Community-based action in Fiji's Gau Island: a model for the Pacific?

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Abstract

Purpose – Drawing on qualitative fieldwork on a remote outer island in Fiji, this paper aims to address a shortcoming in the literature on climate adaptation in the Pacific. Internationally community-based adaptation (CBA) is recognised as a promising approach to help vulnerable populations adjust to climate change. However, with pilot projects in their infancy documented experience for Pacific Islands remains scarce. This limits the ability of the region – faced with persisting development challenges and predicted significant climate impacts – to learn from and build on previous experiences and develop robust responses to climate change.

Design/methodology/approach – By using a community-based initiative in response to environmental challenges and unsustainable development as a proxy, the paper interrogates the potential usefulness of the CBA framework for the Pacific and identifies potential strengths and weaknesses. Sketching out the process and its outcomes, it shows how the initiative has resulted in a diversity of strategies, ranging from pollution control measures, to improved governance of resources and community participation in decision making, to livelihood and income diversification.

Findings – Findings indicate that CBA could have a lot of potential for building more resilient communities in the face of climate change and other pressures associated with modernising Pacific societies. However, to be effective, interventions should pay attention to people's development aspirations; immediate economic, social and environmental benefits; dynamics of village governance, social rules and protocols; and traditional forms of knowledge that can inform sustainable solutions.

Originality/value – The conclusions provide a reflection on the CBA framework in general and make concrete suggestions for practitioners on how the framework could be usefully implemented in the Pacific context.

Keywords Development, Climate change adaptation, Community-based adaptation, Pacific, Fiji, Vulnerability

Paper type Research paper

1. Introduction

"Vakarauni se SigaToka" – Prepare while there is time

Pacific Islands are being transformed by climate change. In addition to warming, the signs of change are manifested through coastal flooding and erosion, loss of coastal

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ecosystems and productivity, damage of aquifers due to saline intrusion and more frequent and intense weather events such as droughts, cyclones and storm surges (Pelesikoti *et al.*, 2013). Simultaneously the limited geographical space presents its own challenges to sustainable development as population growth places strain on available resources (Veitayaki *et al.*, 2007; Veitayaki and Sivo, 2010). Changes in climate therefore couple with other stressors to threaten local livelihoods, settlements and infrastructure and development aspirations. This situation creates an imperative for what has become referred to as *adaptation* or long-term social transformation that aims to safeguard against harmful impacts associated with climate change.

People in the Pacific have in the past continually responded to environmental changes and possess extensive traditional knowledge and practices that provide coping mechanisms during times of stress (Veitayaki, 2002). Yet, the attempt to modernize and participate in economic activities on a global scale has resulted in increased exploitation and degradation of the environment and food sources (McCubbin *et al.*, 2015; Veitayaki, 2012), the weakening and loss of customary knowledge (Veitayaki and Sivo, 2010) and the erosion of people's traditional resilience. On current trends, the impacts of unsustainable development are likely to increase in the future, leaving communities more vulnerable to external stressors such as climate change.

1.1 Background: what has gone wrong with development practice in the Pacific?

Despite over three decades of engagement by international development partners in the region and Pacific Island countries (PICs) being among the highest per capita recipients of development and climate-related aid[1], huge development challenges remain[2] and success on the ground in instituting long-term sustainable development and improved climate resilience remains to be seen (Buggy and McNamara, 2015; Nunn *et al.*, 2014). The paradigm for social and economic development, as well as for improving climate resilience, has been (and continues to be) dominated by largely short-term, infrastructure-based approaches, driven by donor priorities and national governments (McCubbin *et al.*, 2015; PINA, 2014). This has not resulted in the expected improvements and "*most communities […] are no better prepared to adapt to future climate change than they were before*" (Nunn *et al.*, 2014, p. 222). This implies the need for a new approach, a re-thinking of development practice. Literature on development in the Pacific highlights a number of additional reasons that support a call for a change in practice:

- First, the importance of valuing and acknowledging local culture and context: the approach to development and climate adaptation in the Pacific has largely been dominated by top-down decision-making that imposes readymade solutions from the outside. Often not accounting for local culture and priorities (PINA, 2014; UNDP and AusAID, 2009) such approaches deny local knowledge any role in solving current environmental and development problems, as it is "*often disregarded by scientists as part of a romantic past and therefore a barrier to current environmental and development problems*" (Mercer *et al.*, 2012, p. 85). Furthermore, critical scholarship has questioned whether many of the proposed and/or trialled solutions are culturally appropriate for the Pacific Island region. For instance,

  > […] almost all information received by people in the Pacific Islands about climate change over the past 25 years has been in a foreign language, mostly in English, and

> communicated in ways that do not acknowledge the cultural mores of the region's peoples (Nunn, 2013, p. 159).

- Second, a problematic cycle of dependence: decades of development interventions have led some communities to believe that climate and development challenges cannot be overcome without externally initiated and funded projects (Nunn, 2013). Generally across the Pacific increases in expectations and dependence on external aid have lead to a weakening, rather than a strengthening of response capacity and self-reliance. For instance, Johnston (2014, p. 124) argues that "*disaster aid, relief and rehabilitation assistance have […] been shown to weaken traditional disaster risk reduction techniques*".
- Third, short project cycles: donors are usually under pressure to present fast and visible outcomes. This results in donors avoiding activities that may be desirable for their long-term benefits for local people, but which are difficult to quantify as outcomes in the short-term monitoring and evaluation cycle of projects.
- Fourth, the limited access of the periphery to resources: on peripheral outer islands livelihoods continue to depend largely on the surrounding marine and terrestrial ecosystems and their services (Nunn *et al.*, 2014). At the same time, influence and engagement of most Pacific Island Governments dwindles from the core to periphery, leaving people on outer islands with limited access to services and support from central government. Remoteness thus magnifies the extent to which people's wellbeing is linked with how they manage their own immediate environment. In the context of climate change, this means communities need to develop and implement their own adaptive strategies to prepare for changing conditions expected in the future (Nunn *et al.*, 2014).
- Fifth, lack of (sufficient) funding: although resources for responding to climate change are being scaled up globally, competition for these finite funds will intensify, particularly for PICs, which already receive much higher per capita support than many other regions of the world. In this context, PICs would do well to make themselves less dependent on donor-funded initiatives:

  > […] the fact that more will need to be done with less in the future should encourage governments and other local stakeholders in the region to think of adaptive solutions that are less expensive, perhaps resorting to traditional solutions based on unremunerated community-sponsored efforts using, wherever possible, materials freely available locally (Nunn, 2013, p. 160).

Furthermore, the dramatic backdrop of climate change and increasing climate-related aid to the region adds additional urgency to the necessity of embracing a more holistic line of action: mirroring observations elsewhere (Cundill *et al.*, 2014), the most common approach to adaptation currently applied in projects across the Pacific has a focus on technological solutions that consider the impacts of climate change in isolation from other non-climatic stressors (McCubbin *et al.*, 2015). This dominant approach is not only likely to misrepresent local realities and priorities (Forsyth, 2013), but has been criticised by a number of scholars as risking being maladaptive or at least inefficient (Barnett and O'Neill, 2010; Bisaro *et al.*, 2010; Buggy and McNamara, 2015)[3].

Community-based adaptation (CBA) is increasingly recognised as one promising alternative approach for vulnerable people to adapt to climate change impacts. However, despite gaining greater interest internationally pilot initiatives are in their infancy and with a few exceptions (Dumaru, 2010; Gero *et al.*, 2011; McNamara, 2013; Nunn *et al.*, 2014; and, as an example from the "grey" literature UNDP, 2014), little documented experience exists for PICs (for a broad overview of CBA projects in the Pacific, see McNamara, 2013). There is a particular gap when it comes to locally oriented empirical studies. This limits the region's ability to learn from and build on previous experiences and develop robust responses to climate change.

1.2 Aims, research questions and methodology

The present paper aims to address this shortcoming by contributing to the growing body of work on CBA in the Pacific. By using a community-based initiative in Gau, an outer island in Fiji, in response to environmental challenges and unsustainable development as a proxy, it interrogates the potential usefulness of the CBA framework for the Pacific and identifies potential strengths and weaknesses. It examines the process and outcomes of the *Lomani Gau* initiative and highlights lessons that might be learned for more effective, locally driven adaptation elsewhere in the Pacific region.

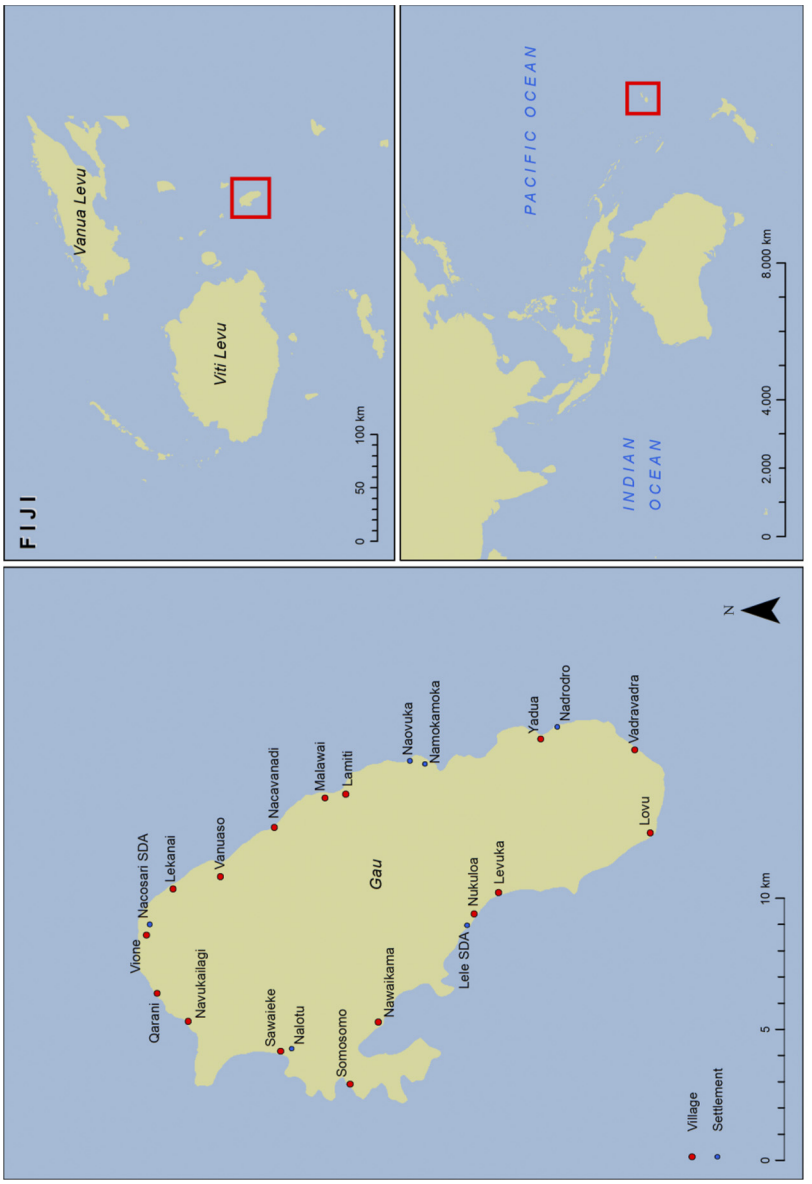
Although we recognise that *Lomani Gau* is not a CBA project *per se* (and has, in fact, never carried that label), the path followed and activities taken match surprisingly well with the CBA model described elsewhere. In the absence of empirical evidence of planned CBA projects, we suggest that *Lomani Gau* can be regarded as a suitable proxy. The paper addresses the following questions:

Q1. How did community-led action on Gau Island develop and what factors catalysed the initiative?

Q2. What changes and outcomes did it generate and how do they correspond to the CBA framework?

Q3. What lessons can be learned for initiating community-driven adaptation in the Pacific?

This paper draws upon fieldwork on Gau Island (see Figure 1) and provides an overview and analysis of the initiative after its more than 10 years of activity. It builds on work from several research projects on marine conservation, fisheries management and rural development in Gau that were conducted over several years (2003-2014), as well as ethnographic observations by one of the authors, who acted both as a researcher and community policy advocate. Qualitative data about community-based action, specifically the process as well as land-management and governance changes, were generated from the island's 16 villages and six settlements. It was collected through semi-structured interviews, with direct questions being avoided wherever possible in favour of discussion stimuli, personal observations and focus groups, as well as several other less formalised discussions with individuals and groups across the island. Informants include village leaders, sub-district and district officials, customary leaders as well as other key village members. Data analysis was conducted from notes taken at all stages of fieldwork and during interviews. As a review, this paper does not seek to be comprehensive; rather, it extracts key ideas and discusses selected material of relevance to the research questions.



Source: Created by T. Weinzierl on behalf of the authors
Note: Villages are formally registered indigenous Fijian communities under Fijian administration, while settlements include villagers settling on their own land outside their villages, leased land and government stations

Figure 1.
Location of Gau Island in the Fijian archipelago

The paper proceeds by describing the CBA framework, as developed in other parts of the world, which will be used as an analytical backdrop to examine the case of Gau's community-led action. It then turns to the history and evolution of the initiative, in terms of the process and the actions taken, followed by a discussion of successes and challenges. Following on, these experiences are compared with the conceptual framework of CBA. One key aim of this paper is to see what lessons can be drawn from this rich experience for future community-driven climate adaptation in the Pacific. Thus, the article concludes with a summary of lessons learned followed by tentative recommendations for future projects in the Pacific as well as a few reflections on the usefulness of the CBA framework.

2. Community-based adaptation

2.1 Evolution and principles of community-based adaptation

In the context of responding to climate change the concept of CBA has been gaining traction as one way of reducing vulnerability and building adaptive capacity. It has the primary objective to "*improve the capacity of local communities to adapt to climate change*" (CARE, 2010, p. 5). The idea is to equip communities with information and tools for them to make choices that will increase their wellbeing and livelihood resilience. Recognising that what individuals and communities respond to are multiple challenges, not just increased climate variability and extremes (Eriksen *et al.*, 2011) but a multiplicity of new and old risks such as overcoming poverty, underdevelopment or environmental and resource degradation (Heltberg *et al.*, 2012), CBA emphasises the close synergies between adaptation and development. Therefore, it has been proposed as a way to make "*climate change policy and international development more compatible*" (Forsyth, 2013, p. 439).

CBA emerged as a distinct debate amongst development practitioners in the early 2000s. These acknowledged a number of trends in recognising that adaptation was key and not drawing attention from mitigation efforts; the social drivers behind people's vulnerabilities needed more attention; and community-based natural resource management as a framework to empower and understand local realities was a good place to start from (Forsyth, 2013). As many people directly depend on ecosystems for their livelihoods, social and economic security, CBA places emphasis on protecting and sustaining local ecosystems.

A key feature of CBA, which often distinguishes it from other forms of adaptation, is that it is a community-led process based on meaningful engagement and proactive involvement of local individuals and organisations. At its core stands the "*fundamental principle of community empowerment*" (Gogoi *et al.*, 2014, p. 2), which recognises that communities should have the means to make their own decisions and self-determine their future. Thus, rather than having external actors predetermine solutions, as commonly the case in adaptation projects, it enables communities to shape development or adaptation interventions, recognising local communities' essential roles in the process of assessing climate and environmental risks as well as in planning, implementing and the monitoring and evaluating of actions (CARE, 2010; Dumaru, 2010). Beyond bringing "*[…] decisions under the control of those affected by them and avoiding predetermined solutions*" (CARE, 2013, p. 2), it also recognises that communities possess valuable skills, experience

and local knowledge necessary to undertake locally appropriate activities (Dodman and Mitlin, 2013).

2.2 Community-based adaptation in practice

As communities face a number of challenges – climate variability and change being only one of them – actions seldom focus exclusively on climate risks (Reid *et al.*, 2009). Consequently, CBA projects often resemble development projects while factoring in future changes in climate. There is no blueprint for a CBA project, as:

> [t]he climatic, environmental, social, economic, and political context surrounding a community determines the design, implementation and possible outcomes of CBA processes and activities (CARE, 2014, p. 57).

This means solutions are very case-specific. Nevertheless, according to CARE International (2010, p. 5f), a vocal promoter of the approach, projects ideally incorporate the following four key strategies:

(1) promotion of climate-resilient livelihood [strategies], including income diversification and capacity building for planning and improved risk management;

(2) disaster risk reduction to reduce the impact of hazards, particularly on vulnerable households and individuals;

(3) capacity development for local civil society and governmental institutions so they can provide better support to communities, households and individuals in their adaptation efforts; and

(4) advocacy, social mobilisation and empowerment to address the underlying causes of vulnerability.

Unlike more conventional approaches to adaptation (McGray *et al.*, 2007), CBA includes an "*element of deliberation, or social learning, between different forms of expertise*" (Forsyth, 2013, p. 442). With the aim of addressing *current* vulnerabilities and building the capacity of people to respond to *new* challenges (CARE, 2010), knowledge and information from local and external sources are articulated together in a participatory process. This, importantly, combines local perceptions of risk and larger-scale risk assessments, such as regional climate predictions (Forsyth, 2013). Such process also builds on existing cultural norms and addresses local development concerns that underlie vulnerabilities (Ayers and Forsyth, 2009), by considering both the local context and (broader) environmental drivers of stress (Forsyth, 2013). Hence, two important outcomes of CBA are the sharing and evaluation of information and achieving social change.

2.3 Challenges to community-based adaptation

It goes without saying that CBA is not without its challenges. First, communities are not homogenous: They are made up of different groups such as young and old, men and women, rich and poor. Members of a community will have different levels of vulnerability (Schipper, 2009), as within communities or even households roles, rights, power and access to and control over resources may differ significantly (Buggy and McNamara, 2015; CARE, 2010). Second, "traditional" and "local" approaches are not necessarily inclusive: any decision-making process is likely to entail a variety of power

relationships and exclusions. As Ensor and Berger (2009, p. 231, citing Cleaver, 2001) highlight, "*[i]t may be that situations are encountered "where 'local culture' is oppressive to certain people" and may rob the most vulnerable within a group of a voice*". One example of such a challenge is when gender-based exclusion is deeply rooted in a culture, requiring those who wish to intervene to acquire a thorough understanding of local power dynamics (Dodman and Mitlin, 2013). In the strongly patriarchal societies of the Pacific for instance, cultural norms often assign decision-making responsibility to men (SPC, SPREP, GIZ, UNWomen and UNDP, 2014). Third, traditional livelihoods are not necessarily sustainable: it is important to acknowledge that "*small islands may be both victims and agents of inadequate responses to climate change*" (Hay *et al.*, 2013, p. 304). There might be traditional practices that are harmful to the environment, in which case, they need to be critically examined, altered and possibly even abandoned.

2.4 A model for adaptation in the Pacific?

Three points make CBA a promising model for sustainable change in Pacific Island communities: first, it focuses on the local level (meaning the neighbourhood, settlement or village level) (Ayers and Forsyth, 2009) and is thus much better equipped to respond to specific vulnerabilities on the ground. Second, and a major strength, CBA looks *beyond* the climate risk at other stressors already affecting communities and seeks general improvements in livelihoods (McCubbin *et al.*, 2015), generating a "no-regrets" development approach to climate adaptation and reducing the risk of maladaptation (Barnett and O'Neill, 2010). Third, as it builds on self-determination and local ownership, the generated change can be expected to be sustainable beyond the (often) limited project cycle. Because local communities formulate actions, CBA also is more likely to avoid investment in efforts that are likely to fail in the local context.

Keeping the above discussion in mind, the paper will now turn to its case study to evaluate the suitability of CBA approach for the Pacific context – one of the world's regions expected to be most affected by future climate impacts.

3. Case study: community-led action in Gau, Fiji

3.1 Introducing Gau Island: a community in transition

Gau (pronounced N'gau') is the fifth largest island in the Fijian archipelago and located 80 km east of the main island Viti Levu (Figure 1). Gau is home to around 3,000 people, who are predominantly indigenous Fijians[4]. For their livelihoods, locals are heavily dependent on products and services provided by healthy ecosystems, such as fish and agricultural produce. Neighbouring islands are accessed by open fibreglass boats and the nearest urban centre, the capital city of Suva, is 2-6 hours away. This geographic isolation presents unique challenges in accessing alternative sources of income and basic government services. Gau has a total land area of 300 km^2 that extends from coastal lowlands and river plains to mountain ridges and plateaus in its rugged interior. A virgin cloud forest in the island's mountainous center is home to the indigenous bird *Kacau Ni Gau* (Fiji Petrel, *Pseudobulweria macgillivrayi*). This forest has not been logged and provides the island's population with essential environmental services such as clean water, wild food and building materials. Traditional medicine, farming implements and household items are also sourced from the forest. Gau Island is divided into three administrative units (*tikina*) or districts. These are Sawaieke, which consists of eight villages and four settlements, Navukailagi, which has three villages, and Vanuaso,

comprising five villages and two settlements. All villages and settlements are located on the coast, consequently the part of the island where human activities have been most profound.

As in many other Pacific Islands (Buggy and McNamara, 2015), people on Gau are transiting from their present semi-subsistence existence to a more commercial-oriented one. With these changes toward a more "modern" lifestyle, people are aspiring to maximise income, improve living standards and, to do so, are taking up commercial agriculture, fishing and timber milling. These non-traditional activities have caused a rapid expansion of areas of secondary vegetation, clearing and alteration off virgin forests, increasing deforestation, alteration of riverine and littoral vegetation and habitats, alteration of coastal habitats and a general depletion of natural resources. Other side effects of this modernisation are an influx of invasive species, and the unregulated use of pesticides and other farming chemicals that come with modern farming practices (whose adverse effects for health and the environment local people often know little about). In addition, these modernising communities have to cater for increased numbers of people, more permanent waste and other challenges related to health, deficient links to markets and poorly planned development activities. These threats to local natural resources are harmful to livelihoods and increasingly felt in villages and settlements across the island.

3.2 History and evolution of the Lomani Gau initiative

Resource management in Gau Island started in the 1990s, when the Gau Island Council decided to work with Fiji's National Trust to preserve the island's native forest, home to the endemic Fiji Petrel (*Kacau Ni Gau*). This island-wide conservation initiative echoed global trends at the time to support community-based conservation projects (Reid, 2014). After a series of community consultations and training workshops at the turn of the century on other topics such as marine awareness and management, participants formulated new resource management arrangements. These included the banning of fish poison and declared "no-take" areas. To manage their marine resources, the three *tikina* on Gau started collaborating with each other and with different non-governmental organisations, government and development agencies.

Traditional resource management practices and rich indigenous knowledge systems still used in some parts of Fiji help people appreciate the need to look after forests and land resources for these to be healthy and productive. This dual relationship between responsibility and dependence means communities are often aware of vulnerabilities and threats associated with degraded local environmental capital. In some cases, this has lead to the protection of local resources. On Gau, people established community-based marine managed areas (MMAs) to enhance local marine resources, knowing that they cannot easily move elsewhere and have to take measures to ensure the health of the resources they depend on for their livelihoods.

Through these engagements, communities on Gau illustrated drive and commitment to resource conservation. However, it soon became obvious that to consolidate these protective measures, communities needed to address other, interrelated, challenges. Not long after the establishment of the MMAs, external collaborators introduced the concept of integrated resource management. As a consequence, local communities began to extend the initial management of marine resources to address sources of related land-based threats such as waste management and harmful land use practices. In this

context, people also began to discuss the attainment of their communal development aspirations. Given Gau's small size and the interconnectedness of its ecosystems it was evident to communities that an integrated management approach was required, balancing communities' resource management activities and the development of appropriate sources of livelihood in the different villages. In Vanuaso district, a consortium of international donors and partners supported the pursuit of alternative sources of livelihood to complement conservation activities in coastal communities. Known as *Mositi Vanuaso*, this initiative made people more aware of the interconnected environmental and developmental challenges they were struggling with and needed to address to improve living standards.

Mositi Vanuaso was successful in engaging local communities and its ideas and approach quickly diffused into other villages (see Table I). In 2005, this lead to the expansion of the project to cover the whole island under a broader initiative named *Lomani Gau*. *Lomani Gau*, which in iTaukei vernacular means "(*to) Care for Gau*", is a social network of people spearheading integrated resource management and promoting the sustainable use of natural resources. A committee consisting of representatives from all 16 villages meets regularly to coordinate and lead the work to enhance community livelihoods. Its main goal is to reduce alterations of local ecosystems associated with transitions and maintaining an island environment that can cater for current and future needs. The network also monitors the implementation of resource management – and

Step 1: Decision to protect the island's forested interior and habitat of the endemic bird *Kacaunigau* (1990s).	**Step 2:** Engagement and awareness programs to promote the involvement of communities in the sustainable management of local marine resources (2000).
Step 4: *Mositi Vanuaso* in Vanuaso district begins a 'ridge-to-reef' approach that recognises the interconnectedness of the island's ecosystems (2002).	**Step 3:** Establishment of community-based Marine Managed Areas (MMAs) in villages to protect degraded fish resources.
Step 5: Success generates spin-offs; other communities express interest to join the initiative. Establishment of Gau MMA network and strengthened island governance, e.g. through an island-wide ban on wild bush fires and rehabilitation of coastal habitats. Inclusion of socio-economic development activities into conservation measures.	**Step 6:** Formalisation of resource management practices to cover the whole island under *Lomani Gau*and address both sources of land-based threats such as waste management or unsustainable land use practices, and the pursuit of people's development aspirations. Integrated sustainable resource management in combination with the development of appropriate sources of livelihood (2005).

Table I.
Evolution of community-driven action in Gau: steps and activities

Source: Author's own representation

development plans from each of the villages. This preservationist approach – that at the same time focuses on improving household income and meeting local development aspirations – is recognised as a key feature of the initiative (see Box I).

What have been tangible effects of the initiative and how do they relate to the framework of CBA? The next section will discuss concrete activities and outcomes of *Lomani Gau* against CARE's (2010, 2014) characterisation of the four central CBA strategies (for a summary, see Table II).

3.3 Analysis of outcomes

New sustainable rural development ideas and practices that have been introduced to Gau communities include participatory decision-making, an integrated resource management approach and the promotion of alternative sources of livelihood. An island-wide *Resource Management Plan* summaries *Lomani Gau's* objectives (as mentioned previously) and reflects the they plans, which highlight how they will address environmental challenges and improve local livelihoods. These plans were formulated by village representatives at *Lomani Gau* meetings and have been endorsed by the villages that are to implement them. This multilevel process ensures people across the island work together as a group to attain common goals, thereby serving their local village's needs and those of the island as a whole.

3.3.1 Promotion of climate-resilient and diversified livelihoods strategies. Livelihood diversification on Gau has focused on crops, livestock, fisheries, non-food products and

Objectives of the Lomani Gau initiative

- Make Gau Island a model for the sustainable rural development of small islands in transition from subsistence to commercial and economically viable rural development.
- Conduct participatory learning and action (PLA) training workshops within the villages to raise awareness and stimulate self-determined rural development activities.
- Formulate and implement Gau Island guidelines on sustainable rural development practices.
- Mobilise communities to rehabilitate important coastal habitats that are under increasing threat from human activities.
- Promote community action to reduce environmental degradation of coastal habitats.
- Use of scientific information as the basis for the sustainable use of island resources.
- Build capacity and promote good environmental resource use practices within communities.
- Promote an integrated coastal management approach.
- Facilitate the development of alternative sources of livelihood and income.
- Facilitate monitoring and enforcement through regular follow-up and applied research activities.
- Publicise the project and the features through publications and production of visual aids.

Source: Author's own representation, summarised from the studies by Veitayaki and Murai (2008) and Veitayaki and Holland (2016).

Key CBA strategies	At the community level	At the household/individual level
1) Climate-resilient livelihoods	Village and island-wide resource management plans formulated and implemented Support of local climate-resilient livelihoods initiatives Local government and non-governmental organisation extension workers understand climate risks and are supporting adaptation strategies	Households are employing climate resilient and sustainable agricultural practices Households have diversified livelihoods, including non-agricultural strategies People are managing risk by planning for and investing in the future
2) Disaster risk reduction	Identification of major risks Formulation and implementation of local disaster risk management plans	People have access to early warnings for climate hazards People have knowledge and mobility to escape danger in the event of climate hazards Formulated emergency plans are known to people
3) Capacity development	Governance and community networks supported and strengthened Communities are informed of climate change and other environmental challenges Local institutions and groups have capacity and resources to plan and implement adaptation activities	People have knowledge and skills to employ adaptation strategies Enhanced climate change and environmental awareness People have access to seasonal forecasts and other climate information
4) Addressing underlying causes of vulnerability	Participatory local planning processes Women and youth groups actively engaged in local planning processes External funds secured to support local initiatives	Women and youth groups have equal access to information, trainings and services

Source: Author's own representation, table format based on CARE (2014)

Table II.
Action in Gau; applied to CARE's (2014) CBA framework

household energy. Farming and other sustainable agricultural practices, such as tree planting and the use of organic manure, are promoted under the initiative. Villagers are selling watermelon, taro, fish, coconuts, coconut products (such as virgin oil and biofuel) and pigs to the main markets in Suva. Cattle, root crops, fruits and vegetables are occasionally sold locally. The villagers are continuing with the cultivation of *yaqona*[5] and the production of *copra*[6]. To help further diversify income and enhance income security, the cultivation of seaweed and *pandanus*[7] has become a new source of income for many families. The weaving and selling of mats at the Suva market has opened new income-generating opportunities, particularly for women. Villagers are harvesting plantation forests and planting sandalwood and timber trees as future sources of income. Pine forests on the island are now being sawn to facilitate the return to wooden building materials. At sea, a *bêche-de-mer*[8] farm has been erected in one village to trial a new style of harvesting, while another village is collecting oyster spat in a new initiative being trialled by the Fiji Fisheries Department. Solar powered lights are being introduced to replace fuel dependent lights in the village communities.

3.3.2 Disaster risk reduction strategies. The villages on Gau have a network of 16 MMAs and a series of resource management plans including those for reducing disaster risks. These Disaster Risk Reduction plans were formulated in a workshop in early 2012. The workshop provided a platform to exchange knowledge and information on environmental challenges and measures for coping and adapting to extreme weather events. The main objectives were to increase people's awareness of disaster risks and to identify suitable solutions to prepare for and guard against related hazards. Representatives from each village assessed the most important disaster risks and formulated plans to address these. Some villages have already implemented their plans and established local response strategies, such as the restoration of mangrove forests, which have been found to act as natural buffers during spring tides and tsunamis.

3.3.3 Capacity development for communities and local institutions. Training, capacity building, advocacy and funding workshops have been carried out and continue to be organised regularly at district and island level, as well as for individual villages. Issues discussed include pressing environmental problems on the island and its surrounding marine areas and action plans on how to address them, rural development planning, alternative sources of livelihood and income, good governance and disaster risk reduction and management. In addition, communities receive orientation and training in a wide range of topics important for their economic activities, including risk management, proposal writing, project management and women's participation and empowerment. The initiative has enhanced civil society networking, information sharing and learning and collaboration on environmental challenges and climate change by strengthening governance at all levels of local administration. The Gau Island Council received support to coordinate local government activities and has set up *Lomani Gau Tikina* Committees to lead community work in the three districts.

3.3.4 Advocacy and social mobilisation to address underlying causes of vulnerability. As discussed in the beginning of this section, unsustainable land use and the destruction of ecosystems are key factors influencing people's vulnerability. Gau residents have addressed these underlying causes by focussing on the importance of healthy forests and marine habitats and taking necessary steps to correct earlier mistakes and malpractices. Coral reefs, mangroves and coastal habitats are now protected and rehabilitated, to complement the recovery of fishing areas and protection of shorelines. Fish aggregating devices (FADs) have been deployed in deeper coastal waters to establish pelagic fisheries, and local fishermen report that these provide relief for the reef resources by diverting some of the fishing effort to other areas and improve fish catch[9]. Additional measures currently undertaken to ameliorate environmental degradation and address harmful land use practices include the following:

- battling deforestation associated with shifting cultivation;
- eradicating indiscriminate burning of coastal slopes which threatens biodiversity;
- protecting watersheds and drinking water sources;
- minimising hillside cultivation to reduce soil loss and erosion;
- rehabilitating degraded coastal habitats to enhance their health and integrity; and

- emphasising the sustainable use of coastal resources.

Beyond these direct interventions *Lomani Gau* is organising regular meetings and training activities to promote sustainable land use guidelines that protect water catchments. The disposal of village waste through appropriate management and composting, and the maintenance of a healthy and clean living environment are currently pursued in all villages.

4. Discussion: lessons from Lomani Gau?

Lomani Gau did not start off as a CBA project. Instead, it commenced as an environmental protection and resource management initiative. However, over the past decade, the process has evolved to embrace and adopt many characteristics and goals typical for a CBA project (CARE, 2010), covering income diversification strategies, efforts to reduce the impact of hazards, capacity development and actions to address underlying causes of vulnerability (see also Table II). In our view, this makes it a compelling case to look at – and one that can serve as a useful proxy – for it provides insights into how community-driven development may be replicated in other Pacific Islands. So what can this case in Gau teach us about the potential for CBA across the wider Pacific Island region, and what interesting and useful advice can the experience offer? The following aspects stand out:

4.1 Change takes time

The multitude of issues that need to be addressed on a path to sustainable development, even on a small island such as Gau, makes the change process complex and drawn out. The initiative has taken over a decade to develop into its current state, extending far beyond activities and timelines with which major donors usually work. *Lomani Gau* exemplifies how social change happens slowly. Only now, after a decade of working intensely with communities, tapping into forgotten traditional knowledge and building new local capacity, does the interrelation between degraded ecosystems and unsustainable activities seem to be much better understood by local people and principles of sustainable development accepted.

4.2 Putting local development needs on the agenda – not climate change

Climate projections do not mean much to people on Gau. Such projections are complex and the inherent concepts hard to understand. Instead locals are concerned about non-climatic forces that are profoundly affecting their livelihoods, such as coastal erosion, depleting marine resources, degraded vegetation and the need for improved sources of income. Thus, rather than focussing on climate change as the major driver for change, meetings on Gau addressed current pressing challenges to livelihoods, future risks and how to address these. Through workshops and trainings (as well as discussions about receding shorelines and processes to rehabilitate coastal habitats, protect local forests, water catchment areas and food sources), communities have established that only a healthy environment can support their basic needs for food and clean water in the long term, and have drawn connections to broader environmental changes such as climate change. Future CBA projects in the Pacific may want to focus on acute community vulnerabilities and local realities as effective entry points for adaptation action.

4.3 Demonstrate that changes make economic, cultural and ecological sense – immediately

Mirroring observations elsewhere (Reid, 2014) one major challenge in Gau has been to motivate communities enough to adopt longer term adaptive practices. Conserving important biodiversity and re-generate ecosystems preservation approaches can be very effective. However, it is hard to expect people to conserve the resources they need to make a living when their immediate worry is about day-to-day existence. Workable environmental protection and adaptation strategies should complement, rather than constrain primary development aspirations and have to go hand in hand with income-generating activities. Pacific peoples have development aspirations beyond "maintaining the status quo". Thus, securing alternative sources of livelihood and income are equally important as adaptation measures. One success of the Gau case has been the inclusion of local (economic) development aspirations and the use of natural resources to empower people economically.

People's long-term involvement in desired actions depends on how well the immediate challenges are addressed. Adaptation is a long-term process, but local momentum can be built on and motivation maintained by also delivering short-term benefits (such as the provision of food or additional income from new activities).

4.4 Empowerment, self-determination and local ownership

Local participation and priorities that reflect people's needs and wishes are critical, in order to have people identify with, and take ownership of an initiative. This is also more likely to generate sustained outcomes beyond the project cycle (McCarthy, 2014). Furthermore, it helps to mobilise local support and minimise the cost of public services by shifting responsibility to local people and organisations. *Lomani Gau* has been successful because of local engagement right from the start in the development of action plans and programme implementation strategies. This has empowered people to work collectively in a way that engenders ownership of the local programmes.

4.5 Learning from others and through hands-on experience

While local people need to determine their own development strategies, it is beneficial to involve external insights and expertise, so communities may learn what has worked elsewhere. Improving the provision of information represents one opportunity that can help communities make more informed decisions. Furthermore, local people can hugely benefit from training in the new skills so that they can be as competent in introduced technologies and practices as they have been with traditional ones. On Gau, workshop and training activities have proven critical to build local capacity as well as equip people with knowledge and skills necessary to undertake action. They have also ensured the integration of climate change into more general development objectives and planning processes. Many of Gau's residents have never left their island home and have a low level of formal education. For this reason providing local communities with the knowledge to understand the complex interrelations in their ecosystems and appreciate their rights and obligations under contemporary statutory management arrangements has been an important part of the engagement.

Successful demonstration is fundamental to changing behaviour in communities in transition. In Pacific societies learning-by-doing is often how people conduct their training. This makes demonstrations and pilot sites crucial for the introduction of new

practices. In the case of Gau, neighbouring communities actively approached the district to learn from the initiative and then requested to join *Lomani Gau* after they began to see the benefits of Mositi Vanuaso.

4.6 Partnerships – between local communities and external actors

Unsuccessful development or adaptation activities are often related to a lack of communities' understanding of why development activities are useful, and the outsider's poor understanding of local context (PINA, 2014; UNDP and AusAID, 2009). Locals need to understand the objectives of a project and the reasons why it might be beneficial to do certain things differently. External partners and development agencies on the other hand must appreciate the lifestyles in villages, people's value systems, practices and needs. External partners need to be familiar with the way local people live, do things and relate to their development aspirations. As has been said elsewhere, "*[w]hile community observations and priorities are not sufficient for climate adaptation planning, they are necessary*" (Lazrus, 2015, p. 59).

4.7 Tapping into traditional knowledge

As Pacific people embrace outside-driven development a lot of traditional practices have lost their importance or have even been abolished. Notwithstanding, there is a breadth of rich, sometimes abandoned or forgotten, traditional knowledge that future CBA projects may want to consider actively tapping into and reviving when articulating responses to local environmental problems and planning adaptation. However – and in reference to our discussion on CBA challenges – given possible limitations and unsustainable practices, we suggest carefully evaluating and, when necessary, blending it with non-traditional (external) knowledge. Initiatives should assess how different forms of knowledge can be articulated together to most effectively address local challenges – something that has also been acknowledged in the context of disaster preparedness in Pacific peripheral communities (Cronin *et al.*, 2004; Mercer *et al.*, 2012, see specifically their discussion on hybrid knowledge; Walshe and Nunn, 2012) and climate action more broadly (Veitayaki and Sivo, 2010).

4.8 Local legitimacy and agents of change

Social networks and local leadership have been essential to the success of the initiative, providing the basis for long-lasting associations. Rather than establishing a new system, the initiative has adapted established local authority structures and sought the support of Gau's community leaders and chiefs, something that has been acknowledged as a success factor elsewhere (McCarthy, 2014). Through good and legitimate governance people feel assured that their interests are foremost and the process emphasises the common good, is fair and to everyone's benefit. At the same time, community leaders must be transparent, fair and lead by example to act on issues that are important to them and their communities.

Agents of change have played a key role in Gau. These dedicated and respected individuals have been crucial for fostering initiatives and motivating fellow community members. Identifying potential agents of change can thus be an important step in generating success. Having exemplary agents of change that are, for instance, interested in testing new agricultural techniques can also make the more exercise cost-effective.

4.9 Access to seed funding and long-term support

Gau people have semi-subsistence lifestyles where little money is accumulated, which means that in spite of local commitment and manpower activities still required seed funding. With the costs that have to be met for implementing community activities such as learning about alternative sources of livelihood, little will be done without support of non-governmental organisations, development or government agencies. From the very start, *Lomani Gau* collaborated with external partners, educational institutions, non-government partners and development agencies; yet, funding has been a major hurdle in Gau. The short project cycles of many donors – the average time frame for CBA projects in the Pacific has been estimated to be just over three years (McNamara, 2013) – it has been a challenge to secure long-term funding. Building capacity and creating awareness are long-term goals that, despite being important and essential for the sustainability of a project, often do not attract donor support. Requirements for accessing external funds and financial assistance often still isolate local communities, who do not have the capacity to access the assistance mounted for them nor any reputation with donors and financial institutions. In the wake of increasing competition over scarce climate funds, future CBA initiatives could also consider linking to mitigation initiatives such as REDD+.

4.10 Limitations of the analysis and next steps

The evolution of *Lomani Gau*, a locally driven, organic process, means that no baseline data were gathered prior to the initiative. This makes a proper evaluation of the environmental, social and economic benefits (or drawbacks) for local communities and individuals impossible. Furthermore, given that climate impacts have yet to strongly materialise, it remains difficult to gauge the true overall success of measures taken – positive or negative – at this stage. The changes in Gau however do reflect a growing level of awareness and commitment to contribute to the protection and development of natural resources. We argue that this makes Gau's communities better equipped to respond to future stressors. Whether this actually has resulted in an increased adaptive capacity in communities – in other words, people's ability to adapt to the impacts of climate change – remains to be seen in the years to come.

Gender, along with other factors such as wealth and family often determines the roles, opportunities, power, access to and control over resources for women and men in Pacific communities. Such inequalities form an important – and often insufficiently addressed – barrier to equitable improvement of livelihoods and adaptation. While there has been some emphasis and encouragement of women's participation in the process, there is insufficient evidence to suggest that *Lomani Gau* has promoted equal participation of men and women in the decision-making and implementation phases of activities. Whether women, or other disadvantaged groups such as people with disabilities, have benefitted equally or at least have not been impacted negatively by the initiative remains unanswered. It is safe to assume that lasting, transformative change in gender relations has not been part of the efforts so far. A next step in the involvement in Gau would, therefore, be to apply a gender-sensitive approach when revising plans/programmes of socio-economic development on the island. So what conclusions can we draw from these experiences?

5. Concluding remarks: implications for the Pacific?

Climate change is a real threat to Pacific nations and their people, and measures to build adaptive capacity are critical in ensuring that communities are able to cope with the immediate and long-term effects of global warming. Nevertheless, what local communities are struggling with are pre-existing problems of economic and rural development, food security and poverty alleviation. In this context clarity and awareness about future climate change will not necessarily stimulate ownership of the climate change agenda, nor will it drive social or behavioural change. In the case of *Lomani Gau*, local development needs and economic challenges have been driving the shift to more sustainable development practices and adaptation, rather than awareness about future changes in climate.

In many projects across the Pacific, adaptation is conceptualised as requiring infrastructure-based solutions such as sea walls or systems to improve water supply. Yet, in contrast to these high-cost, high-technology strategies, actions chosen by Gau's communities are relatively low-cost, address non-climatic socio-economic conditions and focus on "soft" measures including livelihood diversification, ecosystem management and regeneration, capacity building and training and community mobilisation. These actions target deep structural vulnerabilities related to underdevelopment and environmental and resource degradation.

Building on local development aspirations and utilising the benefits of healthy ecosystems can be a compelling and viable alternative to traditional approaches to development in the Pacific, which have recently come under increased scrutiny (Buggy and McNamara, 2015; McCubbin *et al.*, 2015; Nunn *et al.*, 2014). In view of future climate uncertainty, building local capacity and sustainable livelihoods present "no-regrets" approaches, as with or without climate change these measures are likely to increase community adaptive capacity. The efforts being tried in Gau Island offer appropriate alternatives to resource-strapped PICs and represent a more "autonomous" form of adaptation – one that many Pacific Islanders will likely have to rely on in the future. Furthermore, as large numbers of people in the Pacific live subsistence lifestyles, healthy and diverse ecosystems are important for sustaining livelihoods and people's ability to adapt their behaviour. As such we expect this approach to provide a promising alternative to manage future risks associated with climate change. As donors and aid agencies gear up for adaptation, lessons from initial experiences in the Pacific region should be used to inform future decisions. We believe the Gau case depicts that if communities are in the driving seat, they can enrich and broaden an understanding of adaptation processes that often differs from that put forward by external actors. In conclusion, a number of practical implications emerge from our study:

First, the level of action: while the initial focus of the intervention was on one sector (fisheries/marine conservation), Gau residents soon realised they needed a more holistic approach. This led to the expansion in geographical area to a "ridge-to-reef" approach and – eventually – to cover the entire island (for another example, see WCS, 2012). Future CBA initiatives would do well in considering the appropriate geographical scale of intervention. This reflects one problematic aspect of the CBA approach (highlighted by colleagues very recently, see Buggy and McNamara, 2015): the overemphasis on the level of the *community* could potentially limit the success and effectiveness of a development or adaptation project

significantly in contexts where other scales, such as that of an island or ecosystem, might be more suitable.

Second, over the past decade, Gau communities have shown their commitment and support for resource management. Yet, there are limits to what local communities can do autonomously and the lack of government support for community development can significantly hinder potential community-driven initiatives. This is a difficulty that Pacific Governments could address by providing enabling conditions to mobilise local action. The national level plays a key role in adaptation planning and implementation, not the least by funnelling funding and providing conceptual guidance. One useful step could be to establish national guidelines for community-based initiatives, and a database of good practice examples (e.g. similar to weADAPT (2015), but at national or regional level). Another measure could be to provide seed funding and rewards for communities that succeed in attaining their objectives. Although there is a lot of government support for the introduction of new agricultural practices (e.g. in Fiji through the Ministry of Agriculture, Rural and Maritime Development and National Disaster Management), it would be beneficial to provide additional support for local communities that goes beyond mere technical trainings.

Third, at a broader level there is a need for innovative financing mechanisms, as existing funding structures and systems of aid support make genuine local-level engagement almost impossible. This in our view is a key weakness in the CBA framework, which is silent about coordination and cooperation with higher administrative levels. If these levels remain disconnected CBA is likely to remain a fringe activity in the Pacific where local economic power is low. It would be a valuable step to integrate CBA into national policy and planning with a commitment to dedicate resources to the local level. Without such a commitment, there is a risk that climate finance will continue to support top-down, centralised activities that may struggle to address the needs of vulnerable Pacific communities.

Finally, it would be beneficial to avoid a delinking of adaptation from development. Although it makes sense to argue for new and additional finance at international level, the experience in Gau shows that at the local level this separation is an artificial one. The case demonstrates how current livelihood vulnerability on a small Pacific Island is caused by unsustainable land use and development activities. Measures that protect the local environment and improve people's livelihoods will also make them more resilient to future challenges.

Notes

1. Overseas development assistance to the region amounts to US$469 per capita, compared to $64 in Caribbean small states and $54 in Sub-Saharan Africa (PINA, 2014). In terms of climate finance, according to OECD DAC (2013, p. 4), "*SIDS in the Pacific make up all of the top ten recipients of adaptation-related aid per capita, receiving at least 20 times more than the average across other recipient countries*".
2. As a case in point, the PIC group is off track for four of the seven national Millennium Development Goals, namely, primary education (goal no. 2), reduction of child mortality (goal no. 4), improvement of maternal health (goal no. 5) and environmental sustainability (goal no. 7) (ADB, UNESCAP and UNDP, 2013).
3. It is often difficult to accurately predict the impacts of climate change, particularly at the local level. For small islands in the Pacific downscaled projections are typically unavailable or have

too coarse resolution to provide relevant insights. This means it is often unclear what exactly communities need to adapt to, raising the risk of maladaptive or ineffective adaptation.

4. Fiji is a multicultural society with people of Oceanic, European, South Asian and East Asian origin. The biggest demographic groups are indigenous Fijians, or iTaukei, with 56.8 per cent, and Indo-Fijians, who are descendants of Indian contract labourers brought to the islands by the British colonial administration in the nineteenth century, with 37.5 per cent (figures from CIA, 2015).
5. *Yaqona* (kava, *Piper methysticum*) is a small shrub whose roots have sedative properties. Mixed into a drink, kava is of great cultural importance and widely used across Pacific Islands. It is a long-term crop, which can be harvested after three years and is a source of major income in rural areas of Fiji.
6. *Copra* is the processed and dried flesh, or kernel, of the coconut, which is used to make oil and soap.
7. *Pandanus* are palm-like trees that grow leaves commonly used by women across the Pacific to weave mats, baskets and other handicrafts.
8. *Bêche-de-mer* is the common name for sea slugs, or sea cucumber, used in fresh or dried form in various cuisines (mainly in China). Sea cucumbers include all species of *echinoderms* and are harvested by hand in near shore coral reefs for export purposes.
9. We acknowledge recent studies which have raised questions regarding potential environmental impacts of FADs, especially for the long-term sustainability of the fishery (Cabral *et al.*, 2014; Davies *et al.*, 2014). The results presented here are based on the evaluation of local communities pertaining to the socio-economic impacts of FADs on their community. Evaluating the environmental (especially long-term) impact of FADs in Gau, while a very important, is beyond the scope of this paper.

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