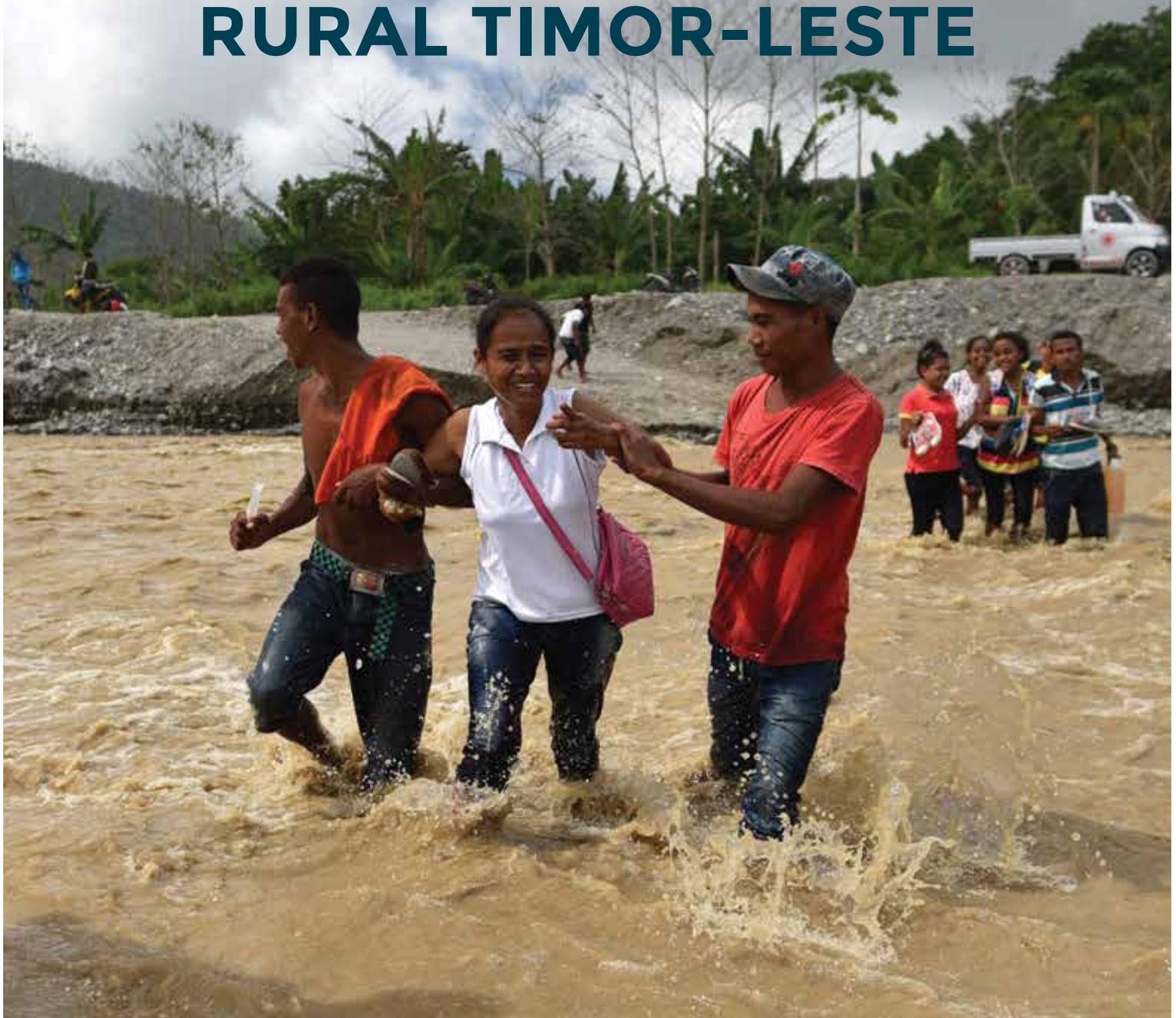


# BUILDING CLIMATE RESILIENT INFRASTRUCTURE IN RURAL TIMOR-LESTE



# Project Summary

**PROJECT** Strengthening the Resilience of Small Scale Rural Infrastructure (SSRI) and Local Governance Systems to Climate Variability and Risks

**TIMEFRAME** November 2013 – December 2017

**FUNDING** UNDP and the Global Environment Facility (GEF): USD4.9m

**MANAGEMENT** Implemented by UNDP Timor-Leste in partnership with the Ministry of State Administration and the Ministry of Commerce, Industry and Environment

- RESULTS**
- The design and construction of 20 climate resilient rural infrastructure projects benefiting over 100,000 people in three rural municipalities : Baucau; Ermera and Liquica;
  - Building the capacity of rural municipalities and communities to plan the development of their own small-scale, climate resilient infrastructure such as: roads; irrigation and water supply systems; and flood protection;
  - Supporting 10 Civil Society Organizations to implement soil-bioengineering approaches to strengthen existing rural infrastructure.
  - By the end of the project soil and land management measures will cover an estimated 5,000 hectares of land.



Strengthening the resilience of rural infrastructure such as water supply systems is transforming the lives of communities in Timor-Leste

# The Challenge

In Timor-Leste 70 percent of the country's total population of 1.1 million people live in rural areas. Around 80 percent of this mountainous country has steep slopes and its tropical climate is characterised by distinct wet (rainy) and dry seasons.

In areas affected by both drought and extreme rainfall events rural municipalities have found it increasingly difficult to supply and maintain critical small scale infrastructure for local communities.

The poor condition of most rural roads is a major constraint to local development. Climate-related risks such as: floods; droughts; erosion; and landslides can severely damage critical rural infrastructure such as access roads and water supply systems, directly impacting community livelihoods and the socio-economic development of the entire nation.

By focusing on key factors such as community ownership, local planning and technical innovations such as soil bioengineering, the UNDP Timor-Leste 'Strengthening the Resilience of Small Scale Rural Infrastructure' (SSRI) project is helping to show how modest investments can yield major economic benefits for the entire country.

More reliable roads mean that farmers can transport their products to markets and children can attend school more regularly. Stronger riverbank defences mean that communities are protected from floods. Better irrigation systems help grow more crops and new water supply systems mean that young people are spending more time on education instead of collecting and transporting water from long distances.



**“It is exciting to think how efforts to improve roads and water supplies could also help to encourage the development of tourism in Timor-Leste.”**

H.E DR. DIONÍSIO BABO SOARES,  
MINISTER OF STATE ADMINISTRATION



**New water supply systems means communities can spend less time collecting and transporting water from long distances**

## CASE STUDY

### Securing Water Supplies

The SSRI project supported the installation of a gravity-fed water supply system and 20m<sup>3</sup> reservoir that now serves three villages in the municipality in Ermera: Leirema, Lublalau, and Otete Kukara. This water supply system serves more than 489 people in 110 households via 16 public water taps. Fransisca Soares, from Leirema Village says that the new water facility has greatly improved their living conditions. “Now, our children do not need to fetch water from far away for drinking, bathing and washing hands,” she says.

This project also engaged a local NGO in watershed management initiatives using soil bioengineering techniques such as planting vetiver grass and live stakes along the river embankment to protect the water supply and to prevent erosion. The Secretary of State for Ministry of State Administration, H.E. Mr. Samuel Mendonça, believes the construction of this new community water supply facility at Leirema Village is about addressing the basic needs of communities in Timor-Leste: “This project is small but it really addresses the needs of the rural communities. Now we have responded to one of the basic needs of community,” he says.



# The Objectives

## Community level

The SSRI project is designed to improve the planning processes needed increase the climate resilience of critical small scale rural infrastructure in the three pilot districts of: Ermera; Baucau and Liquica. At the community level the SSRI has been developing the capacity of communities and local administrations to integrate climate resilience into the development of local infrastructure. These projects focus mainly on four categories of infrastructure including:

- Water supply systems;
- Rural access roads and bridges;
- Reservoirs and irrigation systems;
- Stabilizing river banks/flood protection.



**“New rural roads will help to improve community access to healthcare, schools and employment”**

H.E DR. DIONÍSIO BABO SOARES,  
MINISTER OF STATE ADMINISTRATION

The project often works to strengthen and protect physical infrastructure by using techniques such as soil bioengineering where plants with long roots are used to stabilize the soil against erosion and landslides.

The Secretary of State for the Ministry of State Administration, Mr. Samuel Mendonca, says the SSRI applies a decentralized governance system known as the PDIM or ‘*Programa Desenvolvimento Integrado Munisipál*’.

“The PDIM was established under the decentralization portfolio in order to build capacity of the Local Government in order to undertake the process of administration, finance and procurement, in cooperation with local companies,” he says.

Through its *Climate Change Adaptation Planning for Rural Infrastructure Development* (CCAPRID) activity the SSRI has also been training communities on the use of planning approaches to increase the climate resilience of new infrastructure. The bottom-up planning process helps to identify local needs and it also creates a sense of ownership and participation in the implementation of local solutions.

The Minister of State Administration, H.E Dr. Dionísio Babo Soares , believes these efforts to increase climate resilience are also supporting greater economic development by boosting access to markets and employment opportunities.

“Strengthened irrigation schemes are helping to increase agricultural production and new rural roads will help to improve community access to healthcare, schools and employment opportunities, especially for our young people,” he says.

The Minister also believes that improving road access and water supplies will also boost national efforts to develop the tourism sector.

“It is exciting to think how efforts to improve roads and water supplies could also help to encourage the development of tourism in Timor-Leste,” he says.

### CASE STUDY

## Flood Protection

Manuel Soares, a 45-year old father of three, says that flooding in 2008 destroyed his house and farm in the village of Lissadilla in the municipality in Liquica: “It washed away our stuff such as corn, cassava including our pets. Our houses were almost carried away by floods,” he says. Manuel and his family have now re-settled just 100 metres from the new, reinforced riverbank and the construction of 435 meters of river protection (gabion) shows how innovative bioengineering techniques can help reduce the impacts of flash flooding.



## National level

One of the Government's primary objectives for the SSRI project is to learn how to mainstream climate change resilience into national policies and strategies for local level planning so that these lessons can be applied to all municipalities across the country.

The SSRI project has worked closely with the *Ministry of Commerce, Industry and Environment* to increase climate resilience at national level by supporting the development of key policies such as the new National Climate Change Policy for Timor Leste.

A thorough consultative process with government and non-government actors working on climate and disaster risk management has also helped to ensure that climate change has been conceptually mainstreamed into working policies and priorities across a range of sectors.

National Climate Change Director, Augusto Pinto, says this new framework policy is expected to provide guidance and help sectoral policies become more climate responsive: "As a follow-up to this policy, there will be strategies, action plans and climate change law that would be developed to help implementation of the sectoral working policies indicated in the policy," he says.

As part of its commitment to address climate change impacts the Government of Timor-Leste established the new *Center of Climate Change and Biodiversity (CCCB)* with the support of UNDP and the SSRI project. Because of its important role as a centre of research, the Director General of Environment, Mr. Joao Carlos Soares, says a key objective was to provide an effective online platform for sharing climate change information across a range of sectors.

The SSRI project directly supported the development of the new website for the Centre for Climate Change and Biodiversity at: [www.cccb-tl.org](http://www.cccb-tl.org). Mr Acacio Guterres, from the CCCB, says the new website was created specifically to provide clear and up-to-date information about climate change to users from government, academia and the wider public.



**More climate resilient rural roads mean better access to markets for key products such as coffee**

### CASE STUDY

## Rehabilitating Roads

Mr Antonio Francisco, the Chief of Buruma Village in Baucau, believes the use of bioengineering will help to strengthen their newly rehabilitated road against the impacts of landslide, erosion and flooding. He also hopes the new road will improve market access for farmers and encourage tourism opportunities for the village.

Mr Francisco says the most important part of the SSRI project has been the focus on careful consultation with the community: "The consultation process before the project began has helped to avoid the conflicts that might otherwise have occurred during the implementation period. You can see the community's sense of ownership from their active participation in the construction process. Because of this sense of ownership and involvement the community will continue to maintain this new asset," he says.



# A Participatory Process

Miguel Pereira De Carvalho, the Director General of Urban Planning, believes the SSRI project has helped to strengthen local level planning and enable rural communities to identify their own priorities for improving local infrastructure.

“SSRI was introduced in 2013 as an innovation to help strengthen the local planning processes needed to provide solutions to local infrastructure problems in rural areas. The process of providing resources directly through the SSRI has enabled rural communities to identify their own priorities for improving local infrastructure,” he says.



Local communities are learning about climate risks and identifying their own priorities

SSRI projects are prioritized by communities at the village (suco) level and selection for funding and implementation is based on criteria set by the municipal authority. Projects are then implemented by local companies under the supervision of the municipality and the SSRI. This bottom-up process allows communities to participate directly in the development of local solutions which helps to create greater ownership and to stimulate adaptive learning at the local level.

The SSRI Project is supporting capacity development of local administration to mainstream climate risks into local decision-making. The community consultation process has also helped the communities understand the objectives and purpose of the project, the risks posed by climate change, the benefits of soil bioengineering and the hazards of clearing vegetation from the wider catchment.

The Administrator of Ermera Municipality, Mr Jose Martinho dos Santos, believes the process employed by the SSRI has been effective because it directly involves the local authorities and helps communities to address their own needs.

“The SSRI project is helping to address the risks of climate change because the community feels that they are the owners. The community identifies the priorities and they directly involved in implementation. I think the program needs to be expanded across the country because the landscape in Timor-Leste is mountainous and creates real challenges for providing water and roads for these communities,” he says.

## CASE STUDY

### Strengthening Irrigation

Mr Henanio Ribeiro, the Chief of Uailili Village in Baucau, says the rehabilitation of the irrigation system for his community means they now have enough water to grow rice and improve their economic opportunities: “The SSRI (project) is good because it involves the community and we were able to take part in the “maintenance group” to monitor and supervise the implementation of the project. The coordination between the community, company and the local authorities has been effective in ensuring the quality of the project,” he says.

Mr Antonio Pereira, the Chief of Uaulee aldeia (community), which sits high in the mountains of Baucau Municipality says flooding in the wet season was destroying their rice fields and maize crops almost every year. He believes that directly involving the community in the processes of rehabilitating their community irrigation system has led to a greater feeling of ownership: “Having the local authority meet with the community and having training provided to the community is a new thing for us. But this means that the community will be responsible for maintaining this new project, he says.



At the launch of the water rehabilitation project in Uailili the Minister of State Administration, H.E Dr. Dionísio Babo Soares, said the project could help to boost the agriculture and tourism sectors in Baucau

## Replication & Scale-Up

An increasing number of stakeholders and development partners believe that the SSRI approach should now be scaled up and applied to the development of small scale rural infrastructure initiatives in all rural municipalities in Timor-Leste. Initiatives that were piloted under the SSRI project can now be integrated into the design and implementation of other projects prioritized in the Municipality Investment Plans throughout Timor-Leste.

For more information please visit: [www.tl.undp.org](http://www.tl.undp.org)

