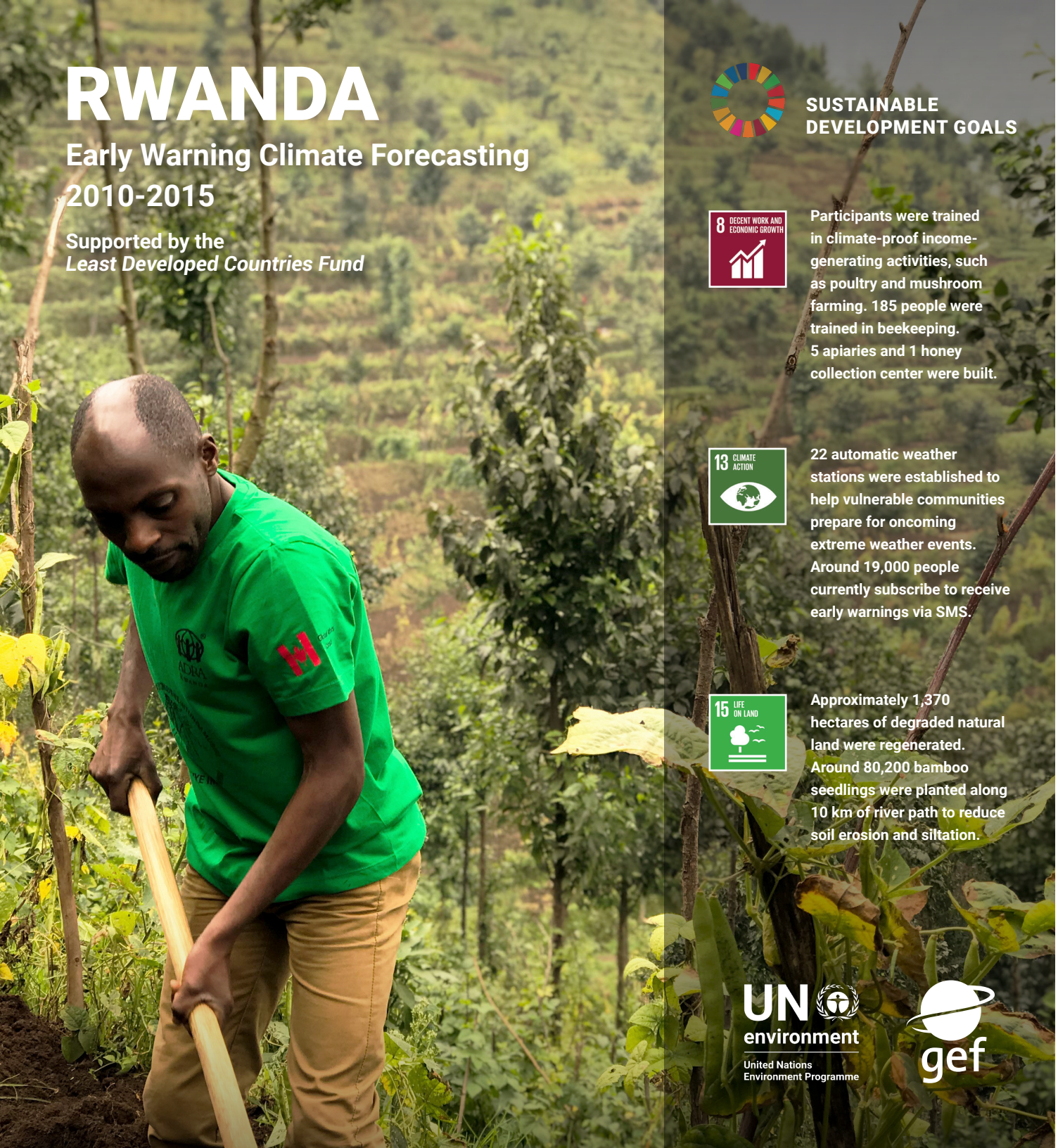
RWANDA

Early Warning Climate Forecasting 2010-2015

Supported by the
Least Developed Countries Fund



SUSTAINABLE DEVELOPMENT GOALS

Participants were trained in climate-proof income-generating activities, such as poultry and mushroom farming. 185 people were trained in beekeeping. 5 apiaries and 1 honey collection center were built.

22 automatic weather stations were established to help vulnerable communities prepare for oncoming extreme weather events. Around 19,000 people currently subscribe to receive early warnings via SMS.

Approximately 1,370 hectares of degraded natural land were regenerated. Around 80,200 bamboo seedlings were planted along 10 km of river path to reduce soil erosion and siltation.

UN environment
United Nations Environment Programme

gef

PROJECT TITLE:

REDUCING VULNERABILITY TO CLIMATE CHANGE BY ESTABLISHING EARLY WARNING AND DISASTER PREPAREDNESS SYSTEMS AND SUPPORT FOR INTEGRATED WATERSHED MANAGEMENT IN FLOOD PRONE AREAS

EXECUTING ENTITY:

GOVERNMENT OF RWANDA

Rwanda Environment Management Authority

KEY FIGURES:

22

Automatic weather stations built to warn communities of extreme weather.

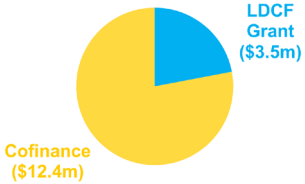
1,370

Hectares of restored natural land.

91,700

Fruit trees distributed to increase food security.

FUNDING:



PROJECT PARTNERS:

Rwanda Meteorological Agency (Meteo Rwanda); Rwanda Agriculture Board (RAB); Ministry of Disaster Management and Refugees Affairs (MIDIMAR); Ministry of Agriculture and Animal Resources (MINAGRI); and the Ministry of Local Government (MINALOC).

INTRODUCTION

- Rwanda is a small country in central/eastern Africa mostly covered by mountainous regions and wetlands. The population stands at around 11 million. The Gishwati ecosystem in the northwest is one of the world's richest biodiversity hotspots.
- UN Environment is helping the government of Rwanda to build the climate resilience of people living near the Gishwati area. The local population depends hugely on rain-fed crops, but the region is under immense pressure from climate change and erratic rainfall.
- The project's main approaches were to: Build an extensive **early warning climate system** to help farmers prepare in advance for extreme weather; develop **alternative climate-resilient livelihoods** like beekeeping; **restore over 1,300 hectares of forests** to reduce floods and drought; and **plant 91,700 fruit trees** to enhance food security.

CLIMATE IMPACTS

- The Gishwati ecosystem sits in the Albertine Rift region and hosts some of the world's most critically endangered species such as the iconic mountain gorilla.
- The region often experiences heavy rainfall and violent floods, but climate change is increasing their frequency and intensity, leading to deaths, destroyed roads and falling crop yields.
- The unpredictable weather has wrought financial ruin for people that rely solely on farming. Future projections suggest rainfall variability will worsen from 2015-2050, putting the lives of 280,210 people in danger.
- Vulnerability to climate change is worsened by unsustainable resource extraction in the forests, which depletes the ecosystem's ability to regulate waterflow. The IUCN classified the Gishwati forest as 'critically endangered.'

"When it floods, there are people who lose their lives. We had a long spell of hunger in my household - for four months."

- Alexandre Uhere, farmer in Western Rwanda.

"The SMSs are received at district level, at sector level and at community level and is spread from neighbour to neighbour so everyone is informed."

- Alphonse Mutabazi, Rwandan meteorologist.

CONTACTS

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STORIES & VIDEOS

Story:
http://www.unenvironment.org/news-and-stories/story/guarding-against-disaster-rwandan-farmers-adapt-changing-climate
Video:
https://youtu.be/aGg_eRkbaAc

TECHNOLOGIES & METHODS

- The project established **22 automatic weather stations** that distribute live data every five minutes across the country (15 synoptic and 7 hydro-meteorological stations). This early warning system is helping people prepare in advance for extreme weather.
- The warning network has been so successful that Rwanda's government decided to expand it to increase the number of SMS subscribers from 800 to more than 19,000.
- Farmers have been trained to monitor and utilize rainfall data to **inform agricultural activities**. A total of 1,254 people and NGOs received training. 60 rain gauges and 30 automatic weather kits were installed in 30 farmers' cooperatives.
- **District Development Plans (DDPs) were climate-proofed** in four districts. The main adaptation interventions that were integrated into the DDPs were soil conservation, forestry, rainwater harvesting, and riverbank protection.
- A **climate-resilience land-use plan** for the vital Gishwati ecosystem was established, dividing lands into settlements, agriculture, and forestry. Approximately **1,373 hectares of degraded land were restored** via seedling production and tree planting. Agricultural terraces were built to protect fragile areas from erosion.
- The land rehabilitation endeavor was extended to the protection of 25ha of the Nyamukongoro river watershed upstream of Karago Lake. For this, around **80,200 bamboos seedlings** were planted along 10 km of river to reduce soil erosion.
- The project strengthened food security for vulnerable villages by **providing 91,700 fruit trees** (Tamarillo, Marakuja, Passion fruit and Avocado species).
- Communities were trained in **climate-resilient livelihoods**, such as poultry and mushroom farming. A veterinary pharmacy was established to assist local farming communities with necessary medicines and advice to deal with livestock diseases.
- Climate-resilient **beekeeping businesses were established** in Gishwati Forest. The project created beekeeping cooperatives and hired an expert to train communities in modern practices, such as 'swarm multiplication'. 185 members were beneficiaries of these activities. In addition, **5 apiaries were established** in five villages, along with a honey collection centre.

PROJECT LOCATION

The project revised the District Development Plans (DDPs) for the above 4 districts, all of which are affected by the Gishwati ecosystem in northwestern Rwanda.