

# PALAU

## PACC Country Brief

*Pacific Adaptation to Climate Change*



### 'Land-to-Sea' Approach to Climate Change Adaptation

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 the Republic of Palau, 350 islands in the far western Pacific Ocean, the PACC project focuses on the agricultural sector. PACC Palau is providing alternative solutions to current problems faced by farmers, including salt water inundation, the negative impacts of increase in sea surface temperature, and changes in ocean salinity in the Ngatpang State. The objective of the PACC Palau project is to test and introduce salt water tolerant taro varieties in order to reduce the impacts of climate change.

### Issues

The Republic of Palau's islands have a total land mass of 487 square kilometres. Ten of Palau's 16 states are on Babeldaob, the country's largest island, with an area of 334 sq km. Ngatpang State is located on the western side of Babeldaob Island. Although agriculture is not very developed in Palau, this region is full of small-scale taro farms that are vulnerable to saltwater inundations.



PACC Palau is introducing climate resilient crop species and varieties (resilient to drought, water clogging, salt water intrusion, and pests).

Palau faces a combination of adverse climatic events which include drought, intense rainfall, frequent storms, and sea-level rise. El Nino and La Nina events directly contribute to the first three, while the melting of ice caps and thermal expansion due to rising sea surface temperatures are contributing to sea level rise. These events are a direct threat to taro cultivation—the main agricultural activity on the islands—which is critical for socio-economic development, as well as cultural and religious obligations. The anticipated rise in atmospheric temperature in the next decade due to climate change

would exacerbate El Nino and La Nina effects in the region. With additional stress on the already vulnerable situations of farmers and their farming systems, land and sea based farmers will be forced to look for alternative livelihoods. In addition, lack of awareness of both local stakeholders and government officials on climate change issues constitutes one of the major challenges of mainstreaming adaptation measures into agricultural practices in Palau.

### Actions

Although problems facing the agricultural sector in Ngatpang are numerous, a number of measures have been developed to improve the resilience of coastal food production systems to the impacts of climate change as part of the PACC Palau project:

#### Policy mainstreaming:

Putting state policies and guidelines in place to accommodate sea surface temperature and sea level change in clam, crab, and milkfish farming production are a key part of PACC Palau's objectives. An overall national food security policy will be developed and the integration of climate change adaptation policies will be promoted following the formation of the Ngatpang State Government.

Towards improving the capacity of key national government and community decision-makers, in 2011 Palau's Ministry of State's Bureau of Domestic Affairs appointed a Ngatpang State delegate to join the PACC Core Group. Important on a strategic policy level, this is also valuable in enhancing institutional capacities and positioning State partners ready to take action.

#### Community-based adaptation:

In addition to policy mainstreaming efforts, there are a number of (capacity building, assessments) and hard (structural installations) are a part of the second PACC outcome: to design and demonstrate innovative decision systems, approaches, technologies and practical measures to improve climate-resilience.

- **Utilization of salt-tolerant taro varieties in taro patches affected by salt water intrusion:** Taro is an economic crop of major cultural significance to Palauans. As such, at least twenty salt water tolerant taro varieties are being evaluated

### Country Summary

**Country:** Palau

**Thematic Sector:**  
Food production  
& food security

**Project Funding Source:**  
GEF-Special Climate Change  
Fund, AusAid

**National budget allocation:**  
GEF-SCCF: \$800,000

**Co-financing:**  
\$1,602,000

**Programme Period:**  
2009-2014

**Target area:**  
Ngatpang State

**National Implementing Agent:**  
Office of Environmental  
Response & Coordination,  
Government of Palau

**Regional Implementing  
Partner:** SPREP

**Implementing Agency:**  
UNDP





The inshore marine resources of Palau provide food security and economic opportunities for Palauans. PACC Palau is working to enhance aquaculture practices to accommodate rising sea surface temperatures and sea levels. Photo: PACC Palau

for saltwater tolerance. After close monitoring, the most successful varieties will be recommended and distributed to taro farmers outside the PACC Palau pilot site.

• **Prevention of salt water intrusion into taro patches:**

At present, once salt water seeps into or displaces the fresh water in the taro patches, farmers abandon the taro plots and move inland or shift to other crops. In the process, more deforestation takes place as people encroach to steeper slopes to plant. This process creates further problems such as soil erosion, silting of water ways, and destruction of biodiversity of the downstream marine population. In response PACC Palau is introducing appropriate traditional and contemporary technologies to halt saltwater inundation into taro patches, and enhanced farming and land use techniques (e.g. mulching, organic farming, mixed cropping, drainage, dykes). These efforts promote soil and water conservation techniques.

• **Water management to address extreme weather events in taro production areas:** Water management is critical in taro cultivation for Palau. Given that most taro plots are in low lying areas where the soil layers are deeper and richer, poorly managed water can lead to comb-rot caused by water logging, as well as higher soil salinity caused by the displacement of fresh water by salt water. PACC Palau is evaluating a number of traditional practices, documenting their development and identifying which ones are most successful.

• **Providing for availability of raw and processed food products in case of extreme weather events:** Post-harvest preparation is key to ensuring that food is available during extreme weather events. PACC Palau is working to support enhanced food storage and processing techniques. This step involves improving the knowledge base of the Ngatpang communities, as well as their skills in post-harvest food preparation.

• **Enhancing aquaculture practices to accommodate sea surface temperature and sea level change:** PACC Palau is working to enhance aquaculture techniques and introduce innovative clam and crab farming techniques into farmers'

practices to increase alternative choices. Clam farmers have reported bleaching when sea surface temperatures increase. Such phenomenon affects the growth rate of clams and fish and leads to a higher rate of sea fauna mortality.

• **Enhancing capacity development on climate change and food security:** A training module on climate change is being developed to touch on impacts already felt in Ngatpang State. Additional capacity building efforts will include training and awareness programmes designed to assist government and community efforts.

## Impacts

These and future measures will strengthen the capacities of the agricultural sector in Palau, and specifically Ngatpang State, to be more adaptable to climate change. Increasing the resilience of key crops, such as taro, diversifying agricultural output, and enhancing fishing practices and policies will ensure that food production is not affected by climate change in the future. Following the activities of the pilot site, program activities will be replicated in other states throughout Palau and results and lessons will be shared regionally and globally.

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