



COMMUNITY-BASED DISASTER RISK REDUCTION Good Practice



KAILALI DISASTER RISK REDUCTION INITIATIVES

April 2009

Author:

Dhruba Raj Gautam
Independent researcher and consultant
E-mail: drgautam@wlink.com.np

Special contributors: Ulla Dons, Chet Bahadur Tamang, Sagar Pokharel, Himal Ojha and Tej Maya Gurung

Photo contributors: Sagar Pokharel, Chet Bahadur Tamang, Himal Ojha, Dhruba Raj Gautam and Ulla Dons

Editor: Perry Thapa

Photos:

Front cover: Community meeting

Back cover: Row wise left to right

1st row: Earth quake simulation in a school, Children inspecting slope bank protection work, Smiling Children

2nd row: Water level recording, Bio-engineering intervention, School girl participating in art competition

3rd row: Search and rescue team members, Street Drama a men of awareness raising

4th row: Inundated house, Building First Aid capacity, Transportation of construction material

Design and Printing: Mind Share Communications Pvt. Ltd.

Published by: Mercy Corps Nepal, Lalitpur, Nepal

The views expressed in this document should not be taken in a way to reflect those of the European Commission, and the European Commission is not liable for any use of the information contained herein.

DIPECHO is the Disaster Preparedness Programme of the European Commission's Humanitarian Aid department, the largest single humanitarian donor in the world. The DIPECHO programme funds pilot projects intended to demonstrate that simple, inexpensive preparatory measures, particularly those implemented by communities themselves, can limit damage and increase resilience and save lives.

Mercy Corps is an international non-governmental humanitarian relief and development organization with headquarters in the USA and UK that focuses on providing support to countries in transition. Mercy Corps exists to alleviate suffering; poverty and oppression by helping people build secure, productive and just communities. Mercy Corps is primarily focusing on emergency relief; economic development; and, initiatives that strengthen civil society. The goal of Mercy Corps Nepal is to alleviate poverty by increasing resilience to shocks, expanding economic opportunity, and fostering social inclusion.

Mercy Corps Nepal
P.O.Box 24374
Sanepa Chowk, Lalitpur, Nepal
Telephone: +977 1 555 5532
Fax: +977 1 555 4370
E-mail: info@np.mercycorps.org

Mercy Corps European Headquarters
40 Sciennes, Edinburgh, EH9 1NJ, UK
Telephone: +44 (0)131 662 5160
Fax: +44 (0)131 662 6648
www.mercycorps.org

Table of Contents

Foreword	ii
Acknowledgements	iii
Acronyms & Abbreviations	iv

Part I: The Project

1.1	Introduction	1
1.2	Documentation of Good Practice	2
1.3	Ten Good Practices	2
1.4	Methodology	2

Part II: Good Practices

2.1	We can change	3	Street drama, an effective tool for empowering communities to implement DRR
2.2	Functional planning	5	Local initiatives in mainstreaming DRR
2.3	Planning for rainy days	7	Emergency and maintenance funds: rays of hope in difficult times
2.4	Learn from reading and watching	9	IEC materials shed light on the nature of disasters
2.5	Putting learning into action	11	Acquiring skills and equipment made search and rescue work easy
2.6	Imitation is the sincerest form of flattery	13	Replicating bio-engineering techniques along riverbanks to mitigate erosion
2.7	No second-class citizens	15	Gender and social inclusion
2.8	Learning to lead	17	Building individual and institutional capacity
2.9	Broadening the scope of school curricula	19	Building resilience by introducing DRR through schools
2.10	Forewarned is forearmed	21	Early warning systems

Major changes	23
----------------------	----

List of Tables

Table 1: Status of external resource generation	6
Table 2: Status of EM Funds	8
Table 3: Gender and social inclusion in DPCs	15
Table 4: Number of participants trained	17

List of Figures

Figure 1: Diversity of DPC members	16
------------------------------------	----

Foreword

Addressing the role disasters play in perpetuating the cycle of poverty and in undermining development is increasingly being recognized as a major global challenge that demands attention. Approximately 70% of recent disasters are weather-related and this proportion is likely to grow as climate change processes increase the unpredictability and intensity of weather events. In response to this growing problem, Mercy Corps Nepal began working in the field of community-based disaster risk reduction in 2007, focusing on flood-prone areas and introducing capacity building, early warning systems, small-scale mitigation measures and school safety through peer education.

Based on its own learning, continual community feed-back, and a real-time evaluation during the September 2008 flood in the Far-Western Development Region of Nepal, Mercy Corps has identified 10 areas of good practice which are documented in this report.

I would like to express my thanks to all the contributors to this report, particularly the project team and Dhruba Raj Gautam. Without their hard work, this important piece of work would not have come together.

I also extend my heartfelt thanks to all the women, men and children in the communities in Kailali District for their partnership in bringing about a change.

Mercy Corps hopes this summary of its successes in community-based disaster risk reduction offers practical insight into how such initiatives can be replicated and developed elsewhere. We encourage you to make use of the enclosed CD/DVD for further inspiration.

Ulla Dons
Project Manager

Acknowledgements

I would like to acknowledge the support of the European Commission's Humanitarian Aid department, which both helped produce this publication and funded the Kailali Disaster Risk Reduction Initiatives Project under the 4th DIPECHO Action Plan for South Asia.

This study is based on field consultations and interviews with disaster preparedness committee members, community members, students, teachers and stakeholders from Bishanpur, Jokahiyapur, Lalitpur, Manikapur, Mohanpur, and Shivaratanpur communities as well as on information provided by village development committee officials and district stakeholders. I am grateful to the project communities for their patience in providing me with such a wealth of information. Without their time, interest, suggestions and feedback, this report would not have materialized. It was through our discussions and consultations that I was able to identify the key achievements, the lessons learned and the ten specific good practices in the reduction of disaster risks that make up the essence of this report.

I would also like to acknowledge the joint implementers of the Kailali Disaster Risk Reduction Initiatives Project, the Kailali District Chapter of the Nepal Red Cross Society and Mercy Corps Nepal, both of which extended their professional support during field consultations as well as at meetings with district level stakeholders in Dhangadhi, Kailali.

I am particularly grateful to the Mercy Corps Nepal management team for their feedback and for entrusting me to write this report.

Dhruba Raj Gautam
Kathmandu, Nepal

Abbreviations & Acronyms

DDC	District development committee
DoHM	Department of Hydrology and Metrology
DP	Disaster preparedness
DPC	Disaster preparedness committee
DRM	Disaster risk management
DRR	Disaster risk reduction
DSCO	District Soil Conservation Office
DWIDP	Department of Water Induced Disaster Prevention
EM	Emergency and maintenance
EWS	Early warning system
IEC	Information, education and communication
HFA	Hyogo Framework for Action
KDRRI	Kailali Disaster Risk Reduction Initiatives
NRCS Kailali	Nepal Red Cross Society Kailali
PwD	Person with disability
S&R	Search and rescue
VCA	Vulnerability and capacity assessment
VDC	Village development committee
VDMC	Village disaster management committee
YRC	Young rescuer club



Good Practice with respect to Disaster Risk Reduction

Introduction

It is widely recognized that recurrent disasters have a large hand in undermining the ability of communities, regions, nations and the global community itself to meet basic development goals. In addition, the intensity, and possibly the frequency, of natural disasters are likely to be exacerbated by climate change.¹ In light of these threats, disaster risk reduction (DRR) is central to meeting local and global development objectives and to adapting to climate change. The importance of DRR is recognized globally in the key agreements of the Hyogo Framework for Action² (HFA) and has been taken up by Mercy Corps.

Broad consensus exists on the need for implementing a wide variety of DRR techniques, ranging from designing physical structures to fostering the growth of social networks and institutions, which could potentially mitigate or alter the nature of the risk.

The socio-political context in Nepal is dynamic and fluid. Risks materialize as rapidly evolving emergent properties of development and settlement processes and vary from context to context. In conjunction with pre-existing patterns of social, economic and gender differentiation, such processes create a kaleidoscope of patterns of vulnerability whose shape depends as much on interactions within livelihood systems as on exposure to location-specific hazards.

The fertile plains of the Terai bordering India occupy only 17% of Nepal's land area, but are responsible for the bulk of its agricultural output, support its main communication and transportation arteries, and are home to its main flood plains.

Map of project area



The population of the Terai experiences floods every year during the monsoon. For many reasons, the impacts of such floods have grown in severity and regularity in recent years. Climate change is the most often cited reason for the growing vulnerability of plains dwellers, but massive

¹ Climate Change 2007: The Physical Science Basis, Summary for Policy Makers. Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Geneva, IPCC, 2007.

² Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters. World Conference on Disaster Reduction, Kobe, Hyogo, Japan, ISDR, 2005.

population growth and the intensification of agriculture over the last 50 years are also responsible. Annual flooding results in great losses of property and livestock, the destruction of irreplaceable assets, the erosion of land, the spoilage of stored foodstuffs and, too often, even the loss of life.

Given the regular recurrence of flood-related losses, it is not surprising that the resources available to government authorities for development activities are limited, with post emergency relief being a major budgetary priority in endemically flood prone area. Several studies³ document that investment in risk reduction has high economic returns. Already, the Government of Nepal has begun to prioritize DRR activities: it signed the HFA in 2005 and initiated a new National Disaster Management Strategy, Policy and Act in 2009. The role and importance of effective community-based DRR is a stated priority in both documents.

Mercy Corps Nepal, in partnership with the Kailali District Chapter of the Nepal Red Cross Society (NRCS Kailali), piloted the Kailali Disaster Risk Reduction Initiatives (KDRRI) project from November 2007 to April 2009 in six communities bordering the Mohana River in the far-western Terai – namely Lalitpur, Mohanpur, Shivaratnapur, Bisanpur, Manikapur, and Jokahiyapur.

The project aimed not only to reduce the risk of flooding but also to help communities to prepare

for and respond to floods to decrease their dependence on external aid.

Documentation of good practice

This report identifies ten risk reduction practices which were successfully implemented in the pilot communities and are replicable elsewhere. Its objective is to encourage knowledge and experience sharing among communities, organizations and other DRR stakeholders for the benefit of all those vulnerable to natural disasters, especially floods.

Thematic areas of good practice

The ten practices described are street drama as a social empowerment and awareness tool, bottom-up DRR planning, the establishment of emergency and maintenance funds, the innovative development of information, education and communication (IEC) material, search and rescue (S&R), local resource-based bio-engineering interventions, cross-cutting issues (gender and social inclusion), capacity building, school safety and young rescuer clubs, and community-based early warning systems (EWS).

Methodology

This study is based on a series of consultations and interviews with disaster preparedness committee (DPC) members, community members, students and teachers, and community, Village Development Committee (VDC) and district stakeholders.



Erosion of agricultural land along the river bank

³ From Risk to Resilience: Understanding the Costs and Benefits under the Changing Climate Conditions, Working Paper 9, Moench, M. and the Risk to Resilience Study Team ISET, ISEI-Nepal and the ProVention Consortium, 2008.



We can change

Street drama, an effective tool for empowering communities to implement DRR

Raising awareness about risk and creating an understanding of the underlying factors are crucial in reducing vulnerability. The population of the Terai plain is almost entirely immigrants: as recently as 50 years ago the plains were a heavily-forested area where malaria was rife and people few. Because its residents are relative newcomers, there is little indigenous knowledge or community memory of flooding and no repertoire of traditional coping mechanisms or history of adaptation to fall back upon. Early on, the KDRRI team realized that it was mainly men who took an active part in community discussions, meetings and other gatherings and that those who spoke most were mainly from majority population groups.

Thus, it was those least needy who became the most aware. In order to reach out to the relatively uninvolved segments of the population –women, youth, and minority groups –the project introduced alternative means of awareness building, primarily street drama. Not only has drama proved to be a popular vehicle to communicate messages about flooding and risk reduction, but it also has served as a means of community empowerment as well as of performers. Performances succeed in overcoming people’s shyness and lack of confidence and catalyze them to participate. Youths, who constitute approximately 65% of Nepal’s population, have been trained as actors and playwrights with the goal of reaching poorly-educated rural residents ill-equipped to tackle local problems and development issues through drama.

Making local culture, including traditional folklore as well as local languages and dialects, an integral part of the awareness and empowerment process was very effective in making people recognize the true nature of their situation and thus in effecting behavioral changes.

A total of 20,945 spectators (10,947 females and 9,998 males) from the target schools and

Box 1: Street drama is more interesting than

For me, street drama is much more interesting than movies as it provides more information and is easier to understand. Plays depict the real situation in our communities. I, like many of my peers, wish that street drama could be a means of teaching school curriculum as messages are so easy to remember that we could get good marks on our exams. I still remember the key message about flood preparedness that the plays I watched communicated.

-Anjil Chaudhary, grade 10, Dipendra Secondary School, Hasauliya

communities as well as their neighbors attended 61 performances lasting 25 to 30 minutes. Many were actively involved, whether heckling the actors or weeping in response to the misery depicted. As the main hazard in the project area is flooding, most plays focused on flood preparedness and response, including evacuation plans, but during the winter, dramas on how to cope with the cold

weather were also organized and hygiene and sanitation, a major problem after flooding, also received attention.

Process

A total of 24 community youths (2 males and 2 females from each project community) were trained by a professional street drama performer to write scripts and act in plays after they had attended Disaster Risk Management (DRM) trainings in their communities. During the nine-day training, they got the opportunity to work with professionals, who later supervised their initial efforts. The scripts countered the common misconception that it was fate, God or bad luck that caused suffering at the hands of natural disasters.

The main source of income in the target areas is subsistence farming, but since harvests are too small to provide for most families all year round and since annual floods exacerbate food shortages, many individuals migrate to India to do daily wage labour. Now, however, street drama has become a new source of employment. The viewpoint of Nabin Chaudhary of Bishanpur is typical: "Since I did not pass my School Leaving Certificate exam, I planned to find a job in India until the street drama team was established and I got to be a member. Now, I see my future differently. I no longer want to go to India because I can make a difference in my community and other communities by performing dramas on different topics."

Street drama has not only increased awareness among audiences but has also provided performers with the skills they need to implement DRR. They now feel that they are well prepared for floods. In fact, during a recent flood, performers were able to help evacuate and provide other assistance to their communities just as they had demonstrated on stage. Spectators also feel well-informed. They thought the plays were memorable and that their messages were clear. In particular, they appreciated the fact that dialogues were delivered in local dialects. They further claimed that street dramas previously performed by other projects as part of health and sanitation campaigns were not interesting and that their messages were obscure. Mohanpur DPC member Ms. Meena Devi Chaudhary had this to say: "We have seen many street dramas, but we have never been provided so much relevant information before. In my view, street drama performances successfully reached previously un-reached segments of society, including the excluded, the marginalized, the vulnerable and the deprived, for the first time. Street drama also helped to mobilize youths to carry out DRR initiatives."



Street drama touching a difficult issue

Mercy Corps' street drama intervention also boosted the self-confidence of performers and motivated them to actively contribute to the development of their communities. Mr. Chedu Ram Chaudhary of Jokahiyapur explains that he no longer experiences stage fright: "At first I didn't think I would be able to perform in front of a single person, but now I act comfortably in front of a thousand." After he became involved in the street dramas, he was even selected DPC coordinator.

Inspired by what they have learned from the street drama, community members have developed rules and regulations concerning river bank protection, implemented zero grazing policies, and introduced small initiatives based on their own local resources instead of waiting for external support. Mr. Hari Ram Chaudhary, Bisanpur DPC Secretary, explains what his community learned: "We see now that we made many mistakes. We have realized that we can change a lot on our own and are committed to doing so."

That street drama is an effective and sustainable mean of awareness-raising is demonstrated by the fact that the 24-member team has started to write and perform new dramas, not just about DRR, but about the trafficking of girls into the sex trade and other local problems. The group has also agreed to requests from neighbours to perform in their communities too.

Important lessons learned:

- Street dramas are most effective in communicating DRR-related messages when the performers are well informed about the specific topics they ought to cover.
- Whether the street drama will continue to be an income source for the street drama performers will depend on continued demand for street drama events from the target communities and neighboring communities.



Functional Planning

Local initiatives in mainstreaming DRR

Raising awareness in communities and pressuring government authorities to mainstream DRR in long-term development planning is a project priority. The project seeks to play a key role in increasing local governments' initiatives in disaster risks and vulnerabilities.

The project has successfully supported the formation of community DPCs and sub-committees in which women, persons with disability (PwDs) and other marginalized groups have been facilitated to take the lead in identifying and acting on various risk reduction initiatives which will eventually contribute towards the long-term socio-economic development of their communities.

Process

- In each community, Mercy Corps helped form DPCs with well-defined mandates, roles and responsibilities and in schools it established young rescuer clubs (YRCs). Members participated in capacity-building exercises.
- Strong emphasis was placed on raising awareness about community-based DRR, particularly among DPC and YRC members, by using various means such as awareness classes, door-to-door campaigns, street dramas and training.
- Vulnerability and capacity assessments (VCAs) and planning meetings between local governments and community members helped all involved to understand the local situation and the actions needed to be taken.

An important step in reaching the most vulnerable was having DPC members, with support from project staff and volunteers, conduct VCAs. This approach builds on the idea that the communities need to come to an understanding of and lead the way toward reducing risks on their own. It helped communities identify the roots causes of flood risk and prioritize actions to reduce that risk.

Using VCAs, communities drew maps of their households and community resources in order to reach an understanding of four key things:

- The nature and level of risks
- The root causes of that risk
- The existing capacity of the community to reduce risk
- The short, medium and long-term interventions required to reduce risk

Communities then translated the information generated through VCAs into action for transformation by developing community disaster



Girls observing the community map created during the VCA

preparedness (DP) plans as a risk reduction strategy. The plans identified both what communities could do on their own and those types of intervention for which they would need external assistance. Communities said that the most noteworthy benefit of sharing DP plans with various stakeholders was that through such engagement they were able access external assistance. (see Table 1).

development of effective plans. Through the process, communities, schools, VDCs and even other stakeholders have grown more confident about their ability to understand the problems they face and to recommend suitable actions. Participants developed



Carrying out a community risk assessment

Table 1: Status of external resource generation

Community	Fund provider	Related work	Amount (NRs)
Lalitpur	DSCO	Toe protection and bio-engineering	16,000
Lalitpur	DWIDP	17 gabion box and 1 spur construction	32,200
Lalitpur	DDC	Spur construction work	400,000
Mohanpur	DSCO	Toe protection and bio-engineering	16,000
Mohanpur	DWIDP	18 gabion boxes	34,200
Mohanpur	DAO	Spur construction and toe protection work	700,000**
Shivratanpur	VDC	Construction of boat	5,000
Bisanpur	DSCO	Toe protection and bio-engineering	16,000
Manikapur	DSCO	Toe protection and bio-engineering	16,000
Jokhaiyapur	DSCO	Toe protection and bio-engineering	16,000

DSCO-District Soil Conservation, DWIDP-Department of Water Induced Disaster Prevention, DDC-District Development Committee, DAO-District Administration Office, VDC-Village Development Committee, **-Only a commitment;

To help support the National DRR Strategy, the project facilitated the formation of village disaster management committees (VDMCs) in the target VDCs. These local institutions are responsible for linking community DP plans with VDC plans, for consolidating community plans and for identifying DRR issues in the VDCs to present to the District Development Committee. This initiative has opened the way for mobilising VDC- and DDC-level resources for community-level DRR interventions. The DP plans will eventually be incorporated into the district plans.

The VCA and DP planning processes were initiated not just in communities but also in the eight schools. There, too, the process promoted advocacy, raised awareness and contributed to the

a sense of ownership of the process and became an integral part of decision-making related to the development of their communities, schools and VDCs.

The VCA and DP planning processes helped stakeholders realize that reducing the risks of natural hazards is a long-term intervention for which success collaboration is essential. Success, they discovered, also requires a shift in mindset from

disaster response and relief to risk reduction. DP plans incorporate three key goals: reducing vulnerability, integrating risk reduction into local development planning and building the capacity of local governments and communities to reinforce existing systems.

It is hoped that the DPCs and YRCs established under the project will continue to play an active role in raising awareness about DRR as well as about possible interventions designed to reduce risks and prepare for and respond to recurrent floods.

Important lessons learned:

- Actively involving VDC and distric stakeholders in the early stages of project development creates greater awareness about disaster prevention, mitigation and preparedness among the decision makers than does later engagement. If these stakeholders are not sufficiently involved initially, it is difficult to attract their attention and secure their active contributions later, and, as a result, regular follow-up advocacy is needed to keep up the momentum.
- There is a need to increase advocacy for DRR interventions at all levels.
- DP plans are living documents and need regular revision.

Box 2: Unity is power

DP plans help establish links between communities and VDCs and DDCs so that we get financial support for DRR interventions. We now know that each VDC receives an annual budget of NRs 10,00,000 from the central government and that there is a good possibility of our community being able to access some of it to carry out our DP plans. We also learned just how many local institutions exist and why it is important to coordinate with them to carry out DRR. Some of the groups we work with are forest users groups, local youth clubs, the committee against poaching, saving and credit groups, and water users groups. DRR will work only if we join hands.

- Gandabi Chaudhary, DPC member, Manikapur



Planning for rainy days

Emergency and maintenance funds: rays of hope in difficult times

Because accessing external support takes time, flood-affected communities are themselves the first to respond in an emergency. Responding effectively requires planning and funds, so it is extremely difficult if no or limited financial resources are available. To counter this problem, the project established emergency and maintenance (EM) funds in each of its target communities. During emergencies, the funds serve as a local resource for immediate relief and response before external support arrives; they also help maintain mitigation initiatives.

The idea of establishing EM funds was introduced during community mobilization trainings after it became clear that the communities had faced financial problems several times over the previous years when flooding had destroyed infrastructure and houses and washed away personal belongings. The six communities have generated a total of NRs. 185,802 (EUR 1,858), out of which NRs. 136,281 is in cash and NRs. 49,521 in kind. For its part, the project has contributed NRs. 211,254 (EUR 2,113) (see to Table 2).

Box 3: EM funds are rays of hope in difficult

The establishment of EM funds promoted solidarity and the desire to help each other. The fund not only increased the sense of togetherness but also created opportunities for villages to get assistance from the government. EM funds provide rays of hope in difficult times. We are thinking of increasing the size of funds so that there will be no need to rely on support from outsiders.

- Bir Bahadur Sunar, DPC member, Lalitpur

Process

- Communities were consulted about the possible rationale for and operating procedures of EM funds.
- Each community developed its own rules and regulations for the collection of funds in cash and/or kind. (The agreed upon monthly contributions per household vary from NRs. 5 to 100.)
- The project provided a metal storage drum to hold collected grains.
- Each DPC treasurer is responsible for keeping accurate records of the cash and grain in each EM fund.
- The funds are kept in a bank account opened in the name of the DPC.
- Grains might be sold and the cash transferred to the bank.
- The project contributed additional funds.

The establishment of EM funds has promoted greater social integration, not just in terms of individual communities being able to cope with their own problems, but also in that they are committed to providing support to other vulnerable communities. For instance, when the people of Bishanpur community heard on the radio about the flooding of the Koshi River in the eastern Terai, they immediately decided to support the victims. They collected an additional five kilograms of wheat from each household and sold it for cash. The money was all ready to be sent when Bishanpur was itself flooded on 20 September, 2008, and the funds were redirected to be used within the community. Two other communities



Simulation of the distribution of grains from an emergency fund

provided support to a neighbouring community after wild elephants damaged houses and crops.

Because they have established EM funds, villagers can now access government resources by requesting that the government match funds for their mitigation initiatives. For instance, one community was able to get NRs. 15,000 from the District Soil Conservation Office (DSCO) to purchase bamboo for a 150-meter river bank protection scheme and another community got the DSCO's help in protecting an additional 100 meters. With EM funds available to them, communities can initiate DRR activities directly without having to rely on or wait for external supports.

The communities are so convinced of the benefits of the EM funds that they have developed other fundraising techniques, including using cultural events and planning to sell plants from community nurseries. Neighboring communities have also been inspired to collect funds to repair and maintain water supply systems and to carry out mitigation work. The communities expect to see many other examples of the replication of EM funds.

Some communities are discussing the possibility of using their EM funds as a saving and credit scheme, in which 40% of the funds will be made

available for credit at the nominal interest rate of 12% per annum (the remaining 60% will continue to be used for emergency purposes). So far, EM funds have been spent on supporting neighbouring communities, buying batteries for CDMA phones and maintaining mitigation work.

Initially, the contributions of all households, both cash and grain were equal. Later, however, villagers decided that the amount of grain contributed should vary with each household's size of landholding.

Box 4: Every family contributes to EM funds

Thus far, we have had no difficulty in raising the agreed upon amounts for our EM fund, mainly because our rules and regulations are flexible. Households can contribute grain instead of cash and can pay for two months at once. We operate our fund based on a community decision-making. After looking at what Shivaratanpur was doing, however, we decided that grain contributions should be based on landholding size (1 kg per kattha) rather than being the same for all. People are ready to pay because the risk of flooding is very real.

- Sarad Chaudhary, DPC member, Bishanpur

It is commonly recognized that if a community organizes itself and raises funds, that its dependency on external support during periods of flooding will diminish and that it will become more self-reliant, thereby taking an important step from risk to resilience.

Important lessons learned:

- It is vital that the project clearly specify the nature and extent of its contributions right from its inception in order to quash expectations that can or will not be met and to ensure that the project can follow its own agenda.
- For transparency the communities need to share agreed criteria for their EM funds with VDC-level DRR stakeholders.

Table 2: Status of EM Funds (In NRs)

	Community contribution	In Kind ¹	KDRRI contribution	Total	Expenditure ²	Balance at project end
Manikapur	6,501	9,275	35,209	50,985	9,128	41,857
Mohanpur (3)	78,551	15,000	35,209	128,760	17,545	111,215
Shivaratanpur	8,864	8,842	35,209	52,915	20,123	32,792
Bishanpur (4)	28,885		35,209	64,094	22,335	41,759
Lalitpur (5)	7,380	1,540	35,209	44,129	12,955	31,174
Jokayapur	6,100	14,864	35,209	56,173	1,916	54,257
	136,281	49,521	211,254	397,056	84,002	313,054

(1) Grain (2) Emergency support after the September 2008 flood, including bags for nursery plants and maintenance of toe protection, (3) Households contributed a percentage of the daily wages they received from a cash-for-work project, (4) Households contributed grain and sold it immediately (5) Landholdings are very limited so households contributed only small amount of grain

Source: Project records 2008-09



Learn from reading and watching

IEC materials shed light on the nature of disasters

Especially since so many people in the project area are illiterate, KDRRI felt it needed to produce a wide variety of information, communication and education (IEC) material to make sure that no community group would be left out. The idea was to saturate communities with the same message in as many ways as possible. Each type was designed to reflect the local culture and social setting and, of course, to pinpoint the nature of disaster-related risks. The criteria of being informative and sensitive may seem self-evident, but a review of the materials that other organizations had produced revealed that they neither met such elementary criteria nor used a participatory process in producing the materials.

The KDRRI team, in contrast, made sure it involved community members, VDC and district stakeholders and project staff in the development of material. In particular, it employed local artists to refine the ideas which emerged from these consultations. The team also ensured that there was no more than one piece of information associated with each illustration and that the text was clear, terse and graspable. The project produced IEC material related to the two main hazards identified during the VCA process, flood and fire. The material informs readers about DRR and preparedness interventions, including planning, evacuation, and mitigation.

Process

- Existing IEC material was assessed for its suitability, in particular whether or not it had considered the socio-cultural context.
- Villagers were asked to rank hazards according to the perceived need for developing IEC material about them. The hazards and responses identified were flood (risk reduction, preparedness, evacuation and rehabilitation) and fire (prevention and response).
- Community leaders, project staff, and district stakeholders, including CARE Nepal and their local partner NGOs, participated in IEC orientation sessions.
- Materials were designed with the aim of illustrating each message with a single and clear picture. The text was made as lucid, concise, and understandable as possible. All material took into consideration the local culture and social structure.
- Local resource persons, artists and community representatives were involved to increase the sense of ownership.
- Before illustrations were finalized, draft sketches were tested in the field and community feedback solicited. Ambiguities were corrected before the works were published.
- Volunteers received training in how to best use IEC materials as a tool of community empowerment.

The IEC materials produced by the project include posters, flip charts, flyers, wall paintings, textbooks, coloring books, and games. Members of YRCs got t-shirts and pencil boxes with these same illustrations.



An IEC wall painting



IEC material used for door-to-door campaigning

The project's approach to disseminating information was innovative and interesting: 24 youth volunteers from the communities used door-to-door campaigning and the adult learning approach. In spreading the word about each message, volunteers provided enough space for locals to express their understanding of and feelings about key themes and to fill in any gaps if necessary. This flexible and interactive approach increased people's understanding. On occasion volunteers passed on information at village meetings, but more often they used group discussions with five to ten households in a convenient location. Volunteers met once a month to report on their achievements and share their experience. They concluded that their efforts had helped to build knowledge about hazards and disasters and their relationship as well to urge people to take the needed action at the local level. Most people confirmed this assessment: they had no trouble deciphering the messages, appreciated the incorporation of local culture, and felt encouraged and enabled to take action to reduce risks and build resilience.

Box 5: We own the IEC materials of the KDRRI

IEC materials are not new to me. Over the years I have seen many posters in my community but never paid any attention to them. It is only now that I understand what use such materials are. This is because we were involved in the development of the IEC materials and because they are clear and easy to understand. Interestingly, no one damages these materials; instead, all are concerned about protecting them. So far as I remember, in the past we neither understood the key message of IEC materials nor were serious about caring for them.

-Chandra Devi Chaudhary, DPC member, Bisanpur

Of the different approaches adopted for IEC dissemination, community members reported that door-to-door campaigns were most effective, in part because it was local youths who were mobilized and because they were well trained in employing the proper process. A total of 714 households

Box 6: The means of dissemination is important

We never realized that we could ourselves receive the key message of IEC through door-to-door campaigns. I found this approach to be very effective because many women, like me, are illiterate, and can't understand written messages. What worked best was that the volunteers asked us to say what we had understood. We tried hard to communicate the messages accurately. There was even a sort of competitiveness in trying to say more than others did. What I realized is that the means of dissemination is extremely important. Besides the door-to-door campaign, I benefited from the radio messages and wall paintings, and, most of all, from the video show. Even though the language was different and difficult to understand, we understand from the photographs.

-Sital Prasad Chaudhary, DPC Secretary, Mohanpur

(3,572 individuals) were visited by the door-to-door campaigners.

Some key messages were disseminated through wall paintings located in strategic places like schools. They were designed to captivate the attention of passers-by. Transferring hazard maps to large boards and displaying them publicly is another valuable tool in making community members aware about the socio-economic condition of their village, including the most vulnerable areas and families and the community resources available.

Radio programs in Nepali and the local Tharu language were another key IEC tool. The project used the skills of street drama performers it had trained as the local FM radio station did not have the capacity to produce programs in the Tharu language. A DRR video show showing a selection of DRR related films was also popular, especially among men.

Important lessons learned:

- The KDRRI team realized that it is essential to involve local communities in the design of IEC materials in order to maximize both their understanding of the messages and their sense of ownership of those materials.
- A participatory process helps to capture the exact messages that communities feel are important to communicate. In fact, those community members who participated in the IEC material development workshop were most committed in disseminating the messages.
- Because different IEC materials motivate different groups, variety and targeting are key.



Putting learning into action

Acquiring skills and equipment made search and rescue work easy

Teacher Mr. Chhallu Ram Chaudhari of Hasulia captures the sentiments of many in his articulation of his new-found optimism and pride: “During the flood of 2008, we were able to save the lives and valuables of many peoples. It was the worst flood in 25 years but with the skills and knowledge we obtained through the training and with the equipment provided by the project, we were able to cope. There was not a single human casualty within our communities though our neighbours reported that 24 people had died. Our hope and our confidence have increased and we no longer fear even severe flooding,”

When their flow from the Churia range is increased by monsoon rains, the Mohana River and its three tributaries carry tree trunks and branches and threaten downstream communities by eroding agricultural land, capsizing boats, and threatening those who cross the rivers. Until last year, only a few, flimsy boats crossed the river during the rainy season, forcing people to take roundabout ways to reach their destinations. There were not enough boats for use in evacuation even if they had been well-maintained.

Because the project communities are comprised mainly of migrants with little indigenous knowledge or community memories about flooding and no longstanding traditional coping mechanisms, they did not have any collective preparedness or contingency plans or any EWSs when the project was introduced. They used to try to save family members and belongings only after

flood waters had already reached great heights and the only means they had to share information with other was by shouting⁴. The only equipment available for evacuation and search and rescue was a few boats and feeding troughs for cattle.

Process

- A search and rescue (S&R) sub-committee was formed under each DPC and S&R teams were trained to carry out swift water rescues by project staff in collaboration with security personnel
- Each S&R team was provided with a set of S&R equipment which included life jackets, throw bags, leather gloves, safety helmets, inner tubes, safety vests and rope.
- Each community was provided with stretchers, shovels, pick axes and crowbars and support for the construction of a boat.
- Communities practiced using the equipment during flood preparedness drills.
- A booklet displaying the various swift water rescue techniques was produced and distributed to the S&R sub-committees.

⁴Project Knowledge, Attitude and Practice (KAP) Assessment, February 2008

Box 7: We are equipped with skills and equipment

In my opinion, the S&R training and equipment is the most essential part of the project as it will help us save the elderly and the disabled as well as our personal belongings. We discovered that previously we had not known enough to reduce the risk. Though some initially opposed the training, we are now happy that we are equipped with both skills and materials.

- Jeet Bahandur Chaudhary, S&R team member, Bishanpur

The target communities are located along the Mohana River and its tributaries, where water levels often rise dramatically with the onset of the monsoon, creating strong currents. To decrease the associated risks, the project facilitated the formation of community S&R teams and then provided their members with training in swift water rescue. The training initially targeted 24 core community members and NRCS emergency team members, who later trained other community members. The training had both theoretical and practical elements, all of which are illustrated in a S&R booklet produced by the project. Trainees learned how to use all of the equipment they were provided.

The wider community was exposed to S&R when pre-monsoon drills were conducted to make sure everyone understood the tasks of the S&R teams and that the teams themselves knew how to use the equipment properly. The vulnerable groups and areas identified in the VCAs and DP plan process received the most attention.

Collective action is one of the positive outcomes attributable to the S&R trainings and drills. Several DPC members noted that they had seen a visibly higher degree of volunteerism and team work. Manikapur DPC Coordinator Mr. Ram Bahadur Chaudhary, for example, spoke proudly of the time the community spent: "We started the S&R operation at 8 a.m. and continued till 11 p.m. In the following days, the S&R team was mobilized to search for household items and livestock."

The project-trained S&R teams stood the test during a severe flood in September 2008: during the emergency operations they assisted not only their own communities but also neighbouring communities and even the police. No casualties were reported in any of the target communities though the Shivaratanpur community estimates that at least 10-12 people would have drowned if they hadn't had the S&R team in place and hadn't had access to boats.

In three cases various S&R teams helped rescue people from boats which capsized because they were overloaded or because of flash flooding. Many S&R team members report that having life jackets helped them approach swiftly flowing water more confidently and to provide assistance in a more timely manner. Feedback from the communities emphasises that the combination of DRM trainings and the establishment and training of S&R and first aid teams made rescue work proceed smoothly and systematically. Life jackets and boats were used extensively in S&R efforts and inner tubes were combined with wooden planks to make makeshift rafts to transport grain, children and pregnant women. Mr. Dhani Ram Chaudhary, from Khonpur and member of Hasuliya VDMC explains: "Life jackets were useful for the operation and as a result rescuers were confident in facing the challenges of rescue."

The YRCs at the project's eight target schools were also trained in S&R. Their training included an earthquake preparedness component as well because all the schools in the project area are also vulnerable to earthquakes. After the training, YRC members practiced what they learned with other students.

Inspired by the project communities, neighboring communities have also mobilized youth groups to carry out S&R during floods. With community DP plans, EWS and evacuation plans in place, plans are evolving for the establishment of additional S&R teams at the VDC level using youth networks of youth clubs and high school students as their foundation. Those involved also have other ideas about how to continue the project's initiatives even after the project is phased out.

Important lessons learned:

- Women must participate in S&R teams in order to make sure that women's unique needs and problems in emergency situations are addressed properly.
- Simulations of S&R procedures need to be carried out regularly.



S&R team in action during a drill



First aid team ready to move



Imitation is the sincerest form of flattery

Replicating bio-engineering techniques along riverbanks to mitigate erosion

The Mohana River is part of Sonu Ram Chaudhary's life: he's been swimming, fishing, working in it and living on its bank for the last 40 years. While the river provides Sonu with many good memories, he also remembers the pain he and his family suffered in his childhood when a change in the river's course forced the entire community of Bishanpur to relocate. Time has passed and Sonu is now the *bhalmansa*⁵ of Bishanpur, but the problem of river erosion remains the same.

To help the many people like Sonu whose fertile farmland and, as a result, their very livelihoods, is eroded every year during the monsoon spate, the project supported the making of 'green belts' to stabilize riverbanks using plants. This bio-engineering method is widely replicable and cost effective as it uses local technology and resources like bamboo, plants, saplings, sand and jute bags.



Planting seedlings

The bio-engineering process

- Four-meter-long bamboo pieces are driven up to three meters into the bottom of the river bed in two rows parallel to the bank to form boxes one meter in all dimensions.
- Bags filled with sand collected from the unprotected side of the river are packed into the boxes, creating 'toe protection' at the bottom of the slope.
- The vertical banks behind the toe protection are cut and levelled to create slopes of less than 30 degrees.
- Sand bags are placed on the slopes up to the mean river level and jute bags are laid above the mean river level.
- Plants⁶ with long roots, like *muj* (used for basket-making), *kans* (grass), *amriso* (broom-grass), *bakaino*, *masala* (eucalyptus), *epil epil* (used for fodder), *khair*, and *sisau*¹ are planted around the jute and sand bags in order to stabilize the slopes and form a green belt.
- Other seedlings and saplings grown in by project-established nurseries are planted on the land adjacent to the slopes.
- Fences and trenches are used to restrict movement and the grazing of domestic animals within the green belt.

When the project started, most community members thought structural measures like gabion spurs were

⁵A traditional village leader in Tharu communities. ⁶Plant names are local names. Their uses or the English names are mentioned in brackets when available.

Box 8: We're convinced bio-engineering works

This year's flood was massive; maybe the biggest in the last 30 years. But we didn't lose any land to river erosion along the 300 meters where we carried out bio-engineering techniques. This makes me so happy. Because the outcome is so impressive, we plan to use our own means to continue the work, covering a longer stretch of the bank this time. We are now fully convinced that bio-engineering techniques work well.

- Man Bahadur Chaudhary, DPC coordinator, Bishanpur

the only effective way of reducing riverbank erosion. Alternative techniques were either not known or not approved of. Now that bio-engineering has proven its worth in protecting riverbanks prone to soil erosion, saving productive land adjacent to rivers and restoring greenery, perceptions have changed.

Sonu has vowed to make Bishanpur a flood-resilient community using bio-engineering techniques. Initially, however, he was sceptical: "We have tried everything from the construction of raised embankments to the plantation of *besarmi* plants along the banks but nothing has worked. What we need here is a series of gabion structures; otherwise, we will be history." Nonetheless, he was willing to give bio-engineering a try "We want to see if bio-engineering techniques work. The community has showed sufficient faith in bio-engineering to have started work along the riverbanks. Let us see when the monsoon starts. We'll find out very quickly then whether or not it works," he said before the 2008 flood.

Box 9: Project communities are a good example

We have seen that bio-engineering techniques are only beneficial. This is because they use locally-available materials and follow systematic procedures. For this reason, we will implement the same bio-engineering techniques as the project has in our project areas this year.

- Navo Narayan Mishra, Assistant DSCO, Kailali

Throughout the rainy season and during the severe flood of September 2008, the bio-engineering techniques effectively reduced erosion. Many, including Sonu, neighbouring communities and the DSCO are now convinced of the efficacy of bio-engineering. Jagu Ram Chaudary, the *bhalmansa* of the neighbouring Mohanpur community said: "We went to Bishanpur to see what they were doing on the riverbanks. Since it was a simple technology, we learned the technique and replicated it in our community. Look how well it has worked. You can really see that the river is not eroding this bank anymore."

Raj Kumari Chaudary from Lalitpur has a similar story to tell. She has had to watch on as the Mohana has stolen lives, houses, cattle, crops, and land. She herself has lost over half of her farmland to floods, and what she can produce on the little left suffices for just three months of the year. She, like many others in Lalitpur, is compelled to sharecrop on others' land in order to feed her family.



Sonu Ram Chaudary on the bank of Mohana River

Fortunately, within a short period, bio-engineering has effectively reduced erosion and the impact of floods in Lalitpur. Because the technique was not unfamiliar to the community, it was easy for them to replicate and scale up the intervention to cover a large stretch of riverbank.

The DSCO even used Lalitpur as a demonstration site, bringing participants attending its trainings to this "laboratory" to see its bio-engineering and community nursery initiatives. As a result of its efforts and the spread of information through informal means, this method of protecting riverbanks has been replicated widely around the project communities. At the institutional level, the approach is being replicated by Backward Society Education, Mercy Corps Cash for Work Project and DSCO. Additionally, the Department of Water-Induced Disaster Prevention (DWIDP) has provided funds to project communities to expand their bio-engineering sites. DSCO and the District Forest Office Kailali have provided plants and saplings.

A total of 1,995 meters of riverbank have been protected using bio-engineering techniques with the support of the project. Once the riverbanks are reliably conserved, people start to cultivate suitable cash crops, including watermelon, vegetables, nuts, turmeric, taro, and ginger. People believe that if they can scale up bio-engineering work, they will not need to migrate to other areas. After all, the conservation of land is one of the main factors responsible for improving people's livelihoods.

Important lessons learned:

- It takes a strong effort to introduce new and low-cost techniques when more sophisticated and expensive techniques are what the community have faith in, but cannot afford.
- Field staff should be made aware of the difficulties associated with prioritizing mitigation measures: sometimes people do not agree because of a conflict of interest or different perceptions of risk.
- It is important not to raise expectations about assistance that cannot materialize.
- Last year's flood, whose magnitude exceeded that of any other flood seen in the last 25 years, damaged parts of the small-scale interventions. It should be kept in mind that project intervention is not designed to withstand the rare large-scale disaster situation but to reduce the risk in relation to frequent small-scale hazards.



No second-class citizens

Gender and social inclusion

Because the majority of Nepali women and socially-marginalized groups, including people with disabilities (PwDs), have comparatively less access to education resources and income-generating opportunities but shoulder heavier economic and social burdens, they are disproportionately vulnerable to the impacts disasters. Only a gender- and socially-inclusive approach guaranteeing equal participation by men, women and marginalized groups can mitigate hazards, reduce social vulnerability and build disaster-resilient communities.

Different groups are vulnerable in different ways, have different needs, and offer different capacities within the disaster context. Mercy Corps recognizes

that DRR interventions can succeed only when the capacity, knowledge and skills of all groups are recognized and utilized at each stage of the disaster management cycle. The project focused on strengthening the disaster preparedness and response capacity of whole communities but gave special attention to the participation of women and socially-marginalized groups.

Process

- Gender and social inclusiveness was introduced during the formation of DPCs and other decision-making committees and groups.
- During trainings, workshops, orientations, inter-community visits, and study visits, the issue of gender and social inclusion for DRR was discussed and awareness about the fundamental rights of vulnerable groups to participate and to be included in DRR interventions was raised.
- The needs of the most vulnerable groups were taken into consideration when designing and constructing evacuation routes, shelters and raised water sources.

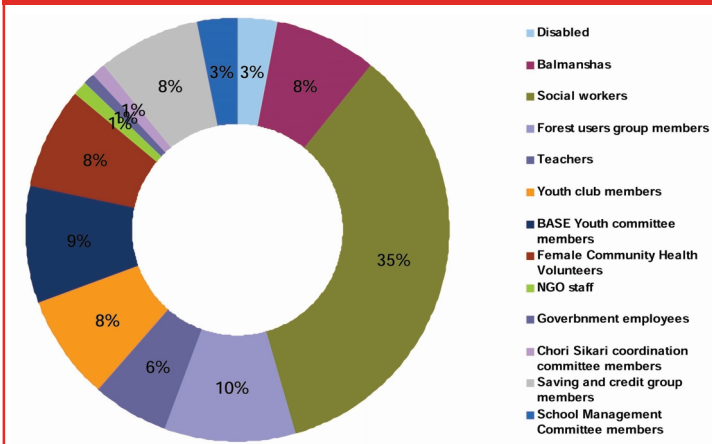
The project believes fostering gender and social inclusion is a community empowerment process that can change the mindset of communities as well as of important stakeholders. The DPCs it helped form were inclusive and representative of a wide variety of occupations and positions (see Table 3 and Figure 1); these core decision-making groups took the lead in identifying and planning various DRR initiatives and in mobilizing community

Table 3: Gender and social inclusion in DPCs

VDC	Community	Members			Ethnicity			
		Male	Female	Total	Tharu	Brahmin/Chhetri	Dalit	Total
Phulbari	Lalitpur	8	5	13	8	2	3	13
	Hasuliya	8	5	13	13	0	0	13
Pabera	Shivaratanpur	6	7	13	12	1	0	13
	Bisanpur	9	4	13	13	0	0	13
Ratanpur	Mankapur	7	6	13	12	0	1	13
	Jokahiyapur	8	5	13	13	0	0	13
	Total	46	32	78	71	3	4	78

Source: Project records, 2007-08

Figure 1: Diversity of DPC members



Source: Project records, 2008-09

members to implement them. One community elected a female *bhalmansa* and another included a widow and PwD as members. This simple initiative has had a great impact: the confidence of the vulnerable groups has clearly been enhanced, their capacities have been built and their voices heard. The beneficiaries of the project are 91 percent Tharus and five percent Dalits.

Women, who were once largely neglected in all development endeavors, are now in the front, well-represented in decision-making committees. Their

Box 10: We saved the lives of

As a result of staunch advocacy and lobbying for the 24 PwDs in Shivaratanpur, the community S&R teams played an active role in evacuating a number of PwDs to safer areas using the boats and life jackets provided by the project. Without such assistance, many PwDs would have been injured or maybe even have lost their lives. Because of the project's positive approach towards PwDs, we also gave them priority.

-Jeet Bahadur Chaudhary, Coordinator, DPC, Shivaratanpur

participation, as well as that of previously marginalized Dalits and Tharus, was a priority in all interventions, from trainings and meetings to study tours and inter-community visits. IEC materials were also designed with inclusiveness in mind to increase participation of women, build knowledge and promote confidence. Overall, participants in project endeavors are 41 percent female and 59 percent male.

PwDs are among the most vulnerable groups in society: disaster responses frequently do not meet their needs or rights and often exclude them altogether. There is much more need to raise awareness among DRR stakeholders about PwDs, especially given that some were refused assistance for evacuation and relief during the September 2008 flood. As a first step, the project, in partnership with Handicap International, constructed two multi-purpose shelters (to be used as evacuation

shelters, DPC offices, community meeting halls, and for education purposes) with access ramps, toilets and water on the same level as the shelter and hand railings around the buildings and in the toilets to serve PwDs and the elderly. Both shelters are raised above the 2008 flood level. In general, community response to the 2008 floods demonstrated that an inclusive approach has been internalized, so much so, in fact, that some members have begun to advocate for support for the vulnerable people in non-target communities.

Experience demonstrated that women and socially-marginalized groups do have the capacity to be key actors in DRR interventions, but also that a concerted effort is required to ensure their involvement equals that of men at all levels. Only if all groups are involved in planning will the specific needs and priorities of a community be revealed and progress towards building safer and more resilient households and communities made. The most significant outcome of the project is the empowerment of the communities, particularly of women, youth and social marginalized groups, who now understand the risks they face and the need to act collectively to reduce the impacts of floods.



Community meeting

Important lessons learned:

- Advocacy for the greater involvement of women and socially-marginalized groups at all stages of DRR must continue.
- Disseminating preparedness messages at major all-community gatherings is a good way to increase overall awareness about the need for inclusion.
- Women and socially-marginalized groups need more exposure to DRR initiatives through cross visits and interactions with other communities.



Learning to lead

Building individual and institutional capacity

Capacity-building initiatives are fundamental to DRR projects. The project focused on capacity-building at two levels: the individual and the institutional. At the individual level, emphasis was given to changing the attitudes and developing the skills of individual DPC and community members, while capacity-building at the institutional level focused on increasing organizational performance with respect to DRR. Conducting knowledge, attitude and practice (KAP) survey and a comprehensive VCA in the initial phase of the project provided essential information about how to address the question of capacity-building.

The analyses allow communities to identify risks, root causes, capacity and short-, medium-, and long-term interventions. Communities identified a need for community-based trainings and capacity-building initiatives in first aid, S&R, disaster management, community mobilization, and leadership, all with a view to improving their ability to launch DRR initiatives. Trainings, orientations, periodic reviews and reflections, and cross visits were some of the capacity-building initiatives. A total of 1,545 people (793 male and 752 female) were trained (see Table 4), while an additional 4,184 people observed simulations, 20,945 people watched street plays and 3,572 people were contacted through door-to-door campaigning.

Process

- Knowledge gaps in terms of DRR-related issues at the individual and institutional levels were identified by using KAP, VCA and training need assessment tools.
- Relevant trainings were designed to fill those gaps and trainings were held at both the community and the district level. Trainers: Red Cross trainers from the district and neighbouring districts, technical resource persons from various government departments and project staff.
- The impacts of each training were assessed through monitoring and developing an action plan at the end of each training ensured follow-up action in the future.

Mr. Ram Bahadur Chaudhary of Manikapur noted how much capacity has grown: “Compared to previous monsoon seasons, our community is much better prepared to deal with flood risk and awareness about disasters has risen so high it is difficult for me to express.” One of the most important outcomes of the capacity-building initiatives is that resilience to natural hazards has increased. Through the trainings and assessments the communities recognized what risks they are exposed to, made decisions to act collectively to counter them, and, most importantly, developed a sense of unity.

Table 4: Number of participants trained

Subject of training	Participants		Total
	Male	Female	
Disaster risk management	227	208	435
Gabion weaving	5	-	5
Search and rescue	115	70	185
Street drama	12	12	24
First aid	200	249	449
Leadership development	66	72	138
Nursery management	6	6	12
Community mobilization	109	91	200
Account keeping	53	44	97

Source: Project records, 2008-2009

Another important outcome is that the communities have started to advocate for support from the government, NGOs and other organizations for other communities in a similar vulnerable situation. Thus one of the target communities facilitated emergency support for a neighbouring community severely affected by flood and later for the same community to be included in a “cash-for-work” project. “Our capacity for DRR has been build and our community has become much more self-reliant, we act more collectively and we help each other to evacuate on time, to manage the alternative resources, which was not the situation previously”, said Ms Manju Chaudhary, DPC Member Bishanpur.

Box 11: Realizing roles and responsibilities is

Like many, I am in the favor of community management training because they taught us how to run meetings, record decisions, and solve disputes and conflicts. The most important lessons we learned were that each team member has certain roles and responsibilities and what the rationale behind emergency and maintenance funds is.”

- Babuni Devi Chaudhary, DPC Treasurer, Jokhayapur

On the institutional level, capacity-building initiatives resulted in the establishment of links with local government and non-governmental organizations. Through various cross visits and exposure visits, the project facilitated interactions between the communities, VDC and district stakeholders. The target communities realized that these links can be used to access funding if they have a proper plan and a well-documented proposal; they realized that they are not alone, that the authorities will help, but also that they will need to be proactive and less dependent on outside initiatives. Already, communities have received support in kind (for example, wood for boat construction, gabion wire, plants for bio-engineering work) and cash (for the procurement of material).

Project beneficiaries also envision getting in touch with other vulnerable groups. The hope of Maiku

Box 12: Now our voices are heard

The trainings have increased the confidence of women and more women are now taking part in discussions both inside and outside the community. The fact that we women have attended various trainings and that we attend all meetings has made us more informed and able to part in decision-making. For the first time, we have been included in discussion of disaster issues. Our voices are now heard.

- Janaki Kumari Chaudhary, DPC member, Lalitpur



Formulation of evacuation plan

Chaudhary of Mohanpur is typical: “There are many other communities in Nepal in similarly vulnerable situations. I would like to bring their plight to the attention of others and ask them to consider supporting those communities in the future.”

The first aid training was useful not only during the flood of September 2008 but every day. It provided essential knowledge on how to provide immediate assistance to an accident victim and especially how to prevent infections. Other trainings provided equally essential tools, approaches and skills for DRR. The door-to-door campaigns to disseminate various IEC materials increased the awareness of individual households about DRR. The exchange of experiences, skills and local technology across the six project communities as well as with neighbouring non-project communities has proven to be very effective. The project also succeeded in developing local human resource to conduct trainings; for instance, volunteers facilitated leadership trainings for youth groups.

The project’s capacity-building initiatives were instrumental in preparing communities for DRR and in increasing their confidence as one in a series of steps toward a continual empowerment process.

Important lessons learned:

- Refresher courses and training of new DPC members to replace those who retire are necessary investments if the efforts of DPCs are to be sustained.
- It is essential that a pool of qualified trainers is permanently available so that no activities are unnecessarily delayed.



Broadening the scope of school curricula

Building resilience by introducing DRR through schools

No task is as important as creating a safe environment for children, especially in a period when we are increasingly reminded of nature's potentially destructive power. The floods in Koshi in August 2008 and the Far-West Development Region in September 2008 together affected several hundred thousand lives and served as that reminder. Because disasters have a huge impact on all children, especially schoolchildren, making disaster risk part of the school curriculum is a sensible approach to increasing their awareness about the risks they, their families and their communities face and how they can reduce those risks. Investing in disaster preparedness interventions in schools reduces long-term costs, protects children and ensures educational continuity after a disaster.

Recognizing that schools are a widely accepted platform for development and reform initiatives and that children have the future shape of society in their hands, the project decided to incorporate disaster risk-resilient features in schools with the understanding that the outcome would be much more sweeping changes. Its school interventions aim at making students and teachers aware of the causes and effects of disasters on lives and property in general and helping them understand measures and methods to prevent and mitigate the impacts of disasters. By imparting such knowledge and skills, schools prepare children to cope with future disasters and to help the community plan and implement disaster preparedness activities. Schools also play a very important role in the dissemination of information among communities; in particular, children and youths can lead awareness campaigns and perform street dramas.

The project worked closely with teachers and with students (a total of 5,785 students of which 5,275 students come from non-project communities). They

Process

- The project helped form 11-member YRCs at eight schools and provided members as well as teachers with training in DP, DRR, leadership, conservation education, first aid, community-based DRM and S&R. Trainers: Project staff who have attended various training for trainers trainings, technical resource persons from government departments, Red Cross resource persons, Teachers help to mobilize groups but it was the clubs themselves that were responsible for organizing peer education, developing and taking action to implement evacuation plans, and organizing simulations.
- A wide range of visual aids, such as wall painting, games, textbooks, coloring books, pencil boxes, leaflets, flip charts, and posters, were developed, and many child-centered activities, including awareness campaigns and intra- and inter-school art competitions and simulations, were conducted. School-level VCAs were carried and DP plans made.
- The project facilitated DRR awareness sessions in each school to sharpen students' knowledge.

were introduced to DRR approaches through learning sessions focusing on issues such as

identification of hazards, causes of disaster, soil conservation, development of DP plans and DRR intervention.

Box 13: Feeling responsible

Whatever I learned from the DRR trainings, I shared with my family and community and have used that information to assist people affected by disasters. The effect of the [September 2008] flood wasn't that severe where I live, but I helped my parents to evacuate some of our neighbours, which I wouldn't have done if I hadn't learned why and how to provide assistance. Because of the trainings, there is more volunteerism. Now people who once would not have turned their heads to even look at victims are now willing to help and support them.

- Susma Sigdel, grade 9, Shree Dependra High School, Hasuliya.

The impact of trainings for students is positive, as Ms. Jit Bahandur Chaudhary of Bishanpur DPC points out: "Students are better prepared for dealing with a flood that occurs when they are in school and they bring the materials they study home and share DRR information with their families." Through the trainings, skills and confidence about implementing DRR have increased, and trained students freely share their knowledge with other students.

Various education materials, such as DRR booklets, coloring books, games and posters, as well as school simulations and street drama performances have made learning more interesting and increased awareness. YRC members are key actors. All YRC members in the eight schools received training in DP planning, leadership, first aid and S&R. Together with their teacher-mentors, they played an essential role in developing school DP plans and DP interventions. The clubs trained other students, developed and implemented evacuation

Box 14: We are acting to reduce the risk at school

In the beginning, to be frank, I was a bit apprehensive when the project introduced discussions about disaster issues. I didn't know much so I wasn't very confident. But when we actually formed the YRC and got the opportunity to be trained and to participate in extracurricular activities, we learned a lot of interesting information about disasters. The materials provided by the project made it easier to understand the disaster context. We also prepared a school-level DP plan. We have changed some of our practices. For example, the bushes around the school were cleared to reduce the risk of snake bite and the compound is cleaner. More work has to be done, but we will do it.

-Ramesh Chaudhary, grade 10, Shree Dependra High School, Hasuliya

and school-level DP plans, held art competitions and organized intra- and inter-school simulations.

The response to the 2008 monsoon demonstrated that when schools and communities work hand in hand, assistance to vulnerable people becomes more efficient. Schools served as evacuation centers and teachers collected cash in support of flood victims. YRC members assisted collecting data and providing direct support in evacuation efforts. Both teachers and students have realized that the existing curriculum did not adequately increase knowledge of and understanding about DRR and they have begun advocating that DRR be mainstreamed into the school curriculum.

The formulation of DP plans has resulted in the construction of raised hand pumps, the renovation of toilets, and the installation of railings on stairs and terraces in the schools. The last initiative has reduced the incident of accidental falls.

The DP plans not only introduced physical measures but also had visible behavioural and psychological effects. Through involvement in extracurricular activities, students have grown more confident and more able to share their knowledge with each other and with their parents. They are comfortable using various IEC materials. As a result of school initiatives, schools and communities are safer and students, more informed.

Important lessons learned:

- To ensure that DRR receives more focus in school curriculum, there is a need for more advocacy directed at education authorities.
- Especially working with the education sector has been challenging due to frequent and unexpected closure of the schools caused by early onset of the monsoon, shortage of text books and strikes. To adapt to unexpected and unplanned closures of schools requires flexible and adaptable project planning; targets for achievement should be set with possible closures in mind.
- It is important to include more child-focused teaching methods.



A YRC organizes a simulation



Forewarned is forearmed

Early warning systems

Early warning systems (EWSs) reduce vulnerability by providing individuals and communities with the information they need to act in a timely and appropriate manner to avoid flood-related risks. The project built effective, integrated systems that included not just the physical infrastructure but also provisions for technical monitoring and warning, and steps to increase public awareness.

EWSs involve monitoring upstream points and passing information and, when flood and rainfall levels make it necessary, warnings to downstream communities. The project provided CDMA telephones to link the upstream recorder stations with downstream communities as well as with the Department of Hydrology and Metrology (DoHM) field office. During the monsoon season, data is collected at hourly intervals, 24 hours seven days a week. Historical data from previous monsoon seasons has formed the basis for identifying critical water levels and rainfall thresholds. When these levels are exceeded, a warning is disseminated through various channels, including local FM radio stations, telephones, megaphones and hand-operated sirens.

DoHM's cooperation ensures the effectiveness and sustainability of the EWS and enables communities to link into the DoHM's forecasting division, which monitors the arrival of the monsoon, the duration of rainfall, flood estimates, and other useful information. Data from the DoHM's nine hydrological stations and six metrological stations along the Mohana River and its tributaries are incorporated into the operation of the EWSs.

Prior to the project intervention, there was no systematized EWS, and people relied on their "instinct," visible flooding upstream and flood-related smells and sounds. Raj Kumari Chaudhary of Lalitpur explains how unreliable the system was: "There was no alternative to watching a flood. In

Process

- Formed EWS sub-committees in each community to provide accurate information
- Build the capacity of the committee members to understand the significance of river and rainfall levels.
- Put in place communication equipment
- Used gauges to measure river and rainfall levels and record their trend
- Installed wooden posts with yellow (warning—get ready) and red (danger—need to evacuate) bands along riverbanks.
- Used local FM radio broadcasts to disseminate warnings
- Prepare evacuation plans incorporating early warning and perform simulations

front of our eyes, floods have stolen many lives, houses, cattle, and crops, often leaving us with nothing. Our family has lost over half of our farmland to the encroachment of water overflowing and eroding riverbanks."

Box 15: The simulation increased our confidence

Now that people have tested the EWS in real life, they understand its benefit and that of a proper response to warnings. Learning is a continuous process and we learn more by doing. The simulation was very effective as it increased our knowledge of disaster management and provided us with the chance to test our plans. We are now quite capable of warning about flooding using sirens, drums and announcements on local radio.

-Jit Banhadur Chaudhary, DPC Coordinator, Shivratnapur



Water- level gauge

During the flood of September 2008, the water came so fast that it was chest-high only four minutes after it first entered the project communities. But the communities followed the warning and evacuation plans which they had developed and practiced beforehand. When the water started to rise on 20 September, the sirens were sounded at 3 a.m. The DPC, the EWS committee and the S&R team together managed to evacuate the people on time. Mr Man Bahadur Chaudhary, DPC Coordinator of Bishanpur describes the benefits of the project initiatives: “The EWS and the evacuation plan we practiced in a pre-monsoon drill saved our lives. The September 2008 flood made us understand the importance of trainings and awareness campaigns through radio and street dramas. It has become clear to us that we can help ourselves by preparing for flooding and by issuing timely warnings.” The communities lost fewer lives (in fact, none at all) and significantly less property than surrounding communities, but surrounding communities also benefited from the EWSs as the project communities spread the word.

Box 16: Good practices should be replicated throughout the Mohana watershed

The project played an important role in the establishment of EWSs. Prior to its intervention, locals had very little knowledge about how floods occurred and how they could protect themselves. Now, people understand how floods occur, how much rainfall upstream will cause flooding in their area, what action should be taken, how to get warning information and how to prepare effective evacuation plans. We think this EWS model should be replicated in other areas of Kailali District.

- Loknath Regmi, District Technical Officer, Kailali

An EWS design and management committee was formed under the chairmanship of the district chief engineer. Its main responsibility is to maintain the communication system, support the recorders and ensure that communication equipment continues to function. District authorities, the press, the security forces, the NRCS, DoHM and other local DRR stakeholders are represented in the committee.

Encouraged by its positive experience during the 2008 monsoon season, the project hopes to expand community-based EWSs across the entire Mohana watershed.

Important lessons learned:

- Systems must be set up in accordance with the demand for information.
- As weather patterns grow increasingly more unpredictable, the period allocated for the recording of rainfall and water levels should be extended on either side of the usual dates for the onset and end of the monsoon.
- It is essential to use existing resources, structures and technology rather than setting up parallel systems.



Communicating using an upstream recorder

Major changes

With in just 15 month the project has brought about some significant improvements in the quality of life of its beneficiaries, reducing their vulnerability by increasing their capacity to prepare for and respond to disaster risks. The immediate visible key impacts are discussed below.

People have become more vocal and confident; they developed a “we-can-do-it” feeling as a result of the many capacity-building initiatives. They have identified vulnerable and high-risk areas and also recognized what strategies and actions are needed to minimize risks. At the individual level, people have become familiar with the do’s and don’ts of action before, during and after disasters. At the family level, new practices has been adopted for the construction of houses and storage of grains. At the community level, people have become more analytical and, have started to initiate additional interventions. Replication is seen in the target communities as well as in neighbouring communities.

Belief in the power of teamwork has increased a culture of helping each other during emergencies. The result is the direct strengthening of social solidarity and neighbourliness. Villagers also report seeing an increase in social justice irrespective of caste, class, gender, and other differences.

Finally, once land along riverbanks was reclaimed using bio-engineering techniques, people started to use the land to farm off-seasonal vegetables, watermelon, nuts, turmeric, taro, ginger and other crops which can be sold for cash. Though these initiatives in income diversification are small, they well change people’s lives and livelihoods in the long run.