Papua New Guinea Case Study

Remote yet Resilient: Strengthening Climate Change Resilience in Papua New Guinea

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Map of project area

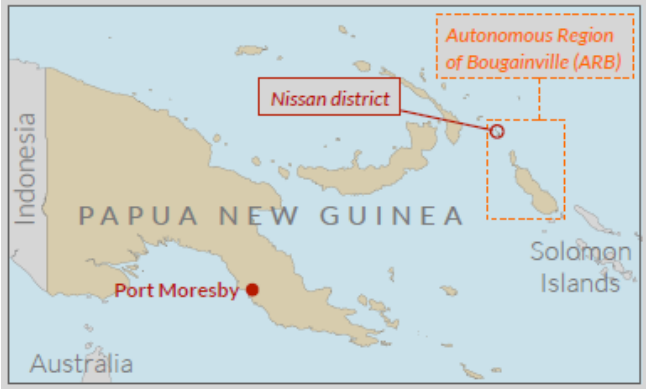


Image: Map of region showing Nissan district (CARE Australia/https://www.care.org.au/wp-content/uploads/2015/08/CBA-Portfolio-Evaluation-CBA-PNG-Evaluation-Report-FINAL.pdf)

Climate change in Papua New Guinea

- Increased land and sea temperatures
- Extreme temperatures
- Extreme rainfall
- Ocean acidification
- Damaging cyclones
- Sea level rise.

Project goal

To support vulnerable people, including men, women and children, to cope better with the impacts of climate change.

Key project outcomes

- Better water management
- Better nutrition
- Livelihoods that are better able to adapt to climate change
- Disaster risk reduction that integrates climate change issues
- Stronger capacity within communities and local governance structures (Council of Elders and Nissan District Administration)
- Local planning that is more inclusive and responsive to community needs and priorities.

PROJECT CONTEXT

> "We will not let climate change impacts take away and control our lives as we are determined to be a voice for our people and our communities."
>
> *Ursula Rakova (Papua New Guinean climate change activist)*

Nissan Atoll sits solitary in the Pacific Ocean; a remote set of islands forming a ring in the ocean where a volcano once sat. The only way to get there is by boat; in good seas about a two hour ride through open seas from the capital of the Autonomous Region of Bougainville, Buka. Fishing and agriculture are the traditional practices of the Futunese but these are becoming harder as a result of climate change. Since 2009, CARE has been working with the people of Nissan to support their efforts to reduce the risk of natural disasters and to adapt to climate change through a range of initiatives to build their knowledge and skills and ability to prepare, respond and adapt. In 2012, CARE began a new initiative to strengthen the resilience of women, men and children to climate change and weather-related disasters in every village on the island.

PROJECT IMPACT

CARE supported communities to build resilience through:

- **Promotion of climate-resilient livelihoods.** CARE worked with local communities- to build community nurseries and home gardens; and worked with the national Agricultural Research Institute and certified local trainers to promote climate-resilient agriculture practices – such as planting drought resilient crops; shading crops; composting and using bio-fertiliser; mulching; agroforestry; integrated pest management; and raising pigs and chickens. As a result, three out of four households on the islands now practice home gardening – a tremendous success.[i]
- **Disaster risk reduction strategies.** CARE partnered with local government and communities to develop and implement disaster risk reduction action plans that integrate climate change concerns. And by bringing together communities at risk from disasters and climate change with local government, district levels plans better represent community priorities and needs, including those specific to disaster and climate risk.

– **Strengthening capacity** of local governmental institutions to better support what communities need through their adaptation activities. CARE worked with the Nissan District Administration (NDA) to increase awareness of climate change, for example, by holding a two-day public food security exposition marking World Food Day, to showcase improvements in family-level subsistence farming techniques. Local government now have a better understanding of community-based adaptation and how it can provide better support.

PROMISING PRACTICES[ii]

Joyceanne looks at the sky. "For many years, we have often wondered if this is a really long drought. It was only when CARE came that we understood what was happening: climate change." Having connected the dots, Joyceanne realised that something could, and needed to be done. The Vice- President of Pinepal Island Women's Group was amongst the first drive the formation of an island-wide core group. From her village of Rogos, "It is a long way to walk to the other villages." She explains. But together with others, she "picked up all the people who were interested" - from all three villages on the island. The group set up an island nursery where members learned and practiced techniques such as mulching and "big hills" (a technique that keeps soil moist for longer), and nurtured the seedlings needed to set up kitchen gardens. She adopted these techniques herself, stressing "it has made my life better." And she told others about the good results, encouraging them to follow suit. "Today, almost everybody has a kitchen garden and uses mulch", she says with a wide smile.

'Peer-to-Peer Learning'

"Behold the turtle. It only makes progress when he sticks his neck out."

James Conant

Given the island's isolation and the great difficulty of working with remote communities, CARE sought an efficient model to overcome this implementation challenge. Following initial assessments, it devised the 'core group' model: rather than deploying community facilitators to each community, the project promoted the formation of six core groups, each consisting of 20-30 volunteers from traditional village clusters.[iii] Each core group member learned about the fundamental elements of climate change and adaptation and were trained in various conservation farming techniques, nutrition, as well as key gender equality issues and basic principles of disaster risk reduction.[iv] Thus equipped, they passed on the new knowledge to fellow villagers and led by example.[v]

While the initial model envisaged two separate groups per cluster - with one promoting agricultural innovation and the other disaster risk reduction - the two group types were eventually merged as this made it easier for groups to work together with different households. These groups then initiated disaster risk reduction planning, which included steps such as the recording of weather information (to enable forecasting and adapted planting patterns), the cutting of high breadfruit trees (to reduce the risk of breadfruits falling on villagers during storms), mangrove afforestation, and the erection of pig fences.[vi] Key outcomes of this model include:

- ***Self-development of village disaster risk management plans.*** All 19 villages now have plans with core group members and village leaders. They used the knowledge they gained through training coupled with their own experience of natural hazards, climate variability and change, to devise their own village plans. Included in the plans were the following measures: the cutting of high breadfruit trees to reduce injury; construction of walls in some villages to prevent wild pigs from accessing and destroying vegetables (some of which were used for food supplies during times of crisis); the banning of tree-cutting in coastal areas (to reduce salt spray entering gardens); and the introduction of fuel–efficient cooking stoves to reduce firewood collection.[vii]
- ***Greater sustainability of project outcomes.*** *The use of core groups to implement the project increased villagers'* sense of ownership and helped the project be more flexible by incorporating villagers' ideas and addressing their concerns. This formed a solid basis to sustain project outcomes.[viii] This resulted in a broad-scale uptake of agricultural techniques – with small area soil management being the most popular. This technique - locally referred to as the 'big hill' is designed to keep plants and soil moist for a longer time.[ix] Villagers also diversified crop types, even though this was not a target of the project.[x]
- ***Stronger communication with governance structures.*** The use of core groups led to stronger communication with the Nissan District Administration (NDA) and the Council of Elders (CoE). These authorities recognised the merit of the model, and plan to make it a part of the formal governance structure through the formation of a core group association.[xi]
- ***Better mechanisms for sharing information.*** With their level of engagement and dedication, core groups represent an effective mechanism for sharing information: focus group discussions and interview revealed that group members advise each other from their experiences and any progress made with climate-resilient practices.[xii] The strong sense of ownership provides a solid foundation to sustain mutual learning to improve techniques into the future.[xiii]

EMERGING LESSONS

- ***Facilitating stronger links between communities and local governance structures helps support longer term sustainability.*** The use of the core group model has helped strengthen informal governance structures, while links with the NDA and CoE will aid the continuation of project gains in the longer term.
- ***Flexibility in implementation strategies can support better project outcomes.*** The use of the core group model has yielded many benefits for the project and may not have occurred if CARE had used more traditional implementation models (with a project office on-site).
- ***Greater spread of project impacts through the use of core group approach.*** By encouraging core groups to take the lead in developing adaptation knowledge dissemination processes, project impacts have spread well beyond the core groups as members have used their broader community networks to disseminate knowledge. As a result, villages have adopted new agricultural practices across the islands, including in communities where the project has had no direct intervention, while demand-driven training has maintained enthusiasm and encouraged ownership, leading to more sustainable outcomes.
- ***Self-development of village disaster risk management plans, while important, has resulted in systematic preparedness and risk reduction measures being ignored.*** While the project has succeeded in the development of disaster risk management plans across all villages, these plans largely focus on individual measures rather than a more comprehensive approach to disaster risk management. If CARE had been more directly involved in the planning process, they could have supported communities to think more broadly about measures such as early warning systems, contingency planning, response and larger scale mitigation.

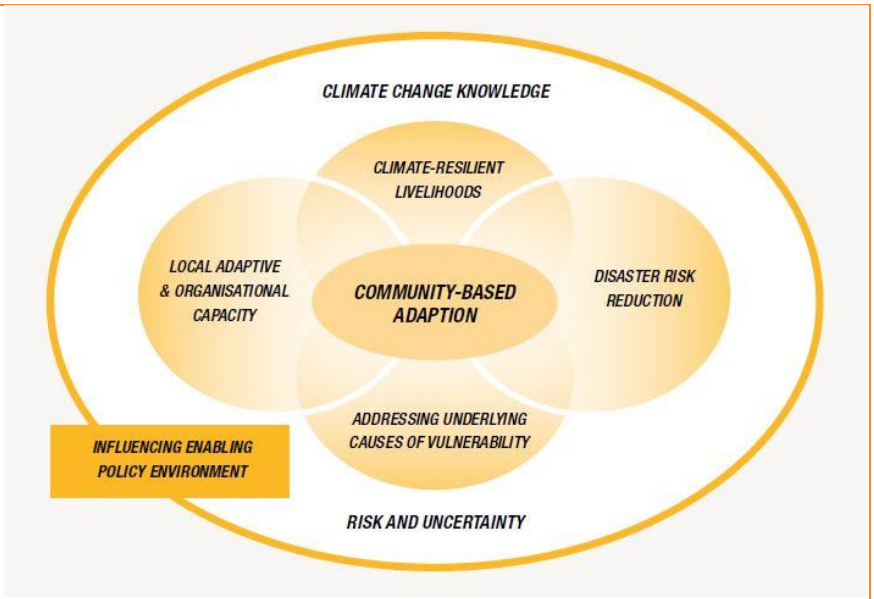
Glossary

Community-based adaptation (CBA): Interventions whose primary objective is to improve the capacity of local communities to adapt to climate change. Effective CBA requires an integrated approach that combines traditional knowledge with innovative strategies that not only address current vulnerabilities, but also build the resilience of people to face new and dynamic challenges.[xiv]

Adaptive capacity: The ability of a system (individual or community to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences.[xv]

Resilience: The capacity of an individual. Household, population group or system to anticipate, absorb and recover from hazards and/or effects of climate change and other shocks and stresses without compromising (and potentially enhancing) long-term prospects.[xvi] Resilience is not a fixed end state, but is a dynamic set of conditions and processes.[xvii]

Diagram 1: CARE's Community-Based Adaptation Framework[xviii]



- **Promotion of climate-resilient livelihoods strategies** such as diversification of land use and incomes;
- **Disaster risk reduction strategies** to reduce impacts of increasing climate-related natural disasters on vulnerable households;
- **Strengthening capacity** in a) community adaptive capacity such as in access to climate information and managing risk and uncertainty and b) local civil society and governmental institutions to better support communities in adaptation efforts; and lastly,
- Local and national level empowerment, advocacy and social mobilisation to: **a) address the underlying causes of vulnerability** such as poor governance, gender-based inequality over resource use, or limited access to basic services, and **b) influence the policy and enabling environment.**

In addition, the CBA framework emphasises the use of climate information, and the uncertainties of climate risk, in guiding project/community decision-making as *the* critical distinguishing features of adaptation work.

This case study is one of a series from CARE's community-based adaptation (CBA) projects in Papua New Guinea, Timor-Leste, Vanuatu and Vietnam. The purpose of these case studies is to highlight and provide examples of the practical application of CARE's CBA framework.
CARE implemented these projects between July 2012 and June 2015 with funding from the Australian Department of Foreign Affairs and Trade (DFAT) under its Community-Based Climate Change Action Grants (CBCCAG) program.

The paper was authored by Charlotte L. Sterrett of Climate Concern. www.climateconcern.net. It is based on the end-of-program evaluations conducted by Charlotte L. Sterrett, Patrick Bolte and Dennis Euker and other project materials.

The views in this paper are those of the author alone and do not necessarily represent those of CARE Australia, its partners or the Australian Government.

The paper would not have been possible without the assistance of Sarah Boxall, and information provided in the evaluations reports authored by Patrick Bolte and Dennis Euker. Thanks must also be given to all participants in each of the individual project evaluations for their kind consideration and involvement.

[i] Bolte, P. (2015) *The adapting atolls. Final evaluation of the project "Community-based adaptation to climate change (CBA CC)" in Nissan District, Papua New Guinea,* p.14.
[ii] Ibid, p.16
[iii] Ibid.
[iv] Ibid.
[v] Ibid.
[vi] Ibid.
[vii] Ibid.
[viii] Ibid, p.5
[ix] Ibid, p.13.
[x] Ibid.
[xi] Ibid, p.13.
[xii] Ibid, p.16.
[xiii] Ibid.
[xiv] CARE (2010) *Community-Based Adaptation Toolkit.* Version 1. CARE International, p.6.
[xv] IPCC (2000) 'Glossary of Terms used in the IPCC Fourth Assessment Report WGII'. Geneva, Switzerland.
[xvi] Turnbull, M. & Sterrett, C. L. (2013) *Toward Resilience: A Guide to Disaster Risk Reduction and Climate Change Adaptation.* Emergency Capacity Building Project, p.160.
[xvii] Ibid.
[xviii] CARE International (n.d.) *Framework of Milestones and Indicators for Community-Based Adaptation.* CARE International.