

Managing Risk Through Economic Development (MRED)



NEPAL RESULTS BRIEF

AUGUST 2020

Severe hazards and disasters are common in Far-Western Nepal, including floods, river bank degradation, landslides and soil erosion—each resulting in loss of life and property. Agriculture is the pillar of Nepal’s economy and 74% of the population is engaged in agriculture, predominantly subsistence farming. When disasters adversely affect agriculture this can lead to food insecurity and increased poverty. Mercy Corps’ Managing Risk through Economic Development (MRED) program supports the most vulnerable households in smallholder farming communities to be more resilient to the adverse effects of climate change and natural disasters through a resilience approach that integrates disaster risk reduction (DRR) and risk-sensitive livelihoods.

MRED-II operated in Nepal and Timor-Leste to support community based DRR structures and capacities whilst strengthening livelihood resilience through a risk sensitive approach the program calls “nexus”. Over the course of seven years of implementation in these two countries, MRED has generated substantial experience and evidence to support the value of the nexus approach to build disaster-ready communities and strategies to work with government and private sector partners that sustain and scale program investments. This brief will discuss the impact and results of the MRED-II program in Nepal.



Managing Risk through Economic Development Phase-II (MRED-II)

MRED-II Goal: Disaster Resilient Communities

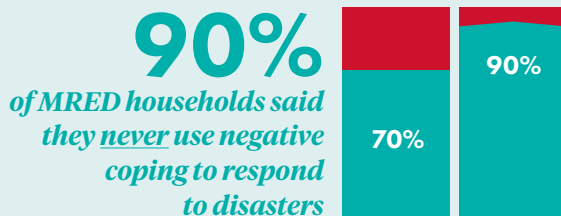
Timeframe: May 2016 to June 2020

Nepal Budget: \$2,374,943 (\$5,558,000 total program budget)

Donor: Margaret A. Cargill Philanthropies

REACH: 36,135¹ people in Nepal are better able to cope with the effects of climate change and disaster.

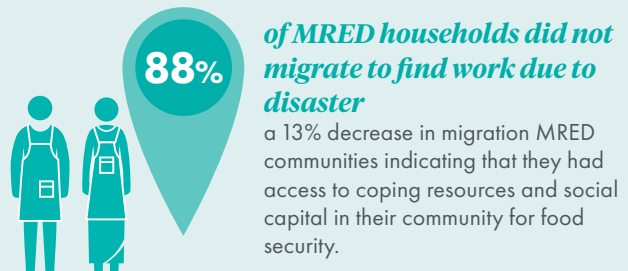
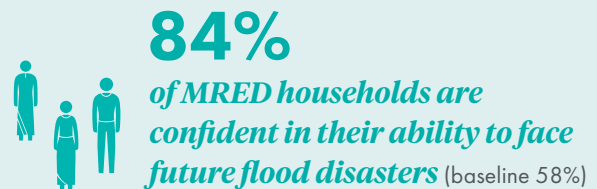
MRED Nepal Improved Community Resilience to Disaster



MRED households resume income generation post-disaster

2.1 months faster

than at baseline.



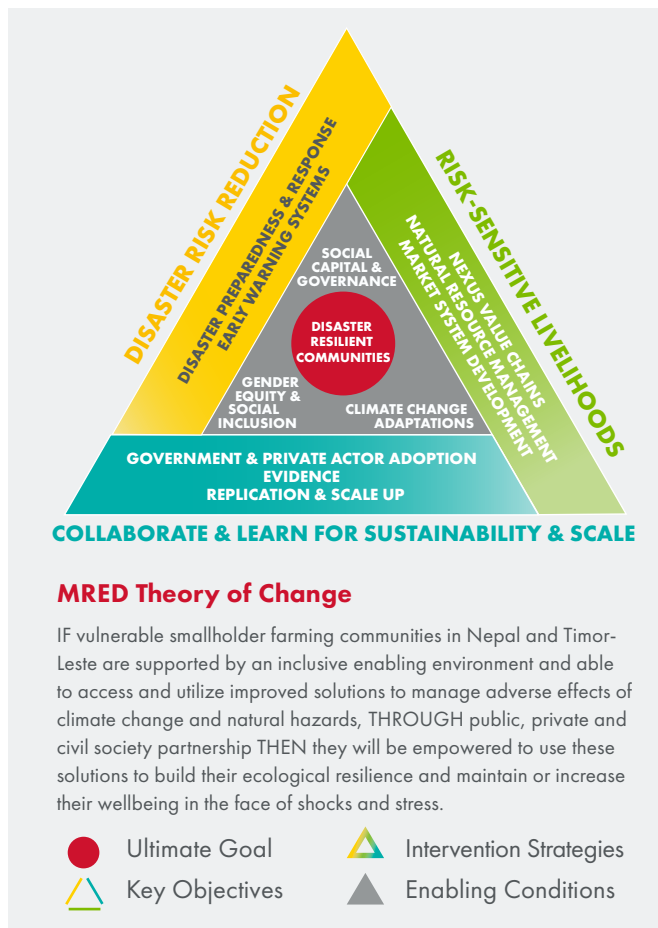
¹ MRED-II engaged 5,314 households in Nepal with an average size of 6.8 members based on endline sample for a total reach of 36,135.

livelihoods to reduce disaster related losses and increase economic security.

MRED empowers smallholder farmers to build their own resilience through economic and ecological systems that support communities to manage shocks and stresses. Rooted in traditional DRR programming, MRED strengthens social capital and physical systems by working with disaster management committees (DMC) linked to local and national DRR institutions to enhance early warning systems (EWS), disaster response, mitigation and preparedness. MRED’s nexus approach promotes the adoption of agricultural commodities that have economic growth and income-earning potential while supporting climate adaptation and disaster preparedness. MRED has a robust partnership with the government of Nepal (GoN), private sector and communities which resulted in increased investments to sustain program advances and replicate the MRED model in additional communities through non-program resources.

MRED-II NEPAL RESULTS

MRED worked with **62 communities and 5,314 households across 4 districts** to build stronger resilience capacities



to manage current and future disasters. Additionally, 12 government and private sector stakeholders have replicated MRED’s nexus approach to support stronger, more resilient climate-sensitive livelihoods.

MRED communities are better prepared for disaster.

Households who said they were ‘completely’ confident in their ability to cope with floods rose 25 percentage points (16% at baseline to 41% at endline).

MRED households improved livelihood recovery times for all types of disasters.

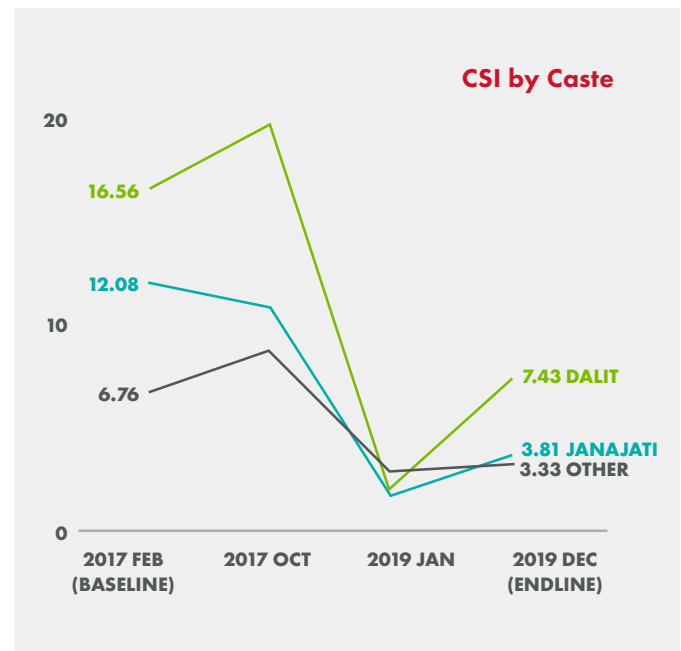
Households recover income impacted by landslides 3.2 months quicker and from floods 2.2 months faster than at baseline (see chart).

Use of risky behaviors declined across all caste groups according to the Coping Strategies Index (CSI)².

Reinforcing this finding, MRED households reported lower rates of reliance on negative food coping strategies after the 2017 flooding events, an average CSI of 3.35 points lower than non-MRED households.³ A reduction in CSI indicates that families are better able to positively cope in times of food insecurity.

Overall, from baseline to endline, MRED households relied on fewer negative coping strategies such as

- › 33% more said they never had to borrow money from family or friends to buy food⁴
- › 40% more said they never purchased food on credit⁵
- › 35% more said they never had to reduce adult food consumption so children could eat more⁶



2 The Coping Strategies Index (CSI) is a measure of negative food coping strategies in the face of a stress or shock; CSI is calibrated on a 100 point scale where 100 indicates extreme food insecurity
 3 Scanlan, J., Petryniak, O., Tamang, C. (2018). Testing the Added Value of Market Incentives on Disaster Risk Reduction in Western Nepal. Final Report. Portland, OR. Mercy Corps.
 4 Percentage of MRED households who answered they never “Borrow money from family or friends” in response to food insecurity; baseline 59.5% and endline 83.1%
 5 Percentage of MRED households who answered they never “Purchase food on credit (from trader using a loan)”; baseline 51.3% and endline 77.2%
 6 Percentage of MRED households who answered they never “Reduce adult consumption so children can eat more”; baseline 67%, endline 95%

DISASTER RISK REDUCTION

MRED strengthened social capital and physical systems to enable community resilience to natural disasters and climate-induced hazards. Participation in nexus livelihoods supports communities to gain confidence in their ability to respond to and recover from disasters.



67% of the endline respondents believed that the government agencies e.g. Agriculture Development Office, Livestock Development Office, Municipality Administration, work to solve problems and meet needs of people in the community.

- **137** community level groups are linked to 19 governments and 33 private institutions.
- **70%** believe that their community groups are able to influence the Government departments to help with livelihoods.
- **All 62** MRED communities have Emergency Management Funds (EMF) at the community level and 72% of households reported having EMF prior to the monsoon during 2017 post flood survey.



84% of MRED households are confident they can cope with future disasters (a 100% improvement from program baseline).

- **100%** of MRED communities have adopted or improved key resilience capacities including disaster structures, preparedness, and response plans that reflect gender and caste sensitive risks.
- **1,813** individuals are prepared to be first responders to disasters in their community, with a 93% retention rate over 4 years.
- **145** community disaster simulation drills were conducted including 26 drills independently conducted by communities with their own resources.
- **116** small scale structural mitigation activities implemented, leveraging \$384,708 from the government and an equivalent of \$161,710 from community contributions. 981 hectares of land has been protected through use of structural mitigation measures.
- **70%** of households are collaborating with other community members on structural mitigation; also 83% have expressed that they would participate in the future.
- **99%** are somewhat to fully confident on bioengineering interventions and low cost structural mitigation techniques.



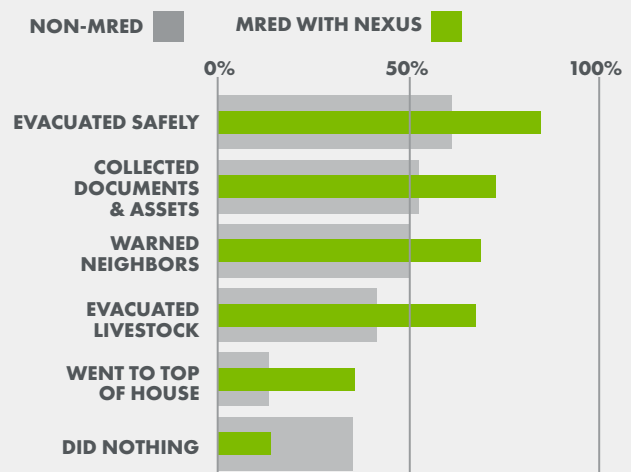
178,336 people⁷ have increased access to more effective flood Early Warning Systems through MRED's work with government disaster management actors to update technology, improve information sharing, and build stronger linkages between government actors and community DMCs.

- **77%** of people reported receiving EWS messages (a 15% improvement) and 99.6% people were confident of the EWS message received.

MRED Households Took Action in Response to EWS in Flooding Disaster

A post-shock evaluation found that MRED households had higher levels of capacities important for disaster preparedness and were able to use these capacities at higher levels to respond to the 2017 floods than non-MRED households (see chart below). Additionally this supports that established EWS in MRED communities were able to provide necessary information when communities were faced with floods. With EWS information 84% of MRED families evacuated the flooding compared to only 63% of non-MRED families.⁷ 32% of non-MRED families did nothing in response to EWS as opposed to only 13% of MRED households.

Nexus households reported responding to early warning information by evacuating to a safe place with their family 21% more often than non-nexus households.



⁷ Represents the total population in the watershed areas where the EWS has been improved.



Women's Initiative Fund meeting in Nepal Photo credit: Mercy Corps



Promoting Climate Sensitive Agriculture (CSA) practices through Farmer Field Schools

Mercy Corps' 2019 study on climatic extremes uncovered changes in frequency and intensity of extreme climate events in Nepal with immediate and intense impacts. Farmer Field Schools (FFS) and Women Initiative Fund (WIF) groups formed under MRED were the vehicle to reach rural farmers with this new information, discuss potential climate impacts, and explore climate adaptations with experts. Connections to local experts such as agrovet, technicians from Agriculture Service Centers, District Agriculture Development Office and District Livestock Development Office officials, private sector agriculture technicians and lead farmers, provided local farmers built participants linking social capital.

1,632 farmers participated in 59 Farmer Field Schools

1,064 female farmers participated in 48 Women Initiative Fund (WIF) groups

RISK-SENSITIVE LIVELIHOODS

Smallholder farmers have improved livelihood resilience to natural hazards and climate change



4,432 farmers benefited from diverse market-based nexus interventions which have become a good source of income, and equally effective in reducing disaster risk. In addition,

nexus interventions were found to generate local economic opportunity that has contributed to retraining 98% of trained Task Force members over four years.



328% increase in average household sugarcane revenue from \$624.92 at baseline to \$2674.83 at the endline; participation in nexus MRED communities rose from 8% baseline to 20% endline reaching 33 communities and protecting 873 hectares of riverbed.⁸



171% increase in milk revenue MRED interventions helped make market linkages and quadruple milk collection centers in target areas so farmers are more readily able to sell. The introduction of improved breeds has also contributed to the increased income.



MRED households participating in nexus reported higher community-level resources and strategies important for reducing the causes of natural hazards including 23% greater familiarity with improved agricultural techniques than non-nexus households.

- Partnership with 25 governments and 33 private actors to strengthen nexus value chain.
- Champion farmer approach reached 70 farmers through 177 demonstration plots, promoting wider replication of climate sensitive agriculture practices.
- 98% of households reported having access to agriculture inputs from the market.



Photo credit: Dipendra Bohara, MRED Staff

Livestock Insurance

A key risk transfer mechanism was the introduction of crop and livestock insurance through training village agents who could reach remote communities. Under MRED, 720 cattle were insured in Nepal's hilly areas, so that when 32 insured cattle died, farmers were able to receive \$15,314 (Rs. 1,828,400) from insurance companies to sustain their livelihoods.

⁸ Mercy Corps, (2020). Trends and impacts of climate change in Far-West and effectiveness of Farmers' Field School approach to climate change coping and adaptation. <https://drive.google.com/file/d/12ZX-kR8U4FZyoN7p4dkumB4Z4EMiW2dg/view>

- In addition to champion farmers, 6,015 farmers were trained on nexus which was jointly facilitated by the MRED technical team, government agricultural department, and private actors, and Agrovet.

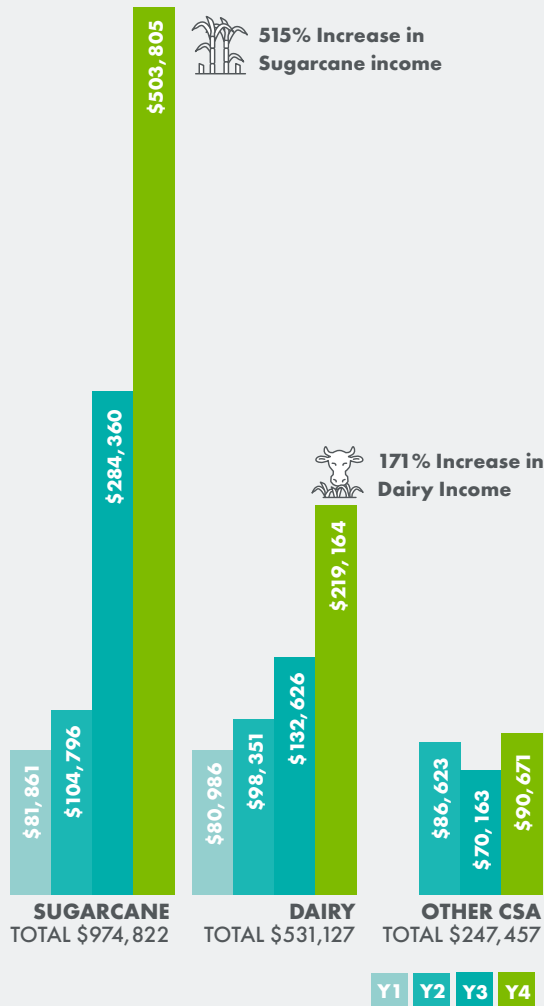


60% of farmers reported social and economic benefits from increased market access through nexus interventions and the application of risk-mitigating, agriculture practices.

- **4,008** households participated in at least one NRM mitigation actions, to respond to disasters, such as bamboo planting, terracing, vetiver grass on hillsides and landslide areas, and tree planting resulting in 1,998 hectares of land protected or under improved land management practices

Nexus Income Grew in All Sectors

\$1,753,406 total income earned through nexus value chains over the life of the MRED-II project including other climate-sensitive agriculture income streams from fodder, WIF, champion farmers, and riverbed vegetable farming.



Gender Equity and Social Inclusion

In 2014, during Phase 1, MRED started a Women’s Initiative Fund (WIF) in Nepal with the aim to improve women’s participation in program activities and increase their meaningful participation in decision making structures, such as Disaster Management Committees and Farmer Groups. The WIF was targeted at women farmer groups to promote Nexus or Climate-Sensitive Agriculture Practices which would encourage women to organize and make more decisions, while engaging in income-generating agricultural activities. Gender integration was not limited to gender-focused interventions but required a greater understanding of the household gender dynamics that limit women’s mobility and engagement.

Achievements included:

Participation: 1,064 female farmers participated in 48 Women Initiative Fund (WIF) groups.

Family Dialogue: 971 HHs participated in family dialogue training.

Leadership: 68% of women in DMCs and FGs reported meaningful participation (32% increase from baseline) and 54% of women reported serving in leadership roles (9% increase over baseline).

Coping Strategies: 96.6% of households never had to reduce female consumption so males could eat more.

Social capital: In Nepal, male and female headed households had almost similar social capital index scores at endline, indicating both had improved social capital.

Access to Finance: A gap of 5% between male and female headed households’ access to finance during baseline was reduced. At endline, female headed households had 1% higher score.

Access to Markets: In Nepal, Female headed households had slightly higher access to markets than male headed households (At endline 97%-Female, 94%-Male).

Disaster Management Committee (DMC): In Nepal, 87% of female headed households reported awareness of the DMC in the community, an improvement from 72.5% at baseline.

Household Disaster Plan: 49% of female households reported having a household disaster plan. The gap of 9% between men and women during the baseline reduced to 2% at the endline.

Early Warning System: 72% of female headed households reported receiving an Early Warning System (EWS) message at the endline. The gap of 13% between men and women at baseline was reduced to 5% in the endline.

COLLABORATE & LEARN TO SCALE



Mercy Corps is considered a key technical partner for DRR by GoN and NGOs from the to the local level, evidenced by joint formal agreement and numerous requests for collaboration and technical support. Additionally, MRED communities are recognized as learning opportunities regarding the nexus approach, the integrated model, Early Warning Systems, low-cost bioengineering techniques, and emergency preparedness and response planning.



For every \$1 investment by MRED, \$4 were invested in DRR and nexus programming by government, community and private sector partners.

\$1,302,470 has been invested by MRED partners in DRR and nexus activities which is 4x more than MRED-II's total program investment of \$354,235¹⁰ over 4 years.

MRED leveraged outside investment in DRR interventions including \$384,708 from GoN and \$161,710 from community partners which helped to build 106 disaster mitigation structures that have protected 1,998 ha of land. **70% DRR funding came from government and local community investment as GoN investment in DRR increased and MRED remained constant throughout the program.** DRR investments contributed to bioengineering and NRM practices which supported the ability for nexus livelihoods to be established in areas, such as sugarcane plantations along riverbanks providing erosion control.

Nexus interventions expanded in Nepal with cost contributions from government, private sector, and community in nexus and DRR. Partner investments in sugarcane plantations on flood-prone river banks enabled communities to gain income diversity and increase productivity of barren lands.

Nexus sustainability outlook is strong with 87% of total nexus investment from partners (\$839, 119 out of \$961,813) including GoN and private sector actors totaling \$455,530 and \$269,759 respectively, as well as emerging support from community partners in year 4 of \$113,830.

Government investment increased significantly

Over the course of the four-year project MRED developed partnerships with the GoN ministries leading to 125% increase in investment in DRR and nexus interventions.



Research and learning around the impact of an integrated systems approach in supporting resilience for smallholder farming communities is widely shared. 8 research and learning

products including case studies, an EWS application manual, River Shifting research, MRED documentary film, the post-shock evaluation study of Nepal's 2017 floods⁹ and other resources have been developed and disseminated to increase knowledge sharing and learning related to MRED's innovative, integrated approach to disaster resilience-building.¹⁰

Publications that have highlighted MRED's work and research include USAID Center for Resilience, Global Resilience Partnership, Sustainability Magazine, BRACED, and others.



17 communities outside MRED target areas have replicated or expanded piloted mitigation projects with their own resources.

MRED's nexus activities are being adopted by neighboring communities through their own resources, demonstrating that the approach can be replicated and scaled up. Examples include government and private sector actors, such as Bhageshwar Sugar mill who adopted digital sugarcane area mapping technology introduced by MRED. Gharelu Chilling Center started using the account-keeping systems independently. Mahakali Municipality started bioengineering investments, and Aalital Ward-5 adopted the MRED model for cow subsidy mobilization.



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⁹ Scanlan, J., Petryniak, O., Tamang, C. (2018).

¹⁰ These and further information about MRED is available at <https://sites.google.com/mercy Corps.org/mred-ii/home>