



PARTNERS FOR RESILIENCE



The Netherlands  
Red Cross



2022

CASE STUDY

Upscaling community  
resilience through  
Ecosystem-based Disaster  
Risk Reduction in Ethiopia

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## **Upscaling community resilience through Ecosystem-based Disaster Risk Reduction in Ethiopia.**

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Prepared by the Partners for Resilience (PfR) Ethiopia Team: Sirak Temasgen, Vincent Van Haaren, and Jeroen Jurriens with support from the UNEP Eco-DRR Team: Malikah Amril and Mikhail Fernandes.

A special thanks to Karen Sudmeier, Mohammad Hasnain, Bram Peters, Alibachew Getie, Abdifatah Hussein, Mukhtar Abdi Ali.

Design and Layout: Ahmad Reza Amiri

# EXECUTIVE SUMMARY

Since 2019, the United Nations Environment Programme (UNEP) in-collaboration with Partners for Resilience (PfR) have developed and implemented scalable Ecosystem-based Disaster Risk Reduction (Eco-DRR) models, working alongside various governments and their respective communities in strengthening their capacity and shaping Eco-DRR policy interventions.

This case study highlights Eco-DRR interventions in Ethiopia focused on ecosystem restoration and protection in the Fafan and Liben Zones of the Somali Region. The key risks being addressed within this context are droughts, flooding, and food insecurity. To address this, the project aims to enhance the resilience of communities to disasters and climate risks through the piloting and scaling up of Eco-DRR activities, reaching 44,000 vulnerable people in approximately 80 communities by the end of the project. Specifically, the project seeks to scale up Integrated Risk Management (IRM) and inclusive risk governance by supporting participatory ecosystem and community disaster risk assessments and action planning. In addition to the implementation of Eco-DRR measures, scaling up of Eco-DRR action, and promotion of citizen-based monitoring of disaster and climate resilient policies and practices.

A model for upscaling community resilience has been developed through three core components of Eco-DRR: Ecosystem Restoration/Protection, Disaster Risk Reduction, and Climate Smart Livelihoods. In Ethiopia, there is a greater emphasis on Climate Smart Livelihoods and Ecosystem Restoration/Protection by demonstrating Eco-DRR rangeland restoration, water management, and embedding Eco-DRR measures within the Productive Safety Net Programme V. The project further focuses on addressing multiple risks through innovative water and soil management, rangelands restoration and protection, community participation, stakeholder capacity building, and embedding Eco-DRR in institutional mechanisms such as the Productive Safety Net V programme. 18 Community-based Organisations were trained on Eco-DRR and 2,520 community members were sensitized on ecosystem and rangeland restoration and management for addressing overgrazing and deforestation, among other capacity building activities. Furthermore, this resulted in 15,847 beneficiaries reached through this project out of which 45% were women.

This case study lays the foundation for demonstrating the need for large-scale implementation of Eco-DRR in advancing the implementation of the Sendai Framework for Disaster Risk Reduction and the Sustainable Development Agenda. The content for this case study has been developed by the United Nations Environment Programme (UNEP) in collaboration with Partners for Resilience (PfR) – a global alliance between the Netherlands Red Cross, the Red Cross/Red Crescent Climate Center, Cordaid, Wetlands International, and CARE along with partner civil society and community-based organisations in the countries where they work.

# TABLE OF CONTENTS

List of Acronyms	I	Ethiopia Project Location	III
Introduction	II		

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<b>1</b>	<b>Rationale</b>	<b>1-4</b>
1.1	Drivers of Risk	2
1.2	Strategies for Addressing Drivers of Risk	2

---

<b>2</b>	<b>Success Story</b>	<b>5-7</b>
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<b>3</b>	<b>Main components and model</b>	<b>8-14</b>
3.1	Eco-DRR Components	9
	Capacity Building	9
	Field Implementation	9
	Advocacy with Government	10
3.2	Ethiopia Upscaling Model	11
3.3	Common roles or key issues to be considered	12
3.4	Scalable feature	13

---

<b>4</b>	<b>Lesson learned</b>	<b>15-17</b>
5.1	Project lessons learned	16
5.2	Gender Mainstreaming	16
5.3	Recommendations for upscaling	16
5.4	Recommendations for future Eco-DRR projects	17

# LIST OF ACRONYMS

<b>CBOs</b>	Community-based Organisations
<b>DG-INTPA</b>	Directorate General for International Partnerships
<b>DRR</b>	Disaster Risk Reduction
<b>Eco-DRR</b>	Ecosystem-based Disaster Risk Reduction
<b>ERCS</b>	Ethiopian Red Cross Society
<b>FAO</b>	Food and Agriculture Organisation
<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit
<b>Ha</b>	Hectares
<b>IRM</b>	Integrated Risk Management
<b>MoFEC</b>	Ministry of Finance and Economic Cooperation
<b>NRM</b>	Natural Resource Management
<b>RESET</b>	Resilience Building and Creation of Economic Opportunities in Ethiopia
<b>GCCA+</b>	The Global Climate Change Alliance+
<b>PfR</b>	The Partners for Resilience
<b>PSNP</b>	Productive Safety Net Programme
<b>UNEP</b>	United Nations Environment Programme
<b>VCA</b>	Vulnerability and Capacity Assessment
<b>WSWs</b>	Water Spreading Weirs



# INTRODUCTION

This case study documents the experiences, results, and lessons learned from the Ecosystem-based Disaster Risk Reduction (Eco-DRR) project undertaken by the Netherlands Red Cross, Wetland International, and Cordaid in Ethiopia with funding from the Directorate General for International Partnerships (DG-INTPA), European Commission. The objective is to upscale community resilience through Eco-DRR activities. The project was implemented from May 2019 to June 2022 in Liben (Dolo Ado Woreda/District) and Fafan (Shebelle, Harores, and Gursum Woredas/Districts) zones of Somali Region, Ethiopia. These areas were selected due to the region's high frequency of droughts, floods, and food insecurity. In the past 20 years, the frequency and impacts of droughts have become more severe. Due to climate change, the intensity of droughts have increased, severely affecting the lives of millions of people whose livelihood are directly and indirectly connected to natural resources. More than 83% of the population is based in the rural areas and is dependent upon natural resources to meet its basic needs. Smallholder farmers depend on rain-fed crop production, and pastoralists in drought-prone areas are the most vulnerable and the most at risk.

**Overall objective:** Enhance the resilience of communities to disasters and climate risks through the piloting and scaling up of Eco-DRR activities, reaching 44,000 vulnerable people in approximately 80 communities by the end of the project.

**Specific objective:** Strengthened integrated risk management and inclusive risk governance by supporting participatory ecosystem and community disaster risk assessments and action planning, implementation of Eco-DRR measures, scaling up of Eco-DRR action and promotion of citizen-based monitoring of disaster and climate resilient policies and practices.

**Project Outcomes:** The programme expected target is divided in 4 outcomes:

1. Communities anticipate and respond to disaster risks by adapting and transforming systems and structures, across selected landscapes through the planning and implementation of sustainable Eco-DRR activities in Fafan and Liben zones of the Somali Region, Ethiopia.
2. Relevant regional and local government stakeholders influence the planning and implementation of sustainable Eco-DRR activities, demonstrating good practices in Disaster Risk Reduction (DRR), in line with the Global Climate Change Alliance+ (GCCA+) overall strategy.
3. Key CSO stakeholders influence the planning and implementation of sustainable Eco-DRR activities, demonstrating good practices in DRR, in line with GCCA+ overall strategy.
4. The PfR Ethiopia country team has demonstrated the effectiveness of Eco-DRR to Civil Society stakeholders and governments at local, national, regional, and global level in a resource package that consolidates good practices and facilitates the replication and scaling up of the Eco-DRR approach.

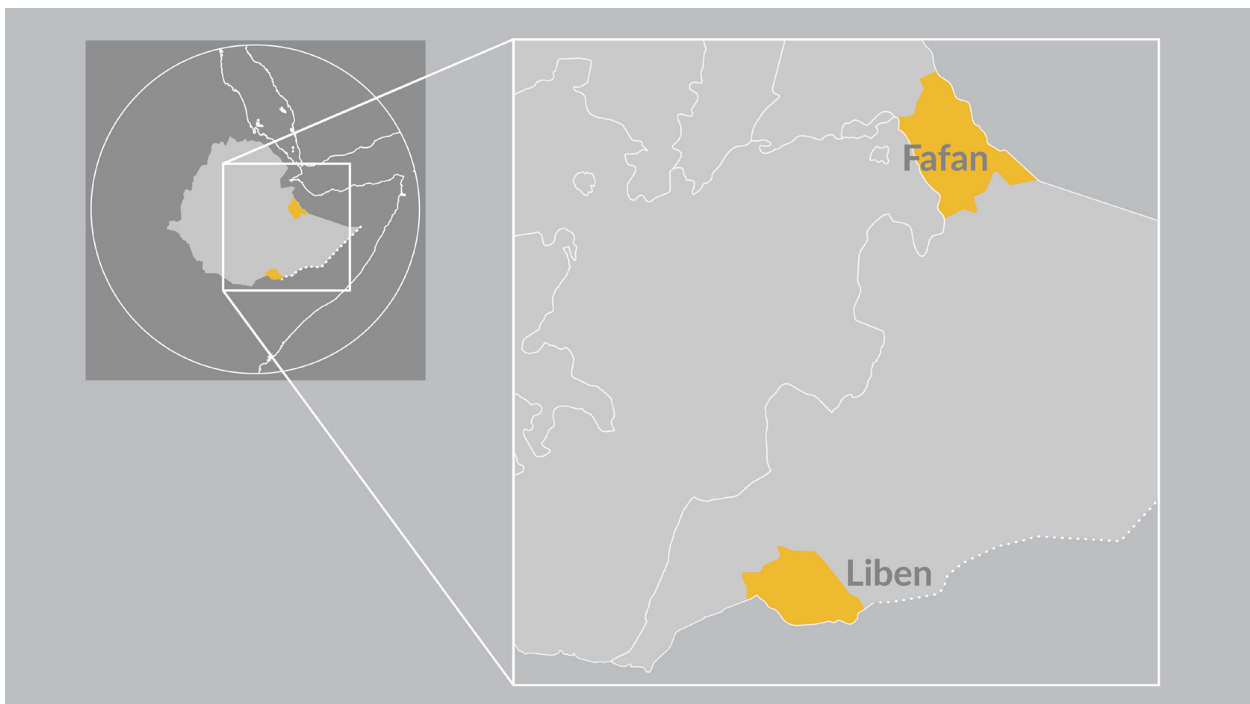
*Camels carry salt in Dancalla.*

*Photo Credit: Unsplash/Daniele Levis Pelusi*



# ETHIOPIA PROJECT LOCATION

The project is implemented in the Liben (Dolo Ado Woreda/District) and Fafan (Shebelle, Harores, and Gursum Woredas/Districts) zones of Somali Region, Ethiopia.



**Table 1:** Expected results/targets.

Number of community-based / local level organizations that have been trained to implement Eco-DRR activities	25
Number of hectares of ecosystems restored or protected as a result of Eco-DRR field project implemented	25
Number of people who are benefiting (directly or indirectly) from community-based model of Eco-DRR field project	44,000

**Key Implementing partners:** Ethiopian Red Cross, Wetland International, Cordaid, the regional and woreda/district level Agricultural and Natural Resources Offices, GIZ, and Jigjiga University.

# 1

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## Rationale

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*Land degradation in Ethiopia poses a significant challenge to rural development and poverty alleviation. More than 85% of the land in Ethiopia is estimated to be 'moderately to very severely degraded' of which an estimated 75% of the land is affected by desertification.*





## 1.1 Drivers of Risk

Land degradation in Ethiopia poses a significant challenge to rural development and poverty alleviation. More than 85% of the land in Ethiopia is estimated to be 'moderately to very severely degraded' of which an estimated 75% of the land is affected by desertification<sup>1</sup>. Currently, approximately 27 million hectares (ha) of land have been significantly eroded<sup>2</sup>. Out of the total degraded area, 14 million is significantly eroded, with over 2 million ha beyond reclamation. Rangeland degradation is the most significant challenge for pastoral livelihood in the Somali Region. A major reduction in the nutritional quality and quantity of vegetation available for grazing in the rangelands, as well as the expansion of localized deserts and barren areas, is evident. Major causes of degradation include climatic change causing drought and arid conditions, flooding, and human factors leading to the overuse of natural resources. More specifically, in Shebelle, Harores, and Gursum woredas/districts, land degradation is increasingly becoming a major challenge, resulting in big gullies, and rendering land unproductive. Consequently, this results in a loss of pasture and failure of crops forcing local communities to abandon their land and permanently move to other areas in search of better livelihood options. Others have resorted to negative coping mechanisms (selling of firewood and charcoal) which further exacerbates their vulnerabilities and the ongoing impacts of climate change.

Pastoralists and agro-pastoralists are highly dependent on livestock and their products for livelihoods. This strong dependence on one sole source of income makes them extremely vulnerable. A shortage of pasture and water, and limited access to markets and low prices mean that productivity is low. Poor agro-pastoralists and farmers along the riverbanks are unable to get the agricultural inputs and technology to ensure household food security. Due to recurrent droughts and related natural resource degradation, forage is in large deficit. Pastoralists who lack experience in haymaking further aggravate the problem.

## 1.2. Strategies for Addressing Drivers of Risk

The Eco-DRR project proposed solutions to implement and upscale activities on ecosystem management and restoration, including physical and biological soil and water conservation measures. The project adopted a community-based approach in its work, where disaster risk reduction is identified from an ecosystem, climate, and livelihood perspective, and solutions are proposed in a participatory and people-centered way.

The project had a strong involvement and collaboration with local sectoral offices for community mobilization, technical support, planning, and implementation of project activities. The regular engagement with Disaster Risk Reduction (DRR) platforms in the regions was a key coordination mechanism. The project influenced the public work component of the PSNP (Productive Safety Net Programme) to promote and consider Eco-DRR approaches and aligned interventions with local development initiatives. Furthermore, collaboration with regional academic (Jigjiga University) and research institutions were also forged. This collectively results in a specific upscaling model that has been piloted in Fafan woredas/districts. This model is developed for replication and upscaling through other stakeholders in other landscapes.

The sections below contain additional information on how drivers of risks have been addressed:

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1. Gebreselassie, S., Kirui, O. K., & Mirzabaev, A. (2016). Economics of land degradation and improvement in Ethiopia. In *Economics of land degradation and improvement—a global assessment for sustainable development* (pp. 401-430). Springer, Cham.

2. Bai, Z. G., Dent, D. L., Olsson, L., and Schaepman, M. E. (2008), "Global assessment of land degradation and improvement. 1. Identification by remote sensing". Wageningen, The Netherlands: International Soil Reference and Information Center.

## **1. Improving physical and biological soil and water conservation measures**

Ecosystem management and restoration activities, like multi-purpose tree planting, soil moisture conservation, rehabilitation of water sources, rangeland management, and fodder production, will improve the production and productivity of animal feeds. It will also strengthen the overall resilience of the landscape and surrounding ecosystem. Physical and biological soil and water conservation measures such as soil and stone bunds, water spreading weirs, masonry check dams, area closure from human and animal interference, and reforestation using climate-adaptive seedlings, which are the most important components of Eco-DRR, will have the potential to reduce the vulnerability of communities to flood and drought risks. Hence, the interventions will have a multiplier effect such as retaining the fertile topsoil, enhancing rainwater infiltration and retention, enabling revegetation, improving the pastures, and gradually increasing crop productivity. This will also improve the livelihoods and resilience of communities, as all these interventions will be integrated with climate change adaptation strategies.

## **2. Building community awareness and capacity**

Project activities focused on increasing awareness and technical capacities on how to prevent land degradation and reduce vulnerabilities to drought and flooding using mainly Nature-based Solutions, including ecosystem management and soil and water conservation measures. Communities were organised in different groups such as Community-based Disaster Risk Reduction Committees, Natural Resource Management Committees, and Water Management Committees. These Committees were trained on disaster risk management, natural resource management, and water and sanitation topics. Selected community members were also trained and sensitized on how to construct and repair soil and water bunds, water spreading weirs, check dams, plant and nurture multi-purpose trees, etc.

## **3. Influencing a large-scale public work component of Productive Safety Net Programme (PSNP) and other project with Eco-DRR approach**

The PSNP is a nation-wide, multi-billion dollar programme launched in 2005 and led by the Government of Ethiopia. Its primary objective is addressing rural food insecurity, building resilience, and reducing the need for humanitarian appeals. Over the years, the program expanded gradually to cover about 8 million direct beneficiaries from 2.5 million rural households in 40 percent of the country's districts (woredas). PSNP V was launched in 2021 with a total budget of 2.2 billion USD.

The Eco-DRR project has recognized a key upscaling opportunity by influencing the public work component of the PSNP program and promoting Eco-DRR approaches in the PSNP program as a viable option for effective and sustainable risk reduction among vulnerable communities.

To achieve this, with support of project partners, woreda-level technical working groups were formed from agriculture, natural resource, and water offices especially in Shebelle, Harores, and Gursum woredas. The technical working group members were trained in integrated risk management, which includes Eco-DRR measures, and various discussions and field visits were conducted. An exposure visit, and consultation were organised from 18 - 19 May 2022, in which relevant federal and regional stakeholders, including donors participated. It was a highlight despite the delays due to the COVID-19 pandemic and government officials being occupied for a long time by the national and regional elections. The inclusion of key Eco-DRR measures in woreda PSNP plans is a tangible demonstration of successful upscaling.

A complementary upscaling strategy is to design and implement more projects that can build on the Eco-DRR achievements and model. As a result, small funding was secured from the Netherlands Red Cross and the British Red Cross to consolidate and/or replicate some of the Eco-DRR measures. There is also a new project under development with the Canadian Red Cross that will replicate the Eco-DRR measures and model, aiming to scale-up to other woredas of the Fafan zone.

#### **4. Advocating for early warning and actions**

The previous Partners for Resilience (PfR) project (2010-2021) which was also being implemented in the Somali region, has financially and technically contributed to the organisation of seasonal weather conferences. In these events, the regional meteorology office shares the seasonal weather forecast for the entire Somali region and the respective sectoral offices (disaster management, agriculture, livestock, water, health, natural resources) prepare advisories that should be disseminated to the community level through their structures. This measure helps communities to take appropriate early actions. If there is a drought forecast, communities would take actions such as destocking, seasonal migration, and saving water. In the case of flood prediction, they start cleaning drainage lines and avoiding low-laying areas in a watershed.

#### **5. Strong engagement of local sectoral government offices and other key actors**

This project strongly engaged the local sectoral offices for community mobilization, technical support, planning, and implementation of its activities. The regular engagement of DRR platforms, which involve all relevant sector offices, will be used as an entry point to jointly work with the offices and link with other ongoing programmes. This project also established a platform with sector offices for project review, consultation, and joint action. The platform already established by PfR and the Resilience Building and Creation of Economic Opportunities in Ethiopia (RESET) II initiatives will also be used intensively for the coordination of key stakeholders as follows:

- The Somali Region Agriculture and Natural Resources Development Bureaus/offices at regional, zonal, and woreda levels (Shebelle, Harores, and Gursum woredas).
- The Somali Region Disaster prevention and preparedness bureaus/offices at regional, zonal and woreda levels (Shebelle, Harores, and Gursum woredas)
- The Somali Region Water Bureaus/offices at regional, zonal and woreda levels (Shebelle, Harores, and Gursum woredas)
- Academia: Jigjiga University - Natural Resource Department
- International Organisation: GIZ
- Community-based Organisations (CBOs)
- Community-based Disaster Risk Committees
- Natural Resource Management Committees
- Water Management Committees

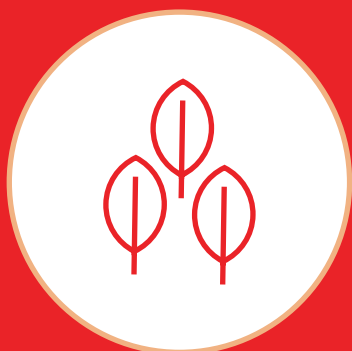
# 2

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## Success Story

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*Changing flash floods into farming opportunities in Hare 2 Kebele/Village,  
Shebelle Woreda - Fafan Zone, Ethiopia*





Hare 2 Kebele is a drought-prone area characterized by low rainfall and high temperatures and is repeatedly affected by flash floods from the adjacent hills. The major victims of the floods are predominantly those households with farms and pastureland in the low-lying downstream areas. This significantly impacts their livelihoods, as fertile soil is eroded, creating large gullies, destroying their crops, and drowning their livestock. The combined effect renders the farm and pasture lands completely unproductive. The situation gets worse every year from the combined effects of extreme weather events and degradation in the surrounding hills. As a result, an increasing number of households are being permanently displaced as they move to other locations for better livelihood opportunities.

With the technical support of the German Development Agency (GIZ), the Ethiopian Red Cross Society (ERCS) in close cooperation with local stakeholders has introduced a flood barrier in Shebelle woreda: water spreading weirs (WSWs) to convert the abundance of surface water during floods into a productive resource. Wetlands International carried out similar interventions in the neighboring woreda Gursum. WSW is a simple, but innovative Eco-DRR measure that drastically slows down the speed of the run-off water and facilitates infiltration to the ground and the settling of fertile soil. It also helps to enhance moisture gradients across farming fields, consequently, improving the productivity of the land. Most people in Fafan are agropastoralists, and besides landowners, pastoralists will also benefit from the improved pasture around the areas where the WSW was constructed.

Compared to contour bunding and other soil and water conservation techniques implemented in the Somali Region for years, the WSW shows better results – albeit at a higher construction cost. So far, six water-spreading weirs have been completed. It is hoped that the WSWs would be effective in restoring degraded areas and returning hopes to those households who are in despair and considering permanently migrating to other areas.

ERCS, and Wetland International, along with GIZ, are widely promoting WSWs with other complementary soil and water conservation measures such as area closure, revegetation with fruit and fodder trees, and community sensitization. There is a continuous effort to influence the Productive Safety Net Program (PSNP) to integrate the WSW and other measures in their woreda level plans to scale up the Eco-DRR model for vulnerable woredas of the Somali Region.



*Local villagers hired in the plant nursery of hot pepper implemented in Jijiga nursery site, Ethiopia.  
Photo Credit: Mohammad Hasnain/UNEP*

## The Productive Safety Net Programme (PSNP V)

PSNP is the Government of Ethiopia's multi-billion dollar programme which was launched in 2005 with the aim of addressing rural food insecurity, building resilience, and reducing the need for humanitarian appeals. Over the years, the program expanded gradually to cover about 8 million direct beneficiaries from 2.5 million rural households in 40 percent of the country's districts (woredas). PSNP V was launched this year with a total budget of 2.2 billion USD. Some of the target woredas of the Eco-DRR project are also a target of PSNP V programme and it would be a suitable opportunity to influence the public work component to consider Eco-DRR approaches for effective and sustainable risk reduction among vulnerable communities.



Photo 1: Mohamed Dahir Osman – Hare 2 kebele Natural Resource Management Committee member. Photo Credit: Abdifatah Hussein/Ethiopian Red Cross. Photo 2: Devastated farming land by gully formation – Hare 2 Kebele. Photo Credit: Mohammad Hasnain/ UNEP. Photo 3: Water Spreading Weir – Hare 2 Kebele. Photo Credit: Mohammad Hasnain/UNEP.

**Mohamed Dahir Osman is a farmer who lives with his family of 9 members in Hare 2 Kebele. He is one of the beneficiaries of the WSW built by the Eco-DRR project. With a mixed feeling of despair and hope, he said:**

“

*All my relatives have suffered the adverse effects of gully formation and had to abandon their farmlands. They moved to another woreda/district. I also lost almost half of my land , and I am now just holding onto the remaining piece until it perishes. You feel hopeless when you see the massive reddish water encroaching on your land out of nowhere, gashing through your farmland and uprooting crops and breaking blocks of soil and in the end leaving behind a vast and degraded valley. I have seen similar water spreading weir constructed in other kebeles/villages that protected their land. It is beyond our capacity to construct a weir ourselves, and we are grateful that the Red Cross did it for us. This has renewed my hope and I'm motivated to contribute and see that the 'flash flood-monster' is tamed and the fertility of our land returned.*

”

Mohamed is also a member of the Natural Resource Management (NRM) committee that was established and trained by the Eco-DRR project. The roles and responsibilities of his committee are described in the community by-laws, which includes sustainable management and protection of the communal enclosure areas. He said that members of the committee will do whatever they can, and they will continue seeking support to expand water and soil conservation measures to lift them out of poverty and out of dependency on food aid.



# 3

## Main components and model

*Addressing multiple risks at a landscape scale through innovative water and soil management, rangelands restoration and protection, community participation, stakeholder capacity building, and embedding Eco-DRR in institutional mechanisms such as the Productive Safety Net V programme.*



## 3.1. Eco-DRR Components

### Capacity Building

The Vulnerability and Capacity Assessment (VCA) was used as an entry point to approach the local community and guided the selection of measures and project locations in relation to the three core components of the project: ecosystem restoration, climate smart livelihood and Disaster Risk Reduction. In most of the target kebeles (villages), restoration of degraded areas was prioritized as a top concern of the local community. Different capacity-building activities were undertaken; these included building awareness on community mobilization, restoration works and sustainability issues of the restored structures, soil, and water conservation practices, and building stone/earth bunds. This capacity building was conducted with the community groups in the targeted villages; more specifically the established Community-based Organisations (CBOs) such as Natural Resource Management and Restoration Committees, kebele administrators, and local masons. Various training courses on integrated risk management, natural resource management and water and sanitation were also organised for government stakeholders and CBOs.

In terms of climate smart livelihoods and DRR, the project built on the previous PforR II project by supporting the organising of seasonal weather conferences and the development of sector-specific advice to mitigate risks on people's life and livelihoods ahead of anticipated dry spells and flood events. The participants included the Somali Region Meteorological Institute, disaster management, agriculture, livestock, water, health, natural resources regional, and woreda level offices. The project has demonstrated the following results

- 18 Community-based Organisations were trained on Eco-DRR and 2,520 community members were sensitized on ecosystem and rangeland restoration and management for addressing overgrazing and deforestation.
- Comprehensive landscape and community-based risk assessments on flooding and drought were conducted, results were verified, and action plans developed.
- 2 Natural Resource Management and 2 Rangeland Management Committees were established and trained, and village by-laws developed for more sustainable ecosystem management.

### Field Implementation

Capacity building had been combined with the implementation of measures at the field level, such as: area closure, water spreading weir construction, nursery establishment, multi-purpose tree seedling production, and transplanting of seedlings in the selected areas, as part of the ecosystem restoration components of the project. In the other target kebeles, water needs for humans, and livestock were prioritized, and the project supported the rehabilitation of three underground water storages (birkads). This is linked to livelihood protection and a reduction of health risks in the community.

The Water Spreading Weir (WSW) is a key innovative Eco-DRR measure of the project. These structures are made of natural stones and cement that span the entire width or large section of a valley to spread floodwater over the adjacent land area. The WSW was introduced in the Somali region by GIZ several years ago and has been showing remarkable results as a new rehabilitation technique for degraded dry valleys. In dry valleys where water flows to the rivers for only a few days a year, the weirs serve to distribute the incoming runoff over the valley floor and allow as much water as possible to infiltrate the soil. Depending on user preferences, the primary goal could be for i) agricultural use, ii) silvo-pastoral use (combining trees, forage and grazing of livestock), or iii) replenishing or increasing water table levels.

5 water spreading weirs have been constructed and promoted as a high potential Eco-DRR measure by project partners in close collaboration with local stakeholders and GIZ. Despite the higher cost of construction, its innovative approach to water and soil conservation measures proves more effective in the Somali region compared to other traditional water conservation measures. Water infiltration and top-soil protection increase the soil's moisture retention capacity and nutrients. Both aspects have a direct link to agricultural yield and livelihood.

For these reasons, WSWs both improve agricultural productivity and community resilience in the target areas. To ensure sustainability and future maintenance, Ethiopian Red Cross Society (ERCS) and Wetlands International have trained local masonry workers, government staff, and community members on how to construct and repair WSWs with technical support from GIZ. They are now able to construct and maintain them. The WSWs will be reinforced by planting trees such as Sisal, Aloe vera, and Kleinia around them as hybrids of gray and green solutions.

The project has demonstrated the following results

- 15,847 beneficiaries reached of which 45% are women.
- 5 water spreading weirs constructed along with stone bunds to restore 49 hectares of degraded land. The project team is working with local stakeholders and GIZ in promoting water spreading weirs as a successful Eco-DRR measure in Somali Region.
- 3 masonry check dams constructed for restoring farm and grassing lands. 1380 people are engaged in this activity on a cash for work basis.
- 4 rainwater harvesting underground tanks (birkad) rehabilitated benefiting around 630 households in the dry season.
- A nursery has been established for multi-purpose tree species such as fruit and fodder to restore rangelands and degraded ecosystems. 79,000 seedlings have been transplanted by the local communities.
- In total 16 hectares of land are restored or protected.

### **Advocacy with Government**

As part of our upscaling model, the project focused on enhancing the technical capacity of the local government stakeholders, specifically the agricultural and natural resources offices, and vulnerable communities on Eco-DRR approaches and principles by showcasing innovative and successful measures, training, and exposure visits. It is expected that they can influence the local planning and implementation of PSNP V programs (particularly the public work component) in the target woredas and beyond.

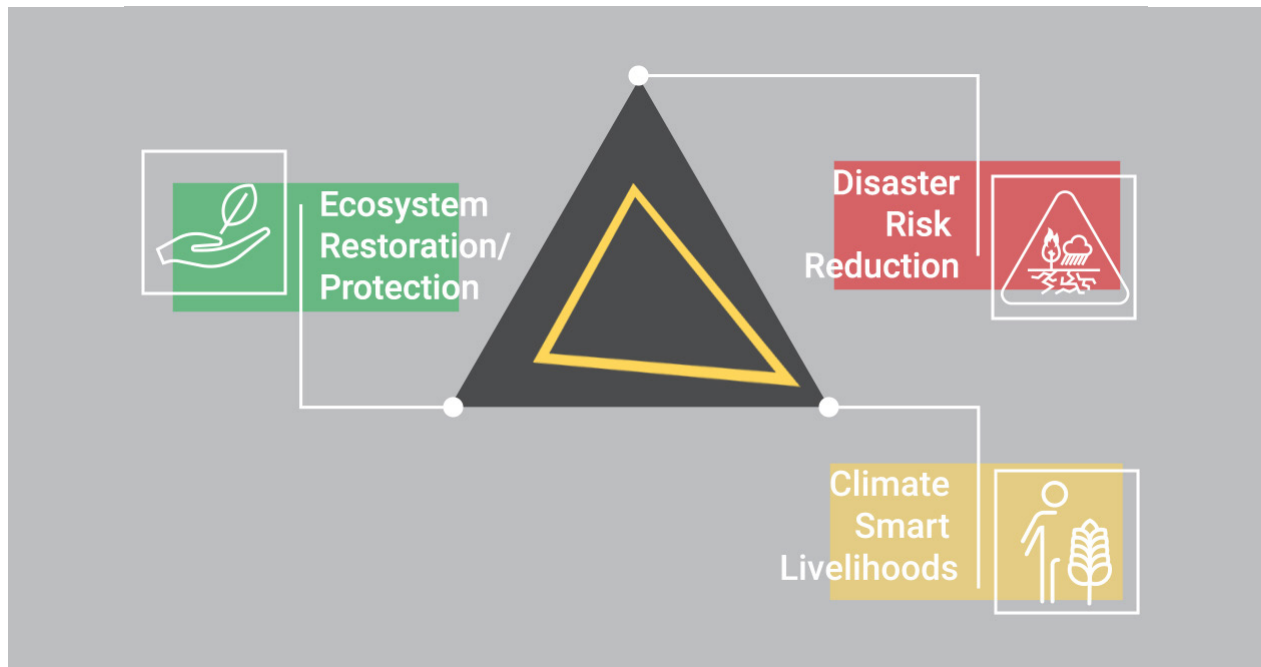
The organisation of an exposure visit, and regional consultation workshop was hosted by the project. The main objective was to share the project results, model, and advocate uptake by disaster management, agriculture, natural resource management offices. Furthermore, it was intended to work towards an action plan that can replicate successful Eco-DRR measures at woreda and regional levels and eventually embed it at the institutional level.

The project has demonstrated the following results

- Risk assessment result was shared and validated with regional and local government stakeholders. Ongoing discussions to integrate Eco-DRR measures in the Productive Safety Net Programme V (PSNP) to scale up Eco-DRR in Ethiopia.
- Outreach to the key government offices (agricultural and natural resources management) to collaborate on scaling up of Eco-DRR within the PSNP programme. The government is gradually adopting the "water spreading weir" technology within PSNP programme.

## 3.2. Ethiopia Upscaling Model

Addressing multiple risks at a landscape scale through innovative water and soil management, rangelands restoration and protection, community participation, stakeholder capacity building, and embedding Eco-DRR in institutional mechanisms such as the Productive Safety Net V programme.



The upscaling model consists of training government partners on Integrated Risk Management principles and approaches (including Eco-DRR) and exposure to practical and successful Eco-DRR measures in the field.

### Ecosystem Restoration/Protection

- Community members were empowered to participate in rangeland restoration and management, soil moisture conservation, rehabilitation of water sources, and improved rangeland management.
- Community members were engaged in developing village by-laws to control overgrazing and tree cutting, producing multipurpose tree seedlings in the nursery, and revegetating enclosure areas and individual lands.



### Climate Smart Livelihoods

- Improved soil and moisture conservation was implemented through water spreading weirs, soil, and stone bunds, and check dams that contribute to better pasture and crop productivities based on agreements with all relevant parties to continue proper management and sustainability of the water spreading weirs.
- Farmers were involved in enhancing fodder production for improved livestock breeding to increase food security.



### Disaster Risk Reduction

- Organized seasonal weather conferences to prepare sectoral advisories based on seasonal forecast information, established, and trained community-based disaster risk reduction groups on flood and drought risk assessments for preparing local disaster risk reduction plans.
- Rehabilitated rainwater harvesting underground tanks (birkad) to prioritize water needs for humans, and livestock for livelihoods protection, food security and reduction of health risks in the communities.





### 3.3. Common roles or key issues to be considered

Working on multiple levels is necessary to advocate Eco-DRR in local and district development planning. At the local level, the community groups require technical support, and collaboration with Kebele/village government structure should take place. The existing community groups should be trained on Eco-DRR aspects and how to consider them in the village planning. At district level, collaboration with key government agencies, for example, the Ministry of Finance and Economic Cooperation (MoFEC) enables financial support for Eco-DRR through the PSNP. Exposure and experience sharing visit of selected government officials from PSNP could be facilitated to disseminate this successful Eco-DRR practices. This action could be followed with a regional forum or discussion on how that experience will be used to improve PNSP planning especially in using a landscape approach/Eco-DRR.

Community participation is essential throughout the project implementation, thereby making it necessary to identify and address the priorities and pressing needs of the local community. The community groups should be in the driver's seat of participatory risk assessment and action planning. Consequently, when the local communities prepare their Kebele-level PSNP project plan, they could consider and propose Eco-DRR measures. This should be accompanied by the provision of technical support and guidance for the local community in restoring the degraded ecosystems with soil and water conservation technics (WSW, masonry check dams, etc), tree planting, and also participatory monitoring process of the progress and results.

Demonstration and wider promotion of the Eco-DRR model is beneficial to stimulate replication of this good practice. This can be done with documentation of best Eco-DRR practices to influence PSNP woreda-level planning in other woredas and regions in Ethiopia. Similarly, dissemination and sharing of the Eco-DRR model with wider stakeholders could also be done using different forums and targeting specific partners such as humanitarian actors and relevant donors.



*Local beneficiary of water storage restoration project in Harta ali bayle kebele Mulacle village, Ethiopia.  
Photo Credit: Mohammad Hasnain/UNEP*

## 3.4. Scalable feature

The project actively worked on addressing the underlying risk factors, especially the degradation of productive lands, with a strong focus on improving the soil and water conservation techniques. The model could be scaled up with the following actions:



- **Disaster Risk Reduction: preparing for the drought spell:**

Rehabilitating or constructing water tanks to harvest rainwater in the rainy season. This will provide water supply during prolonged droughts for livelihood, water, and sanitation needs. This structure significantly reduces the burden on women to fetch water during dry seasons.



- **Ecosystem Restoration/Protection: empowering community groups and laws:**

Empowering community groups such as natural resource management committee to restore their lands with multipurpose trees: fodder and fruit trees, in enclosure areas. Using community-based/village laws to enforce the protection of enclosure areas or rangeland.



- **Climate Smart Livelihoods: improving soil and water conservation :**

Constructing water spreading weirs to improve the physical and biological conditions of soil, prevent erosion, and formation of gullies. The improved soil condition enables better crop and pasture production.

The water spreading weir (WSW) is a key pillar because in dry valleys where water flows to the rivers for only a couple of days per year, the weirs distribute the incoming runoff over the valley floor and allow as much water as possible to infiltrate the soil.

- It serves multi-purpose goals: agriculture, silvopasture, and groundwater recharge.
- It reduces erosion, flood, and drought risks by improving water infiltration and accessibility.
- It contributes to ecosystem restoration by retaining topsoil and moisture.
- It enables landscape restoration and vegetation growth.



How to scale up water spreading weirs:

A. Integration within the government safety net program (e.g., PSNP)

- Training and advocacy with the key local government offices
- Organise experience-sharing visits for the relevant government offices from the federal, regional, and woreda levels, as well as international organisations such as FAO and GIZ.
- Timely submission of the proposal for soil and water conservation to the natural resource management and agriculture office for regional and PNSP plans during the government planning process (normally in June).
- Continuing advocacy for Eco-DRR measures and the provision of technical support regionally by engaging the key actors (Regional Agriculture and natural Resource Management Bureau, ERCS, Wetland International, GIZ and FAO) by establishing the task force with specific roles and responsibilities.
- Develop the guideline for the WSW construction with the support of the expert (GIZ) and share it at the regional level.

B. Integration within the Red Cross Movement programme (e.g., Ethiopian, Netherlands, British and Canadian Red Crosses)

- Expanding the Eco-DRR achievements and model by designing new projects that cover larger areas and benefit more vulnerable communities.
- The project could address various issues such as: food security, drought response and recovery, climate change impacts, etc.

In this project, engaging with the private sector and academic institutions in upscaling the model has proven unfeasible: private sector actors need more secure, quicker, and larger profit margins. Meanwhile, academic institutions expect larger funds and longer engagement periods for research exceeding the Eco-DRR project resources (time and funding).

# 4

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## Lesson learned

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*Changing knowledge and transforming attitudes in local communities to support conservation and protection of selected degraded ecosystems.*



## 5.1. Project lessons learned

- Lack of skilled labour due to migration and unpredictable rainy seasons impacted the pace of project implementation, especially for the construction of the water spreading weirs. It is advisable to engage and impart technical skills to local communities, especially local masons, in supporting the WSWs construction.
- Project flexibility is indispensable to meeting the basic needs of the target communities. This includes unconditional cash distribution for most vulnerable households and cash-for-work schemes when community members are engaged in soil and water conservation activities.
- Producing and nurturing tree seedlings in an arid and semi-arid region like Somali is challenging, especially during the prolonged dry season. Empowering community-based organisations especially natural resource management committees is effective in protecting young trees in the nursery and in the restored areas.
- The national and regional elections hampered the outreach to the sectoral government offices. However, it is possible to engage the grass-root government structures at Kebele/village and Woreda/district levels.

## 5.2 Gender Mainstreaming

The key strategies to address a lower women engagement included awareness raising and sensitization of the community on the importance of women's participation in soil and water conservation measures, involving women in relatively low labour-intensive activities and selecting areas that were culturally and relatively progressive to serve as entry points for engagement (e.g., planting trees in the enclosed areas, crop production, water management committees, etc.). In addition to this approach, the project also attempted to reduce the vulnerability of women, especially during the dry season, by rehabilitating the birkad. This structure significantly reduced the burden on women in obtaining water for household and livelihood needs.


## 5.3. Recommendations for upscaling

- Formation of a technical team – encompassing relevant government offices and technical partners such as the Food and Agriculture Organisation (FAO), GIZ, Red Cross, and Wetlands International is necessary to render technical support and advice to the various government-led programs (including PSNP) and to succeed in implementing innovative Eco-DRR measures (including but not limited to WSW).
- Promoting WSWs as a package in a landscape-scale approach rather than a standalone intervention at site. There should be a deliberate effort to emphasize the focus on soil and water conservation - intended to improve livelihoods in combination with reducing disaster risks and degradation of the landscape.
- Fair management of restored areas around WSWs, its maintenance and sustainability. WSWs require larger financial development investments. The establishment of formal agreements between Woreda/district government, Kebele/village government and private landowners are therefore important and should be prepared to effectively use the restored areas in an equal and sustainable way, benefiting a large number of people.

## 5.4. Recommendations for future Eco-DRR projects

- This project demonstrated a successful Eco-DRR model that addressed persistent and increasing drought risks and enabled effective advocacy with decision makers. The project has garnered enthusiasm from senior government officials to look for more effective, durable, and Nature-based Solutions. This is a strong basis for advocating the inclusion of similar soil and water conservation measures within the relevant and large-scale government programmes to upscale Eco-DRR measures and contribute to ecosystem restoration and strengthening the resilience of people.
- Changing knowledge and transforming attitudes in local communities to support conservation and protection of selected degraded ecosystems. This could be done by engaging the local university, district, and village government to sensitize and mobilize the local communities.
- Anticipating the surge in cost and logistical challenge of transporting goods in a country with poor infrastructure and political instability like Ethiopia. The project should consider and allocate sufficient budget to overcome this problem in the project design.
- Enhancing the capacity of local partners to monitor and document the restoration progress and its impact to formulate credible evidence. Training in Google Maps and other GIS tools in the first phase of the project can facilitate this.





This case study documents the experiences, results, and lessons learned from the Ecosystem-based Disaster Risk Reduction (Eco-DRR) project undertaken by the Netherlands Red Cross, Wetland International, and Cordaid in Ethiopia with funding from the Directorate General for International Partnerships (DG-INTPA), European Commission. The objective is to upscale community resilience through Eco-DRR activities. The project was implemented from May 2019 to June 2022 in Liben (Dolo Ado Woreda/District) and Fafan (Shebelle, Harores, and Gursum Woredas/Districts) zones of Somali Region, Ethiopia.

