

FIJI

PACC Country Brief

Pacific Adaptation to Climate Change



Improving crop resilience and drainage systems in lowland farming areas in the Tailevu-Rewa and Serua-Namosi Province

The Pacific Adaptation to Climate Change (PACC) project is supporting the integration of climate change risks into policy frameworks and the implementation of community-based adaptation measures in 14 countries throughout the Pacific. These actions are intended to increase resilience in three key development sectors: water resource management, coastal zone management, and food production and food security.

In Fiji, PACC actions focus on food production and water management with emphasis on addressing the impacts of climate change on these islands' crops and drainage systems. For PACC Fiji, improving agrobiodiversity, through enhanced farming and land use techniques, offers a more holistic approach to agricultural production.

Issues

The Fiji Islands are at high risk of climate change impacts and are easily affected by natural disasters. Trends indicate that rainfall and surface air temperature have increased annually between 1961 and 2003, affecting agriculture, cash crop production, and drainage systems for communities. Impacts on agriculture can take a significant toll on Fiji's economy, as this sector provides 50% of Fiji's employment and 43% of the country's foreign exchange earnings. Since 1990, floods and rainfall have caused major damage to agricultural lands, especially lowlands. The resulting loss of millions of crops has disrupted livelihoods and 50% of the nation's economy. To support agriculture in the region, proper drainage systems need to be in place.



Figure 1: improving drainage and irrigation networks will protect crops against extreme events. Photo: PACC FIJI

In addition, hurricanes in higher categories have increased annually since 1970. Sea level rise, projected to reach 11cm by 2025, can further devastate infrastructure, coastline settlements,

reefs, as well as ecosystems and fisheries that provide livelihoods for many communities.

Actions

PACC Fiji, through the Land and Water Resource Division of the Ministry of Agriculture, is improving drainage and irrigation networks to adapt to current and future impacts of climate change. By reviewing and revising the existing drainage design, improved drainage systems will protect crops against extreme events.

Given population growth and changing agricultural demand, adaptation activities for PACC Fiji also include increasing both the area of land used for agriculture and crop variety. Creating more land for crop production will allow for growth in food exports—an important component of Fiji's economy.

Introducing climate resilient crop species, and enhanced farming and land use techniques (including soil and water conservation) will ensure that the land is used sustainably.

Policy mainstreaming:

The first of the PACC outcomes is devoted to mainstreaming. The PACC approach to mainstreaming has a dual purpose: 1) to strengthen the ability of institutional frameworks, policies and plans to take climate change risks into consideration and 2) to improve the capacity of key national government and community decision-makers to integrate adaptation measures in key decisions.

To better deal with extreme precipitation and flooding, the PACC Fiji will revise the current drainage guideline for Fiji taking into consideration current and future climate change. This will help the government design drainage infrastructures to minimize water logging and flooding. PACC Fiji is installing new drainage systems, expected to help approximately 2685 farm families in the short-run, and more in the future, as new infrastructure is added. The new drainage guidelines will be developed for broader dissemination and will support the development of local knowledge and capabilities for carrying out adaptation techniques in the future.

Country Summary

Country:
Republic of the Fiji Islands

Thematic Sector:
Food production & food security

Project Funding Source:
GEF-Special Climate Change Fund

National budget allocation:
GEF-SCCF: \$1,000,000

Co-financing:
\$8,600,000

Programme Period:
2011-2014

Target area:
Tailevu-Rewa and Serua-Namosi Provinces

National Implementing Agent:
Land & Water Resource Management Division of the Ministry of Agriculture, Government of Fiji

National Implementing Partner:
Department of Environment, Government of Fiji

Regional Implementing Partner: SPREP

Implementing Agency: UNDP



Monitoring and maintenance of the drains is also a key component of project implementation. Therefore training on project administration and management, including cost /benefit analysis training is an important part of PACC Fiji activities. Cost /benefit analysis training will assist the PACC Core Team and the Land and Water Resources Management Division (LWRM) of the Ministry of Primary Industries understand the costs involved in the new drainage designs and how it will impact the government's future budgeting scenarios for the LWRM division.

Community-based adaptation:

The second PACC outcome is to design and demonstrate innovative decision systems, approaches, technologies and practical measures to improve climate-resilience. Working through a combination of hard and soft measures, PACC Fiji will enhance farming systems, establish methods for adapting to future climate and sea-level changes, improve water management and food production, and create a platform for sharing knowledge among stakeholders. Knowledge sharing will allow communities to compare best practices and learn different farming and agriculture methods for implementation.



Figure 2: Crop production systems - Out fall structures controlling salt water intrusion into the agricultural land. Photo: PACC FIJI

At the PACC Fiji pilot sites (Tailevu/Rewa & Serua/Namosi Province) climate resilient crop species and varieties have been introduced and select dredging activities conducted. For example, in the Qaraniki Creek, the main estuary of the Rewa delta area, a total of 21,500 cubic metres of dredged material was removed from the mouth of Navolua River. PACC Fiji is analysing the impact of dredging on water flow and its impact on the water table. These efforts have opened up more low-lying areas for farmers and created more fertile lands for agricultural products for food security.

Mosese Talea, a retired gold mineworker, said: "We were not able to plant any crops in our low-lying farms due to salt water intrusion into our crop fields during high tides, so our farming land has been left idle for a number of years." He said clearing of the water was through dredging had brought a big relief to the farmers and he says the onus is on them to retain these agricultural lands for future generations [Fiji Times: "Project brings relief to farmers", Samisoni Nabilivalu, Thursday, March 29, 2012].

PACC Fiji has been working with the Koronivia Agriculture Station and the SPC Germplasm programme to trial Climate Ready

Collection of taro at the pilot sites. The crops will be tested for their ability to withstand saline conditions and also water logging to determine which species will thrive in the current or future environmental conditions.

Impacts

The principal objective of the PACC Fiji project is to introduce long term adaptation measures, thereby increasing the resilience of Fiji's agriculture sector to the adverse impacts of climate change. The main impacts will be increased resilience and enhanced adaptive capacity of food production and food security. Through new infrastructure and training programmes, local communities will have the tools and knowledge to protect their livelihoods from the adverse effects of climate change. Enhancement of agriculture systems and the development of drainage networks and infrastructure in lowland farming areas will reduce the effects heavy rainfall and climate change on agriculture. Furthermore, trained staff in key agencies will also be prepared to respond to the impacts of storm surges and rises in sea surface temperatures on coastal food production systems.

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