

# EU-GIZ ACSE

ADAPTING TO CLIMATE CHANGE AND SUSTAINABLE ENERGY

The EU-GIZ ACSE Programme is assisting fourteen Pacific Island countries and Timor Leste to adapt to climate change and to improve access to sustainable energy.

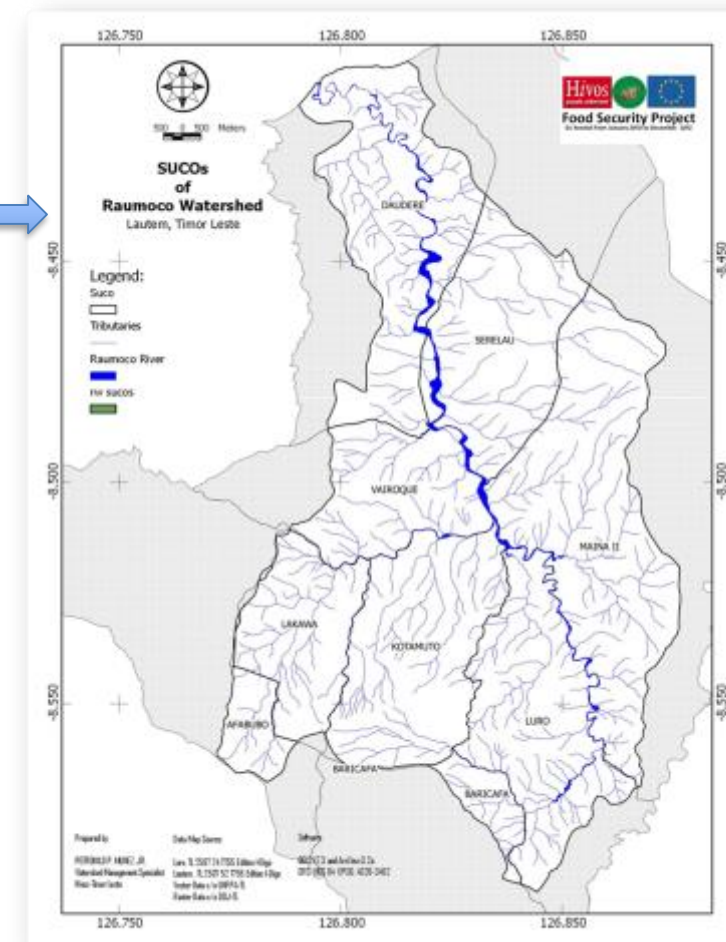


PACIFIC ISLANDS  
FORUM SECRETARIAT





The Democratic Republic of Timor-Leste showing the location of the Raumoco Watershed in the Municipality of Lautem



MINISTERIO DA  
AGRICULTURA  
E PISCAS



Implemented by:

**giz** Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH

**Hivos**  
people unlimited

*Integrated  
Actions for  
Resilience &  
Adaptation  
(IA4RA) to  
climate change  
in the Raumoco  
Watershed  
Project*

**Basic information:**

- Project Focus: Climate change adaptation and Sustainable energy
- Sectors: Food security, Agriculture, Water, Solar energy, Policy & planning
- Project duration: 28 months (June 2016-September 2018)
- Lead agency/National Implementing Agency: Ministry of Agriculture and Fisheries
- Contracting Party: Hivos
- Total project cost: EUR 516,868 (EU-GIZ Grant of EUR 492,168 & Hivos In-kind Co-financing of EUR 24,700)

**IA4RA:  
Project  
objective  
and  
outcomes**

**Project objective:**

- To contribute to the sustained adoption and scaling out of sustainable food, water- and energy-efficient technologies for 500 vulnerable households in six villages in the Raumoco watershed

**Outcomes:**

- Outcome 1: Increased adoption by 350 vulnerable households in six villages of climate-resilient and sustainable food production systems
- Outcome 2: Increased adoption by 400 vulnerable households in six villages of water- and energy-efficient technologies for vegetable/cash crop production and cooking
- Outcome 3: Increased involvement of 150 young people in climate-resilient and sustainable livelihood systems

## IA4RA: Outputs

### Outputs:

- Output 1: Sustainable, low-carbon food production technologies are implemented by vulnerable farming households
- Output 2: Low-cost rainwater collection/drip irrigation systems are implemented by vulnerable groups of women, men and young people
- Output 3: Fuelwood tree species (G. sepium or Gamal) planting are established as living fence, contour hedgerows and windbreaks for farmlands under cultivation
- Output 4: Improved cooking stoves are distributed to vulnerable women, men and young people
- Output 5: Experiences and lessons learned are collected and shared

**IA4RA:  
Progress to  
date**

**1) Pilot solar energy-powered farm established**

- Established for *Grupu Ernisi Morin (GEM)*, a group of 15 farming households in a 1.5 ha. production area) in Aldeia Sagueli, Suco Daudere, Postu Administrativu Lautem, Munisipiu de Lautem
- Solar pump powered by four 100-watt solar panels lifting water to a 60,000-liter water tank
- Trialling the use of drip irrigation in individual raised bed gardens
- Adopting diversified/agro-ecological crop production system including the block planting of corn; cassava in ridges; companion planting/three sisters of corn, beans and pumpkin; vegetables (kangkong, mustard, eggplant, tomato, cabbage, cucumber, etc.); and cash crops of watermelon, papaya, banana (in banana circles)

## **Images: Grupu Ernisi Morin (GEM) solar energy-powered farm**

**IA4RA:  
Progress  
to date**



**IA4RA:  
Progress  
to date**

**2) 12 Rainwater collection ferro-cement tanks constructed**

- Constructed in 12 aldeias of six villages, each with a capacity of 10,000 liters
- Designed to collect/store water for diversified horticulture activities of 12 groups
- Will benefit mainly women, some men and youth group members from at least 176 to 200 households (average of 15 households/group)
- Production area of at least half-hectare/tank
- Trialling the use of different drip irrigation techniques, agro-ecological approaches to farming and gardening

## *Images: Rainwater collection ferro-cement tanks*

**IA4RA:**  
**Progress to  
date**



**IA4RA:  
Progress to  
date**

**3) Improved Cooking Stoves (ICS) produced and distributed to 500 beneficiary households**

- All 500 targeted vulnerable households have received one ICS
- Prior to distribution, the IA4RA facilitated a day-long orientation and demonstration of the benefits of ICS to health, the economy and the environment
- Prior to receipt of ICS, each household executed an agreement with IA4RA, providing for a commitment on their part to: a) plant at least 200 gamal (*gliricidia sepium*) trees as fuelwood, b) desist from the illegal cutting trees from the forest and use gamal as fuelwood

## *Images: Improved Cooking Stoves (ICS) production, socialization and distribution*

**IA4RA:**  
**Progress to**  
**date**



#### **4) 11,115 gamal trees planted as living fences/barriers**

- 66 households that received Improved Cooking Stoves (ICS) have planted gamal as living fences around their houses and farms.

**IA4RA:  
Progress to  
date**



**IA4RA:  
Progress to  
date**

**5) 25 Lead Farmers and nine MAF Extension staff trained on climate-resilient agro-ecological practices**

- 25 of 50 Lead Farmers have participated in 3-day sessions on agro-ecological practices
- Agro-ecological practices taken up focused on soil, water, plants, animals and landscape resilience
- Farm Land Use Planning approach was also introduced using mapping of current farm land use and future farm land use
- Conservation and production criteria were developed as basis for farm land use planning
- Climate risk assessment at farm and landscape level is being trialled to inform farm land use planning

## *Images: Training of Lead farmers on climate-resilient agro-ecological practices*

**IA4RA:**  
**Progress to  
date**



**IA4RA:  
Milestones  
reached/  
Success  
stories**

**5) Milestones reached/Success stories**

- Women's burden of collecting water to irrigate vegetable gardens have been reduced with the installation of a solar-powered water harvesting facility that also trials drip irrigation. Income of these women-members of GEM have increased. The GEM farm represents a massive transformation from a dry, unproductive land to a bio-diverse landscape. (See accompanying success story.)
- The distribution of Improved Cooking Stoves (ICS) from August to early this year is an important milestone for the IA4RA. The use by 500 households of this clean and efficient stoves is contributing to decreased indoor air pollution, decreased use of firewood from the remaining forest stands of the watershed and increased savings from fuelwood purchase. (See accompanying success story.)
- Rainwater collection for horticulture is given a boost with the installation of rainwater harvesting tanks with a 10,000-liter capacity in 12 aldeias, designed to benefit at least 176 households

**IA4RA:  
Challenges  
faced**

**6) Challenges faced**

- Access to up-to-date climate data for Timor-Leste is difficult constraining early warning and prediction of climate events.
- On-farm trials/treatments are limited to a few technologies due to delayed start of implementation. The project will require at least six to nine months from September 2018 to complete key deliverables, especially the results of on-farm trials and the conduct of climate field days to share lessons learned.
- The outcome on involving young people in agriculture is a real challenge because many young people are either in school in Dili or nearby cities (far from their farms). Their interests are for non-agricultural work in Dili or abroad.

**IA4RA:**  
**Next steps**

**7) Next steps**

- Enhance Farm land use planning methodology with 12 groups using rainwater collection system, with GEM and with Lead Farmers to develop climate resilience at farm, landscape and household levels using agro-ecological approaches
- Training of trainers for 27 more Lead Farmers
- Implement on-farm trials with Lead Farmers and Extension staff
- Intensify planting of gamal trees as hedgerows and windbreaks
- Trial various types of drip irrigation systems, including efficient traditional irrigation systems, e.g. *zai* pits, for all groups and Lead Farmers
- Facilitate Climate Field Days to share lessons learned
- Manualize Climate Change Adaptation Extension System (CCAES)
- Mid-term review and audit

# Thank you



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