

# Coping with Climate Change in the Pacific Island Region (CCCPIR)

## Climate Adapted Livestock and Integrated Farming Systems Pele Island, Vanuatu



### Project facts CCCPIR

Funding sources: Federal Republic of Germany through the Federal Ministry for Economic Cooperation and Development (BMZ)

Regional partners: SPC, SPREP and USP

Countries: Federated States of Micronesia, Fiji Islands, Marshall Islands, Nauru, Kiribati, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu

Duration: January 2009-December 2015

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## Climate Change in the Pacific

Pacific Island Countries (PICs) are already experiencing the negative impacts of climate change, especially as these countries are of the most vulnerable to environmental hazards and often have insufficient adaptation resources. Sea-level rise, changes in precipitation patterns and rising temperatures are causing secondary impacts of coastal erosion, salt water intrusion, cyclone damage, pest and disease outbreaks, water insecurity and declining agricultural production.

The 'Coping with Climate Change in the Pacific Island Region (CCCPIR)' programme aims to strengthen the capacities of Pacific member countries and regional organisations to cope with the impacts of climate change. The programme is funded by the Government of the Federal Republic of Germany through the Federal Ministry for Economic Cooperation and Development (BMZ) and implemented through GIZ working in partnership with SPC and SPREP. The project aligns with the Pacific Island Framework for Action on Climate Change 2006-2015 (PIFACC) and at the national level with the Priority Action Agenda (PAA).



## Livestock in Vanuatu

The Vanuatu Agricultural Census of 2007 highlights the considerable importance of pigs within the context of subsistence agriculture production, both as a source of food and for the role they play in culture and custom.

The agricultural census estimates a total of 86,896 pigs, with an average of five pigs tended per household. Of these pigs, 26 per cent were breeding boars, 41 per cent were breeding sows and 33 per cent were other types of pigs. 70 per cent of Ni-Vanuatu households reported the slaughter of pigs, with over 50 per cent of these being consumed for subsistence. The number of pigs is also increasing each year. For example the total number of rural pigs increased by nearly 20,000 from 1983 to 2007.

Pigs in Vanuatu are being negatively affected by climate change in the following ways:

- Heat and temperature stress results in reduced productivity (including fertility problems) and mortality
- Reduced rain and ground water availability on many islands causes productivity loss and mortality
- Sea level rise, coastal inundation and ground water salt intrusion affects environmental suitability
- Reduced feed intake in hot weather negatively affects performance and productivity
- Potential for increased/different diseases and thus reduced productivity or higher mortality
- Reduced grass and forage plant cover and lower feed security
- Increased periods of heavy rain leads to higher incidence of mortality and disease
- Increased intensity of cyclones and storms causes physical damage to pig infrastructure, reduces feed security and causes mortality
- Increased time and effort is required of farmers to search for appropriate and scarce feeds for pigs
- Higher costs associated with improving or fortifying pig enclosures in preparation for extreme weather events (cyclones, droughts etc)
- Increased unpredictability of extreme weather events leads to loss of farmer time and reduced efficiency
- Storm damage to roads and infrastructure leads to market access problems for farmers



## Climate change and its impact on Vanuatu Communities

The Island of Pele, one of the SPC-GIZ CCCPIR pilot sites, is experiencing many climate change impacts such as coastal erosion, slope erosion, leaching of soil nutrients and increasing temperatures.

SPC-GIZ is working with the people of Pele to identify how climate change impacts on their lives, and to find innovative solutions and locally appropriate adaptation strategies. CCCPIR is also working to strengthen the capacity of the Nguna-Pele Marine and Land Protected Area Network to deliver climate change education and awareness to island communities, and encourage families to proactively adapt to climate change.





## Hands-on, sustainable projects

The 400 residents of Pele Island rely heavily on the production of pigs to supply protein and income to their communities. From a survey conducted in September of 2010 there are 192 pigs on the island, 28% of which are adult sows and 18% of which are adult boars.



Pigs on Pele are often enclosed in exposed makeshift fences, without proper access to freshwater, and are commonly fed a diet heavily composed of fatty coconut. The effects of prolonged droughts, lack of appropriate feeds during weather extremes and heavy rains during la Nina periods have caused considerable declines in the productivity of Pele Island's livestock.

In order for Pele Island farmers to adapt to the negative effects of climate change they will be required to address pig health and performance (e.g. fertility implications); security of feed and water supplies; and enclosure/wallow design and management to cope with extreme and fluctuating weather.



The SPC-GIZ CCCPIR program on Pele is enabling farmers to adapt to the negative effects of climate change by addressing both pig productivity and animal welfare. The key focus of the pilot project is on enhancing feed and water supplies, improving enclosure design, integrating livestock and agricultural production through manure composting, innovating with pig feed silage and preservation, planting shade trees and encouraging cross breeding for enhanced resilience against climate variability and extremes.

The communities on Pele are currently undertaking cross-breeding trials among climate-tolerant wild varieties, productive commercial varieties and domesticated pigs to rear a stronger breed of pig that can withstand climate variability, has increased productivity, quiet temper and proven environmental suitability.

Further, attention is given to intermixing livestock husbandry and agriculture in order to achieve mutual productivity enhancement. E.g. animal waste is turned into compost to contribute to cultivating quality plants on the island which are utilised to feed the local communities, pigs and at the same time generate income through their sale.

Island-appropriate technologies including Tilapia for enhanced pig feed and biogas for energy production are also being trialled.



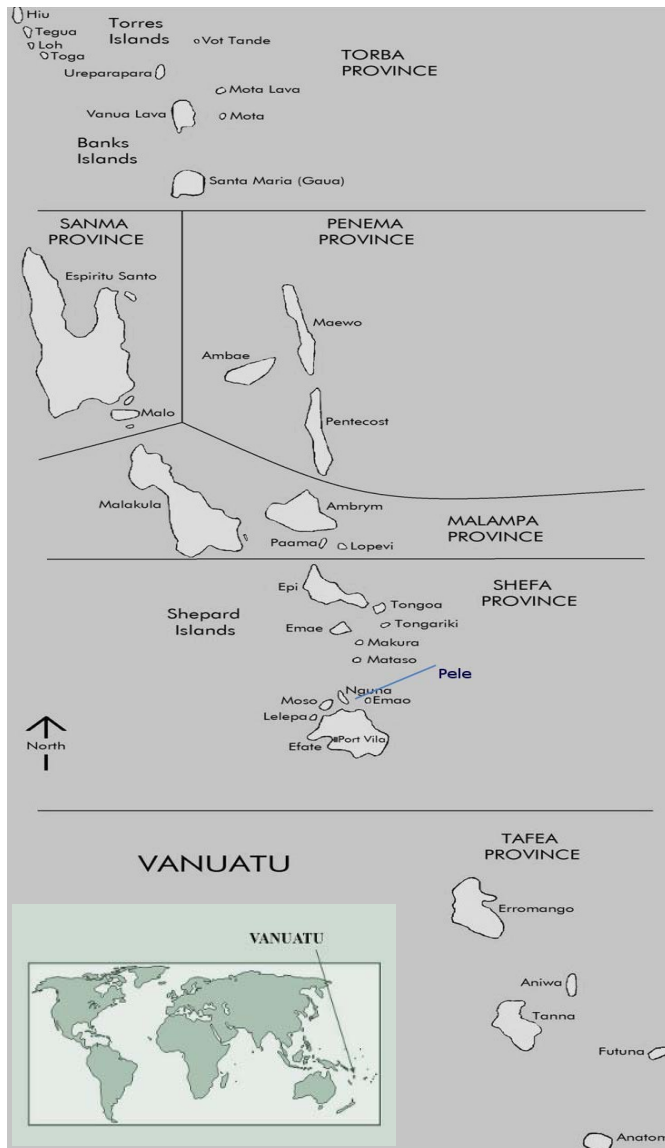
### A success story for Ni-Vanuatu people

Frank and Eileen from Worearu/Pele

*"I am grateful for the livestock project to be trialled on my island because it is an opportunity for us to learn how to better secure our food and income."*







GIZ is a federally-owned enterprise that supports the German government in the field of international development cooperation. For more than 30 years, GIZ has been cooperating with Pacific Island partners in strengthening the capacity of people and institutions to improve the lives of communities for this generation and generations to come. GIZ is an implementing agency providing support through technical cooperation to balance economic, social and ecological interests through multi-stakeholder dialogue, participation and collaboration.

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