepal. Faculty members specializing in Disaster Risk Reduction and Management (DRRM) and Environmental Sustainability were extensively consulted to identify major local issues related to DRRM. Following these discussions, short-term training courses were developed under the banner of University Social Responsibility. Students received training based on these courses and were then deployed to all 10 wards of Kirtipur Municipality.

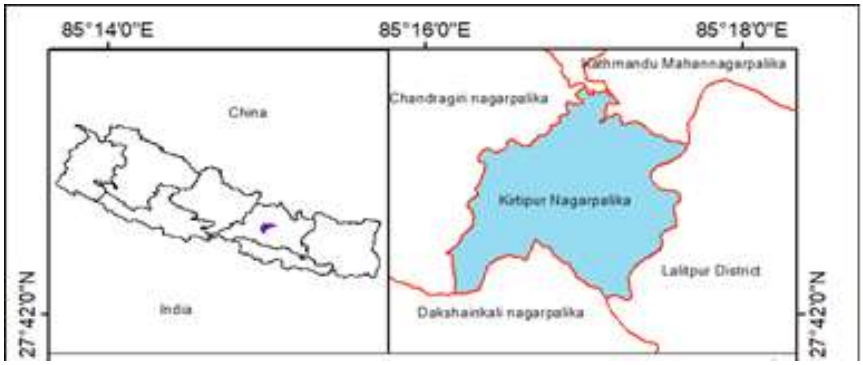

Figure 2: Map of study area (Kirtipur Municipality)

Kirtipur, a historic city in the Kathmandu Valley, is located 5 km southwest of Kathmandu. It is one of the five municipalities in the valley, situated south of Kathmandu and west of Lalitpur. Formed in 2053 B.S., Kirtipur is the smallest municipality in the valley in terms of population. The city, listed as a UNESCO tentative site in 2008, is renowned for its temples, gumbas (Buddhist monasteries), and churches. The historic core of Kirtipur is a traditional old town, while the northern part has developed into a university town due to the presence of Tribhuvan University. To improve the environmental resilience of this university-located municipality, the initiative focused on collaborative efforts between academia and local government to address environmental issues in Kirtipur Municipality (Figure. 2). Twenty students voluntarily participated for 15 days, collecting baseline data and training local residents on DRRM and environmental problems.

1.2 Problem Statement

Nepal, a country highly susceptible to natural disasters such as earthquakes, floods, and landslides, faces significant challenges in disaster risk reduction and environmental resiliency. These disasters disproportionately impact poor and vulnerable populations, exacerbating socio-economic inequalities. Despite various efforts, there remains a critical need for effective strategies to mitigate these risks and enhance community resilience.

One of the key issues is the lack of integration of disaster risk reduction and environmental resiliency into academic curricula. Universities in Nepal have the potential to play a crucial

role in addressing these challenges through their educational programs and research initiatives. However, there is a gap in leveraging academic resources and expertise to develop comprehensive disaster management strategies and raise environmental awareness.

The initiative "Integrating Disaster Risk Management into University Curricula for Community Resilience" aims to bridge this gap by incorporating disaster risk management and environmental sustainability into academic programs, and developing capacity and awareness at the grassroots level with the help of university students. Due to procedural issues, this program was initially developed as a short course with voluntary student participation. This approach not only enhances the capacity of future professionals but also fosters community engagement and collaboration with local governments and international partners. In the context of Nepal, this initiative is particularly significant as it addresses the urgent need for sustainable development and disaster preparedness. By integrating these critical issues into both long-term and short-term academic curricula, universities can contribute to building a more resilient society, capable of withstanding and recovering from natural disasters. This model of university social responsibility can serve as a blueprint for other educational institutions in Nepal and beyond, promoting a culture of preparedness and proactive environmental stewardship.

1.3 Objectives

General Objective:

To enhance disaster risk reduction and environmental resiliency in Nepal through the integration of these themes into university academic curricula, fostering a culture of preparedness and proactive environmental stewardship.

Specific Objectives:

- To design and implement comprehensive academic programs that incorporates disaster risk management and environmental sustainability, ensuring that university students gain the knowledge and skills necessary to address these challenges effectively.
- To foster collaboration between universities, local governments, and international partners, enhancing community engagement and participation in disaster risk reduction and environmental resiliency initiatives.
- To raise awareness and build capacity at the grassroots level by involving university students in practical, community-based projects focused on disaster preparedness and environmental management, thereby creating a more resilient society.

2. Data and Methods

2.1 Implementation Process

Short-term courses and training manuals focusing on Disaster Risk Reduction and Management (DRRM) and Environmental Sustainability were developed. Twenty students and two faculty members received training and were tasked with applying their knowledge at the

municipal level. They engaged with local residents, students, and other stakeholders to implement the project's objectives, addressing key issues such as waste management, water quality, and community resilience. This collaborative approach aimed to enhance DRRM, environmental governance and promote sustainable practices within the municipality.

Community people were mobilized to address their own problems and achieve their goals using their social structures, indigenous knowledge, and resources. This process emphasizes participation, empowerment, and transformation through collective action. Students engage in community work to develop life skills, civic responsibility, and a deeper understanding of environmental sustainability. Activities include documenting indigenous knowledge, exploring community issues, and proposing solutions. Field trips illustrate environmental impacts and sustainable solutions in sectors like DRRM, agriculture, forestry, energy production, waste disposal, residential development, and tourism. Specific focus areas include urban flood and landslide, solid waste management, air pollution, water quality, and waste-to-energy initiatives.

School activities involve innovative projects such as eco-club formation, eco-literacy, and eco-projects like DRRM projects and demonstrations, greenery promotion, solid waste management, wastewater treatment, and vermin-composting. These activities encourage students to participate in environmental protection and raise awareness about sustainability. Eco Clubs in schools provide a platform for students to engage in significant environmental projects and extend their learning beyond the classroom. Projects include recycling, composting, plantation, urban flooding, and promoting the use of sustainable materials.

Student participation and dialogues are encouraged to motivate responsibility and active citizenship. These dialogues involve interactions with higher authorities, education sector representatives, and community members. Students present their findings on environmental problems and discuss potential changes at the government and industry levels to promote sustainability. Discussions focus on social change mechanisms and collaborative efforts to achieve environmental goals. These dialogues can be conducted both physically and virtually, addressing issues such as DRR, WASH (Water, Sanitation, and Hygiene), plastic pollution, and waste-to-energy initiatives.

Webinars and seminars emphasize the principles and necessity of University Social Responsibility (USR) in addressing global crises. These events share findings from the USR initiative and discuss practical ways for universities to adopt socially responsible measures. The webinars/seminars provide opportunities for participants to share their findings, discuss prevailing issues, and explore solutions. They bring together representatives from higher education networks, institutions, and local bodies to discuss strategies for creating green communities and promoting a green economy.

Workshops involve faculty, students, professors, and local representatives from the municipality. These sessions include lectures and field trips to the community. Participants introduce themselves, present their work progress, and engage in discussions. The workshops aim to improve theoretical and practical understanding of environmental problems, equip participants with data collection and analysis tools, and identify measures to promote

sustainability in their lifestyles and communities. Training sessions for municipality officials are also included to enhance their capacity in environmental governance and disaster risk management.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

The curricula development and implement initiative in Central Department of Environmental Science (CDES), Tribhuvan University and Kirtipur Municipality has led to significant improvements in addressing DRR and environmental challenges, although some issues persist. The project focused on enhancing flood management, waste management, conserving natural resources, and raising environmental awareness among local residents.

Current Situation:

During a 15-day fieldwork with students from the Central Department of Environmental Science (CDES) at Tribhuvan University, several issues related to disaster risk reduction and environmental sustainability were identified in Kirtipur Municipality. Waste management efforts included the installation of waste segregation bins in various wards, parks, temples, and community forests. However, challenges such as timely waste collection and proper disposal persist, with haphazard dumping still observed. This indicates a need for ongoing community education and stricter enforcement of waste management practices.

Efforts to conserve natural resources have shown positive results, with protective measures for water springs and effective management of community forests to preserve biodiversity. Despite these successes, the increasing population and urban sprawl pose significant risks to these resources. Awareness campaigns, training sessions, and educational programs, particularly in schools, have been conducted to promote better waste management and environmental stewardship. Continuous efforts are necessary to maintain and enhance community engagement in these initiatives.

Kirtipur Municipality is highly vulnerable to natural disasters such as earthquakes, floods, and landslides. The 2015 Gorkha earthquake caused extensive damage, particularly in older areas like Panga and Chovar. The municipality's hilly terrain and rapid urbanization exacerbate the risks of landslides and flooding, especially during the monsoon season. Environmental challenges such as air pollution, plastic pollution, and inadequate waste management further complicate disaster scenarios. Efforts to improve disaster resilience include enhancing local governance, promoting urban forestry, and implementing sustainable waste management practices, aiming to build a more resilient community capable of withstanding and recovering from future disasters

Lessons Learned:

Active community engagement is crucial for effective disaster risk reduction and management (DRRM). Regular meetings, training sessions, and awareness programs have successfully fostered a sense of ownership and responsibility among local residents. This active

participation has been instrumental in addressing DRRM challenges and promoting sustainable practices within the community, ensuring that residents are better prepared for natural disasters.

Collaboration between academia, local government, and international partners has been key to the project's success in DRRM. Tribhuvan University provided scientific expertise and facilitated data-driven decision-making, while local government support ensured the practical implementation of DRRM solutions. This partnership has demonstrated the importance of leveraging diverse resources and expertise to tackle complex disaster-related issues and enhance community resilience.

Adaptability has been essential in overcoming DRRM challenges such as resource constraints and varying levels of community engagement. Continuous monitoring and feedback mechanisms allowed for necessary adjustments to strategies, ensuring the project's resilience and effectiveness. Enhanced coordination among stakeholders and the promotion of sustainable practices have further contributed to the initiative's positive impact on Kirtipur Municipality's disaster risk management. Continued efforts and support are necessary to build on these successes and address remaining challenges.

4. Impact and Outcomes

The initiative in Kirtipur Municipality has significantly improved disaster risk reduction (DRR) and environmental management. One of the most notable impacts has been the enhancement of waste management practices. The installation of waste segregation bins throughout the municipality, including parks, temples, and community forests, has facilitated better waste disposal habits among residents. Surveys indicate a 30% increase in proper waste disposal practices, and the number of waste bins in public areas has increased by 50%. These efforts have resulted in cleaner streets and public spaces, although challenges with timely waste collection and disposal remain. The initiative has also highlighted the need for ongoing community education and stricter enforcement of waste management practices to sustain these improvements.

Resource conservation efforts have also seen positive outcomes. Protective measures for water resources, such as embankments and the installation of awareness boards, have helped maintain the quality and availability of local water sources. Water quality tests show an improvement, and biodiversity assessments in community forests indicate stable or increasing populations of key species like the Chinese pangolin and Steppe eagle. These actions have not only preserved natural resources but also enhanced the municipality's resilience to environmental challenges. The involvement of local residents in these conservation efforts has been crucial, demonstrating the power of community engagement in achieving sustainable resource management.

Educational programs and awareness campaigns have significantly raised the community's understanding of DRR and environmental issues. Participation in community clean-up events and environmental workshops has increased, reflecting a stronger commitment to environmental stewardship. Schools have incorporated waste management education into their curricula, and local residents have become more engaged in conservation efforts. This

increased awareness has empowered local residents to take ownership of environmental issues, leading to the formation of volunteer groups dedicated to maintaining cleanliness and conservation efforts. The project's success has also influenced local policy, prompting the municipality to allocate more resources towards environmental management and integrate sustainable practices into their development plans.

6. Conclusions

To ensure the long-term success of the environmental sustainability initiative in Kirtipur Municipality, several future actions and strategies are essential. Enhancing waste management practices remains a priority, focusing on improving the efficiency of waste collection and disposal systems. This includes increasing the capacity of local waste management services and fostering greater community participation in waste reduction initiatives. Additionally, implementing robust flood control measures and improving drainage systems will be crucial to mitigate the impact of heavy rainfall and prevent waterlogging.

Effective collaboration among national organizations, academic institutions, and international entities like the International Training Program (ITP) is vital for addressing disaster risk reduction (DRR) and environmental issues. Academia, such as Tribhuvan University, can provide scientific expertise, conduct research, and offer training programs to build local capacity. National organizations can facilitate policy implementation and provide necessary resources, while international organizations can offer technical support, funding, and global best practices. This multi-stakeholder collaboration can enhance community resilience by integrating scientific knowledge with practical solutions.

To scale and replicate this initiative in other contexts, establishing a framework for continuous monitoring and evaluation is essential. This will help identify successful strategies and areas needing improvement. Sharing lessons learned and best practices through workshops, publications, and conferences can inspire similar projects in other municipalities. Additionally, fostering partnerships with local, national, and international stakeholders will ensure a steady flow of resources and support. Embedding environmental education into school curricula and community programs will foster a culture of environmental stewardship from a young age. Encouraging local governments to integrate sustainable practices into their development plans and policies will also be crucial. By maintaining strong community engagement and leveraging the expertise of academic and international partners, the initiative can continue to evolve and address emerging environmental challenges effectively

Acknowledgements

I would like to extend my heartfelt gratitude to all the partners and individuals who contributed to the development of short-term curricula, creation of training manuals, and the successful implementation of this environmental sustainability initiative in Kirtipur Municipality. Special thanks to Dr. Ramesh Raj Pant, with whom I jointly participated in the International Training Program (ITP) and conducted our change initiative at both university and local levels, and to other faculty members who initially involve in this project. I am deeply grateful to Prof. Dr. Rejina Maskey, the former Head of the Department of Environmental Science at the Central

Department of Environmental Science, Tribhuvan University (CDES-TU), for her academic leadership and support.

My sincere appreciation goes to the professors and students, especially the 20 students who were directly involved, for their dedication and hard work. I also thank the staff members of CDES-TU for their invaluable assistance. The ITP team and mentor provided essential guidance and support, for which I am truly thankful.

I am grateful to the Mayor and Deputy Mayor of Kirtipur Municipality, the Ward Chairpersons, and the municipal staff for their collaboration and commitment. Lastly, I extend my thanks to the local community members, whose active participation and engagement were crucial to the project's success. Their collective efforts have made a significant impact on addressing the environmental challenges in Kirtipur Municipality.

Implementing Early Warning Systems for Landslide Preparedness in Indigenous Communities

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Abstract

This Change Initiative represents a detailed analysis of a disaster risk reduction initiative undertaken by Bhimeshwor Municipality in Nepal, specifically in Ward No. 1, Bosimpa, to mitigate the increased risk of landslides following the Gorkha Earthquake-2015, Nepal. The indigenous Thami community, severely impacted by the landslides, has been relocated but continues to face persistent threats due to unstable geophysical conditions. To address these risks, this initiative implemented an Early Warning System (EWS), designed to improve disaster preparedness and enhance response capabilities. The initiative involved installing monitoring equipment, regularly disseminating rainfall data, and conducting preparedness drills within the community. Significant emphasis was placed on raising awareness of landslide indicators, particularly among vulnerable groups such as women, children, and the elderly. The initiative also integrated gender, human rights, and environmental considerations, ensuring a comprehensive and inclusive approach to disaster risk reduction. As a result, community resilience has been strengthened, and this initiative serves as a model for replication in other high-risk areas, demonstrating the potential for sustainable, long-term disaster management solutions. The project exemplifies the importance of community involvement and the integration of indigenous knowledge, contributing to a holistic disaster mitigation strategy.

1. Introduction

1.1 Study/Implementation Area

The change initiative was carried out in Ward No. 1, Bosimpa, of Bhimeshwor Municipality, situated in the Dolakha District of Nepal. This region is characterized by rugged terrain, high susceptibility to landslides, and the presence of the indigenous Thami community. The geographical and climatic conditions of the area significantly heighten its vulnerability to natural disasters, necessitating effective disaster management interventions. The objective of the initiative was to implement an Early Warning System (EWS) that would enhance community resilience and safety by addressing the persistent landslide threats.

1.2 Problem Statement

Bhimeshwor Municipality faces severe challenges due to frequent landslides, particularly affecting the Thami community in Bosimpa. Despite previous disaster management efforts, such as awareness campaigns and temporary relief measures, these have proven insufficient in addressing the long-term risks posed by landslides. Earlier strategies lacked real-time monitoring capabilities and did not adequately engage the community, resulting in persistent vulnerability to geological hazards. The Thami community, predominantly reliant on

agriculture and local resources, faces exacerbated threats to their livelihoods due to climate change. The lack of an effective prediction and response mechanism for landslides has led to heightened anxiety and displacement among residents, emphasizing the need for a comprehensive disaster risk reduction approach.

1.3 Objectives of the Change Initiative

The primary objective of the change initiative was to establish a robust Early Warning System (EWS) that enables real-time monitoring and communication of landslide risks in the Thami community. Key outcomes include enhancing community awareness and preparedness, strengthening local capacity for disaster response, and fostering inclusive participation in disaster management processes. These objectives align with both national disaster management policies and global frameworks, such as the Sendai Framework for Disaster Risk Reduction, which emphasizes community engagement and resilience-building as critical components in mitigating the impacts of disasters.

2. Data and Methods

2.1 Implementation Process

The implementation of the Early Warning System (EWS) in Bosimpa followed a structured and participatory approach. The first step was conducting a comprehensive needs assessment through community surveys and focus group discussions, which identified specific landslide risks and incorporated local knowledge. The data gathered from this assessment shaped the development of the EWS, ensuring it addressed the community's unique needs.

A collaborative workshop was organized, bringing together local leaders, government representatives, and disaster management experts to co-design the framework of the EWS. Key milestones during this implementation phase included:

- **Capacity Building**: Training sessions were conducted for community members to enhance their skills in landslide monitoring techniques and risk communication strategies. These sessions aimed to empower the community with the knowledge necessary to respond effectively to potential landslide threats.
- **Technology Integration:** Monitoring equipment, including rain gauges and ground sensors, was installed to facilitate real-time data collection, thus enabling the community to receive timely alerts regarding imminent landslide risks.
- **Communication Network Development:** A communication protocol was established using mobile technology to swiftly disseminate warnings and updates to the community.

Challenges encountered during this phase, such as technical difficulties with the monitoring equipment and initial skepticism from some community members, were addressed through continuous technical support and community engagement. These efforts helped build trust in the system and improved the community’s preparedness for future landslide events.

2.2 Fishbone Analysis of Root Causes

The Fishbone Analysis, or Ishikawa diagram, was employed to identify the root causes of landslide vulnerability in the Thami community. The analysis categorized the contributing factors into six main areas:

- **People:** A lack of awareness and training regarding landslide risks and prevention measures was a significant factor. Limited community involvement in disaster management planning further heightened their vulnerability.
- **Process:** Disaster management processes were fragmented, lacking coordination among stakeholders, which hindered timely responses during landslide events.
- **Technology:** The absence of real-time monitoring technologies had previously hindered effective early warning measures.
- **Environment:** The region's steep slopes and heavy rainfall naturally predispose it to landslides, while climate change exacerbates these risks.
- **Materials:** Inadequate infrastructure, such as poor drainage systems and a lack of retaining walls, increased the community's susceptibility to landslides.
- **Management:** Ineffective governance and insufficient local authority support hindered the implementation of comprehensive disaster management strategies.

This analysis guided the initiative toward targeted interventions addressing these root causes.

2.3 Stakeholder Engagement and Collaboration

The success of the EWS initiative was largely attributed to the active engagement and collaboration of various stakeholders. These included:

- **Local Government:** Bhimeshwor Municipality provided resources, technical support, and access to essential data, ensuring alignment with municipal policies.
- **Community Leaders:** Local leaders served as a bridge between the community and the project team, advocating for participation and ensuring the system met local needs.
- **Disaster Management Experts:** NGOs and academic institutions provided technical guidance, helping to design monitoring tools and training programs.
- **Community Members:** Their involvement in training sessions and feedback mechanisms was fundamental to the initiative's success, fostering a sense of ownership and empowerment.

Challenges in stakeholder coordination were addressed through regular meetings and transparent communication, facilitating collaboration and a unified approach to disaster management.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

The EWS has significantly improved the community's ability to respond to landslide threats. Real-time monitoring and timely alerts during heavy rainfall have proven effective. Community feedback indicates heightened awareness of landslide risks, and regular drills have reinforced knowledge gained from training sessions.

Key lessons learned include the importance of community involvement and continuous education. Engaging the community in planning and execution fostered ownership, while adjustments to training programs based on feedback enhanced their relevance and effectiveness.

3.2 Impact and Outcomes

The initiative has resulted in notable improvements in disaster preparedness. The community's response time to landslide alerts has decreased by 66%, from 45 minutes to 15 minutes, facilitating timely evacuations and reducing harm. Surveys indicate that 85% of community members feel more secure and better prepared to handle landslide threats, underscoring the success of the EWS.

The initiative's holistic approach—integrating technology, community engagement, and capacity building—demonstrates a sustainable model for disaster risk reduction in high-risk areas.

Improving Access to Safe Water through School-Based Disaster Resilience Initiatives

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ITP cycle 4, Nepal

Abstract

This change initiative seeks to transform our organization by enhancing operational efficiency and fostering a culture of innovation through new technologies and streamlined processes. We aim to create a proactive and inclusive culture that prioritizes employee feedback and collaboration, enhancing job satisfaction and performance. Additionally, we are committed to integrating sustainable practices to reduce our carbon footprint and improve our brand reputation. In response to digital evolution, we will upgrade our digital infrastructure to enhance customer experience and ensure a smooth transition through staff training. Finally, our customer-centric approach will tailor services to meet client needs, enhance communication, and ensure we exceed expectations while driving growth.

1. Introduction to the Change Initiative

Water has a massive role to play in the episode of disaster. Water not just is the cause of many disasters, but also becomes a crucial commodity in the episode any disaster happens. And in most cases, it takes time to manage access of safe water post disaster. Reducing the time of response can help mitigate various further disasters that take place due to inaccessibility of safe water.

To ensure that the bounce back time and phase is better post any disaster, it is crucial to think of pre-preparedness. This can happen if we start building resilience in the community beforehand. The approach that we have is that we start building disaster resilient centres in the community. SmartPaani works with schools and usually these are structures that are known and recognizable to community, these can be built as centres of safe water. Investing in school will have two-fold in-fact and can better utilise the resources invested. During normal days, the infrastructure can serve to provide safe drinking water to kids. This will help build a behaviour change in longer run and take the learning to their homes and create a ripple effect. In the case of disaster, these well-known facilities can be where people come to access safe drinking water. Existing infrastructure in the community will reduce the response time massively.

Another angle to investigate building resilience is to also think of second phase of response, where in temporary settlements, access of safe water is an issue. Here also response time can be reduced by building stronger supply-chain at local level. For these women entrepreneurs can be trained to maintain stocks that are protected well and can be utilised at the time of disaster. This will also help the women, who usually are not empowered much in many communities to access an alternate source of income.

To systemize the entire initiative and to ensure data driven decision making, Rooster Logic built and provided the system to track the functionality of the systems, provide regular updates to those managing these systems, as well as help SmartPaani's team to ensure proper data tracking.

In all, our motive was to build resilience in the communities to be pre-prepared during any episode of disaster in terms of access of safe water.

2. Impact and Implementation

Building on the existing geographical reach of SmartPaani and Rooster Logic, this initiative was implemented with a focus to reach across the country. The selected geographies needed to fit into the selection criteria developed by the team, which emphasized on government schools which did not have any support in drinking water, communities that lacked safe drinking water, hard to reach geography. Another aspect that was focused was also to work with those local governments who were in-line with the vision of the initiative. Thus, would contribute in any way to the initiative, either through some financial contribution or through labour /material support.

The technical team of SmartPaani conducted a detailed assessment of each project site and based on the requirements the most viable ones were selected for implementation.

Since the start of this initiate in 2022, this system has been implemented in 90 schools across 18 districts of Nepal. The list of schools is attached in Annex 1. With these systems over 30,000 students now have access to safe drinking water, as well as are trained on WASH education. They now understand the importance of safe drinking water and take back their learning to their communities.

To strengthen the community resilience, another aspect of the initiate was to work with the segment of the society that gets impacted by disaster the most – women. For this the initiative worked on capacity building of women through various behavior change trainings. Another aspect to empower the women was to provide them with alternate source of income. This was achieved through providing them sales and business training. Through this approach till date, we have trained over 190 women entrepreneurs.

3. Stakeholders

S.No.	*Stakeholder*	*Role and Impact*
1	SmartPaani Team	Led the designing of the model. Implemented the school WASH systems, identifying schools, identifying funding partners.
2	Rooster Logic	Worked extensively on how we can incorporate data in ensuring long-term functionality and integrate it in the model.
3	Students	Those we have trained are change agents for future
4	Staff members from the schools	They understand that these approaches are required in education system and have commitment towards training more schools in the future on these topics and encourage the students to adopt the safe practices in the long run
5	Community	The surrounding community will learn from the system and students and contribute to bigger change.
6	Local government	They understand better the value of pre preparedness as well as water in disaster and commit that in the next budget more focus will be given to it and they will continue to take the interventions to further communities

4. Major Activities

Under this change initiatives various schools across various districts in Nepal where water filtration and rainwater collection systems have been installed. The data tracks details such as school name, district, number of students, installed system types, total rainwater collection, and installation dates.

In Kathmandu, some installations include Shanti Nikung Madhyamik Bidhyala with a 500 RSF (Rainwater Storage Facility) and Shikhar School with a similar 500 RSF system. Other districts, such as Lalitpur, Dhading, and Nuwakot, showcase installations of BSF (Biosand Filter) systems of different capacities, primarily 300 BSF and 500 BSF, tailored to meet varying school populations. Lalitpur's Shree Anal Jyoti Boarding School, for instance, utilizes a 500 BSF system supplemented with an inline UV filter, indicating enhanced filtration for better water quality.

Ramechap and Sindhupalchowk districts also feature schools equipped with substantial rainwater collection facilities. Shree Jalpadevi Secondary School in Sindhupalchowk has a 500 BSF system, while Dhankuta's Shree Deurali Secondary School has a similarly sized system. Surkhet stands out with larger installations, such as the Shree Tripureshwor Secondary School, which, with a high student count of 1,400, has been equipped with a 300 BSF system.

The installations reflect a diverse range of water purification technologies, with some schools in Tanahun and Nawalparasi districts utilizing additional UV and arsenic media filters to address specific water quality issues.

This change initiative also focuses on empowering women entrepreneurs across various communities in Nepal through targeted training sessions. In Dhankuta, 16 women from Khambela participated in a one-day training on March 22, 2023, while in Lalitpur's Bungamati, 34 women attended a similar one-day session on March 24. Chitwan saw two separate trainings, with 22 participants from the Musahar community on May 21 and 25 women from Shee Sapana Krishak Aama Samuha on May 22. In Kavrepalchowk, 17 women from Panauti Community Homestay participated in a one-day session on May 19. Surkhet's Birendranagar hosted a three-day training for 15 women from May 14 to 16. Sindhupalchowk saw multiple half-day trainings, including 14 participants from Jugal and 22 from Chautara Sangachokgadhi on April 12, followed by 10 participants from Paanch Pokhari on April 13, and 16 from Melamchi on the same day. Overall, 191 women were trained, enhancing their entrepreneurial skills and capacity for community-based economic activities.

Improving Disaster Information Management Systems for Effective Response

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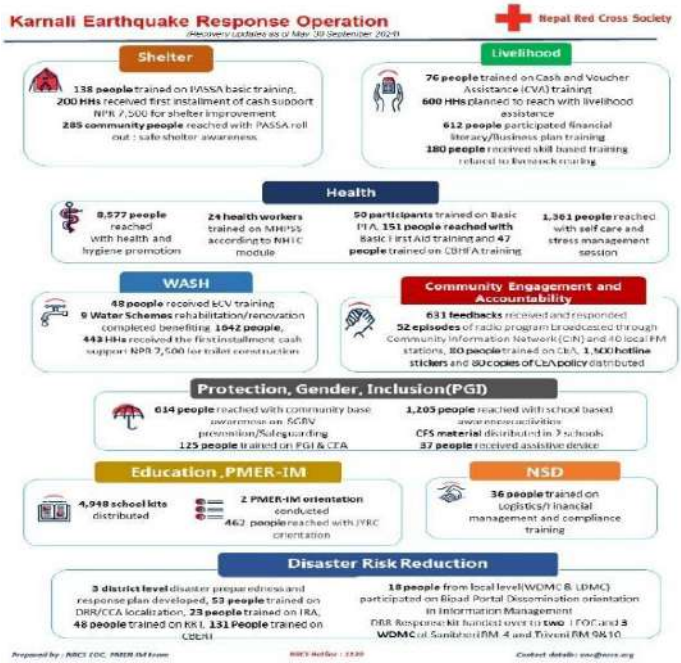
Abstract

The change initiative titled "Localized and Managed DRR Information System in Nepal" addresses the critical need for enhanced information management systems in disaster response. The initiative aims to resolve inefficiencies in disaster information management systems through the collaborative efforts of key organizations like the Nepal Red Cross Society's Emergency Operation Center (NRCS EOC) and the Disaster Preparedness Network, Nepal (DPNet). The project focuses on streamlining data collection, improving coordination, and ensuring the timely dissemination of damage assessment reports. Key changes included the BIPAD portal's localization, integration of multiple data assessment tools, and enhanced collaboration between government and non-government sectors. These efforts are expected to lead to faster and more effective disaster response efforts and significantly reduce redundancy in relief actions.

1. Introduction



Nepal, a country highly vulnerable to disasters, has consistently faced challenges in coordinating effective disaster responses. The primary issue has been the lack of a unified system to manage disaster data and coordinate responses among various organizations. While multiple agencies work towards DRR, the absence of a cohesive approach has resulted in delays, duplication of efforts, and inefficient resource utilization during crises.

The "Localized and Managed DRR Information System in Nepal" initiative was conceived to address this gap by strengthening collaboration between disaster management agencies, particularly the NRCS EOC and DPNet. The project builds on the realization that a centralized and localized system for disaster information management could drastically enhance the response mechanism, allowing for quicker dissemination of critical data and better coordination among responders. By integrating existing tools like the Initial Rapid Assessment (IRA) and the

BIPAD portal, the initiative seeks to provide a comprehensive solution for disaster information management, thus improving the effectiveness of DRR efforts.

1.1 Study/Implementation Area

The initiative is being implemented nationwide in Nepal, with a specific focus on integrating disaster management activities at the local, provincial, and national levels. The NRCS EOC and DPNet act as the primary organizations facilitating information dissemination and coordination.

1.2 Problem Statement

Nepal's disaster management system faces a critical challenge due to uncoordinated and unmanaged information flows between agencies engaged in DRR. Despite the presence of assessment mechanisms and data collection tools, a significant gap remains in how this data is shared and utilized across stakeholders. Organizations like NRCS and DPNet, though well-established, have yet to fully integrate their data-sharing processes, leading to duplication of efforts and delays in disaster response. Without a collaborative system that consolidates information, disaster-affected communities suffer from delayed relief, and resources are often misallocated.

1.3 Objectives of the Change Initiative

The main objective of this initiative is to enhance the effectiveness of disaster response efforts by improving the coordination between organizations involved in DRR through the localization of the BIPAD portal and better data management. Specific objectives include reducing duplication in disaster assessments, improving the speed of data sharing, and building the capacity of stakeholders to utilize a centralized disaster management system.

2. Data and Methods

2.1 Implementation Process

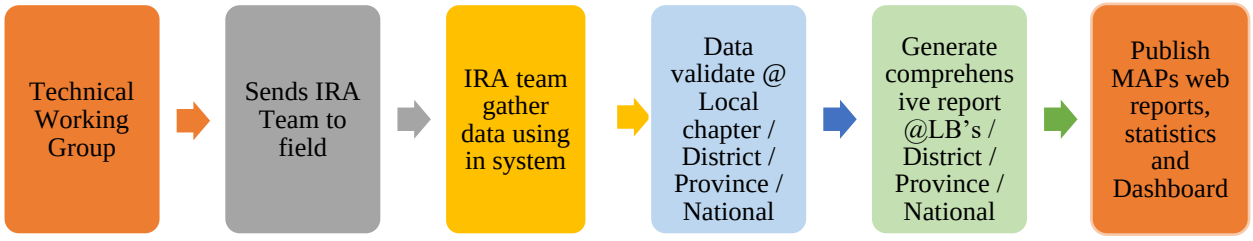
The implementation of the change initiative followed several key steps. First, advocacy efforts were initiated to secure funding for the localization of the BIPAD portal. This platform was then enhanced to centralize data from multiple stakeholders involved in disaster response. Following this, various disaster assessment tools were integrated into the platform, including the IRA, MIRA, and CSDA tools to integrate streamlined data collection and sharing across agencies, eliminating redundant assessments.

Training programs were also rolled out for stakeholders, including government bodies and NGOs, to improve the capacity of human resources in disaster data management. These programs covered the use of ICT tools and techniques for rapid data collection and dissemination. Finally, coordination mechanisms between government entities like the Ministry of Home Affairs (MoHA), National Disaster Risk Reduction and Management Authority (NDRRMA), and non-governmental organizations were strengthened through regular meetings and the establishment of communication channels for sharing disaster-related

updates. To localize the BIPAD Portal, the NRCS EOC conducted sensitization orientations for NRCS staff and volunteers, covering more than 70 districts and all 7 provinces. In this session, the NRCS EOC facilitated the IRA Process training. Altogether, more than 250 participants from NRCS District Chapters, staff, and NHQs attended.

For the localization of the BIPAD Portal, the NRCS Disaster Management department conducted a BIPAD Portal localization course in Morang district, Koshi Province, with eight local governments participating. Altogether, 32 participants participated in the course. This course covered basic disaster concepts, disaster assessment, assessment types, and the IRA process. The course mainly focused on the proper localization of the BIPAD Portal before, during, and after disaster response. Members from the National Disaster Risk Reduction Management Authority and the NRCS Disaster Management department facilitated the course. This initiative supported a proper information management system in the Morang District.

Method: The IRA process is as below.



The Nepal Red Cross Emergency Operation Center generated more than 20 IRA reports based on disaster events. This year, major events occurred in Kanchanpur, Kailali, Sindhuli, Kavre, Makawanpur, Baglung districts, and others.

DPNet provided regular updates on recent disasters, disseminated through social media, group emails, and web portals on a daily, monthly, and quarterly basis. DPNet also prepared a detailed log of every event during the monsoon, ensuring that information was streamlined and easily accessible.

2.2 Fishbone Analysis of Root Causes

The lack of a coordinated and effective disaster information management system in Nepal leads to delays in response efforts and duplication of relief activities, significantly impacting affected communities. A key issue is the weak Disaster Risk Governance system, characterized by fragmented information management systems and a lack of dedicated human resources and agencies to manage disaster risk management information. Immediate and post-disaster efforts are often prioritized over critical data management functions, such as logs and reporting. This is further exacerbated by limited budget allocations, stemming from a lack of clarity and awareness among stakeholders about the importance of prioritizing information management in disaster scenarios.

Another significant challenge is the differing priorities of stakeholders, some of whom focus on development projects rather than disaster risk management efforts. This has led to limited human and financial resources being dedicated to information management, as well as a lack of necessary technology and systems for efficient data collection and analysis. Furthermore, there are often conflicts of interest between agencies working on DRR, contributing to a lack of coordination. The absence of a baseline database system and the limited functionality of the NEOC, which has undergone structural changes, further hinder disaster management efforts.

Geographical challenges, such as difficult terrain, complicate data collection, which is often dependent on volunteers and security agencies, leading to inconsistent and delayed responses. Despite the availability of disaster assessment tools, these tools require revision and localization to be more effective. There is also a need for more technical human resources and trained manpower to conduct disaster assessments. Stronger coordination mechanisms between government bodies and humanitarian agencies, supported by legal provisions and policy frameworks, are necessary to streamline disaster management efforts and improve data collection, assessment, and response.

In summary, the root causes of ineffective disaster response in Nepal stem from weak governance, inadequate coordination, fragmented information management systems, and insufficient technological and human resource capacity. Addressing these challenges will require prioritizing disaster information management, revising disaster assessment tools, and establishing stronger legal and policy frameworks for coordination among stakeholders.

2.3 Stakeholder Engagement and Collaboration

Key stakeholders in the initiative include NRCS EOC, DPNet, MoHA, and NDRRMA. These organizations played crucial roles in the planning and implementation of the change initiative. NRCS EOC focused on improving its assessment data collection processes, while DPNet provided a platform for coordination among NGOs, INGOs, and UN agencies. MoHA and NDRRMA were engaged to streamline government-level coordination. Collaboration was a challenge, as many organizations were initially resistant to adopting a centralized system. However, through regular meetings, advocacy, and training, these barriers were gradually overcome. The establishment of real-time communication channels between stakeholders helped to build trust and foster cooperation.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

Since the initiative's implementation, significant improvements have been observed in disaster response. The BIPAD portal has become the central hub for collecting and sharing disaster data. There is now less duplication of assessments, and relief efforts have become more targeted. The regular updates provided by NRCS EOC and DPNet ensure that all stakeholders are informed about the latest developments in realtime. One key lesson learned was the importance of early stakeholder engagement. By involving all relevant parties from the beginning, the initiative was able to foster better collaboration and overcome initial resistance to change.

3.2 Impact and Outcomes

The primary impact of the change initiative has been the improved speed and accuracy of disaster response efforts. The centralized information system ensures that responders have access to real-time data, allowing for more informed decision-making. Training efforts have also increased the capacity of volunteers and professionals involved in DRR, further improving the overall response mechanism.

Unexpected outcomes included the increased interest from local governments in adopting similar systems, indicating potential scalability.

4. Conclusions

Future Actions and Sustainability

To ensure the long-term success of this initiative, it is crucial to continue building capacity among stakeholders and expanding the use of the BIPAD portal. Future actions include rolling out additional training programs and advocating for increased funding for disaster management systems. The initiative can be scaled to other regions and countries facing similar challenges, ensuring sustainability and broader impact.

Localization Disaster Risk Reduction and Management (DRRM) through Community Empowerment

Ashok Bikram Jairu, Nepal National Social Welfare Association
ITP cycle 3, Nepal

Abstract

Rationale: *The national policy for disaster risk reduction was endorsed by the federal government on October 22, 2017 (DRRM Act, 274 BS). However, this act was not fully disseminated to local governments (municipalities) or accompanied by any orientation. As a result, newly elected local leaders were unaware of how to localize the national policy. Local experts or resource persons for policy localization were rare in the municipalities of this province. Consequently, local governments tended to form DRRM policies by copying the national-level reference guidelines. There appeared to be little participation from vulnerable communities in risk zones during policy development, leading to a lack of ownership and inadequate implementation of these policies.*

Solving Strategy: *Capacity building in the DRRM sector, particularly regarding policy localization, is essential. This includes increasing the participation of local leaders, engaging community members, involving youth, and collaborating with the private sector and policymakers. While DRRM practitioners exist at all levels in Nepal, there is currently no effective mechanism for sharing their knowledge and skills for localizing practices. Therefore, the MSB International Training Program (ITP) for DRRM serves as a crucial platform, providing practitioners with the opportunity to enhance their knowledge, skills, tools, and technology, as well as build their capacity. We believe that participants trained through the ITP-DRRM will be able to transfer their acquired knowledge and skills to their respective Change Initiatives (CIs) in targeted areas.*

1. Background/Introduction:

The Swedish Civil Contingencies Agency (MSB) has been providing an international training program on disaster risk management (DRM) aimed at individuals working in disaster risk reduction (DRR) in affected and potential countries. The participant selection process is transparent and encourages applications that include innovative change initiative ideas. During the ITP DRM Cycle 3, participants came from three countries: Nepal, Bangladesh, and the Philippines. I was one of the participants from Nepal. The International Training Program was designed to last about a year, featuring both virtual and in-person training sessions in Sweden, focusing on various techniques and strategies related to the change initiatives developed by the trainees.

1.1 Change Initiative (CI) Implementation Area:

Kanchanpur District, which encompasses nine municipalities in Sudur Paschim Province, is the area for implementing the Change Initiative (CI). While the CI covers all municipalities in the district, it primarily focuses on two municipalities: Bheemdatt and Dodhara Chandani. The initiative specifically targets local communities in disaster-prone areas, particularly those

around the Mahakali River Basin. Local women, youth, elected leaders, members of the District Disaster Management Committee, and municipality DRR focal persons are all directly involved in the implementation of the Change Initiative.

1.2 Problem Statement:

"Inadequate functioning of DRRM policies in Local Level Government causes increasing risk of vulnerable communities for resilient. Which enforce for awareness raising among the frontline Local Leader on DRRM"

In the context of Sudur Paschim Province, particularly in the municipalities of Kanchanpur District, policies are often not properly formulated to reflect local contexts and practices. This issue was observed prior to 2020, when local government leaders were newly elected under the Nepal Constitution.

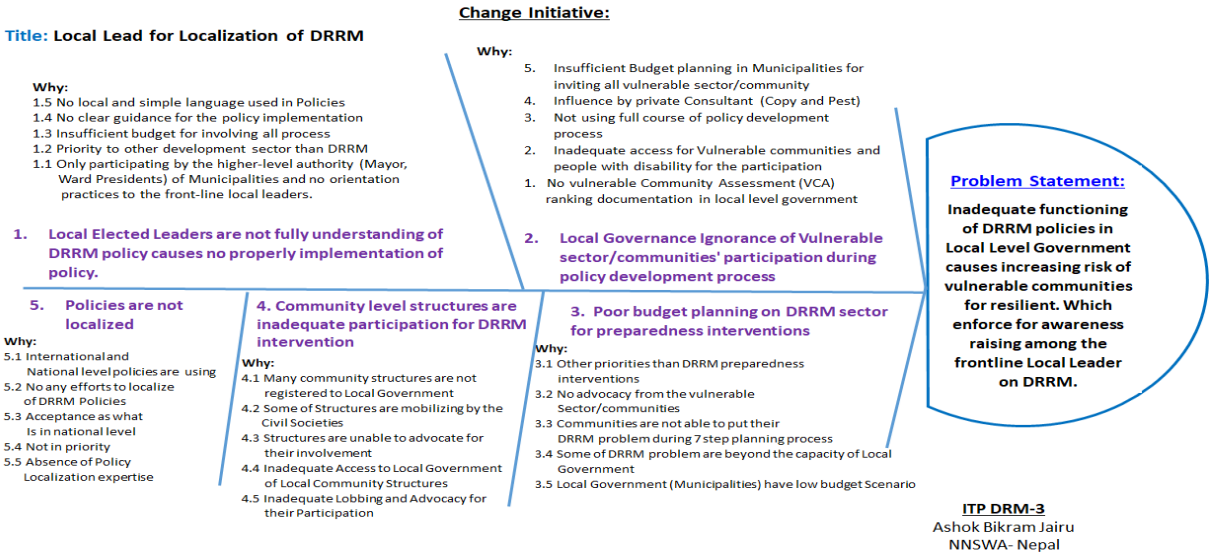
1.3 Objectives of the Change Initiative:

- Increasing Local participation for community resilience to reduce the risk of Disaster.
- Encourage the Local Government Elected Leaders for their joint efforts to mitigate the disaster risk and impact.
- Engaging Local Community and Youths for disaster risk reduction and Management.
- Enhancing the DRR project management skill within the organization (NNSWA)

2. Implementation Process:

As the initiator of the Change Initiative (CI), discussions were held with the board of the organization and the DRR-related staff at NNSWA. The CI was also shared with the funding agency, DCA Nepal. In each meeting with local government representatives, the importance of localization for DRRM was emphasized. The supporting staff from NNSWA, responsible for the DRR project, fully shared all tools and techniques during their implementation activities in the municipalities. The organization has made an agreement for the DRRM project implementation, which includes a gap analysis and capacity-building training focused on DRRM. We conducted gap analyses in three municipalities, specifically targeting their DRRM needs. Based on the findings of the gap analysis, we began reviewing and updating existing policies and formulating new policies as necessary. Examples of policy development and updates include Community Disaster Management Committees (CDMC), Climate Vulnerability Assessments (CVA), Anticipatory Action, Early Warning Systems, and Household Risk Profiling. Additionally, a mayoral networking initiative, known as the Mayor Forum, was established to enhance local government responses to DRRM in Kanchanpur District. Similarly, DRRM basic training was provided to more than 500 youth in the Mahakali River Basin, uniting them into the Youth Resilient Networking (YRN) in Kanchanpur District.

2.1 Fishbone Analysis of Root Cause



2.2 Major 5 Causes of Problems:

1. Local Elected Leaders are not fully understanding of DRRM policy causes no proper implementation of policy
2. Local Governance Ignore of Vulnerable sector/communities for them during the policy development process
3. Poor budget planning on DRR sector for preparedness or readiness interventions
4. Community level structures are rarely participation of DRM intervention
5. Policies are not localized

2.3 Stakeholder Engagement and Collaboration:

Local governments, especially municipalities, along with DRR focal persons in municipalities, the District Disaster Management Committee (DDMC), Community Disaster Management Committees (CDMCs), women's and youth groups, civil society organizations (CSOs), local forces, DCA, NAXA, IHRR, and NNSWA are the major stakeholders engaging in these change initiatives.

Key stakeholders involved in the initiative include:

- **Local Governments and Municipalities**: They play a crucial role in policy implementation, resource allocation, and coordinating disaster risk reduction efforts.
- **DRR Focal Persons**: These individuals are responsible for overseeing disaster risk management activities within municipalities, ensuring effective communication and coordination among stakeholders.
- **District Disaster Management Committee (DDMC)**: This committee is tasked with planning and coordinating disaster management strategies at the district level, integrating efforts from various sectors.

- **Community Disaster Management Committees (CDMCs)**: CDMCs engage local communities in disaster preparedness and response, helping to build resilience at the grassroots level.
- **Women's and Youth Groups**: These groups bring diverse perspectives and skills to the table, promoting inclusivity in disaster risk management initiatives.
- **Civil Society Organizations (CSOs)**: CSOs provide support through advocacy, capacity building, and community engagement, helping to mobilize resources and expertise.
- **Local Forces**: They contribute to disaster response efforts, ensuring safety and security during emergencies.
- **DCA, NAXA, IHRR, and NNSWA**: These organizations offer technical support, training, and resources to enhance disaster risk management capabilities.

2.4 Challenges and Successes:

Building partnerships and collaboration among these stakeholders can face challenges, such as differing priorities, limited resources, and communication barriers. However, successes have been noted in fostering strong relationships, leading to more coordinated and effective disaster risk reduction efforts. By leveraging the strengths of each stakeholder, initiatives have been able to create a more resilient community.

3. Results: (Current Situation and Impact):

3.1 Develop/Reviewing/Updates of Policies and Guidelines:

NNSWA has served as the District Lead Support Agency (DLSA) in Kanchanpur District, Sudur Paschim Province, Nepal, since 2012. NNSWA supports local governments, including the District Disaster Management Committee (DDMC) of Kanchanpur, in developing Disaster Preparedness and Response Plans (DPRPs), policy guidelines, and directives for local execution during disasters. Examples of frameworks developed within the local government include DPRPs, Local Disaster Management Committees (LDMCs) Guideline, Fire Assistance Guidelines, Cash Assistance Guidelines, Community Disaster Management Committee (CDMC) directives, and Local Youth Mobilization Standard Operating Procedures (SOPs).

3.2 Uniting Local Government through Mayor's Forum:

Nine municipalities exist as local governments in Kanchanpur District, Sudur Paschim Province, Nepal. To foster collaboration among these local governments in disaster risk reduction, the concept of a Mayor's Forum was created. This initiative facilitated discussions among local government chiefs (mayors) to establish a joint forum where they could collectively explore opportunities for reducing disaster risk. NNSWA played a vital role in

organizing the Mayor's Forum, which was established as the Kanchanpur Simelane (Kanchanpur Conference).

The first Mayor's Forum was held on December 9, 2021, organized by Bheemdatt Municipality, with all management responsibilities handled by NNSWA under the Sudridh Project in partnership with DCA. The Mayor's Forum now operates on a rotational basis, with each district municipality conducting this event as part of the Kanchanpur Simelane.

3rd Mayor's Forum Dist. Kanchanpur

Speech by NDRMA Chief Mr. Anil Pokhrel

The second conference was organized by Punarbas Municipality on December 14, 2022, followed by the third conference organized by Dodhara Chandani Municipality on December 14, 2023. The fourth conference is scheduled to be organized by Laljhadi Municipality on December 14, 2024.

The forum discusses how to utilize local resources, technologies, policy implementation, and community participation for anticipatory action and disaster risk reduction. During these conferences, both international and national practices are presenting and examined, with efforts made to localize these practices alongside indigenous knowledge. As a result of this initiative, many policies and guidelines have been developed or updated, and local governments are now more focused on disaster considerations during their program planning and budgeting, as they committed during the Mayor's Forum.

3.3 Engaging Local Youths on DRRM:

Through a range of approaches, NNSWA helps empower local governments, youth, women, and communities to become more resilient to disasters, thereby reducing the loss of lives and livelihoods during such events. Using participatory, community-led methods, NNSWA supports vulnerable communities in anticipating and preparing for disasters.

NNSWA engages in discussions with river basin municipalities to develop youth volunteers focused on disaster risk reduction (DRR) and mobilization. It facilitates the creation of a roster of youth volunteers to assist municipalities in disseminating early warnings, implementing

anticipatory actions, and responding during disasters. Additionally, NNSWA supports municipalities in formulating guidelines for engaging and mobilizing youth volunteers.

As a result of these initiatives, more than 500 youth volunteers have united to form the Youth Resilient Network (YRN), which has been instrumental in supporting communities to save lives and mitigate damage. Currently, these youth volunteers are campaigning for a green city in Bheemdatt Municipality by planting trees on barren land in coordination with NNSWA, the local government, and the Forest Division of Kanchanpur District in Sudur Paschim Province, Nepal.

The Youth Resilient Network (YRN) has received training in basic DRR and networking mobilization. These youth are also registered with the National Disaster Risk Reduction Management Authority (NDRRMA) of the Government of Nepal.

Many of the youth are engaged in self-employment activities, such as vegetable gardening, compressed cement brick enterprises, floriculture, and vermicomposting, working both in groups and individually under the Green Enterprises initiative.

4. Conclusions:

Local leadership and system strengthening have enhanced the responsibility and accountability of local government in Sudur Paschim, particularly in Kanchanpur District. The effective early warning systems (EWs) and weather forecast-based anticipatory actions taken by civil society organizations (CSOs), youth networks, and local government leadership in Kanchanpur have bolstered community resilience. System strengthening is currently in progress.

In the local government, well-organized youth volunteers, Community Disaster Management Committees (CDMCs), rescue teams, and safe shelters have been established. Families in high-risk areas have been identified and evacuated, with priority given to elderly individuals, pregnant women, lactating mothers, and children during relocation to safer locations based on weather forecasts.

Disaster risk reduction (DRR) is achievable when we build capacity and strengthen local governance, including municipalities and other local structures, alongside CSOs, which leads to resilient communities. International and national authorities should invest in capacity building for local government, local youth, and CSOs, providing technologies and resources to effectively mitigate losses and damages at the community level under disaster risk management and reduction (DRRM). Therefore, we can conclude that local leadership and the localization of DRRM are essential, as demonstrated in the current situation in Kanchanpur District.

Localization of the Standard Practices for the Better Disaster Risk Understanding and Anticipatory Actions for the Science-Based Decision Making

Er. Suraj Gautam, Institute of Himalayan Risk Reduction
ITP cycle 3, Nepal

Abstract:

In Nepal, citizens increasingly face vulnerability to frequent hazards, resulting in significant loss of lives and infrastructure. Local governments have traditionally adopted ad hoc and reactive approaches to disaster risk management, exacerbating the challenges posed by rising exposure and existing vulnerabilities. There has been a dire need for a proactive approach towards the disaster risk management. IHRR has been collaborating with the stakeholders and local governments of Bheemdatta and Dodhara Chandani Municipalities to adopt the integrated approaches. Considering the different scenarios and return period, a flood-hazard model has been developed through the technical expertise of IHRR. Under the leadership of municipalities, household-level surveys have also been conducted to develop household risk profile of individual households. Further, in collaboration with the Department of Hydrology and Meteorology (DHM), Impact based weather forecasting (IBF) has been piloted with a view to enhancing forecast and preparedness. This also involved capacity-building for DRR focal persons and LEOCs. The municipality has developed a risk communication tree and framework for the timely dissemination of forecast and observation information to the stakeholders through weather and IBF bulletins, which offers avenues for informed decisions. Additionally, the implementation of Digital and Spatial Technologies for Anticipatory Action (DASTAA) platform within the municipality supported the integration of risk assessment, monitoring, warning, and communication. This multifaceted approach aims to provide municipalities, such as Bheemdatta and Dodhara Chandani, with the prior information necessary for effective anticipatory actions against flooding. By fostering a proactive, data-driven culture in disaster management, this initiative seeks to enhance community resilience and reduce the impacts of climate-related hazards in Nepal.

1. Introduction

Flooding is a widespread issue across Nepal, frequently resulting in catastrophic consequences and displacing numerous households each year during the four months of the monsoon season (June, July, August, and September). However, due to climate change rainstorms have measured beyond the monsoonal window. Among the most flood-prone regions, the low-lying Terai area is particularly vulnerable, experiencing severe flooding almost annually. Various factors, including changes in land use and land cover, unplanned urbanization, encroachment on floodplains, squatter settlements, and the effects of climate change, have exacerbated the flooding impacts in these low-lying areas of Nepal.

After enactment of the Disaster Risk Reduction and Management (DRR/M) Act 2017, there has been a significant paradigm shift in the approaches of disaster risk reduction, i.e., from

relief-centric approaches to preparedness and priorities to all the cycles of disaster. However, the changes are yet to be visible in the implementation level. With the provisions of Local Government Operation Act, 2017, and also the coordination among three tiers of the Government in Nepal, there are very promising opportunities to the local governments in aiming for disaster resilience and preparing a risk-informed municipality. However, with the large number (753) of local governments, it is difficult to manage the sufficient human and non-human resources for the identification of the DRR interventions to bring about changes in the understanding of the risk, attitude, behavior and policies for mainstreaming. and sustainability in each municipality. Further, the local government has been adopting the ad hoc and reactive approaches towards the disaster risk management. The increased exposure towards the hazards and the existing vulnerability has been resulting in the loss of lives and properties.

In order to achieve the targets, set by the strategic Action Plan of the local government from 2020-2030 in Nepal (Short Term: 2020-22, Mid Term 2020-2025, Long Term 2020-2030), there is a dire need of the understanding of the DRR, its components and the measures to achieve the targets set. There is also a strong requirement of developing the capacities of the municipality in understanding the risk through the spatio-temporal study of the hazards within the municipality. The science-based decision making, and the application of the technologies will ease in the understanding of risk and implementation of the necessary intervention at the local level. Similarly, the elected representatives and policy makers must work effectively and efficiently for the implementation of the prepared plan of actions in order to achieve sustainable disaster risk management at different levels of governance. Thus, it is very much essential to capacitate and strengthen the existing capacities of the local government considering the resource constraints. There is a dire need to integrate the data and information from the multiple sources alongside the application of science and technology to assess the hazards, exposure and vulnerability. With the prior information regarding the hazards through the forecasts and risk computations, anticipatory actions can be designed and developed in the local municipalities.

1.2 Objectives of the Change initiatives:

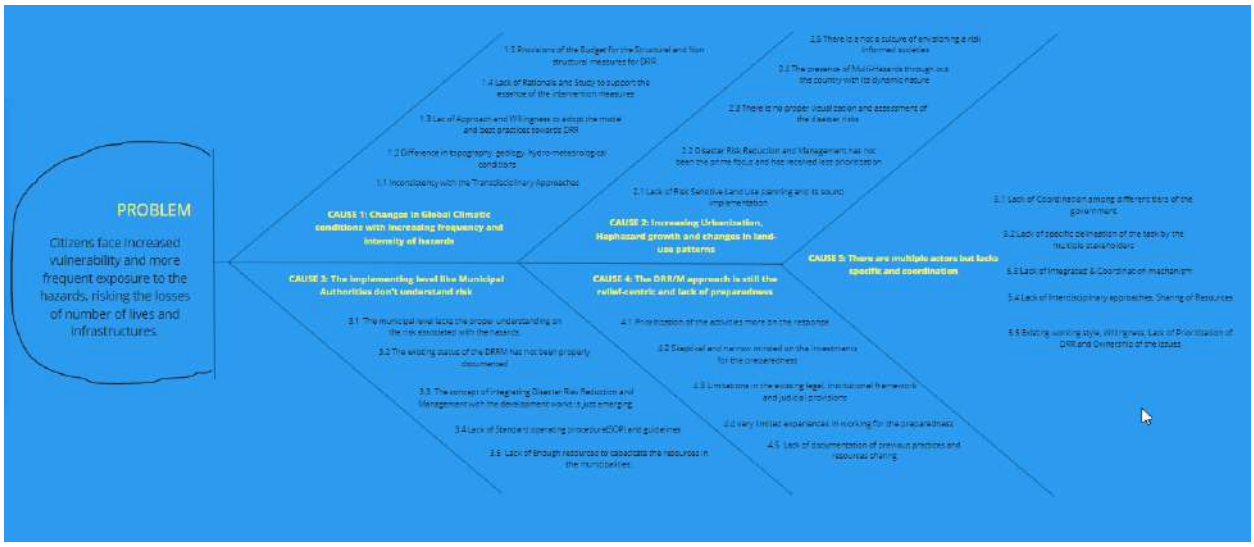
Citizens face increased vulnerability and more frequent exposure to the hazards, thereby risking the losses of number of lives and infrastructures. Hence, to explore the solutions to these problems, the Change initiatives focused on the following components:

- To identify the specific challenges and risks faced by the local government in adopting proactive approaches towards the Disaster Risk Reduction in Nepal
- To facilitate integrated and participatory approaches for Anticipatory Action
- To improve and strengthen the local capacity
- To support the preparation of local policies, guidelines, and documents for the institutionalization

2. Data and Methods

2.1 Fishbone Analysis: The Fishbone Analysis offered a systematic breakdown of the interrelated challenges encountered by disaster risk management (DRM) organizations in

Nepal. The identified problem statement to this Change initiative was “Citizens face increased vulnerability and more frequent exposure to the hazards, thereby risking the losses of number of lives and infrastructures.”



Using the fishbone analysis, following key items were identified.

Causes

1. **Cause 1: Changes in Global Climatic Conditions with Increasing Frequency and Intensity of Hazards**
   1.1. Inconsistency with the Transdisciplinary Approaches
   1.2. Difference in topography, geology, hydro-meteorological conditions
   1.3. Lack of Approach and Willingness to adopt the model and best practices towards DRR
   1.4. Lack of Rationale and Study to support the essence of the intervention measures
   1.5. Provisions of the Budget for the Structural and Non-structural measures for DRR
2. **Cause 2: Increasing Urbanization, Haphazard growth and changes in land-use patterns**
   2.1. Lack of Risk Sensitive Land Use planning and its sound implementation
   2.2. Disaster Risk Reduction and Management has not been the prime focus and has received less prioritization
   2.3. There is no proper visualization and assessment of the disaster risks
   2.4. The presence of multi-Hazard throughout the country with its dynamic nature
   2.5. There is a not a culture of envisioning a risk informed society
3. **Cause 3: The implementing level like Municipal Authorities have limited understanding of risk.**
   3.1. The municipal level lacks the proper understanding on the risk associated with the hazards.
   3.2. The existing status of the DRRM has not been properly documented
   3.3. The concept of integrating Disaster Risk Reduction and Management with the development works is just emerging
   3.4. Lack of Standard operating procedure (SOP) and guidelines

3.5. Lack of Enough resources to capacitate the resources in the municipalities.

4. **Cause 4: The DRR/M approach is still the relief-centric and lack of preparedness**
   4.1. Prioritization of the activities more on the response
   4.2. Skeptical and narrow minded on the investments for the preparedness
   4.3. Limitations in the existing legal, institutional framework and judicial provisions
   4.4. very limited experiences in working for the preparedness
   4.5. Lack of documentation of previous practices and resources sharing
5. **Cause 5: There are multiple actors but lacks specific and coordination**
   5.1. Lack of Coordination among different tiers of the government
   5.2. Lack of specific delineation of the task by the multiple stakeholders
   5.3. Lack of Integrated & Coordination mechanism
   5.4. Lack of Interdisciplinary approaches, Sharing of Resources
   5.5. Existing working style, Willingness, Lack of Prioritization of DRR and Ownership of the issues

2.2 Implementation process

Planning and Preparation phase involved the coordination and collaboration with the stakeholders in the region. The Local government were consulted and shared with the existing scenarios of disasters, data limitations and reactive approaches. Coordination phase involved the coordination with the Department of Hydrology and Meteorology (DHM) to receive the forecast and near real time observation data. Implementation phase involved a series of activities. A workshop for the local government resulted in the acceptance of the use of science and technology to assess the hazards, vulnerability and risk. As a result of the training to the field enumerators in Bhimdutta for the household survey, the local youth surveyors gained new learning on the digital data collection and also on the understanding of the risks. The collaboration of the private sectors, CSOs and local government has contributed to better aid the coordination from the preparedness stage in the DRM cycle. The initiated network (and network meetings held) between local CSO's and different stakeholders together with the local government is contributing towards the development of SOPs for the early action and risk assessment.

Consultations with the different stakeholders such as Bheemdatta Municipality, DCA Nepal, NNSWA, NAXA, IHRR, etc were made for the initiation and consensus development on the need of hazard, exposure and vulnerability assessments. The importance of data and understanding of risk was highlighted citing the examples of available forecasts and pre hand information for the early action. The community/ward level assessment often undermined the disproportionate impacts faced by each household as the capacity differed from each unit. With the help of Household Survey using Digital and Spatial Technology for Anticipatory Action (DASTAA), the household level risk assessment was visualized. It was also capable of visualizing the hazards, vulnerabilities, thematic maps and overall risk. The platform is also able to integrate the forecast data from the multiple sources such as Department of Hydrology and Meteorology (DHM), open weather. With the available hazard, vulnerability and exposure layers, the risk was also visualized alongside the integration of 3-days lead time forecast

information. This will thus allow the people in the flood prone region to adopt the early action and be well prepared to the flood disasters. With this initiative, the stakeholders and targeted community will be able to anticipate the risk in advance and have necessary arrangements for the early actions. Similarly, the local stakeholders active in emergency response can also use this system as a baseline to identify the households. The overall Initiative was classified under the five components summarized as:

- Component 1: Understanding Risk
- Component 2: Establishing Threshold and Benchmarks
- Component 3: Monitoring of Forecast
- Component 4: Communicating Triggers
- Component 5: Early Action

2.3 Stakeholder Engagement

Local governments, particularly municipalities, alongside disaster risk reduction (DRR) focal persons, the District Disaster Management Committee (DDMC), Community Disaster Management Committees (CDMCs), women's and youth groups, civil society organizations (CSOs), local forces, and organizations such as DCA, NAXA, IHRR, and NNSWA, are key stakeholders driving these change initiatives.

The main stakeholders involved in the initiative include:

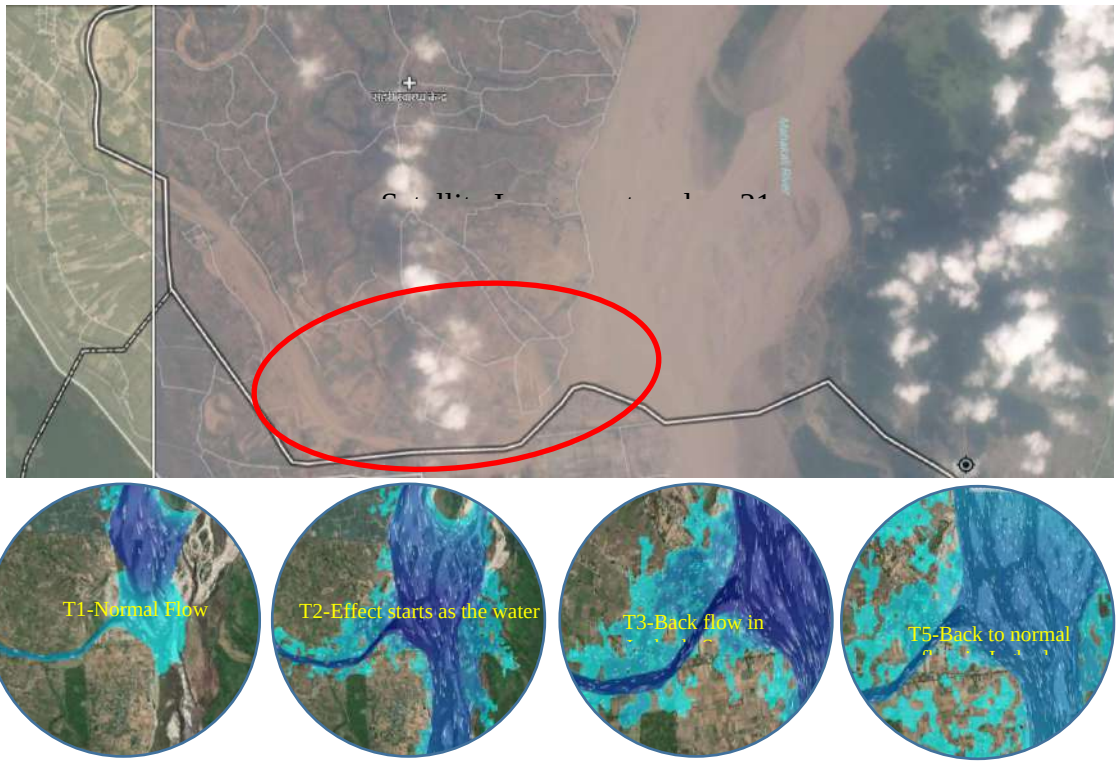
1. Local Governments and Local Emergency Operation Centre (LEOC): Crucial for policy implementation and resource allocation in disaster management.
2. DRR Focal Persons: Responsible for overseeing and coordinating disaster risk management activities within municipalities.
3. District Disaster Management Committee (DDMC): Plans and integrates disaster management strategies at the district level across multiple sectors.
4. Community Disaster Management Committees (CDMCs): Engage local communities in preparedness and response, fostering grassroots resilience.
5. Women’s and Youth Groups: Bring diverse perspectives to promote inclusivity in DRR efforts.
6. Local Civil Society Organizations (CSOs): Support advocacy, capacity building, and community engagement, mobilizing resources and expertise.
7. IHRR, DCA, NAXA, and NNSWA: Provide technical support, training, and resources to enhance DRR capabilities.

3. Implementation Progress

3.1 During the Change Initiative

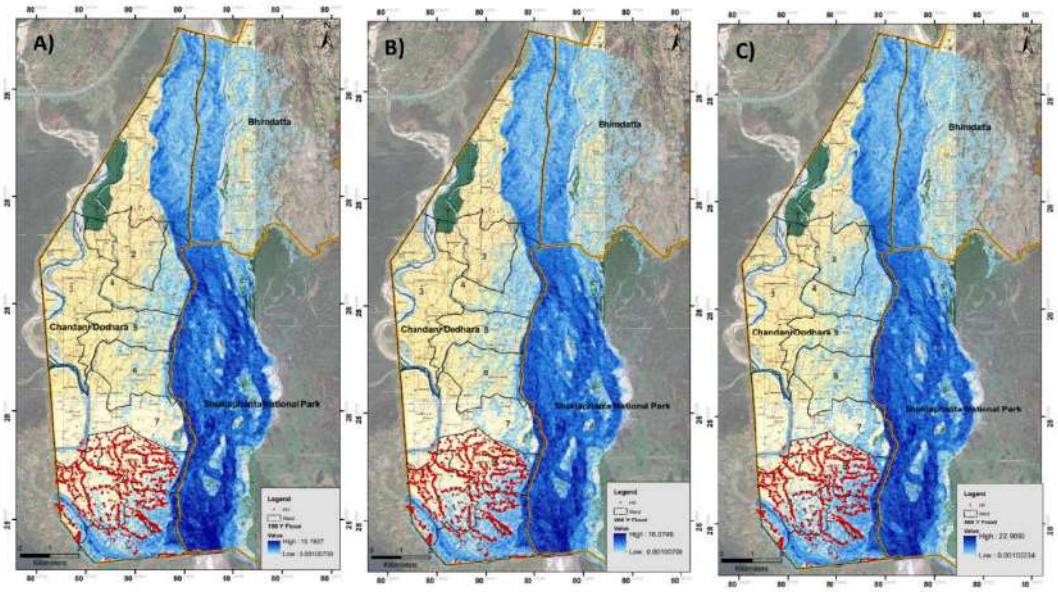
a. Developed Flood Hazard Model under different scenarios

Mahakali is a border river and hence requires transboundary cooperation and data sharing mechanisms (types of data, frequency of sharing). There are very limited data available on the discharge measurement. There are two barrages between the DHM station at Parigaon and Four-Lane Bridge at Bheemdatt Municipality



There is no real time data on the amount of discharge flowing on the river. Hence, the free water flow modelling is not able to represent the scenario. Limitedly available hydro-meteorological data and thus difficulty in planning and designing anticipatory actions. The historical inundation scenarios were used to validate the hazard model. Flood inflow in Mahakali and Jogbuda river was used to visualize the flood impact of three scenarios: 1) 100 Year, 2) 200 Year and 3) 500 Year return period flood. This was supported by the DCA Innovation Grant.

b. Review and Preparation of Local Policies and Guidelines: Under the leadership of local government, together with local stakeholders like DCA Nepal, NNSWA and NAXA, IHRR has supported in creating Disaster



Preparedness and Response Plans (DPRPs) and other policy guidelines. Further, the Standard Operating Procedures for LEOC and Anticipatory Action has also been developed.

c. **Participating in the Mayor's Forum:** As a technical organization, IHRR has been participating in a Mayor's Forum, a Forum of nine municipalities in Kanchanpur District under the coordination of NNSWA. The first conference took place on December 9, 2021, and subsequent forums have rotated among the municipalities, fostering discussions on local resource utilization, technology, policy implementation, and community participation in disaster preparedness. This initiative has led to updated policies and guidelines, ensuring that local governments incorporate disaster considerations into their planning and budgeting.
d. **Engaging Local Youths in Disaster Risk Management:** IHRR as a technical partner has been contributing to strengthen the capacity of local youths, volunteers in data collection and climate action.

3.2 Beyond the Change Initiative: IHRR has been coordinating with a number of stakeholders in the region Considering the resource limitation and constraints. Similarly, the digital innovation, Digital and Spatial Technologies for Anticipatory Action (DASTAA) has also been implemented in the local municipalities for the integrated approach. IHRR collaborated with a number of stakeholders like DCA Nepal, NAXA Pvt. Ltd. and NNSWA, to bring external resources. Together with the local government, the team has already raised a number of Grants in the region that includes DCA Innovation Grant, The GSMA Innovation Fund for Anticipatory Humanitarian Action under the leadership of NAXA Pvt. Ltd, Asian Disaster Preparedness Centre (ADPC) ICARE Innovation and so on. Looking ahead, we are now focusing on strengthening partnerships with international organizations and development partners to secure the necessary technical and financial support for upscaling this Change initiative across different parts of the globe. Some of the major achievements being achieved beyond the CI implementation period includes

a. **Coordination with the Department of Hydrology and Meteorology**: The region has been receiving a daily forecast information, critical Impact Based Weather Forecast (IBF) Bulletins under the complex forecast scenarios. Similarly, the Local government has also developed their impact-tables for anticipating potential losses,
b. **Risk Communication:** The municipalities have worked in developing the proper risk communication tree and models for seamless communication. The municipalities have also piloted the Interactive Voice Response (IVR) for disseminating the risk information to the local communities.
c. **Zero Fatality During Historical Cloud Burst 2024:** In July 2024, a significant cloudburst event affected the Dodhara Chandani municipality in Kanchanpur, Nepal, causing extensive flooding. The cloudburst resulted in heavy rainfall, measuring up to 624 millimeters in a 24-hour period, leading to the overflow of the Mahakali River and inundating multiple settlements within the municipality, including Kutiyakabhar, Shanti Tole, and Lisani Tole. Despite the severity of the situation, the region

remarkably recorded zero fatalities, which was attributed to effective early warning systems and prompt disaster response measures.

d. **Scaling up of DASTAA Platform:** The interoperability and interactive feature of the platform is making it scalable in a number of geographical areas that includes the municipalities in the Mahakali Basin of Nepal, Countries like Bangladesh and so on.

4 Conclusions and Ways Forward

As we look ahead, the initiative of science-based decision-making process is making a significant progress. The learnings from the project were embedded to develop a power Digital and Spatial Technology for Anticipatory Action (DASTAA) platform. DASTAA, is evolving as a powerful tool for the risk assessment. The platform is scaling up for the multi-hazard risk assessment and is gaining attention across the country and globe. The nearby municipality, Parshuram Municipality is also facing the risks of flooding and inundation due to Mahakali River. The household level risk assessment is being carried out and is visualized in the DASTAA platform. Recently, the tool was also shortlisted as the finalist by the United Nations World Food Programme Innovation Accelerator Program and was invited for the Pitch Event in Luxembourg.

The ITP program has shaped my journey forward, demonstrating the incredible outcomes that can arise when the researcher cum activist receives professional training. The learning through the Vision setting, Fish bone analysis and the interaction with change makers across the globe has made the journey more interesting and simpler. I believe through the networking, coordination and communication, we can make a safer world to live in. At Institute of Himalayan risk reduction (IHRR), we will continue towards promoting innovations and science-based decision making in climate change and disaster risk reduction and management. Some of the key lessons learnt and ways forward from this CI can be summarized as:

- It is very crucial to sensitize the stakeholders and capacitate them towards the Understanding of Risk and taking evidence based decision making.
- Strengthening local leadership and systems in Sudur Paschim, particularly Kanchanpur District, has significantly enhanced the accountability and effectiveness of local government.
- Engagement and coordination among the local governments in the upstream and downstream are important and enable sharing of innovative approaches and lessons learned. The establishment of effective early warning systems (EWs) and anticipatory actions, facilitated by civil society organizations (CSOs), youth networks, and local government leaders, has strengthened community resilience.

- The capacity building and strengthening of local governance structures are essential for achieving effective disaster risk reduction (DRR). Investments from international and national authorities in training and resources for local governments, youth, and CSOs are vital to mitigating losses and damages during disasters.
- The overall risk assessment process should be made simple and very representative through the use of such technologies so that we can bridge the gap.
- Through the adoption of integrated and proactive approaches, evidence-based decision making for DRR can be taken.
- Different households have their different characteristics and coping capacities. Therefore, the response of each household towards the crisis can be different. Thus, household level vulnerability and risk assessment are essential.
- Local government initiatives have successfully organized youth volunteers, Community Disaster Management Committees (CDMCs), rescue teams, and safe shelters. They have proactively identified and evacuated families in high-risk areas, prioritizing vulnerable populations such as the elderly, pregnant women, lactating mothers, and children based on weather forecasts.
- Effective communication is important to ensure the local government and concerned assemblies work together to minimize the risk of flooding through anticipatory actions.

5 Acknowledgments

I would like to express my gratitude to all the organizations and individuals who have supported and contributed to implement this Change Initiative Special thanks to:

- Institute of Himalayan Risk Reduction for taking this initiative and keeping it as their priority and strategic working theme.
- DCA Nepal for their support and partnership.
- NAXA Pvt. Ltd to collaborate and work together for securing financial support and grants.
- NNSWA for the local coordination and facilitation
- Department of Hydrology and Meteorology for providing the forecast and near real time observation data in the implementation area.
- Community Leaders and Practitioners who have embraced inclusive practices and are making a difference on the ground.

Most Vulnerable People have Access on Effective Early Warning System in the Flood Prone Areas

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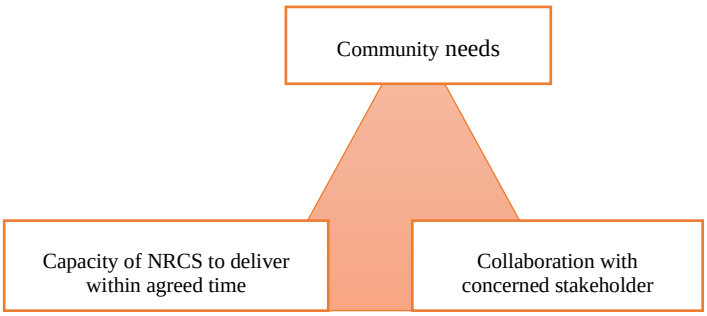
Abstract

Nepal ranks among the most disaster-prone countries globally, with frequent natural hazards disproportionately affecting vulnerable populations, including women, children, and people with disabilities. Our Change Initiative (CI) targeted flood-prone districts, Bardiya and Nawalparasi East, emphasizing inclusive disaster preparedness and early warning systems to address this disparity. The CI facilitated active engagement of local governments in Disaster Risk Management (DRM), enhanced community capacities through participatory trainings, and promoted inclusive planning. Results showed improved community resilience, with increased involvement of women and youth in disaster preparedness, development of inclusive DRM plans, and strengthened collaboration with local stakeholders. The initiative underscores the importance of inclusive approaches in disaster management.

1. Introduction



Nepal ranks as the 20th most disaster-prone country globally, with its fragile geology and steep topography exacerbating its vulnerability to natural hazards. Among 200 countries, Nepal is ranked 4th in climate change vulnerability, 11th in earthquake susceptibility, and 30th in flood hazard exposure. Disasters have a disproportionate impact on various segments of the population, with women, children, and marginalized groups facing the most severe effects due to socio-economic, cultural, and structural vulnerabilities. For instance, the 2015 earthquake revealed the stark disparity in disaster impact, with 72% of female fatalities among women and girls, and statistics indicating women and children are 14 times more likely to die in natural disasters. Despite policy frameworks and budget allocations for enhancing resilience, efforts to increase disaster preparedness and early warning systems are often insufficiently implemented. Our Change Initiative (CI) seeks to bridge this gap by focusing on disaster preparedness and an accessible early warning system, particularly in flood-prone areas in Bardiya and Nawalparasi East districts, with an emphasis on reaching vulnerable groups, including women, children, and people with disabilities.

1.1 Study/Implementation Area

The initiative was implemented in Bardiya and Nawalparasi East, two districts in Nepal known for their high flood risk. The CI focused on enhancing disaster resilience and preparedness, especially targeting most vulnerable populations especially women, children and people with disability.

1.2 Problem Statement

Nepal's frequent and multi-hazard disasters cause unprecedented impacts, particularly among vulnerable groups such as women, children, and people with disabilities. Social inequities, lack of preparedness, and limited access to information result in disproportionate losses in these communities. For instance, although policies exist to enhance resilience and inclusive disaster management, their application remains insufficient, hampered by limited government participation in local disaster risk management (DRM) and inadequate capacity building. Additionally, a lack of funding further restricts the continuity of initiatives, such as in Nawalparasi East.

1.3 Objectives of the Change Initiative

The primary objectives of our CI are to increase access to effective disaster preparedness and early warning systems for vulnerable populations, especially women, children, and people with disabilities. Additionally, we aim to strengthen the participatory engagement of local governments in DRM, enhance community capacity through trainings, and foster inclusive participation in DRM planning and implementation to build resilience across high-risk areas in Nepal.

2. Methods

2.1 Implementation Process

Our CI aimed to promote greater participatory engagement by local governments, facilitate community involvement in DRM planning, and enhance local capacity. This approach ensures that community members, including women and youth, play an active role in resilience-building efforts, supporting the overall objectives of inclusive disaster preparedness and response. The bottom to top approach was followed in its implementation. Regular monitoring and evaluations were also carried out for smooth implementation of projects. Exit plan was developed for the sustainability.

2.2 Fishbone Analysis of Root Causes

Few people from the vulnerable communities in particular with women, children and people with disabilities are prepared for early warning in flood

Root Causes

- Limited access to early warning information (Low access to participate in public events, limited access and knowledge in use of technologies, multitasking role of women, unavailability of language friendly information)
- Early stage of early warning system (Excluded in decision making role, involvement in household chores, insufficient interventions, people give less priority)
- Cultural barriers and traditional thoughts (Existing patriarchal society, low literacy rate, poverty, fatalistic society, social norms and values)
- Ineffective early warning mechanism (Policy, strategies and guidelines, lack of proper coordination with local stakeholders, single hazard focus,

CI has benefitted women and children in our working districts. Furthermore, the teachers as well as men are also benefitted. The CI empowered community members, especially women, to actively participate in disaster preparedness and early warning systems. Women took on leadership roles, joining and leading community disaster management committees (CDMCs), engaging in DRM discussions with local government, and organizing early warning sessions within their communities. They also maintained "Go Bags" and allocated funds for disaster management at home. Children, encouraged by teachers, held weekly events focused on DRM and early warning, developed school safety plans, and presented street dramas to raise awareness. Local Red Cross volunteers, trained through the CI, became advocates for disaster preparedness, ensuring the initiative's future sustainability.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

We have worked with women, children and people with disability and the key results we achieved are as follows:

- Participatory engagement of local government in DRR: Local government leaders and representatives work in collaboration with us and always take technical support in DRR actions.

- Localization of DRR actions: DRM plan development in Local government supported in localization of DRR actions. Community people are trained, and their rosters are documented in local government. The response kits were provided and stored in the community for prompt response.
- Inclusive DRM plans in schools and community: While developing DRM plans in the community and schools, everyone equally participated in this process. Their meaningful participation ensured inclusive DRM plan preparation.

- Community Capacity Building on disaster preparedness: Community trainings and early warning sessions were conducted. They were provided with trainings. Practical methods were used for their capacity building on disaster preparedness.
- Community engagement: Community consultation was highly prioritized and community people were encouraged to participate in two way communication. The community feedback mechanism were installed. The miking related to early warning was done using local languages.

- Community's trust and believe: Community acceptance is key tool for success of CI. Community's trust were build up through transparency mechanism.

3.2 Impact and Outcomes

Nepal Red Cross Society implemented two projects in Bardiya and Nawalparasi in support of Danish Red Cross and Japanese Red Cross. Following activities were conducted in two different districts to achieve results according to our CI:

- Enhanced Vulnerability and Capacity Assessment (EVCA) conducted to identify the most vulnerable groups, capacity and need of those groups.
- Community Disaster Management Committee (CDMC) formed and linked them with local government's DRM strategies. Registered in government ward offices.
- Local Champions were selected for provided sessions on disaster preparedness and early warning in the community. Awareness increased in community people after sessions organized in the community.
- Early warning dissemination in local languages through radio messages and miking increased accessibility in the most vulnerable groups.
- Door to door visits were done and shared the knowledge and awareness on disaster preparedness. This action supported people with disabilities as well to get information.

- Regular coordination and meetings with local government and relevant stakeholders. DRM plan developed in technical support of red cross.
- Provided technical inputs in the documents (plans, policies, strategies) related with early warning/disaster risk reduction and management
- Junior/Youth Red Cross formation at schools. School safety plan development at schools. Child led school events organized at weekly basis on Friday for e.g. speech competition, drawing competitions, street dramas, folk songs competition etc. related to DRM
- Trainings, orientations and awareness sessions to community people on disaster preparedness and early warning system resulted in increasing in awareness in the community people. The session were mostly focused to women groups.
- Regular monitoring and evaluation conducted.
- Success storybook was published which includes the efforts of community, Red Cross, school and local government in disaster management.

Planning Risk-informed Emergency Preparedness and Response for Effective Disaster Management

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Abstract

The "PREPARED - Planning Risk-informed Emergency Preparedness and Response for Effective Disaster Management" initiative is a collaborative effort led by Sushil Kumar Bhandari and Narayan Khatri from Nepal's Ministry of Home Affairs, designed to address critical gaps in emergency response mechanisms for vulnerable populations. This change initiative seeks to bridge the gap between disaster risk reduction and the needs of vulnerable groups—women, children, and persons with disabilities—who often receive inadequate attention during disaster responses. Through the development of a GIS-based vulnerability database and a targeted stockpiling strategy, the initiative aims to enhance disaster preparedness and ensure that relief materials reach those most in need swiftly and effectively. By linking vulnerability data with emergency stockpile management, this initiative aspires to foster a sustainable, efficient, and inclusive emergency response framework that prioritizes the safety and well-being of at-risk populations.

1. Introduction

Disasters disproportionately affect vulnerable populations, often exacerbating the challenges they face in daily life. In Nepal, like in many other countries, the populations most at risk during disasters—women, children, the elderly, and persons with disabilities—frequently experience delays in receiving necessary relief and support. These delays not only put these groups at greater risk of harm but also undermine the effectiveness of disaster response efforts as a whole. Ensuring that disaster preparedness and response mechanisms adequately address the specific needs of vulnerable populations is a fundamental aspect of effective DRR.

The "PREPARED" initiative was developed to address this pressing issue. By focusing on vulnerability-informed preparedness and response, this change initiative aims to link emergency response efforts with the needs of at-risk populations in a way that is proactive, efficient, and inclusive. Through the use of Geographic Information Systems (GIS), the initiative is building a vulnerability database to identify and document high-risk groups, enabling targeted stockpiling and efficient distribution of resources in times of crisis. In collaboration with local governments, humanitarian organizations, and the private sector, the PREPARED initiative seeks to establish a foundation for a more resilient and inclusive emergency response system in Nepal.

The primary goal of the PREPARED initiative is to ensure that vulnerable groups receive the support they need promptly, thereby reducing the potential for preventable harm and hardship. This document details the objectives, methodology, key stakeholders, achievements, and

sustainability strategy of the PREPARED initiative, highlighting its significance as a model for integrating vulnerability data into disaster preparedness and response.

1.2. Objectives

- To develop a GIS-based vulnerability database system that enables effective identification and mapping of high-risk populations in Nepal.
- To identify vulnerable populations, including pregnant women, lactating mothers, single women, infants, children, and senior citizens, and document their specific needs for informed emergency planning.
- To strengthen the linkage between emergency stockpile resources and vulnerability information, ensuring that stockpiles are strategically positioned to serve high-risk populations efficiently.
- To enhance collaboration among local governments, humanitarian actors, and private sector partners to support need-based emergency preparedness and response efforts.
- To foster an inclusive, evidence-based approach to disaster response that prioritizes vulnerable populations, thereby reducing the consequences of delayed responses and mitigating the adverse impacts of disasters.

2. Methodology

The methodology for the PREPARED initiative is built on a systematic, data-driven approach to emergency preparedness and response. This multi-step process encompasses vulnerability assessment, stakeholder engagement, GIS-based information management, and inventory management of emergency stockpiles.

2.1 Vulnerability Assessment

The foundation of the PREPARED initiative is a comprehensive vulnerability assessment. This assessment involves identifying the most at-risk populations and areas within Nepal, focusing on demographic factors such as age, gender, disability, and socio-economic status. By working with local government representatives and community leaders, the assessment gathers critical information on specific needs and vulnerabilities, enabling a more targeted and effective response strategy.

The vulnerability assessment process is designed to be inclusive, with special attention given to marginalized groups that may otherwise be overlooked. Key vulnerability indicators are established in consultation with local stakeholders, ensuring that the assessment accurately reflects the needs of the community.

2.2 GIS-based Information Management System

To manage and analyze the data collected during the vulnerability assessment, a GIS-based information management system is being developed. This system allows for the mapping and tracking of vulnerable populations across Nepal, enabling real-time access to critical information for emergency response planners and decision-makers. GIS technology is

instrumental in visualizing the geographical distribution of vulnerabilities, which aids in identifying areas that require priority attention in the event of a disaster.

The GIS platform also serves as a centralized repository for data on emergency stockpiles, enabling responders to quickly locate and allocate resources as needed. This system not only enhances the efficiency of emergency response efforts but also ensures that resources are directed to the populations and areas most in need.

2.3 Stakeholder Engagement

Engagement with key stakeholders is a critical component of the PREPARED initiative's methodology. The initiative involves collaboration with various stakeholders, including local governments, humanitarian organizations, and the private sector, to ensure a coordinated and comprehensive approach to disaster preparedness.

Local governments play a crucial role in implementing the initiative at the grassroots level, as they possess valuable insights into the needs of their communities. Humanitarian organizations, both national and international, provide support in the form of resources, expertise, and logistical assistance. Additionally, private sector partners contribute to the supply chain management of emergency stockpiles and offer technical support for the GIS platform.

Regular consultation sessions with stakeholders help maintain open lines of communication, ensuring that all parties are aligned in their efforts and that the initiative remains responsive to evolving community needs.

2.4 Inventory Management of Emergency Stockpiles

The PREPARED initiative includes the development of a structured inventory management system for emergency stockpiles. This system is designed to ensure that essential resources are strategically positioned in locations that are accessible to high-risk populations. By reducing the need for long-distance transportation of resources, the initiative minimizes response times and enhances the overall efficiency of disaster relief efforts.

The inventory management system is continuously updated based on vulnerability data, allowing for dynamic allocation of resources that reflects the changing needs of the community. This approach not only improves the speed and accuracy of emergency responses but also reduces the logistical challenges associated with resource distribution.

3. Major Stakeholders

The success of the PREPARED initiative is contingent upon the active involvement of various stakeholders. Each stakeholder group plays a distinct role in supporting the initiative's objectives, contributing their unique expertise and resources to ensure a comprehensive approach to disaster preparedness and response.

- **Ministry of Home Affairs**: As the lead agency, the Ministry of Home Affairs, through its Disaster and Conflict Management Division, is responsible for coordinating the

overall implementation of the PREPARED initiative. The ministry provides policy guidance, oversees risk identification and assessment efforts, and facilitates capacity development among local stakeholders.

- **Local Governments (Municipal and Rural Municipalities)**: Local governments are instrumental in implementing the initiative at the community level. They collaborate with the Ministry of Home Affairs to conduct vulnerability assessments, manage emergency stockpiles, and coordinate responses in times of crisis. Their close relationship with community members ensures that the needs of vulnerable populations are accurately represented in disaster preparedness plans.
- **Humanitarian Organizations**: National and international humanitarian organizations provide critical support in terms of resources, expertise, and logistical assistance. These organizations help facilitate emergency preparedness activities, support inventory management of emergency stockpiles, and provide on-the-ground assistance during disaster events.
- **Private Sector Partners**: The private sector contributes to the initiative through supply chain management and technical support for the GIS platform. Private companies play a crucial role in ensuring that emergency resources are readily available and efficiently distributed, particularly in remote or hard-to-reach areas.

3.1. Major Achievements

The PREPARED initiative has achieved significant milestones since its inception. These achievements underscore the impact of a vulnerability-focused approach to disaster preparedness and demonstrate the potential for sustainable, inclusive change in emergency response systems.

One of the initiative's most notable achievements is the establishment of a GIS-based vulnerability database. This database serves as a centralized resource for mapping and tracking high-risk populations, enabling more effective planning and resource allocation. The database is accessible to both government officials and humanitarian actors, fostering a coordinated approach to disaster preparedness.

The initiative has also developed a streamlined process for managing emergency stockpiles. By positioning resources in proximity to high-risk areas, the initiative has reduced response times, ensuring that relief materials reach affected populations more quickly. This approach has proven particularly beneficial in remote regions, where logistical challenges often hinder timely disaster responses.

Furthermore, the initiative has fostered increased awareness and capacity-building among local governments and humanitarian actors. Through training sessions and workshops, stakeholders have gained a deeper understanding of vulnerability-focused disaster preparedness, equipping them with the skills needed to implement the initiative's strategies effectively.

4. Sustainability

To ensure the long-term sustainability of the PREPARED initiative, a comprehensive strategy has been developed, encompassing financial, operational, and environmental aspects.

- **Financial Sustainability**: Financial sustainability is a key consideration in the initiative's design. By establishing partnerships with both governmental and non-governmental organizations, the initiative has created a shared funding model that distributes the financial burden across multiple stakeholders. This approach reduces dependency on any single source of funding and ensures that resources are available to maintain the GIS platform and manage emergency stockpiles over time.

- **Operational Sustainability**: The initiative's operational sustainability is supported by ongoing training and capacity-building efforts. Regular training sessions are conducted for local government officials and humanitarian actors, equipping them with the skills needed to use the GIS platform and manage emergency resources effectively. By embedding these practices within local governance structures, the initiative fosters self-reliance and ensures continuity beyond the initial implementation period.

- **Environmental Sustainability**: Environmental sustainability is integrated into the initiative through the strategic positioning of stockpiles. By placing resources in locations that are easily accessible to high-risk populations, the initiative reduces the need for long-distance transportation during emergencies. This approach minimizes fossil fuel consumption, decreases greenhouse gas emissions, and reduces the environmental impact of emergency response activities.

The initiative also promotes sustainable practices by encouraging local communities to implement measures that reduce disaster risks. By fostering a culture of preparedness and resilience, the PREPARED initiative empowers communities to take proactive steps in mitigating the impacts of future disasters.

Promoting Disability-Inclusive Disaster Risk Reduction in Nepal

Dr. Raju Thapa, DPNet Nepal
ITP cycle 3, Nepal

Abstract

- *The 2015 earthquake exposed Nepal's neglect of PWD in disaster management, as most stakeholders were unfamiliar with the concept of DIDRR.*
- *As part of DPNet, I have worked to promote DIDRR in Nepal.*
- *Partnerships with international organizations, like USAID and Tayar, strengthened DIDRR.*
- *In consultation with the concerned stakeholders and all federations of PWD, we developed the DIDRR Guideline and handed it over to the NDRRMA. Additionally, we developed and distributed hard copies of the DIDRR Guidebook to all 753 local governments.*
- *In 2024, through the collective efforts of all stakeholders, the government introduced the Strategic Action Plan for GEDSI in DRRM.*
- *As DPNet Chair and NPDRR Member Secretary, I work to make Nepal a model for inclusive disaster management.*

1. Background

Natural disasters are an inherent part of life on Earth, but they disproportionately impact vulnerable populations, particularly in developing nations like Nepal. Located within the Himalayan region, Nepal is exposed to a wide range of environmental hazards, including earthquakes, floods, and landslides. The devastating earthquake of 2015, which caused

widespread destruction and loss of life, was a wake-up call for the nation's disaster preparedness and response mechanisms. It also exposed a glaring gap in the disaster management framework: the neglect of persons with disabilities (PWDs).

In the aftermath of the earthquake, it became obvious that the unique needs of PWDs had not been considered in the disaster response, which exacerbated their vulnerabilities during emergencies. They faced challenges in accessing relief services; evacuation routes were not accessible, and essential information was not provided in formats they could access. This realization marked the beginning of an advocacy movement for disability-inclusive disaster risk reduction (DIDRR) in Nepal.

As the Acting Chair of DPNet Nepal and CEO of Atullya Foundation, I have been deeply involved in promoting DIDRR. We recognized that existing disaster management policies, while encompassing gender equality and social inclusion (GESI), often failed to address the specific needs of PWDs. The concept of GESI was important, but in practice, disability was frequently overlooked or only superficially addressed. This led to increased hardships for PWDs, who were excluded from critical disaster planning and response activities.

In response, we embarked on a mission to raise awareness and advocate for the inclusion of PWDs in Nepal's disaster risk reduction strategies. Our work began with the introduction of the DIDRR concept, engaging with stakeholders across the government, non-governmental organizations, and communities. Our efforts culminated in the creation of the DIDRR Guidebook and the drafting of a DIDRR Guideline through stakeholder consensus. These documents laid the foundation for inclusive disaster management in Nepal and were shared in hardcopy across all 753 local governments through the Ministry of Federal Affairs and General Administration's (MoFAGA) training sessions.

Our advocacy efforts resulted fruit in May 2024 when the Government of Nepal introduced the Strategic Action Plan for Gender Equality, Disability, and Social Inclusion (GEDSI) in Disaster Risk Reduction and Management. This landmark document not only recognized the need for gender and social inclusion but also specifically addressed the inclusion of PWDs in disaster risk management. With this action plan in place, we are now focused on its rollout and implementation, ensuring that disability-inclusive principles are embedded in all aspects of disaster risk management across the country.

Our journey, strengthened through continuous advocacy and collaboration with organizations, has set the stage for a more inclusive and resilient Nepal. By integrating DIDRR principles into national disaster frameworks, we aim to ensure that every citizen, regardless of their physical abilities, is prepared and protected in times of crisis.

2. Identifying the Issue

The lack of adequate policy, accessible communication, inadequate evacuation plans, and exclusion of PWDs from disaster planning processes left them disproportionately affected during emergencies. This realization spurred continuous advocacy which was intended to

integrates disability considerations into Nepal's disaster management framework. In this regard, following issues were identified.

2.1 Lack of Accessible Information: One of the most important barriers faced by PWDs during the 2015 earthquake was the lack of accessible information. Disaster warnings, evacuation instructions, and safety measures were often communicated through channels that were inaccessible to individuals with hearing or visual impairments. There were no provisions for sign language interpreters, Braille materials, or easy-to-read formats that could ensure PWDs received the vital information needed to act swiftly during the crisis. This lack of accessible communication left many PWDs uninformed and at greater risk

2.2 Inadequate Evacuation Plans: Emergency evacuation routes and shelters, which were important for ensuring safety, were not designed with accessibility in mind. PWDs faced difficulties in navigating through debris, narrow pathways, and steep evacuation routes. The absence of ramps, wide passages, and other mobility-friendly infrastructure further restricted the ability of individuals with physical impairments to reach safety. In addition, shelters lacked the necessary facilities to accommodate the unique needs of PWDs, placing them in unsafe environments during disasters.

2.3 Exclusion from Planning Processes: A major gap in disaster management policies was the exclusion of PWDs from the disaster preparedness planning process. Without their involvement, plans were developed without considering the specific needs and vulnerabilities of PWDs. As a result, policies were not tailored to address these needs, leaving PWDs out of critical disaster management strategies. Their exclusion reinforced the cycle of neglect and increased their risks during emergencies.

2.4 Limited Access to Relief Services: Post-disaster relief services, such as the distribution of food, water, and medical supplies, were not accessible to PWDs. Relief centers often lacked the necessary infrastructure and support systems to cater to individuals with disabilities. Many PWDs struggled to access the basic resources required for survival, as relief efforts did not

prioritize their unique needs. This further exacerbated their vulnerability and prolonged their recovery process.

2.5 The Advocacy for a More Inclusive DRR: Recognizing these gaps, advocates and organizations like DPNet Nepal and Atullya Foundation pushed for a more inclusive DRR framework. Their continuous efforts also culminated in the introduction of the GEDSI Strategic Action Plan in 2024, which seeks to ensure that disaster management in Nepal is inclusive of PWDs. This plan represents a significant step forward in addressing the historical neglect of PWDs and aims to integrate disability considerations into every aspect of disaster preparedness, response, and recovery. Through sustained advocacy, the inclusion of PWDs is now becoming a cornerstone of Nepal's disaster risk management policies.

3. Steps Taken Towards Disability-Inclusive Disaster Risk Reduction (DIDRR)

The 2015 earthquake led to a concerted effort to promote Disability-Inclusive Disaster Risk Reduction (DIDRR) as a core component of Nepal's disaster management strategies. A multi-faceted approach was adopted to address these issues, focusing on advocacy, collaboration, capacity building, policy development, and implementation. Below is a detailed overview of the steps taken to promote DIDRR in Nepal.

3.1 Advocacy and Awareness Raising

3.1.1 Introducing the DIDRR Concept: The journey toward a more inclusive disaster risk reduction framework began with advocacy efforts aimed at introducing the concept of DIDRR to various stakeholders. Recognizing that the exclusion of PWDs from disaster preparedness and response was not only an oversight but a systemic issue, we focused on raising awareness at multiple levels. The initial step was to bring this issue to the forefront by organizing seminars, workshops, and media campaigns. These platforms allowed us to engage with policymakers, practitioners, and the general public, emphasizing the critical need for disability-inclusive practices in disaster management.

The aim was not only to inform but also to challenge the status quo and shift the mindset of stakeholders who had previously not considered the unique needs of PWDs in disaster scenarios. We highlighted real-life examples from the 2015 earthquake to highlight how the lack of accessible evacuation plans, information, and relief services had severely impacted PWDs. This awareness-raising campaign laid the foundation for the broader DIDRR initiative, pushing the conversation into policy-making circles and media outlets.

3.1.2 Engaging Stakeholders: Recognizing that meaningful change requires a collective effort, we actively sought partnerships with a wide range of stakeholders. We established collaborations with organizations representing PWDs, government agencies, non-governmental organizations (NGOs), and international development partners. These partnerships were crucial in building a collective voice and creating momentum for the DIDRR agenda.

Involving organizations representing PWDs was particularly important because they provided first-hand insight into the challenges faced by their members during disasters. These organizations became key allies in the advocacy effort, ensuring that the voices of PWDs were heard at every level of decision-making. Additionally, partnerships with international organizations such as USAID/Tayar brought in technical expertise and resources, which significantly strengthened the initiative.

3.2 Capacity Building and Training

3.2.1 DPNet Nepal's Role: To translate the concept of DIDRR into practice, it was essential to build the capacity of disaster risk reduction practitioners. DPNet Nepal played a central role in organizing training programs aimed at educating these practitioners on the principles of DIDRR. The goal was to ensure that all those involved in disaster management, from local government officials to community leaders, understood the importance of making disaster plans and responses accessible and inclusive for PWDs.

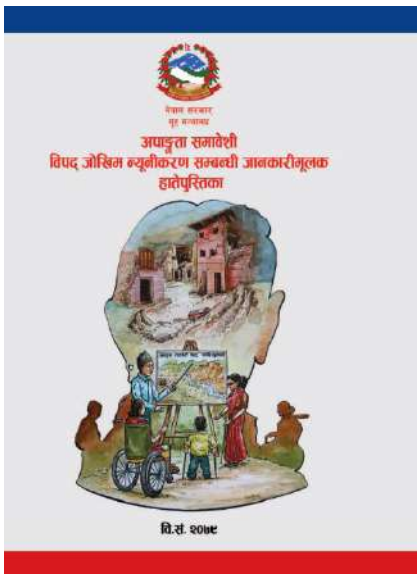
These training programs emphasized three key principles: accessibility, participation, and empowerment. Participants were trained on how to design evacuation plans that accommodated individuals with mobility issues, how to make information accessible to those with visual or hearing impairments, and how to involve PWDs in the planning process. This knowledge transfer was vital in ensuring that disability-inclusive practices became embedded in disaster management at all levels.

3.2.2 Atullya Foundation's Initiatives: While DPNet Nepal focused on training practitioners, Atullya Foundation directed its efforts towards grassroots-level training. The foundation developed and provided training materials specifically designed to empower local communities and PWDs with the knowledge and skills they needed to enhance their resilience to disasters.

Atullya Foundation's work ensured that PWDs themselves were equipped with the necessary tools to navigate disaster situations. Training focused on enhancing the self-reliance of PWDs by providing them with information about accessible evacuation routes, personal safety measures, and ways to communicate during emergencies. The foundation also worked closely with local community leaders, encouraging them to adopt inclusive practices that would benefit all community members during disasters.

3.3 Developing Guiding Documents

3.3.1 Drafting the DIDRR Guideline: A key milestone in the promotion of DIDRR in Nepal was the development of a comprehensive DIDRR Guideline. This document was drafted through a collaborative process that involved various stakeholders, including all federation of PWDs, government agencies, and disaster management experts. The guideline provides a framework for integrating disability considerations into all aspects of DRR, from preparedness to response and recovery.



The drafting process involved extensive consultation with PWDs to ensure that their perspectives and experiences were accurately reflected. By involving them in the creation of the guideline, we ensured that it was grounded in the real-life challenges faced by PWDs during disasters. The guideline

covers a range of topics, including accessible communication, inclusive evacuation planning, and ensuring that relief services cater to the needs of PWDs.

3.3.2 Creating the DIDRR Handbook: To supplement the guideline, we developed the DIDRR Handbook, a practical resource designed for use by practitioners, policymakers, and community leaders. The handbook provides step-by-step instructions on how to implement the strategies outlined in the guideline and offers practical examples of best practices in DIDRR.

The handbook is intended to be a user-friendly tool that can be easily adopted at all levels of disaster management. It includes checklists, case studies, and templates that practitioners can use to ensure their disaster plans and response efforts are inclusive of PWDs.

3.4 Policy Engagement and Endorsement

3.4.1 Submitting Drafts to NDRRMA:

Once the DIDRR Guideline was finalized, it was submitted to the National Disaster Risk Reduction and Management Authority (NDRRMA) for consideration. This was a critical step in ensuring that the guideline would be adopted at a national level and integrated into official disaster management policies. We worked closely with NDRRMA to refine the guideline and ensure that it aligned with the broader disaster risk management framework in Nepal. Our engagement with NDRRMA was instrumental in moving the DIDRR agenda forward, as the authority has a central role in overseeing disaster management efforts across the country.

3.4.2 Government Endorsement: The Ministry of Home Affairs (MoHA) played a key role in endorsing the DIDRR Handbook, signaling strong governmental support for disability-inclusive disaster management policies. This endorsement marked a significant victory for the DIDRR initiative, as it ensured that the principles of inclusivity were officially recognized and supported at the highest levels of government.

The government's endorsement also helped to raise the profile of DIDRR, ensuring that it became a priority issue within the broader disaster management agenda. This official support was critical in driving the adoption of inclusive practices across all levels of government.

3.5 Dissemination and Implementation

3.5.1 Distribution to Local Governments: With the support of the Ministry of Federal Affairs and General Administration (MoFAGA), we distributed hard copies of the DIDRR Guidebook to all 753 local governments in Nepal. This step ensured that the guideline reached those who

are responsible for implementing DRR at the local level, where disaster preparedness and response efforts are most critical.

The distribution of the guidebook was accompanied by training programs, led by MoFAGA. The DRR localization training session of MoFAGA provided officials with the knowledge and tools they needed to ensure that their disaster plans were inclusive and accessible.

3.5.2 Training Programs: In addition to distributing the guidebook, MoFAGA incorporated the principles of DIDRR into their ongoing training sessions for local government officials. This ensured that the knowledge and skills required to implement inclusive DRR strategies were embedded in the everyday practices of disaster management professionals at the local level.

These training programs were essential in bridging the gap between policy and practice, ensuring that the principles outlined in the guidebook were translated into actionable strategies on the ground.

3.6 Strategic Action Plan Development

3.6.1 GEDSI Strategic Action Plan: The culmination of these efforts came in May 2024 when the government introduced the Strategic Action Plan for Gender Equality, Disability, and Social Inclusion (GEDSI) in Disaster Risk Reduction and Management. This strategic plan provides a comprehensive roadmap for integrating GEDSI considerations into all aspects of DRR, ensuring that disaster management strategies in Nepal are inclusive of PWDs.

The introduction of the GEDSI Strategic Action Plan marked a significant step forward in addressing the historical neglect of PWDs in disaster management. The plan outlines specific actions that need to be taken to ensure that PWDs are included in all phases of disaster management, from preparedness and planning to response and recovery.

By institutionalizing the principles of DIDRR through the GEDSI Strategic Action Plan, the government of Nepal has laid the groundwork for a more inclusive and resilient disaster management framework. Moving forward, the focus will be on the effective implementation of this plan to ensure that PWDs are no longer left behind in times of crisis.

4. Challenges Faced

The journey toward promoting Disability-Inclusive Disaster Risk Reduction (DIDRR) in Nepal, while transformative, was fraught with challenges. One of the primary obstacles was the limited awareness among policymakers and disaster management practitioners regarding the specific needs of persons with disabilities (PWDs) in disaster contexts. Historically, disaster preparedness and response strategies were designed with a one-size-fits-all approach, and the unique vulnerabilities of PWDs were often overlooked. Raising awareness and shifting the mindset of stakeholders required persistent advocacy and education.

Resource constraints were another significant hurdle. Developing comprehensive training materials, guidebooks, and conducting capacity-building programs across Nepal's 753 local governments demanded considerable financial and human resources. Securing adequate funding and technical support was a challenge, particularly in a developing country like Nepal, where disaster management resources are already stretched thin.

Furthermore, cultural barriers posed substantial difficulties. Societal attitudes towards disability in Nepal often hindered the acceptance and implementation of inclusive practices. PWDs have historically been marginalized, and this marginalization extended to disaster preparedness efforts. Overcoming deeply ingrained perceptions required both community-level engagement and nationwide advocacy efforts to foster a more inclusive and empathetic approach toward disability.

Lastly, coordination challenges arose from the need to align efforts across multiple stakeholders, including government agencies, non-governmental organizations, and organizations representing PWDs. Each of these stakeholders had different priorities, resources, and levels of understanding regarding DIDRR. Coordinating these diverse actors to work towards a common goal required careful negotiation, collaboration, and consistent communication, often resulting in delays and requiring significant effort to ensure alignment. Despite these challenges, continuous advocacy and collaboration helped drive the DIDRR agenda forward, paving the way for more inclusive disaster management in Nepal.

5. Strategies Employed to Overcome Challenges

To address the challenges in promoting DIDRR in Nepal, several strategies were employed. Education and sensitization were pivotal in shifting the mindset of policymakers and practitioners. Extensive awareness campaigns were launched, drawing upon the lessons learned

from the 2015 earthquake to highlight the severe consequences of excluding persons with disabilities from disaster planning. Workshops, seminars, and media outreach helped stakeholders understand the critical need for inclusivity in disaster risk reduction.

Leveraging partnerships was another important strategy. By collaborating with international organizations like USAID/Tayar, we were able to secure much-needed financial resources and technical expertise. These partnerships strengthened our capacity to develop training materials, conduct workshops, and disseminate the DIDRR guidelines across the country. The involvement of international partners also lent credibility to our initiatives, which helped gain wider acceptance among local stakeholders.

To overcome cultural barriers, we engaged in cultural advocacy by working closely with all federations of the PWD, influencers. These stakeholders played a key role in changing societal perceptions about disability and promoting inclusive practices at the grassroots level. By encouraging their active participation in our programs, we were able to foster a more inclusive attitude toward PWDs within communities, which was crucial for the successful implementation of DIDRR strategies.

Finally, we implemented effective coordination mechanisms to ensure all stakeholders, including government agencies, NGOs, and PWD organizations, worked in unison. Regular coordination meetings were held to align efforts, share best practices, and address any emerging challenges. These coordination efforts were instrumental in ensuring that the DIDRR agenda moved forward in a cohesive and collaborative manner.

6. Outcomes

Through collaboration with various stakeholders, including government agencies, non-governmental organizations, and various partners, DPNet Nepal and Atullya Foundation initiated a movement to promote DIDRR across Nepal. This comprehensive approach has focused on policy integration, capacity building, and active engagement with PWDs to make disaster response systems more inclusive and effective which generated following outcomes.

Local governments, empowered through training and the dissemination of the DIDRR Guidebook, have started incorporating accessibility considerations and improving safety for persons with disabilities.

The endorsement of the DIDRR Handbook by the Ministry of Home Affairs marked a significant progress, formalizing the government's commitment to promoting disability-inclusive disaster management practices across Nepal.

Comprehensive training mannual have equipped stakeholders and practitioners with the skills and knowledge to implement inclusive disaster strategies that consider the specific needs of PWDs.

Partnerships with international organizations such as USAID/Tayar have strengthened the DIDRR initiative by providing crucial technical support and resources, enhancing the credibility and effectiveness of the program.

The introduction of the GEDSI Strategic Action Plan in 2024 has laid out a comprehensive roadmap for integrating gender equality, disability, and social inclusion into disaster risk management strategies, ensuring that these principles are embedded in all future disaster management efforts.

Looking Ahead

As the Chairperson of DPNet and the Member Secretary of NPDRR, I now have a unique opportunity to engage with a wide range of stakeholders and further advocate for the inclusion of persons with disabilities (PWDs) in disaster risk reduction (DRR) strategies. With the endorsement of the DIDRR Handbook and the introduction of the GEDSI Strategic Action Plan, we have laid a solid foundation. However, my focus moving forward will be to ensure the effective implementation of these policies at the local level. By leveraging my current roles, I am committed to working closely with government agencies, NGOs, and communities to ensure that the inclusive practices we have introduced are fully integrated into Nepal's disaster preparedness and response efforts.

As part of this ongoing effort, I will emphasize the importance of monitoring and evaluation to ensure that these strategies make a tangible difference on the ground. Gathering feedback from PWDs and assessing the effectiveness of our disaster plans will be key to identifying gaps and making necessary adjustments. My aim is to ensure that our disaster management frameworks remain adaptive, responsive, and inclusive, particularly as we continue to face evolving challenges. By establishing stronger feedback loops, we can ensure that PWDs are actively involved in shaping policies that impact them, and that their voices continue to be central in DRR planning and implementation.

Looking ahead, I am also focused on strengthening partnerships with international organizations and development partners to secure the necessary technical and financial support for our ongoing initiatives. Through these collaborations, I am confident that we can further enhance Nepal's capacity to lead the way in disability-inclusive disaster management. My commitment is to ensure that every citizen, regardless of their physical ability, is protected and prepared in times of crisis, and that Nepal continues to serve as a model for inclusive disaster risk reduction in the region.

8. Acknowledgments

I would like to express my gratitude to all the organizations and individuals who have supported and contributed to the promotion of DIDRR in Nepal. Special thanks to:

- DPNet Nepal for providing a platform for collaboration and knowledge sharing.
- Atullya Foundation for its unwavering commitment to empowering PWDs.
- USAID/Tayar for their support and partnership.
- MoHA, MoFAGA, and NDRRMA for recognizing the importance of DIDRR and endorsing our efforts.
- All Federations of Persons with Disabilities for their invaluable insights and active participation.

Community Leaders and Practitioners who have embraced inclusive practices and are making a difference on the ground.

9. References

While this write-up is based on our collective experiences and initiatives, the following resources have been used in guiding our work:

Sendai Framework for Disaster Risk Reduction 2015-2030 - United Nations Office for Disaster Risk Reduction (UNDRR).

United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).

National Disaster Risk Reduction and Management Act, 2017 - Government of Nepal.

Strategic Action Plan for Gender Equality, Disability, and Social Inclusion (GEDSI) in Disaster Risk Reduction and Management, 2024 - Government of Nepal.

DIDRR Guideline and Handbook - Developed by Atullya Foundation.

Promoting Gender Inclusiveness in Disaster Risk Reduction in Panchkhal Municipality

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Abstract

This initiative addressed gender inclusiveness in disaster risk reduction (DRR) by engaging students and community women in Panchkhal Municipality. Vulnerable groups, particularly women, often faced challenges in participating in disaster management due to socio-cultural, economic, and geographical constraints. By educating secondary students and community groups, including Mothers Groups and Female Community Health Volunteers (FCHVs), on gender-sensitive DRR practices, this initiative promoted an inclusive approach that acknowledged the essential role of women in resilience and recovery. The program involved interactive training sessions on DRR concepts, gender roles, and preparedness, with a focus on empowering women and encouraging student advocacy for gender-sensitive approaches in disaster management.

1. Introduction

In Nepal, gender inclusiveness was historically hindered by complex socio-economic, cultural, and traditional factors, particularly impacting women and marginalized groups. Vulnerabilities were especially pronounced for rural Nepalese women, who faced societal constraints and limited access to essential resources. Within DRR, these gender-related barriers reduced resilience and increased disaster risk for women and marginalized communities.

This change initiative, conducted in Panchkhal Municipality, raised awareness about gender inclusiveness among students and community groups. Focusing on gender equality in DRR processes empowered women to contribute to disaster resilience efforts, promoting leadership roles for women in their communities. This approach aligned with findings from Nepal's Post Disaster Needs Assessment (PDNA) and the Post Disaster Recovery Framework (PDRF), which identified women as a particularly vulnerable group. The significant contributions of mothers groups and FCHVs to community health and resilience were recognized, as their active involvement in DRR proved crucial.

Through this initiative, the Institute of Crisis Management Studies (ICMS) provided knowledge on DRR practices, focusing on inclusivity and resilience. The program equipped women and students with the skills and knowledge needed to participate in and lead DRR activities, fostering gender equality in disaster management practices.

1.1 Study/Implementation Area

The initiative was implemented in Panchkhal Municipality, wards 9, 7, and 11, located 45 km east of Kathmandu along the Arniko highway. This area, with its diverse geography, was prone to natural hazards, making DRR knowledge essential. ICMS had a well-established working

relationship with the local government and had previously conducted research in this municipality on themes related to human security and climate resilience.

1.2 Problem Statement

Gender inequality significantly affected DRR efforts, particularly in rural Nepal, where social constraints limited women's participation in DRR. Despite the effectiveness of community health groups like FCHVs, gender representation in disaster preparedness and response activities remained inadequate. This initiative bridged the gap by promoting gender inclusiveness in DRR, leveraging the knowledge and influence of mother groups, FCHVs, and the younger generation in Panchkhal.

1.3 Objectives

The major objectives of this initiative were:

- To Introduce DRR Concepts: to educate students and community members about the key principles of DRR, including risk assessment, preparedness, response, recovery, and mitigation.
- Promote Gender Inclusiveness: to advocate for the active involvement of women and marginalized groups in all stages of disaster management.
- Empower Women through Leadership: to foster leadership skills in women, ensuring their participation in DRR activities and decision-making processes.
- Encourage an Inclusive Approach: to enhance community resilience by involving diverse groups in DRR initiatives.
- Promote Gender Equality in Preparedness and Mitigation: to advocate for gender-sensitive policies and practices in disaster preparedness and mitigation efforts.

2. Data and Methods

This initiative employed a structured implementation process, effective data collection methods, and active stakeholder engagement. Using a mixed-methods framework, it assessed both the quantitative and qualitative impacts of the training program. The approach ensured that the program not only educated participants about DRR concepts but also fostered an inclusive environment that empowered women and marginalized groups.

2.1 Implementation Process

The initiative, structured as a training program, targeted secondary students (grades 8–12) and women's groups in Panchkhal Municipality. Initial activities involved sharing DRR fundamentals and engaging participants in discussions on the significance of gender inclusiveness in DRR. Training sessions covered gender-sensitive approaches and leadership roles in DRR, complemented by real-life examples and interactive activities.

Collaborating with local schools and community health volunteers, ICMS conducted orientation sessions across schools and community centers. Financial support for training

materials, venue setup, and participant allowances was provided by ICMS, ensuring accessibility for all targeted groups.

2.2 Fishbone Analysis of Root Causes

The root causes of gender inequality in DRR included socio-cultural norms, limited access to education and resources for women, and inadequate gender-focused disaster policies. A fishbone analysis categorized these factors into:

- Socio-cultural Factors: Traditions and cultural beliefs restricting women's mobility and decision-making.
- Economic Constraints: Limited financial independence hindering women's ability to participate in community-based DRR activities.
- Educational Barriers: Low literacy rates and limited access to DRR education are reducing awareness and skills among women.
- Policy Gaps: Insufficient government policies on gender inclusiveness in DRR.

These factors reinforced gender inequities, resulting in lower resilience levels among women during disasters.

2.3 Stakeholder Engagement and Collaboration

Key stakeholders included secondary students, school faculty, Mothers Groups, FCHVs, and Panchkhal's local government representatives. School administrators and local leaders provided venue support, while ICMS engaged with community members to facilitate collaboration. The inclusion of mother groups and FCHVs were essential, as they possessed deep knowledge of local needs and could drive gender-inclusive practices in DRR at the community level. ICMS worked closely with teachers and mothers' groups to identify issues affecting community resilience and gender inclusion. This initiative employed a structured implementation process, effective data collection methods, and active stakeholder engagement. Using a mixed-methods framework, it assessed both the quantitative and qualitative impacts of the training program. The approach ensured that the program not only educated

participants about DRR concepts but also fostered an inclusive environment that empowered women and marginalized groups.

3. Results and Discussion

This section outlines the outcomes of the change initiative, detailing the current situation, key lessons learned, and the initiative's overall impact on the target communities.

3.1 Current Situation and Lessons Learned

Post-implementation, the program fostered increased awareness of DRR principles and gender inclusiveness among students and community women. Key lessons highlighted the need for

sustained engagement with local institutions to support women's continued involvement in DRR. Adapting content to different literacy levels was essential to ensure inclusivity.

3.2 Impact and Outcomes

The initiative empowered participants, equipping them with practical knowledge on disaster preparedness and gender inclusiveness. Preliminary evaluations indicated improved understanding among women of their role in DRR, with students advocating for inclusive practices in school-based disaster programs. Feedback suggested that the initiative also fostered interest in DRR leadership among community women, with some expressing a desire to pursue roles in local governance.

4. Conclusion

This conclusion reviews the initiative's progress toward sustainable, gender-inclusive DRR practices. It also outlines future actions to broaden the impact and ensure lasting support for DRR across Nepalese communities through our academician's experts and students.

Future Actions and Sustainability

ICMS aims to scale this initiative to other municipalities by incorporating continuous support and resources for local DRR committees. Future steps will be to transfer knowledge on the importance of gender inclusiveness in disaster management cycle and its landscape. PFA will be done to reduce the initial distress caused by traumatic events and disaster. It will be helpful in addressing the survivors' specific needs and concerns. It helps in adjustment and coping with stressful situations. As an academic institute we would help in research identifying the situation of gender inequality, offensive behavior, social relationships, vulnerability and resiliency. This will help to analyses the community-led monitoring systems to assess gender inclusiveness in DRR activities. By integrating DRR into school curriculums and local government agendas, the initiative seeks to ensure long-term sustainability and replication in diverse contexts across Nepal.

Promoting Inclusive Disaster Risk Management Across Local Governments

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Abstract

The change initiative focused on embedding Inclusive Disaster Risk Management (IDRM) practices across all levels of Nepal's government. With vulnerable groups, particularly persons with disabilities (PWDs), disproportionately impacted during disasters, the initiative aimed to ensure that inclusive practices became central to local and national disaster management policies. Key activities included capacity-building programs, partnerships with national and international organizations, and targeted training sessions for local officials to instill inclusive disaster preparedness strategies. The initiative also established community disaster management committees to amplify the voices of marginalized communities and to ensure that local DRR planning took these perspectives into account. As a result, the program strengthened the understanding of inclusive DRR practices at the local level, fostering a shift towards recognizing vulnerable populations as active participants in disaster preparedness rather than passive recipients of aid. Local governments demonstrated a greater commitment to implementing inclusive DRR frameworks, showing tangible policy adjustments that prioritize PWDs and other vulnerable groups. Moving forward, Upreti and Adhikari's initiative will leverage partnerships with MoFAGA and other organizations to continue enhancing inclusivity in DRR practices. By emphasizing local government capacities and integrating marginalized perspectives into disaster management, this initiative has laid a strong foundation for sustainable and inclusive DRR policies, contributing significantly to Nepal's resilience and preparedness.

1. Background

Nepal is highly vulnerable to various natural disasters due to its unique geographic and climatic conditions. The country ranks among the top 20 in terms of disaster risk, facing hazards such as earthquakes, floods, landslides, and the impacts of climate change. With fragile geology and a steep topography, Nepal's communities, infrastructure, and ecosystems are at a constant threat. Additionally, the vulnerability of specific groups, including persons with disabilities and marginalized communities, is exacerbated during disaster events. Recent studies highlight that in such events, these groups face disproportionately higher risks, with limited access to essential services, evacuation routes, and emergency response resources.

The transition to a federal structure in Nepal has introduced a more localized approach to governance, with the establishment of 753 local governments. This structural reform aims to strengthen local capacity for governance, service delivery, and development planning, including disaster risk management (DRM). The Ministry of Federal Affairs and General Administration (MoFAGA) serves as the nodal ministry for local government functions, including DRM responsibilities. As the focal point for disaster and environmental issues,

MoFAGA plays a crucial role in coordinating resources, policy support, and capacity-building initiatives for rural municipalities and urban municipalities across the country. In recognition of the urgent need for an inclusive approach to disaster resilience, MoFAGA has prioritized DRM as a core aspect of local governance.

In this context, we a team of two dedicated officials have undertaken a change initiative focused on Inclusive Disaster Risk Management (IDRM) across all levels of government. This initiative acknowledges the diverse needs of communities and aims to integrate marginalized groups, including persons with disabilities, into DRM planning and response strategies. By championing IDRM, we aspire to enhance local government capacities, foster a rights-based approach to disaster preparedness, and ensure that no one is left behind in Nepal's journey towards resilience.

This initiative not only aligns with MoFAGA's commitment to empowering local governments in DRM but also seeks to set a benchmark for inclusive and participatory disaster management practices nationwide. Through this effort, we hope to address the pressing challenges in Nepal's DRM landscape and contribute to building a more resilient and inclusive society.

Objective: The overarching objective is to ensure the effective implementation of Inclusive Disaster Risk Management (IDRM) policies across all levels of government in Nepal. This will enhance disaster resilience, particularly for marginalized and vulnerable communities, through inclusive and coordinated efforts.

Specific Objectives:

- To strengthen capacity at local government levels for inclusive disaster preparedness and response.
- To integrate inclusive approaches into existing DRR frameworks, ensuring participation from marginalized groups.
- To ensure sufficient and sustainable funding to support IDRM initiatives across sectors.

2. Methodology

Our approach to Inclusive Disaster Risk Management (IDRM) at all levels of government in Nepal is grounded in a multi-step methodology aimed at building capacity, fostering inclusivity, and ensuring that local governments are equipped to respond effectively to disasters. Given Nepal's diverse social and geographical landscape, this methodology emphasizes stakeholder engagement, capacity-building, and evidence-based policy development.

First, we conducted a comprehensive needs assessment to understand the unique challenges faced by marginalized groups, including persons with disabilities, across different localities. This involved gathering data from disaster-prone communities, analyzing previous disaster response outcomes, and identifying gaps in accessibility, awareness, and resources. We collaborated with various local government units to collect qualitative and quantitative data, ensuring that our findings reflect the specific vulnerabilities and capacities of each community.

This data informed our strategy, allowing us to tailor our IDRM approach to the distinct needs of different areas.

Second, we established partnerships with national and international organizations specializing in disaster risk reduction (DRR) and inclusive development. These partnerships are crucial for resource mobilization, technical expertise, and knowledge sharing. By collaborating with NGOs, INGOs, and development partners, we can leverage resources to enhance local government capacities in IDRM. Additionally, these partnerships enable us to design training modules and workshops that provide local officials with the skills and knowledge needed to implement inclusive DRR policies effectively.

Next, we developed a training and capacity-building program tailored for local governments, emphasizing the importance of inclusive approaches in DRR. The program covers topics such as rights-based approaches to IDRM, accessibility in emergency response, and community engagement practices. We adopted an experiential learning approach, utilizing simulations, case studies, and scenario-based exercises to help participants internalize the concepts. The training also focuses on building communication skills and fostering partnerships to ensure that local authorities can coordinate effectively with other disaster management stakeholders.

Finally, we are implementing a monitoring and evaluation framework to track the progress of IDRM initiatives. This framework includes measurable indicators to assess improvements in local government capacities, policy adoption, and community resilience. Regular feedback sessions and follow-up assessments allow us to identify areas for improvement and make data-driven adjustments to our methodology. Additionally, we aim to document best practices and lessons learned, which will serve as a valuable resource for scaling IDRM efforts across Nepal.Through this systematic methodology, we strive to make disaster risk management in Nepal inclusive, resilient, and responsive to the needs of all communities, particularly the most vulnerable

3. Outcomes

The Inclusive Disaster Risk Management (IDRM) initiative across Nepal's local governments has yielded impactful outcomes that enhance resilience and inclusivity in disaster preparedness and response. Through this project, significant strides have been made in empowering local governments, fostering community engagement, and ensuring marginalized voices are represented in DRR planning and policy implementation.

A key outcome of this initiative is the enhanced capacity of local governments in implementing Inclusive Disaster Risk Management (IDRM) practices. As the nodal ministry, MoFAGA has introduced 37 different sample policies related to DRR and inclusive DRR to guide local governments. Additionally, comprehensive training sessions and workshops have equipped local officials with the necessary skills and knowledge to adopt a rights-based approach to disaster management. This has led to heightened awareness and sensitivity among local authorities regarding the specific needs of marginalized groups, including persons with disabilities. With this training, local personnel are now better prepared to develop and

implement inclusive disaster response plans, making the entire process more accessible, equitable, and effective for all members of the community.

Secondly, the partnerships established with national and international organizations have strengthened the local government's ability to mobilize resources and technical support for DRR initiatives. These collaborations have led to resource sharing, increased funding, and access to specialized expertise, which have been instrumental in the sustainable implementation of IDRM strategies. By leveraging these partnerships, local governments have been able to implement practical solutions tailored to their unique disaster risks, thereby enhancing community resilience.

Another outcome is the establishment of inclusive community disaster management committees. Through community engagement, local governments have incorporated the perspectives of marginalized groups into DRR planning, ensuring that emergency resources and response mechanisms are accessible and adaptable. These committees act as a bridge between the government and the community, facilitating ongoing dialogue and feedback that enable continuous improvement in IDRM practices.

Additionally, there has been a noticeable shift in policy and practice, with local governments increasingly integrating IDRM principles into their planning frameworks. This shift has moved the narrative from viewing persons with disabilities as passive recipients of aid to recognizing them as active participants in disaster preparedness and response. As a result, disaster response plans are now more inclusive, emphasizing accessibility and equity in resource distribution.

4. Way Forward

Nepal has developed an extensive range of disaster risk reduction policies tailored for local governments, providing a solid foundation for inclusive disaster management. With 37 model DRR policy documents and various other frameworks now available, the emphasis must shift from policy formulation to practical implementation. The focus should be on operationalizing these policies at the grassroots level, ensuring that they are effectively integrated into local governance structures and address the specific needs of vulnerable communities.

One of the critical steps forward is to enhance the capacity of local governments to implement these policies. This requires continued training and support to equip local officials with the necessary skills for inclusive disaster management. Building technical expertise in areas like accessibility, adaptive resource allocation, and community engagement is essential for making DRR efforts more inclusive and responsive.

Furthermore, strengthening partnerships with NGOs, INGOs, and development partners is crucial to mobilize resources and provide technical assistance for implementation. These partnerships can support local governments by sharing best practices, technical know-how, and funding, ensuring that the policies are not just implemented but are sustainable over the long term.

Lastly, there should be a sustained emphasis on community engagement. Involving marginalized groups, especially persons with disabilities, as active stakeholders in DRR planning and response can foster a more resilient and inclusive society. By prioritizing these actions, Nepal can transition from policy development to impactful and inclusive disaster risk management across all levels of government.

Strengthening Local Authorities for Disaster Risk Reduction in Nepal

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Abstract

This change initiative aimed to strengthen local authorities in Nepal by instigating Disaster Risk Reduction (DRR) priorities and implementing them effectively within communities. Recognizing the country's vulnerability to natural disasters such as floods, earthquakes, and landslides, the initiative focused on empowering Local Disaster Management Committees (LDMCs) and municipalities to enhance their capacities in disaster preparedness and response. By facilitating the preparation of emergency contingency plans, providing training and awareness programs, and fostering collaboration among stakeholders, the initiative sought to build resilient communities capable of effectively managing disasters. The impact included increased awareness and sensitization of LDMC members, establishment of institutional linkages between municipalities and the Nepal Red Cross Society (NRCS), and the development of comprehensive contingency plans. These outcomes have contributed to improved disaster readiness at the local level, promoting safety and reducing vulnerability among the affected populations.

1. Introduction

Nepal is a country prone to a multitude of natural disasters due to its diverse topography and climatic conditions. The frequent occurrence of earthquakes, floods, landslides, and other hazards poses significant threats to lives, property, and livelihoods. Local authorities often lack the necessary resources, knowledge, and skills to effectively prepare for and respond to these disasters, leading to increased vulnerability of communities. Strengthening local governance structures and integrating DRR priorities into local planning are essential steps toward enhancing disaster resilience. This change initiative focused on empowering local authorities, particularly LDMCs and rural municipalities, to develop and implement emergency contingency plans. By enhancing capacities through training, advocacy, and stakeholder engagement, the initiative aimed to instill a culture of preparedness and proactive disaster management at the community level.

1.1 Objectives of the Change Initiative

- To facilitate the preparation of emergency contingency plans in selected local bodies.
- To enhance capacities on disaster risk reduction through awareness and advocacy at the local government level.
- To engage NGOs, civil societies, the public, and partners in participatory action for DRR implementation.
- To develop sample contingency plans as models for replication.

- To produce and broadcast communication materials, such as radio programs, for wider audience awareness.

1.2 Problem Statement

The primary challenge addressed by the initiative was the inadequate preparedness of local authorities and communities to effectively respond to disasters. LDMCs often lacked the necessary knowledge, skills, and resources to develop comprehensive contingency plans, leading to ineffective disaster response and greater loss during emergencies. This problem is significant in the disaster management context because local authorities are the first responders, and their capacity directly influences the effectiveness of disaster mitigation and response efforts. Past disasters in Nepal have highlighted gaps in local preparedness, with significant loss of life and property attributed to insufficient planning and response mechanisms. Data from the Nepal Disaster Risk Reduction Portal indicates a need for enhanced local capacity to reduce vulnerabilities and build resilient communities.

2. Methodology

The implementation process began with the selection of two rural municipalities in the Dang district—Gadhawa and Rajpur—based on risk assessments and consultative processes. A three-day emergency contingency plan development workshop was organized, involving 26 participants from various local levels, including LDMC members, municipal officials, and representatives from NGOs and civil societies. The workshop provided theoretical knowledge on DRR concepts, response planning, and group exercises to engage participants actively. Topics covered included disaster risk reduction, response mechanisms, roles and responsibilities during emergencies, data collection, and institutional linkages.

The Fishbone Analysis of Root Causes was utilized to identify underlying factors contributing to t he inadequate preparedness of local authorities. Main categories identified included lack of awareness and training, insufficient resources, limited stakeholder collaboration, and absence of inclusive practices. Contributing factors such as inadequate funding, poor coordination, and neglect of marginalized groups were analyzed. This analysis helped target key areas for action, focusing on capacity building, resource mobilization, enhancing collaboration, and promoting inclusivity and environmental considerations in DRR efforts.

Stakeholder engagement was a critical component of the initiative. Key stakeholders included LDMC members, municipal officials, the NRCS, NGOs, civil society organizations, and community representatives. Their roles involved active participation in workshops, contributing local knowledge, facilitating coordination among agencies, and committing to implement contingency plans. Challenges faced included initial resistance from local authorities due to limited awareness of DRR importance and logistical constraints. These were overcome through continuous dialogue, demonstrating mutual benefits, and leveraging support from the NRCS to provide technical and financial assistance.

2.1 Implementation Process

The implementation of the initiative involved several critical steps executed methodically to achieve the desired outcomes. Initially, Gadhawa and Rajpur rural municipalities in the Dang district were selected as target areas due to their high vulnerability to floods and other disasters, identified through comprehensive risk assessments and sampling methods. Recognizing the urgency, a three-day emergency contingency plan development workshop was organized, bringing together 26 participants from various local levels, including members of Local Disaster Management Committees (LDMCs), municipal officials, and representatives from NGOs and civil societies. The workshops were designed to be highly interactive, blending theoretical knowledge with practical group exercises to engage participants effectively.

The training content was comprehensive, covering key Disaster Risk Reduction (DRR) concepts, response planning, data collection methodologies, and delineation of roles and responsibilities during emergencies. A significant emphasis was placed on integrating gender and environmental considerations into disaster management practices, highlighting the importance of inclusivity and sustainability. The training underscored the pivotal role of LDMCs in disaster management, empowering participants with the knowledge to take proactive measures within their communities.

During the workshops, participants collaborated closely to draft specific emergency response and contingency plans tailored to their municipalities. This hands-on approach ensured that they could directly apply the knowledge acquired, resulting in tangible outputs that would enhance their communities' preparedness and resilience. Following the workshops, continuous support was provided by the Nepal Red Cross Society (NRCS) and municipal authorities to finalize these contingency plans.

Efforts were made to integrate the plans into official municipal processes and to make them accessible by uploading them onto the municipalities' official websites, thereby institutionalizing the DRR efforts.

Throughout the implementation process, several challenges were encountered, including logistical constraints such as limited resources and accessibility issues, language barriers that affected communication and understanding, and initial resistance from some participants who were skeptical or lacked awareness of DRR importance. These challenges were adeptly managed through flexible planning, adjusting schedules and resources as needed, utilizing local languages and translators to ensure clear communication, and demonstrating the practical benefits and relevance of the training to gain participants' buy-in.

The strategies employed proved effective in engaging participants, enhancing their understanding of disaster preparedness, and achieving the initiative's objectives of developing robust contingency plans. The successful implementation not only built local capacities but also fostered a culture of preparedness and collaboration within the targeted municipalities, setting a precedent for future DRR initiatives.

3. Results and Discussion

Post-initiative shows significant improvements in local disaster preparedness. LDMC members in Gadhawa and Rajpur rural municipalities were sensitized to the importance of emergency response and contingency planning. They gained knowledge on DRR concepts, response mechanisms, and the integration of gender and environmental considerations. Participants drafted specific emergency response and contingency plans during the workshop, enhancing their confidence and commitment to disaster preparedness.

Key lessons learned include the importance of inclusive participation and environmental mainstreaming. Ensuring 30% female participation, including representation from Dalits, Janajatis, and persons with disabilities, enriched the planning process and ensured that diverse perspectives were considered. Environmental considerations were addressed by minimizing the use of paper during training sessions and promoting sustainable practices. Adjustments made during the project included tailoring training materials to be more context-specific and addressing language barriers to ensure all participants fully understood the content.

The impact and outcomes of the initiative are evident in the enhanced capacities of LDMC members, strengthened institutional linkages between municipalities and the NRCS, and increased community resilience. The development of contingency plans has improved disaster readiness at the local level. Municipalities have taken ownership by including the contingency plans on their official websites, demonstrating accountability and commitment to DRR.

3.1 Stakeholder Engagement and Collaboration

Stakeholder engagement was pivotal to the success of the initiative. The key stakeholders included:

Local Disaster Management Committees (LDMCs): Members played an active role in participating in the workshops, sharing local knowledge, and committing to implement the contingency plans. Their involvement ensured that the plans were context-specific and addressed the actual needs of the communities.

Municipal Officials: Officials from Gadhawa and Rajpur rural municipalities collaborated in organizing the training sessions and provided logistical support. They facilitated the participation of relevant local actors and demonstrated commitment by allocating resources for DRR activities.

Nepal Red Cross Society (NRCS): The NRCS provided technical expertise and financial support for the training workshops. They shared best practices, facilitated discussions, and helped establish institutional linkages with the municipalities.

Non-Governmental Organizations (NGOs) and Civil Society Organizations (CSOs): These entities contributed by sharing experiences, providing resources, and advocating for inclusive DRR practices. Their involvement enriched the planning process and fostered a collaborative environment.

Community Representatives: Inclusion of community members, particularly from marginalized groups such as Dalits, Janajatis, women, and persons with disabilities, ensured that diverse perspectives were incorporated into the contingency plans.

Building partnerships required overcoming challenges such as initial reluctance from some stakeholders due to limited awareness of DRR importance. Continuous engagement, highlighting the benefits of collaboration, and demonstrating successful examples helped in gaining their support. The success of the initiative is attributed to the collective efforts and shared commitment of all stakeholders involved.

4. Current Situation and Lessons Learned

Following the implementation of the initiative, there has been a notable improvement in the disaster preparedness of the selected municipalities. The LDMC members are now more knowledgeable and confident in their roles. The contingency plans developed are being utilized as guiding documents during emergencies, and the municipalities have demonstrated ownership by integrating DRR into their local development agendas.

Key lessons learned include:
Importance of Inclusivity: Ensuring the participation of women, marginalized communities, and persons with disabilities enriched the planning process and ensured that the needs of all community members were considered.

Environmental Mainstreaming: Incorporating environmental considerations not only promotes sustainability but also enhances the effectiveness of DRR efforts.

Capacity Building is Essential: Continuous training and awareness programs are crucial for empowering local authorities and ensuring that they are equipped to manage disasters effectively.

Adjustments made during the project, such as tailoring training materials and addressing language barriers, contributed to the overall success and can inform future initiatives.

5. Impact and Outcomes

The main impacts and outcomes of the initiative include:
Enhanced Capacities of Local Authorities: LDMC members and municipal officials have improved their knowledge and skills in DRR, enabling them to develop and implement effective contingency plans.

Strengthened Institutional Linkages: The collaboration between municipalities and the NRCS has been strengthened, leading to ongoing support and resource sharing for DRR activities.

Development of Contingency Plans: The creation of specific emergency response and contingency plans provides a structured approach to disaster management at the local level.

Promotion of Inclusivity and Diversity: Active participation of women, Dalits, Janajatis, and persons with disabilities has ensured that DRR efforts are inclusive and address the needs of all community members.

Increased Community Resilience: Communities are now better prepared to respond to disasters, reducing vulnerability and potential losses.

Quantitative data includes the participation of 26 individuals in the training, with 30% female representation and inclusion of marginalized groups. The development of contingency plans for two municipalities serves as a model for replication in other areas.

Unexpected outcomes included a higher level of enthusiasm and commitment from participants than initially anticipated. The success of the initiative has sparked interest from neighboring municipalities seeking similar support.

Future Actions and Sustainability

To ensure long-term success and sustainability, several actions are planned for the initiative. Scaling up by replicating the project in other vulnerable municipalities will broaden its impact and build a network of prepared communities across Nepal. Continuous capacity building is essential; therefore, ongoing training and refresher courses will be provided for LDMC members and local authorities to keep them updated on best practices in DRR. Strengthening collaboration by enhancing partnerships with additional NGO, CSOs, and government agencies will help pool resources and expertise, fostering a more cohesive approach to disaster management. Regular monitoring and evaluation will be conducted to assess the effectiveness of the contingency plans during emergencies, identifying areas for improvement and ensuring that strategies remain relevant and effective. Increasing community awareness through campaigns and educational programs will also be prioritized to foster a culture of preparedness among the broader population.

As a result of the initiative, comprehensive contingency plans have been developed, enhancing the capacities of local authorities and strengthening institutional linkages. These efforts have contributed to improved disaster readiness and resilience in the selected communities. Building on this success, future efforts will focus on scaling up to additional areas, ensuring the sustainability of DRR practices through continuous engagement. Integrating DRR priorities into local governance frameworks will promote safety and reduce vulnerability across Nepal. By embedding these practices into the fabric of local governance, the initiative aims to create a resilient society capable of effectively managing and mitigating the impacts of disasters.

Strengthening Capacities for Application of GIS in Disaster Risk Reduction Management

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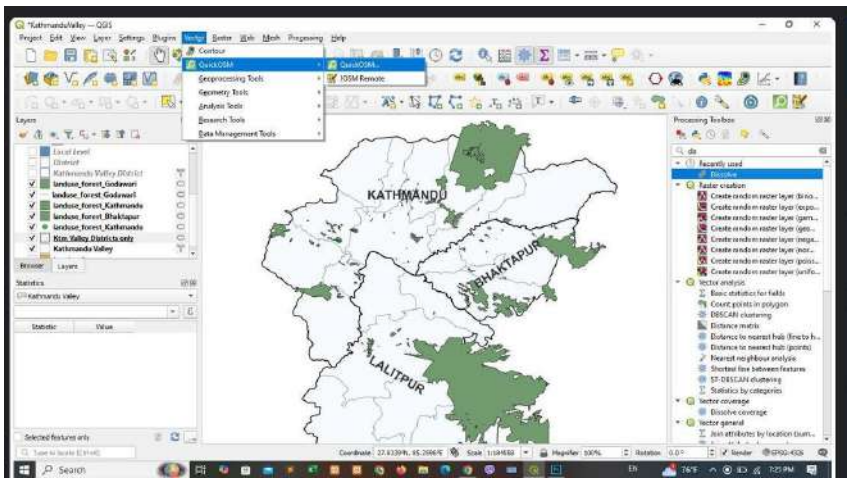
Abstract

Strengthening the capabilities of using GIS, mapping, and visualization to forecast, take immediate and long-term mitigation measures, plan for the emergency evacuation and shelter during the time of the disaster, map and visualize the different measures like safe transportation, fastest and shortest logistic service delivery network, crisis communication, emergency rescue, temporary and IDP Camp settlement (with the provision of Women and Children Friendly Spaces) and empower the strengths of the local people in the community with pieces of training and awareness programs. All these will act as a strong pillar for building the proper GIS-based strengthening disaster risk reduction Management (DRRM) paradigm.

Managing a crisis is very challenging and requires a group of experts on different domains to mitigate the outcomes of the disaster. The disaster and its effect can be forecasted or mapped using different, newer tools and techniques. Geographic Information Systems (GIS) is a powerful tool for supporting disaster risk reduction (DRR), thus, the use of the GIS and Data Analytics can support the higher authorities in decision-making. In countries like Nepal, the major challenge for GIS not being considered strongly is the ignorance of the newer technology and its contribution to Disaster Risk Reduction Management.

So far, we have been able to address the problem of ignorance of risk factors reaching few of the communities and municipalities.

1. Introduction



Managing crisis isn't a o ne man's task. This challenging task requires a joint effort of experts in different domains to first be able to foresee the crisis and then imply effect ive measures to mitigate the outcomes in case the disaster incurs. With advancement of technology, we can forecast or map the disaster and its effect using a variety of new tools and techniques.

Geographic Information System often know as GIS is one such powerful tool that can aid in early prediction of upcoming disaster and hence support disaster risk reduction (DRR). The use of GIS in data generation and Data Analytics can aid the responsible people in higher authorities to make an effective decision to safeguard people and their properties from probable catastrophic situations.

Strengthening the capabilities of using GIS, mapping, and visualization to forecast support the authorities to take immediate and long-term mitigation measures, plan for the emergency evacuation and shelter during the time of the disaster. Besides, use of GIS can assist to map and visualize the different measures like safe transportation, fastest and shortest logistic service delivery network, crisis communication, emergency rescue, temporary and IDP Camp settlement (with the provision of Women and Children Friendly Spaces) and empower the strengths of the local people in the community with pieces of training and awareness programs. All these will act as a strong pillar for building the proper GIS-based strengthening disaster risk reduction Management (DRRM) paradigm.

In countries like Nepal, the major challenge for GIS not being considered strongly is the ignorance and hesitation to adapt to a newer technology and its contribution to Disaster Risk Reduction Management. So far, we have been able to address the problem of ignorance of risk factors reaching few of the communities and municipalities.

1.1. Study/Implementation

The implementation of the "Strengthening capacities for application of GIS in disaster risk reduction management (DRRM)" initiative is designed to target local communities and stakeholders in geographically vulnerable areas across Nepal. The initiative's goal is to build the technical capacities of local governments, educational institutions, civil society organizations (CSOs), and community members in utilizing Geographic Information Systems (GIS) for disaster preparedness and management. The following key activities outline the study and implementation process:

Targeted Locations

The initiative identified several geographically vulnerable regions in Nepal as its primary implementation areas. These include remote and disaster-prone districts such as Jajarkot, Rukum, Bajhang, Nuwakot, and parts of Kathmandu Valley. These locations were chosen due to their susceptibility to natural disasters like landslides, floods, and earthquakes, combined with limited access to technology and resources for disaster management. The goal was to engage both urban and rural communities, focusing on those at higher risk of being affected by disasters but with minimal existing disaster preparedness programs.

Community-Driven Approach

A community-driven approach was central to the implementation strategy, with the aim of fostering active participation from local governments, community members, and educational institutions. This approach ensured that the training programs and workshops were tailored to meet the specific needs of each community, taking into account local resources, infrastructure, and challenges. By actively engaging the community, the initiative sought to promote a sense of ownership over the disaster risk reduction efforts and ensure the long-term sustainability of the outcomes.

Training Workshops on GIS and Disaster Risk Reduction

One of the core components of the implementation was conducting training workshops on GIS and disaster risk reduction (DRR). These workshops targeted various stakeholders, including:

Community Members: Local community members participated in workshops designed to increase their awareness of disaster risks in their areas and teach them practical skills in using GIS for identifying and mapping risk zones. The training emphasized the importance of proactive disaster preparedness and the use of mapping tools for planning evacuation routes, locating shelters, and visualizing hazard-prone areas.

University Students: Students from universities such as the Institute of Crisis Management Studies (ICMS), Sagarmatha College of Science and Technology, and Tribhuvan University were involved in more advanced GIS and DRRM training. These sessions focused on participatory mapping, disaster simulation exercises, and critical resource mapping using GIS tools like QGIS and OpenStreetMap (OSM). By integrating practical knowledge with academic learning, the initiative aimed to prepare students for future roles in disaster management.

Local Government Officials: The initiative provided specialized GIS training to local government officials in areas like Panchpokhari Thangpal rural municipality, Kirtipur municipality, Tarkeshwor municipality, and Jajarkot District Administrative Office (DAO). The training enabled these officials to understand and apply GIS tools for disaster response planning, risk visualization, and the use of early warning systems. The officials were also trained to use satellite imagery to develop contingency plans and enhance emergency response operations.

Collaboration with Educational Institutions

Collaboration with schools and colleges played a crucial role in the dissemination of GIS and DRRM knowledge. Schools like Golden Horizon Academy and various colleges in Kathmandu Valley participated in experiential knowledge-sharing sessions, which included disaster simulations, critical resource mapping, and the integration of GIS tools into their curricula. These institutions acted as knowledge hubs where students and faculty could experiment with disaster management tools, raise awareness among students, and involve local communities in preparedness activities.

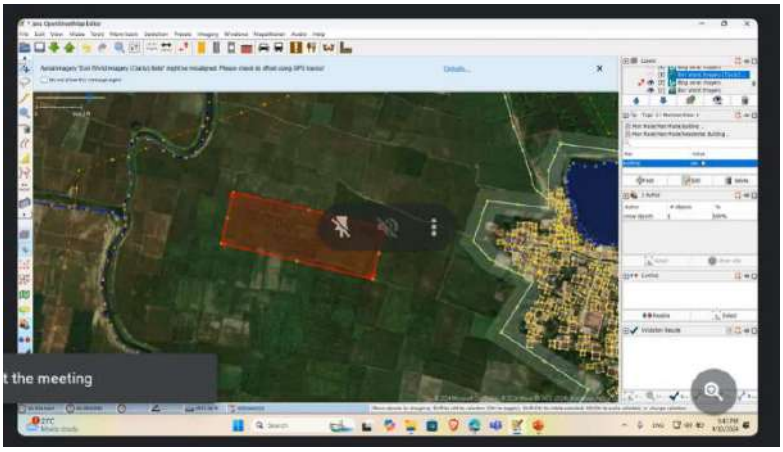
By collaborating with educational institutions, the initiative ensured that disaster risk reduction principles became part of the standard learning process. This would allow students to apply their theoretical understanding of GIS and DRRM to real-world scenarios, preparing them to take on future roles in community leadership and disaster response.

Engagement with Civil Society Organizations (CSOs)

The initiative actively engaged CSOs in regions such as Bajhang and Jajarkot, particularly in earthquake-affected areas. These organizations played a pivotal role in leveraging GIS and satellite imagery for the planning and execution of relief distribution during disasters. The training sessions enabled CSOs to visualize damaged areas, assess humanitarian needs, and coordinate aid more effectively using free data and mapping tools.

OpenStreetMap (OSM) and Geospatial Data Collection

The use of OpenStreetMap (OSM) and other free geospatial data tools was a key component of the study and implementation process. Training sessions were held to teach students, local officials, and community members how to collect, validate, and visualize data using OSM. Participants learned to create detailed maps of critical infrastructure (such as schools, hospitals, roads, and open spaces) that could be used in disaster response and planning. These maps helped communities visualize the risks they faced and plan accordingly for evacuations, shelter locations, and the distribution of emergency supplies. In addition to training, participants were involved in hands-on data collection efforts. These activities allowed them to contribute real-time data that could be used by local governments and disaster management agencies in planning and response efforts.



1.2 Outcomes of the Study/Implementation Phase

The study and implementation phase of the initiative resulted in several key outcomes:

- **Increased Awareness and Preparedness:** Local communities gained a deeper understanding of disaster risks and how GIS tools could help mitigate those risks. Community members were empowered to take proactive steps in preparing for disasters by using the tools and knowledge provided through the workshops.
- **Enhanced Technical Capacity:** University students and local government officials developed practical skills in using GIS for disaster management. This included creating detailed risk maps, planning evacuation routes, and developing contingency plans based on real-time data.
- **Improved Collaboration:** The initiative fostered stronger collaboration between local governments, educational institutions, CSOs, and development agencies. These partnerships created a network of stakeholders working together to build more resilient communities.
- **Integration of GIS in Education:** The inclusion of GIS and DRRM topics in school and university curricula ensured that future generations would continue to benefit from these skills and be better prepared to manage disasters.

1.3 Problem Statement

Nepal faces numerous natural disasters, including floods, landslides, forest fires, and earthquakes, which have devastating effects on lives, property, and infrastructure. However, there is limited use of GIS and other advanced technologies in DRRM. Several key challenges contribute to this situation:

- **Ignorance of disaster risks**: Many communities and local authorities lack an understanding of the potential risks posed by natural hazards. This leads to insufficient preparedness and inadequate response measures during disasters.
- **Lack of technical expertise**: The technical capacity to use GIS for disaster risk reduction is lacking at both the community and government levels. Most local officials and community members are unfamiliar with how GIS can be applied to identify risks, plan evacuation routes, or manage resources during emergencies.
- **Vulnerability of rural areas**: Rural and mountainous regions of Nepal are particularly vulnerable to disasters due to their geographical location and lack of infrastructure. These areas often lack early warning systems, making it difficult to predict and respond to disasters in a timely manner.
- **Limited collaboration and coordination**: There is a need for better collaboration between government agencies, academic institutions, and civil society organizations to integrate GIS into DRRM efforts. Stakeholders often work in silos, and there is limited sharing of knowledge and resources.

1.4 Objectives of the Change Initiative

The primary objective of the Change Initiative is to enhance the capabilities of local authorities, communities, and stakeholders in using Geographic Information Systems (GIS) to strengthen

disaster risk reduction management (DRRM). This involves training participants to utilize GIS for disaster forecasting, planning emergency evacuations, and developing mitigation measures. By integrating GIS technology into DRRM, the initiative seeks to empower decision-makers to make data-driven decisions, ensuring a swift and effective response to disasters.

Another crucial objective is to establish comprehensive mapping and visualization systems to support critical disaster-related activities. This includes mapping safe transportation routes, designing the fastest and shortest logistical service delivery networks, and visualizing crisis communication channels. Additionally, GIS will be used to identify suitable locations for temporary settlements, especially for internally displaced persons (IDPs), ensuring the inclusion of women- and child-friendly spaces in these camps. This mapping will improve the efficiency of disaster management operations, particularly during large-scale emergencies.

Finally, the initiative aims to empower local communities by providing training and raising awareness about disaster risks and mitigation strategies. By enhancing community knowledge and fostering collaboration with educational institutions, local governments, and civil society organizations, the initiative promotes a grassroots approach to disaster preparedness, helping to create more resilient and informed communities.

2. Data and Methods

2.1 Implementation Process

We adopted the community driven approach and to implement the CI. During which we partnered with various local governments, organizations and university clubs to disseminate the knowledges and skills of GIS and Critical resource mapping among the university and school students, community clubs and others.

- **Training Workshops on Disaster Risk Reduction and GIS:** These workshops, targeted at local community members in areas like Jajarkot, Rukum West, Bajhang, Nuwakot, and Kathmandu, resulted in an increased understanding of disaster risk reduction and emergency response procedures. The direct result is that these communities are now better prepared to respond quickly and safely in disaster situations, especially earthquake.

- **GIS and Disaster Management Training for University Students:** Students from institutions like the Institute of Crisis Management Studies, Sagarmatha College of Science and Technology, Masters in Tourism and Hospitality, Kantipur Engineering College, Kathmandu Model College and Tribhuvan University, and others participated

in DRR simulation, OSM mapping and GIS training. The outcome was a significant enhancement of their knowledge and practical skills in GIS, critical resource mapping, comprehensive participatory mapping, disaster management, and simulation drills, directly contributing to their preparedness for future disaster management roles.

- **Capacity Building for Local Government Officials:** The initiative provided training for local government officials of Panchpokhari Thangpal rural municipality, Kirtipur municipality, Tarkeshwor Municipality and Jajarkot DAO on the application of GIS and mapping in disaster risk management. This has led to improved planning and implementation of disaster management strategies, utilization of early warning systems, and better emergency response operations.
- **Collaboration with Educational Institutions:** Schools like Golden Horizon Academy and colleges received experiential knowledge sharing sessions on disaster risk reduction and GIS. This resulted in the integration of these important topics into their curriculum, 4-5 classes' incorporating DRR simulations exercise, identification of critical resources like schools, hospitals, open spaces, and alternative road connectivity within their community, raising the level of awareness and preparedness among students.
- **Engagement of Civil Society Organizations (CSOs):** The initiative facilitated the use of GIS visualization and satellite imagery for CSOs and development agencies, especially in the earthquake-affected areas of Bajhang and Jajarkot. This has improved their ability to plan and execute relief distribution more effectively, showcasing better aid coordination during emergencies.
- **OpenStreetMap (OSM) and Geospatial Data collection sessions:** The spread of knowledge about OSM and geospatial data visualization has empowered students from STEAM to ideate and develop apps for data collection, validation and visualization to help local governments, development agencies, and DRR professionals. Some of the development agencies and DRR professionals are now adept at accessing, visualizing, and utilizing free data for various humanitarian support activities, including disaster risk reduction and emergency response planning.

These activities have collectively enhanced the capabilities of various stakeholders in disaster management, leading to more resilient communities and organizations. The initiative has established a foundation for sustainable disaster risk reduction and management strategies, incorporating modern technology and collaborative approaches.

2.2 Fishbone Analysis and Root Causes

As the change initiative is more focused on strengthening the capabilities of using GIS, mapping, and visualization techniques to forecast the disaster and crisis situations. Importantly

the CI has been designed to change the mindset of the community about the disaster and the anticipatory actions. The root because we were trying to bring impact on was the ignorance of the risk factors of the disaster by community and the government level entities. During the fish bone analysis process, sit with different organizations and like-minded people from DRR sectors, and analyzed the hierarchical problems and causes of the ignorance of the risks.

2.3 Stakeholders Engagement

During the implementation of the CI, we collaborated with various stakeholders and organizations. We have been partnering with local stakeholders like Higher Schools and University affiliated colleges to train the students and local government. Students from IT and Crisis Management Studies will be the first to get the training on the integration of GIS into Disaster Risk Reduction and Management, both student groups will be learning vulnerability Mapping, data collection, and mapping & visualization into QGIS software.

With the technical support of the National Network of Community Disaster Management Community (NCDMC), the local committee of the NCDMC will coordinate with the local government and the local government will be an organizer. NCDMC will bear all the expenses for technical support, designing training manuals, resource persons, training materials, etc. whereas the organizer will provide a hall for the participants. ICMS, Community based organizations, Local government, and NCDMC will be the primary stakeholders in implementing the change initiative.

As part of the stakeholder engagement, we coordinated with:

Local Community Members: People living in the areas where the initiative was implemented (Jajarkot, Rukum West, Bajhang, Nuwakot and Kathmandu) likely gained increased awareness and skills in disaster risk reduction.

University Students: As part of the capacity-building efforts, students at universities (Institute of Crisis Management Studies, Sagarmatha College of Science and Technology, Tribhuvan University, Masters in Tourism and Hospitality, Kantipur Engineering College, and others)

involved in the initiative benefited from enhanced knowledge and practical skills in GIS, disaster management and Simulation drills workshop.

Local Government Officials: The initiative aided the local government to understand and apply GIS. Mapping and visualization in disaster risk management, upskilling their skill in dealing with the outcome of the disaster. They have at least understood the importance of early warning system and how the satellite imageries can be used as reference to make contingency plans and emergency support operations.

Educational Institutions: Schools (Golden Horizon Academy, Balaju and Jeetpur Phedi, Tarkeshwor) and colleges benefited from the experiential knowledge sharing of disaster risk reduction and GIS.

Civil Society Organizations (CSOs): Various development and government agencies supporting the Bajhang and Jajarkot EQ got chance to visualize the power of GIS visualization and satellite imagery from Maxar to visualize and plan during the relief distribution.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

The current situation shows that the dissemination of GIS knowledge and skills has significantly improved disaster preparedness and response capacities in targeted regions of Nepal. Through training workshops and hands-on practice, local governments, communities, and students now have a better understanding of how to utilize GIS for mapping disaster risks, planning evacuation routes, and managing resources during emergencies. These stakeholders are now able to access and use free geospatial data sources such as OpenStreetMap (OSM) to support humanitarian and disaster management efforts.

The key lesson learned is that community-driven initiatives, combined with strong institutional support, can effectively enhance disaster resilience. The success of this project underscores the importance of engaging local communities and integrating modern technologies like GIS into disaster management frameworks. However, the need for continuous capacity building, updated tools, and sustained collaboration among stakeholders remains critical to ensuring long-term success.

3.2 Impact and Outcomes

The "Strengthening capacities for application of GIS in disaster risk reduction management (DRRM)" initiative has delivered significant and multi-faceted impacts at the community, educational, and government levels. The outcomes reflect improvements in disaster preparedness, response mechanisms, technical capacity, and overall resilience to natural disasters in targeted regions of Nepal.

Immediate Impact: Increased Awareness and Strengthened Capacities

One of the immediate impacts of the initiative is the increased awareness about disaster risks and the role that GIS technology in disaster management. Community members, local government officials, university students, and civil society organizations (CSOs) now possess a clearer understanding of disaster risks in their regions. The workshops and training sessions provided practical knowledge on how to use GIS to visualize and map disaster-prone areas, leading to better preparedness for emergency situations.

Short-Term Outcomes: Enhanced Mapping, Visualization, and Planning

In the short term, the initiative has resulted in a notable improvement in the mapping and visualization of disaster risks. Using GIS tools, local governments and communities have been able to identify high-risk areas and create detailed maps that inform decision-making. These maps have become critical in the planning and design of contingency plans, allowing for more effective coordination of emergency responses. The initiative also introduced the concept of real-time crisis communication and logistics support using GIS. This strengthened operational efficiency during disaster response will reduce loss of life and property in future emergencies.

Long-Term Outcomes: Institutional Integration and Policy Impact

In the long term, the initiative has laid the groundwork for the institutionalization of GIS and DRRM practices within local governments, educational institutions, and civil society organizations. One of the most significant outcomes is the integration of GIS-based disaster management strategies into the curricula of partner universities such as the Institute of Crisis

Management Studies, Tribhuvan University, and Sagarmatha College of Science and Technology. This inclusion ensures that future generations of students will be trained in the application of GIS for disaster management, fostering a new cadre of professionals equipped to handle crises using cutting-edge technology.

At the policy level, local governments that participated in the initiative are now better positioned to integrate GIS mapping into their disaster management frameworks. The capacity-building efforts aimed at government officials have led to more informed policymaking, where disaster risk reduction is now a priority in local development plans.

Sustained Community Resilience and Collaboration

Beyond institutional and policy changes, the initiative has fostered stronger collaboration between local governments, educational institutions, and civil society organizations. The partnerships formed through this initiative have built a network of stakeholders committed to disaster risk reduction, creating a foundation for continued collaboration on future DRRM projects. The success of the initiative in targeted regions has also created the potential for scaling up these efforts to other vulnerable areas across Nepal, where similar challenges exist. The ability of communities to access and use open data sources such as OpenStreetMap (OSM) and geospatial data has been a significant milestone in creating locally driven disaster management solutions.

4. Future Actions and Sustainability

The future actions of the Change Initiative will focus on expanding the reach and sustainability of GIS-based disaster risk reduction management (DRRM) efforts. A key strategy for achieving this will involve forging stronger partnerships with universities, community clubs, and local organizations to ensure continued dissemination of knowledge and skills through workshops, training sessions, and seminars. By extending the program to more institutions and regions across Nepal, we aim to create a self-sustaining model where DRRM knowledge becomes ingrained in both academic and community settings.

University Partnerships:

We plan to collaborate with universities such as Far Western University, Mid-Western University, and Pokhara University to expand the GIS training modules. These partnerships will involve incorporating DRRM and GIS into the universities' curricula, offering students the opportunity to participate in hands-on training and simulations. The universities will serve as hubs for knowledge transfer, hosting regular workshops, seminars, and field exercises on disaster preparedness, risk mapping, and emergency response planning. By

engaging students from various disciplines—engineering, environmental science, geography, and crisis management—this initiative will create a new generation of disaster management professionals skilled in using GIS technology.

Community Engagement and Youth Organizations:

In addition to academic institutions, partnerships with community-based organizations and youth clubs, such as YouthMappers and local crisis management clubs, will play a crucial role in extending the initiative to grassroots levels. These organizations will help organize community outreach programs, involving local leaders, government officials, and civil society members in training workshops. With a special focus on engaging youth, these programs will raise awareness about disaster risk reduction and empower younger generations with the technical skills needed to map vulnerabilities and respond to crises. YouthMappers, Open Tech Community and Innovation Lab will continue to provide technical support in mapping and satellite imagery interpretation, enabling community-driven data collection and analysis.

Collaboration with Local Governments and NGOs:

The involvement of local governments and non-governmental organizations (NGOs) will be essential for the sustainability of the initiative. Local government officials who have already received GIS training will become advocates for further integration of GIS into their disaster management plans. These officials will collaborate with NGOs, such as the National Network of Community Disaster Management Committees (NCDMC), to organize additional training sessions and simulations for wider municipal staff, first responders, and community leaders. Local governments will also play a crucial role in implementing the initiative's outcomes, such as creating risk maps, establishing early warning systems, and improving crisis communication networks within their jurisdictions.

By ensuring sustained community involvement and fostering partnerships with educational institutions, government bodies, and civil society, the initiative will build a strong foundation for ongoing disaster risk reduction efforts. The integration of GIS into educational curricula, combined with the continuous engagement of communities and local authorities, will ensure that these DRRM efforts remain effective and resilient long into the future. Furthermore, these partnerships will help secure the technical and financial resources needed to scale the initiative to other regions and sustain long-term capacity building.

Strengthening Resilient Business Practices through DRR and GESI Integration, NET Consortium

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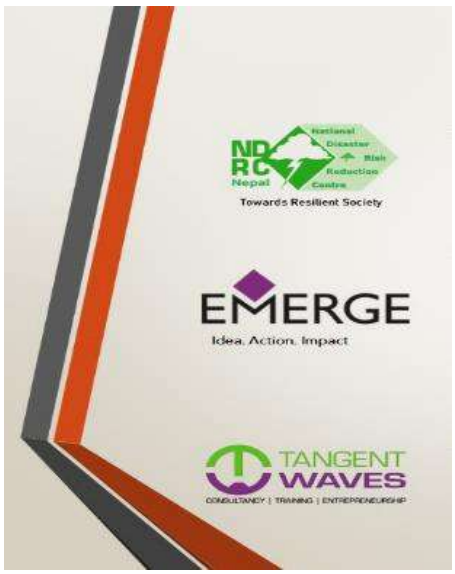
Abstract

The NET Consortium, co-founded by the National Disaster Risk Reduction Centre (NDRC), Enterprise for Management, Economic Reform, and Gender Equality (EMERGE), and Tangent Waves, spearheads a transformative Change Initiative (CI) aimed at promoting sustainable and resilient business practices. This initiative, originating from the International Training Program for Disaster Risk Management (Cycle 4) by MSB Sweden, aims to integrate Gender Equality and Social Inclusion (GESI) with Disaster Risk Reduction and Management (DRRM) strategies. It challenges conventional business models, addressing key issues such as inadequate recognition of DRRM, insufficient integration of GESI, and the inefficient use of CSR funds.

The CI employs a three-pronged strategy: building a knowledge base, enhancing capacity, and supporting policy advocacy. Notable achievements include The Bamboo Series (TBS) which has hosted five events focusing on business resilience, Business Continuity Management (BCM) training for over 200 participants, government collaboration, and educational integration. Moving forward, the CI aims to sustain its efforts through digital initiatives, resource mobilization, and annual symposiums, while continuing to foster partnerships, influence policies, and expand its impact in Nepal and beyond. The CI remains committed to overcoming challenges such as capacity building, resource mobilization, and data collection to drive meaningful change.

1. Introduction



The NET Consortium is spearheading a transformative Change Initiative (CI). This initiative, rooted in the International Training Program for Disaster Risk Management organized by MSB, Sweden, promotes sustainable and resilient business practices by incorporating Gender Equality and Social Inclusion (GESI) and Disaster Risk Reduction and Management (DRRM) perspectives, offering a forward-thinking alternative to conventional business approaches.

The CI is driven by the need to address critical challenges within Nepal's private sector. Key issues include the lack of recognition of DRRM's importance, the absence of GESI integration in business operations, inefficient use of corporate social responsibility (CSR) funds, and the limited scalability of best practices.

To tackle these issues, CI focuses on building a comprehensive knowledge base, strengthening capacity through training, and advocating for policy changes that support inclusive and resilient business models. The initiative aims to reshape traditional business practices by promoting disaster preparedness, gender equality, and social inclusivity across the private sector, government, and civil society. The significance of this initiative lies in its comprehensive approach, which integrates lessons learned from past failures and emphasizes collaboration among diverse stakeholders.

1.1 Study/Implementation Area

The initiative has been implemented in Nepal, which is severely impacted by natural disasters, specifically focusing on vulnerable sections of the SME communities along with the society and state, particularly the local governments that lack adequate knowledge, skill, resources, and infrastructure.

1.2 Problem Statement

Despite the growing recognition of disaster risk management globally, Nepal's private sector continues to overlook the importance of integrating (DRRM) and GESI into business practices. The conventional "business as usual" model often overlooks these critical factors, limiting the sector's resilience to disasters and capacity for sustainable growth. Furthermore, CSR funds are underutilized, and scalable best practices remain rare.

Private sector businesses lack sufficient awareness of DRRM, fail to incorporate GESI principles in their operations, and lack structured Business Continuity Plans (BCPs). Moreover, deep-rooted misconceptions among the private sector, civil society, and the government hinder effective collaboration. These challenges are further exacerbated by financial constraints and a lack of reliable data, making coordinated efforts even more difficult.

1.3 Objectives of the Change Initiative

The CI consists of the following core objectives:

- **Raise Awareness and Capacity**: Educate the private sector on the importance of DRRM and GESI through knowledge-sharing, training, and capacity-building initiatives, replacing outdated business practices with inclusive and resilient approaches.
- **Integrate GESI and DRRM in Business Operations**: Encourage businesses to embed GESI and DRRM into their core operations, ensuring that gender equality and disaster resilience become integral components of their sustainability efforts.
- **Support Policy Development and Advocacy**: Collaborate with government and civil society to influence policy changes that promote BCM, foster disaster preparedness, and enhance private sector engagement in DRRM.
- **Strengthen Partnerships and Collaboration**: Establish strategic partnerships with government officials, educational institutions, and private sector organizations that enhance the impact of sustainable business practices.

- **Sustainability and Knowledge Dissemination**: Ensure long-term impact by building a robust digital presence, mobilizing resources, and disseminating knowledge through events, webinars, and the annual symposium, while focusing on scalability and adaptability.

2. Implementation Process

The implementation process involves a strategic and phased approach aimed at building sustainable, resilient businesses.

- **Developing a Knowledge Base**: CI starts by preparing resources and tools to create awareness and knowledge about DRRM and GESI in business practices. This includes organizing discussion platforms, conducting and disseminating research, and curating case studies.
- **Capacity Building**: CI focuses on enhancing the skills and capacities of businesses, government officials, and other stakeholders. Through workshops such as the Business Continuity Management (BCM) training, over 150 participants have been sensitized to disaster preparedness, including key business figures and media professionals.
- **Policy Advocacy**: CI works closely with government bodies to influence the development of policies that promote DRRM and GESI integration into the private sector. This involves direct collaboration and advocacy efforts, contributing to significant milestones such as the introduction of BCM as an elective course in educational institutions.
- **Stakeholder Engagement**: Through initiatives like The Bamboo Series (TBS), CI engages the private sector, civil society, and the government, fostering partnerships and aligning efforts for sustainable business resilience.

This multifaceted approach ensures CI's sustainability, scalability, and long-term impact.

The Fishbone Analysis of Root Causes

The NET CI Fishbone chart contains a visual representation of issues affecting business resilience in the context of disasters, particularly focusing on small and medium-sized enterprises (SMEs), especially women-led SMEs in Nepal.

Root causes identified include:

- **Disasters Affect Women and Marginalized Groups Disproportionately**: Issues include limited access to resources, socio-economic barriers, and a lack of GESI-responsive policies.
- **Poor Policy Provisions and Implementation**: Policies are siloed, lacking integration, and show weak responsiveness to resilience needs.
- **DRRM is response-centric**: There is insufficient focus on building resilience before disasters, with inadequate support for MSMEs in recovery and risk reduction.
- **Corporate Focus on Sales Over Resilience**: MSMEs struggle with sustainability, lacking an environment that promotes business continuity planning.
- **Entrepreneur Panic**: There is minimal disaster risk awareness and preparation, causing entrepreneurs to react in crisis mode.

- **Limited Information and Planning**: Businesses often lack formal planning, relying on passion or inheritance, without concrete business continuity plans.

The NET CI Fishbone analysis identifies structural, policy, and preparedness issues that collectively hinder SME resilience to disasters. This analysis guided the initiative in prioritizing actions that address these underlying issues effectively.

Stakeholder Engagement and Collaboration

The CI is built on the foundation of strong stakeholder engagement and collaboration. Bringing together private sector organizations, government entities, civil society, and educational institutions, the initiative seeks to create a broad coalition committed to sustainable and resilient business practices. Key stakeholders included local government agencies, non-governmental organizations (NGOs), community leaders, and academic institutions. Their roles ranged from providing expertise to facilitating community workshops. Building effective partnerships presented challenges, particularly in aligning diverse objectives; however, successful collaboration was achieved through regular meetings and shared goals.

One of the key platforms for collaboration is **The Bamboo Series (TBS)**, which has successfully brought stakeholders together to discuss and strategize on building resilient and inclusive businesses.

The initiative has also built effective partnerships with government officials, resulting in a commitment to policy development that supports business resilience. Furthermore, collaboration with educational institutions has led to the integration of BCM as an elective subject, enhancing knowledge dissemination.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

This initiative has made significant strides in integrating GESI with DRRM. Currently, the CI continues to face challenges such as limited recognition of DRRM within the private sector, insufficient GESI integration, and ineffective utilization of CSR funds. Key achievements

include the successful Bamboo Series, which has fostered partnerships and dialogue among stakeholders, and BCM training, which has engaged over 150 participants. Collaborative efforts with government officials have also paved the way for policy support and educational integration of BCM. Lessons learned include the urgent need for documented BCPs in Nepal, the importance of collaboration among government, civil society, and the private sector, and the necessity for data-driven approaches.

4. Conclusions

Future Actions and Sustainability

Moving forward, the CI will focus on resource mobilization, enhancing digital presence, and sustaining partnerships to amplify its impact and address identified challenges effectively.

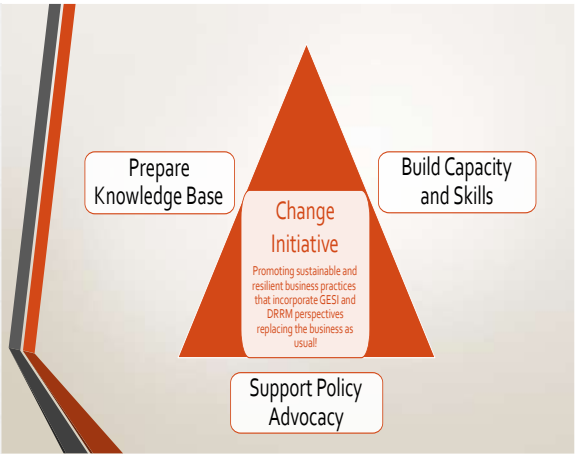
To ensure the initiative's long-term sustainability, a multifaceted strategy is essential. Key actions moving forward include solidifying The Bamboo Series (TBS) as a flagship program to expand participation, establishing a dedicated digital platform for sharing resources, and securing funding and support through strategic partnerships. These efforts will help broaden engagement, enhance accessibility, and provide a foundation for continued growth.

A good start was achieved when the Institute for Social and Environment Transition (ISET) Nepal joined hands to collaborate on the TBS with support from the Dan Church Aid Nepal for a year and an MOU was signed. Besides, regular knowledge dissemination through podcasts, webinars, and an annual symposium will facilitate continuous learning and collaboration among stakeholders.

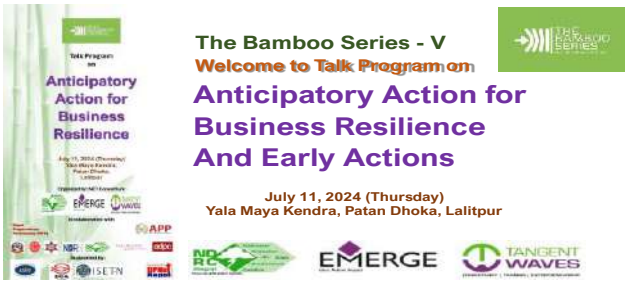
Additionally, investing in data collection and research will provide concrete evidence of our initiatives' impacts, supporting advocacy efforts and attracting further funding.

To ensure the long-term success of the CI, future efforts will prioritize ongoing training programs for SME/private sector members and establish a framework for continuous evaluation and adaptation of strategies. Sustainability will be achieved by securing funding partnerships and embedding successful practices within local governance structures, enabling replication in other vulnerable province.

The Problem Analysis and Strategy to Address: Fishbone and Three-Pronged Approach of NET CI



Glimpses of the Journey of NET Consortium Change Initiatives



Study of Adaption Strategies in Development Sectors to Address the Impacts of Pandemic

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Abstract

This Change Initiative examined the challenges and safety measures development organizations in Nepal faced while conducting Disaster Risk Management (DRM) activities during the COVID-19 pandemic. Organizations went through limited in-person interactions and movement restrictions, which affected field visits, community engagement, monitoring, and evaluations. Using surveys, interviews, and focus group discussions, the change initiative gathered insights on the pandemic's effect across project stages and explored measures to safeguard staff while ensuring program continuity. Emphasis was placed on understanding how Gender Equality, Disability, and Social Inclusion (GEDSI) principles influenced DRM efforts. Findings demonstrated resilience through virtual adaptations, collaborative knowledge-sharing, and environmental benefits from remote work. Lessons learned fostered stronger coordination and preparedness for future crises.

1. Introduction

This Change Initiative is designed to gather information on the challenges and risks that development organizations faced and the safety measures they have adopted while working both in the field and in their offices on Disaster Risk Management activities. Development organizations frequently engage in field-based work. They need to collaborate closely with communities and frequently conduct field visits. The COVID-19 poses serious threats to development organization since in-person meetings and travels were limited. The goal of the Change Initiative is to understand how these organizations handle challenges at different stages of their work and ensure their staff's safety. To collect this information, a detailed questionnaire was developed. Surveys were carried out through various methods to make it convenient for participants, including phone calls, video calls, and in-person meetings that followed necessary safety protocols. These surveys involved in-depth discussions and meetings with different development organizations working in Disaster Risk Management to capture a broad range of perspectives on the issues they face. The questions were designed to focus on the specific challenges and risks organizations deal with at various program stages, such as planning, implementing, reporting, collecting data, monitoring and evaluating progress, providing training, and coordinating with others. Separate sets of questions were developed for different types of organizations to ensure relevance and effectiveness.

Additionally, the survey aimed to gather perspectives on how the quality of work is ensured by the inclusion of people with disabilities and women. By including these viewpoints, the survey aimed to understand how Gender Equality, Disability, and Social Inclusion (GEDSI) considerations influence Disaster Risk Management work and to promote inclusive practices in the field.

1.1 Study/Implementation Area

The study was carried out in the Kathmandu Valley and in Dorambha Rural Municipality of Ramechhap District. Both locations are situated in the hilly region of Nepal.

1.2 Problem Statement

Nepal's geographical complexity and diverse topography expose it to numerous natural and human-induced hazards, making it particularly vulnerable to climate-related risks and earthquakes. Ranking fourth in climate risk globally and eleventh in earthquake occurrence, the country experiences frequent floods, landslides, and fires, which annually lead to significant loss of life and property. Despite ongoing efforts by the government and national and international development partners to enhance Disaster Risk Management (DRM), achieving effective outcomes remains challenging due to the country’s diverse and difficult terrain.

The COVID-19 pandemic has further added complexity, disrupting essential DRM activities that depend on field-based activities. Lockdowns and health risks have limited the availability of human resources and restricted field visits, making it difficult to implement the program activities and protect vulnerable populations. These constraints have introduced gaps in preparedness for unforeseen disruptions, emergency and posed significant challenges to organizations in implementing DRM programs effectively. To address these issues, it is essential to understand the challenges, risks, and safety measures implemented by organizations during the pandemic while conducting DRM activities both in the field and within offices.

1.3 Objectives of the Change Initiative

- To identify the specific challenges and risks faced by organizations involved in DRM in Nepal due to the COVID-19 pandemic.
- To assess the safety measures adopted by organizations during the pandemic to continue DRM activities, including field visits.
- To develop questionnaires for different types of organizations, including donor agencies and program beneficiaries, to capture diverse perspectives on challenges, risks, and safety measures.
- To facilitate discussions and collaborations with DRM specialists.

2.Data and Methods

2.1 Implementation Process

This assessment, a Change Initiative, was implemented in the following phases:

Phase 1: Planning and Preparation

Questionnaire Development: Structured and semi-structured questionnaires were developed for different stakeholders, including donor agencies, field staff, and programming beneficiaries.

Coordination with Stakeholders: DRM specialists and key stakeholders from relevant organizations were engaged early in the process to gain insights into potential areas of focus and ensure comprehensive data collection.

Phase 2: Data Collection

Survey and Interview: Surveys were conducted via telephone, video calls, and in-person meetings, following COVID-19 safety protocols.

Discussion Sessions and Focus Groups: To gain a broader understanding, focus group discussions and one-on-one interviews were organized to certain group of people.

Phase 3: Data Analysis

Data Compilation and Categorization: Information from surveys and interviews was compiled and categorized according to themes, such as operational challenges, human resource availability, and safety measures taken.

Risk and Challenge Analysis: Specific risks encountered at each program stage design, execution, data collection, monitoring, training, and coordination were highlighted.

Lessons Learned Documentation: The project documented the impacts of COVID-19 on implementation and impact on results and recorded successful strategies for adapting to pandemic conditions.

Reflection on Effectiveness

The strategies employed proved effective in achieving project objectives despite the constraints imposed by COVID-19. The approach to data collection allowed diverse voices to be included, and the survey approach ensured safety without compromising data quality.

2.2 Fishbone Analysis of Root Causes

The Fishbone Analysis is an effective tool for identifying the root causes of complex problems by organizing them into main categories. The main categories are People, Processes, Environment, and Resources.

1. People
    - Limited Human Resources Availability due to health risks.
    - Skill Gaps in Remote Working: DRM work is typically field-oriented, so many staff were unfamiliar with remote tools and strategies.

- Community Engagement Limitations: COVID-19 safety protocols restricted close interactions with communities, a core part of DRM efforts, impacting the ability to conduct needs assessments and engage effectively in disaster-prone areas.

2. Processes
    - Field Visit Restrictions: Government-imposed lockdowns and travel restrictions stopped regular field visits, essential for DRM work, particularly in rural and high-risk areas.
    - Reduced Monitoring and Evaluation (M&E): Limitations on field access disrupted traditional monitoring and evaluation processes, making it challenging to assess program outcomes.
    - Delays in Coordination and Reporting: Remote working disrupted communication channels, delaying coordination with stakeholders, and reporting processes.
3. Environment
    - Geographical Challenges: Nepal's diverse topography made it difficult to reach certain remote or high-altitude areas, especially under travel restrictions, adding complexity to fieldwork.
    - Increased COVID-19 Risks: In areas with high infection rates, health risks discouraged field presence and made communities suspicious of external visitors, impacting data collection and engagement efforts.
    - Frequent Natural Disasters: Continuous natural disasters such as floods and landslides, compounded by COVID-19, overwhelmed DRM organizations and diverted resources from proactive to reactive approaches.
4. Resources
    - Budget Constraints: The pandemic led to reduction in funding for many organizations, limiting resources for field operations, M&E, and capacity-building initiatives.
    - Insufficient Digital Infrastructure: Many DRM organizations lacked the necessary technology for efficient remote work, affecting communication, data collection, and overall program efficiency.
    - Personal Protective Equipment Shortages: Shortages in PPE limited safe field operations, further constraining physical engagement with communities.

How Fishbone Analysis Identified Key Areas for Action

The Fishbone Analysis provided a structured breakdown of the interconnected challenges faced by DRM organizations in Nepal. By categorizing these issues, it became easier to see where targeted action could have the most significant impact:

- Capacity Building on virtual consultations and achieving best outcomes with limited travel
- Process Flexibility-developing remote-friendly M&E processes, and building alternative workflows adaptable to crisis conditions.

- Preparedness for Environmental and Health Risks- Creating guidelines for safe operations in high-risk areas.
- Resource Allocation: Prioritizing funding for digital resources, PPE, and other essential items, and securing funds for emergencies.

2.3 Stakeholder Engagement and Collaboration

Key Stakeholders and their Roles

International NGOs (INGOs)

Role: INGOs provide expertise, financial resources, and coordination support for Disaster Risk Management (DRM) initiatives. They are often instrumental in delivering training, capacity building, and developing safety protocols during crises.

Local NGOs

Role: Local NGOs are critical for community-level implementation, outreach, and awareness-raising. They directly engage with communities, assessing needs and disseminating information on safety measures.

Donor Agencies

Role: Donor agencies fund DRM projects and provide guidelines on monitoring, evaluation, and reporting processes. They ensure financial stability for initiatives and contribute to capacity building by offering training and technical support.

Disaster Networks

Role: Disaster networks, which include coalitions of organizations working in DRM, promote knowledge sharing, advocacy, and unified approaches to risk management and emergency response.

Local-Level Committees and Government Entities

Role: Local governments and committees are responsible for planning and implementing DRM activities at the grassroots level. They coordinate with local communities, mobilize resources, and execute safety protocols during fieldwork.

Community-Based Groups and Small Community Organizations

Role: These groups work at the grassroots level to raise awareness, mobilize resources, and implement safety measures directly within communities.

Challenges and Successes: Resource constraints and lack of formal training were challenges, but with support from larger NGOs, they successfully adapted to local needs and ensured continued support for DRM activities.

Challenges and Successes in Building Partnerships and Collaboration

Challenges:

- Diverse Organizational Capacities: Lack of resources, digital infrastructure, and training among stakeholders made it challenging to data collection and ensure participation.
- Alignment of Objectives: Balancing the priorities of INGOs, donors, and local organizations required strategic discussions to align goals while respecting local needs.
- Pandemic-Related Restrictions: COVID-19 limited face-to-face interactions, making it difficult to coordinate activities, share resources, and conduct on-site assessments.

Successes:

- Collaborative Knowledge Sharing: By promoting open dialogue and encouraging each stakeholder to share their COVID-19 adaptation measures, the Change Initiative created a valuable pool of shared knowledge.
- Innovative Approaches to Participation: Virtual meetings and remote surveys enabled continued engagement with stakeholders despite movement restrictions.
- Community-Centric Solutions: Local NGOs and community groups developed practical, low-cost adaptations that larger organizations could integrate into their strategies, highlighting community resilience and adaptability.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

The Change Initiative identified the challenges that development partners in Disaster Risk Management (DRM) faced both in fieldwork and in the office during COVID-19, along with the steps they took to overcome these challenges. Lessons and insights from the government, Civil Society Organizations (CSOs), media, and academia were then shared in discussions and meetings with local government officials to help them strengthen their resilience against future pandemics. These discussions introduced new ideas and technologies to handle health crises and other potential disasters. ECO-Nepal and other organizations can now apply the strategies learned from each other. By sharing these findings, the Change Initiative helped various development partners—those involved in both the discussions and surveys—benefit from the lessons learned. As a result, the initiative contributed to increased awareness and built some level of institutional capacity among local governments and CSOs, making them more prepared for future challenges. It also strengthened coordination among development stakeholders, promoting a culture of knowledge-sharing and best practices. The government even created informal groups within local areas to further spread.

After adapting to virtual work during COVID-19, many organizations in Nepal have begun to implement work-from-home practices as needed. A lot of these organizations are now using paperless strategies and conducting most meetings and consultations online. In-person meetings and discussions are held only when absolutely necessary. This shift has led to a

reduction in transportation and consumption of resources and energy, which in turn helps lower their carbon footprint.

3.2Impact and Outcomes

Main Impacts

- Improved Resilience and Preparedness: The discussions with local governments led to a greater understanding of how to handle future epidemics and disasters.
- Shift to Virtual Work: Many organizations transitioned to work-from-home practices when necessary, allowing for greater flexibility. This shift has resulted in a significant decrease in office-related overhead costs and improved work-life balance for employees.
- Environmental Benefits and reduction of carbon footprint: By adopting paperless strategies and conducting meetings virtually, organizations reported a reduction in transportation-related emissions. For example, one organization noted a 40% decrease in travel costs and a corresponding reduction in their carbon footprint. A preliminary assessment showed that organizations collectively reduced their paper usage by about 60%, aligning with environmental sustainability goals.
- Strengthened Coordination and Knowledge Sharing: The initiative cultivated stronger collaboration among various stakeholders, establishing a culture of knowledge sharing. As a result, informal platforms were created for continuous communication among development partners. Feedback from participants indicated that about 80% felt that these new channels for sharing information improved their operational effectiveness.

Areas for Further Improvement

- Infrastructure Challenges: Some organizations reported that internet connectivity and access to technology remained a challenge for staff and community members, especially in rural areas. Future initiatives should focus on improving digital infrastructure to ensure equitable access.
- Balancing Virtual and In-Person Interactions: While virtual meetings have many benefits, there is still a need for face-to-face interactions in certain contexts to build trust and rapport. Finding the right balance between virtual and in-person meetings will be crucial moving forward.
- Monitoring and Evaluation: There is a need for a more structured approach to monitor and evaluate the long-term impacts of these changes.

4. Conclusions

Future Actions and Sustainability

Invest in improving internet connectivity and access to technology, particularly in rural areas, to facilitate continued virtual engagement. This could involve partnerships with telecommunications providers or government initiatives to expand infrastructure. Create guidelines for when to conduct virtual versus in-person meetings, ensuring that organizations can effectively engage with communities while also maintaining necessary safety protocols. Regular feedback from stakeholders can help refine these guidelines.

Organize regular training sessions and workshops for staff and community members to build digital skills and enhance knowledge in DRM practices. This will ensure that all stakeholders can effectively utilize new technologies and methodologies. Establish formal networks among development partners to promote ongoing collaboration and knowledge sharing. Encourage organizations to integrate virtual working methods and paperless strategies into their standard operating procedures. This ensures that the benefits gained during the initiative are preserved in the long term. Collaborate with organizations in other regions to share insights and experiences. This could involve cross-regional workshops or virtual conferences that highlight successful strategies and facilitate knowledge transfer. The Change Initiative has demonstrated the potential for transformative changes in Disaster Risk Management practices through collaboration, innovation, and adaptability.

Training Community Radio Journalists in Disaster Communication for Inclusive Outreach

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Abstract

The change initiative was started on 2019 and successfully completed in February 2020. The initiative was created and implemented by Asha Thapa from greenhood Nepal, with the training and mentorship support from Internation training program of The Swedish International Development Corporation Agency (SIDA). With the initiative two-day training session, held in December 2019 in Janakpur, the capital of Province 2, equipped local radio journalists with the skills needed to produce lifesaving PSAs in local languages to support communities in disaster-prone areas. The focus of the PSA's content was to provide access to the right communication to women and marginalized communities who are often the most vulnerable in disaster crisis situations.

A total of 11 radio journalists from eight districts across Province 2 were trained in crisis and risk communication content production. In Nepal much of the disaster related content are produced in Nepali, hence with the change initiative the PSA was created in Maithili, Bhojpuri, and Awadhi—languages which is widely spoken in the region—ensuring that the messages resonated with local audiences.

Province 2 remains highly susceptible to natural disasters such as floods and heatwaves, as well as public health crises. The skills and knowledge gained through this initiative continue to be relevant and beneficial, enabling radio journalists to deliver timely, effective crisis communications. Trainees emphasized that the initiative underscored the importance of research-based content creation and has inspired them to continue supporting their communities in future as well.

1. Introduction

It's helpful to provide an overview of the initiative's background and its significance in the context of disaster management. A two-day intensive training session was conducted in December 2019 in Janakpur, the capital of Province 2, a region highly vulnerable to natural disasters, particularly flooding due to its flat terrain and river networks. Additionally, Province 2 faces challenges such as a low literacy rate among its population, with many women who are engaged in household responsibilities often having limited access to formal education. Research shows that women are at high risk during disasters, underscoring the need for targeted information.

In many communities, access to disaster-related information remains restricted, with much of it only available in Nepali language, which local communities may not understand. In the community in Madhesh the majority speak Maithili, Bhojpuri, or Awadhi. The initiative aimed

to address this by training local radio journalists to produce PSAs in local languages, ensuring that crucial disaster-related information reaches in the communities.

This change initiative has been vital for empowering communities to respond proactively to disaster risks and was especially impactful during 2020 terai flood and the COVID-19 pandemic.

In times of disaster, timely information is as critical as food, medicine, and water. With access to reliable information in their own language, communities are better prepared, allowing them to plan, respond, and recover with resilience. When local journalists and communities are well-informed, disaster response becomes more effective, and the overall impact of disasters at the local level is mitigated.

1.1 Study/Implementation Area

The change initiative was implemented in Province 2 (Madhesh Province) a region comprising eight districts. Radio journalists from each district actively participated in the training. Madhesh Province is highly susceptible to natural hazards such as floods and heatwaves due to its low-lying plains, which increase the vulnerability of its communities. Additionally, access to timely and accurate information in this province remains limited, which has historically hindered effective disaster preparedness and response efforts. This initiative aimed to bridge this information gap, equipping local radio journalists with skills to deliver critical, lifesaving information directly to the communities they serve.

1.2 Problem Statement

The Madhesh Province is highly prone to natural disasters such as floods and heatwaves. With one of the lowest literacy rates in the country, much of the population communicates primarily in local languages, including Maithili, Bhojpuri, and Awadhi. However, disaster-related information is often only available in Nepali, creating a critical language barrier in accessing lifesaving information.

This initiative addressed the need to equip local journalists with the skills to produce solution-oriented and lifesaving content in local languages. By providing training in effective crisis communication, this program enabled communities to access essential information, enhancing their ability to prepare for, respond to, and recover from disaster situations more effectively.

1.3 Objectives of the Change Initiative

The primary objectives of this Change Initiative (CI) were to sensitize local radio journalists on the production of lifesaving crisis communication content and to provide access to information during emergencies. Following the training, participants expressed an enhanced understanding of the importance of delivering solution-based content in local languages. This newfound expertise has been put into practice, notably during the 2020 monsoon's Terai floods and throughout the COVID-19 pandemic.

2. Data and Methods

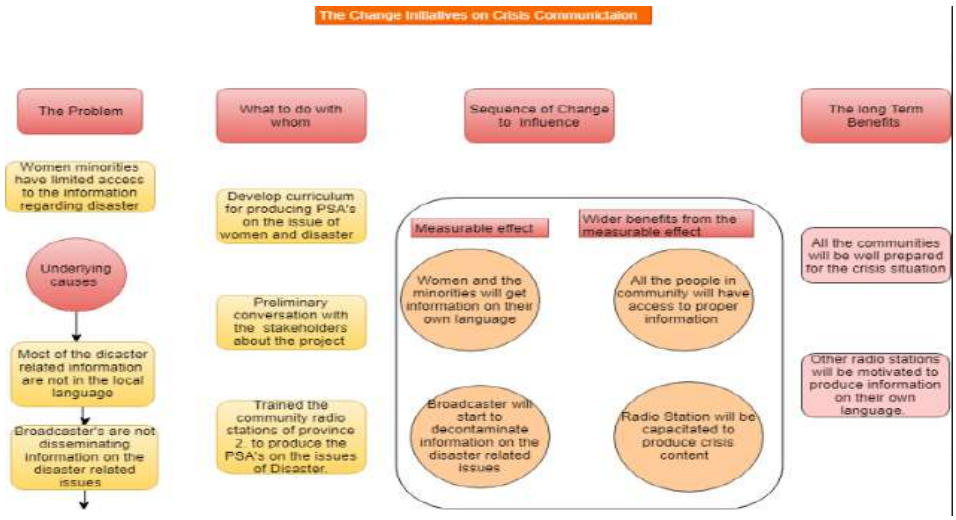
2.1 Implementation Process

To design this Change Initiative, a thorough needs assessment was conducted using both secondary and primary data sources. Secondary data included research on the demographics and vulnerabilities of Province 2, which has a low literacy rate and is highly prone to disasters such as floods and heatwaves and to know the landscape of media and journalists of Madhesh Province. Primary data was gathered through phone conversations with local radio journalists, while a Facebook group was also established to facilitate input from journalists and communities, to gather their specific needs on PSA production for the disaster preparedness and response.

The assessment process prioritized a gender-sensitive approach, ensuring that questions and discussions considered the unique needs of women and marginalized groups, who are often most affected during crises. Based on these findings, a tailored training curriculum was developed, with a focus on integrating gender perspectives and local language use. This approach aims to encourage radio journalists to incorporate gender considerations into their crisis communication efforts, ensuring that their content effectively addresses the needs of all women and marginalized communities.

2.2 Fishbone Analysis of Root Causes

Break down the root causes of the identified problem using Fishbone Analysis. Discuss the main categories and their contributing factors, showing how the analysis helped in identifying key areas for action.



2.3 Stakeholder Engagement and Collaboration

The Change Initiative successfully fostered strong engagement and collaboration not only with individual journalists but also with local radio stations. Radio stations committed to airing public service announcements (PSAs) frequently and during prime-time slots, maximizing

their reach and impact. Furthermore, several stations expressed a willingness to continue broadcasting these critical PSAs even beyond the initiative's timeline. This collaborative effort has established a lasting platform for effective crisis communication within the community.

3. Results and Discussion

3.1 Current Situation and Lessons Learned

a. Impact and Outcomes

All 11 trained radio journalists successfully produced a minimum of 20 public service announcements (PSAs) all together, which were broadcast through their respective local radio stations. Collectively, these PSAs reached an estimated audience of 6,114,600 people across the eight districts of Madhesh Province, greatly enhancing community access to lifesaving information and preparedness messages. This extensive reach highlights the initiative's significant impact in delivering critical, accessible information to a large and diverse population, strengthening the community's resilience to disaster.

4.Conclusions

Future Actions and Sustainability

The training has significantly enhanced participants' understanding of inclusive, solution-oriented radio content creation, empowering them to better support disaster-affected communities in their efforts to survive and thrive. Participants remain connected through social media channels, fostering ongoing collaboration and knowledge sharing. This network enables them to continue promoting solution-based information and ensures that women and minority communities have improved access to critical information during crises.