

PACIFIC VOICES

LOCAL GOVERNMENTS AND

**CLIMATE
CHANGE**

CONFERENCE PAPERS

The University of the South Pacific
Pacific Centre for Environment & Sustainable Development
Commonwealth Local Government Pacific Forum

10 *Vakarau Ni Se Siga Toka* (Prepare While There is Still Time) Lomani Gau's Response to Climate Change

ASSOCIATE PROFESSOR JOELI VEITAYAKI

Introduction

The common indigenous Fijian idiom used as the title of this paper warns that it is wise to be prepared while there is still time. The people of Gau Island, Fiji have taken heed of the warning and are preparing for the uncertain future ravaged by the combined debilitating effects of climate change, an ever increasing population that has to be provided for, worsening poverty as people join the lowest rung of the modern economy for which they are disadvantaged and the tendency amongst indigenous resource owners to trade their environment resources and heritage for money. The result of this transition is damaging to local communities that are unable to meet their development aspirations and their environment which is significantly altered and stripped off their resources. Thus in their attempts to modernise and participate in economic development, indigenous communities often overexploit their environment and food sources, which make them more vulnerable because the people diminish the capacity of their environment resources to support them. This loss of resilience, coupled with food scarcity, worsening *poverty*, dependence and stagnation are motivating the people in Gau to ensure that they look after their food sources as the basis of the rural development brand that they pursue to realise their development aspirations while maintaining the integrity of their island environment that supports them.

In 2005, the people representing their villagers at a workshop in Lovu, established Lomani Gau, a social network of people who are willing to spearhead their community-based resource management and sustainable development initiatives. The sixteen Villages in Gau each has a Marine Managed Areas (MMAs) that constitutes the network of community-based MMAs in the island. The villagers also have agreed to work together and have taken some broad resource management decisions to *conserve* the *virgin* cloud mountain forest as the home of the endemic Fiji Petrel (*Pseudobulweria macgillivrayi*), ban wild bushfires, rehabilitate their coastal habitats, strengthen island governance and pursue sustainable development with partners from the University of the South Pacific, Japan International Cooperation Agency and Mie University in Japan.

The *intervention* in Gau is timely because the people are rapidly transiting between their present semi-subsistence economies and a more commercially-oriented one. The people are assimilating commercial agriculture, timber milling and infrastructure development that are causing deforestation and the alteration of coastal habitats. In

addition, these modernising communities have to cater for their increased numbers, more persistent and poisonous waste, health issues, poor transport links to the markets and poorly planned development activities. This is why the Lomani Gau focuses on the articulation of sustainable development to incorporate development and the *environment* in the best possible way. To achieve this, the project aims to protect the people's food sources, reduce the changes that are resulting in the alteration of coastal environments, promote the sustainable use of the natural resources and secure alternative sources of livelihood in the different villages. The objective is to allow the villagers to make decisions that will improve their social and economic positions and yet are consistent with known sustainable development practices.

The experience in Gau will provide useful lessons for the rest of the Fiji Group as well as in other Pacific Island countries. The mainstreaming of environment management initiatives at the local level, the responsibilities of the local communities, the partnerships that have been forged, and the financial assistance are some of the interesting lessons that can be observed on Gau where they are emphasised. The challenges as well as the opportunities also will be useful pointers to other communities at this stage in their development.

Climate change is now being felt in the Pacific Islands. The threats associated with these changes in local conditions are likely to make life even harder in years to come. Faustino Yarfaisung from the Federated States of Micronesia and Isoa Koroiwaqa from Fiji are quoted in climate frontlines (www.climatefrontlines.org) describing the deteriorating environment conditions that are making life harder for people who eventually have to leave or perish. In Malolo, Waya and Viwa in Fiji, about 80 families are ready to relocate to their ancestral land (*yavutu*) in Namotomoto in Nadi on Viti Levu because of rising sea level over the last two decades (Malo 2012). It is therefore prudent to take action now to look after the local environment to ensure that it is in the best shape it can be in to withstand the changing conditions expected in the future. As shown in the next section, the changes now witnessed at the local level are indicating that time is quickly running out. The Lomani Gau initiative outlines an attempt taken at the local community level to be prepared for the eventuality that is climate change.

In the remainder of the paper, there are two main sections. First, is an overview of the climate change risks in Gau Island, the issues associated with that risk and the strategies that the Fiji Government has adopted to address the issues. The second section focuses on the Lomani Gau approach, its achievement, challenges and future opportunities. The lessons from the experience are shared in the concluding section.

Climate Change Risks in Gau

Gau Island is the fifth largest in the Fiji Group. It is about 80 km east of Suva and has an area of 1,200 km² that extends from the coastal lowlands and river plains to mountain ridges and plateaus in its rugged interior. The island is encircled by fringing reefs on the

eastern side and a barrier reef system on the western end. The island is well drained by a system of large rivers that connect the mountains to the surrounding seas. The island has a virgin cloud forest in its mountainous interior where the indigenous bird *Kacau* (Fiji Petrel/*Pseudobulweria macgillivrayi*) is found. The virgin forests have not been logged and provide the inhabitants with healthy clear waters, wild foods and building materials. Semi-subsistence existence and shifting cultivation are increasing the islander's impact on their surroundings. With better farming equipment and machines and the indiscriminant use of fire, the villagers are rapidly progressing towards the virgin forests.

The natural environment is in relatively unchanged conditions but the rapid rate at which the islanders are transiting to commercial agriculture, intensive fishing and the alteration of coastal habitats such as mangrove forests and sea grass beds is alarmingly becoming an imminent threat. In addition, the increasing population and westernised lifestyles are resulting in coastal pollution and more exploitative uses of natural resources that threaten people's livelihood. Consequently, there is the rapid expansion in areas of secondary vegetation, alteration of coastal habitats, the degradation of fisheries resources and pollution. People are using pesticides and other farming chemicals they know little about. In the drive to be economically active, the people have introduced taro beetle into Gau, which also recently reported the arrival of cane toads. The island is now infested with beetle and has been isolated as its taro crop is being banned from other places around the country. The environment in Gau is under siege even without climate change and the people need to plan and implement strategies to attain their social and economic aspirations while upholding holistic and environmentally friendly standards that are consistent with known sustainable development practices.

The IPCC Third Assessment and the Fourth Assessment reports have outlined the changes to be expected by 2100 with the only uncertainty relating to the timing and magnitude of these changes; not their occurrence (IPCC 2007). In Small Island Developing States (SIDS) and islands such as Gau, the changes are already manifested through coastal flooding, erosion, salt water intrusion, damaged water sources and increased storm damages. In addition, the island is under threat from its rapidly increasing population that needs settlements, services and facilities, its undulating landscape that *severely* confines the development options available and the people's poor resources both in terms of weak financial position and restricted capacity. This is the reason why island communities, which will be the first and worst victims, must devote more concerted effort to maintain the integrity of their natural environment and adapt to these eventualities.

Gau, Fiji and the other Pacific Islands are increasingly more vulnerable due to the impacts of climate change, sea-level rise, coastal erosion, storm surge, inundation and coastal hazards, their higher population and their altered natural *environment*. These issues reduce the capacity of the environment to provide the ecological services to support human lives in these areas and consume resources people do not *have* as they

struggle to recover from the last natural disaster. Fiji experienced 35 natural disasters in 39 years between 1961 and 2000 and went into recession following the 1997/1998 natural disasters (Reddy 2000). The costs of recovery are high if the available figures are an indication. In Viti Levu for instance, economic damages of more than US\$23-\$52 million a year by 2050 (in 1998 dollars) is expected if the current climate change scenarios materialize (Sem 2008).

Many of the physical impacts of climate change are already visible in Gau. These include: salinization of soils and water resources, flooding from rising sea levels; soil erosion; increased frequency of forest fires due to drought conditions; degradation of land and marine ecosystem by intensified tropical storms; and, the inundation of low-lying arable land by the sea and swollen rivers. These impacts are evident in Navukailagi, Qarani, Nacavanadi, Malawai, Lamiti, Yadua, Lovu, Nawaikama, Nukuloa and Sawaieke and will ultimately change the layout of these villages. In a number of these villages, infrastructure development such as the removal of gravel from the coast over the years and the construction of the jetty has exacerbated the problem.

Floodings, such as those that in 2009 resulted in damages of FJD\$59 million in Fiji (Lal et al. 2009) are regularly experienced in Gau. Damages caused by tropical cyclones over the last decade has been estimated at about USD\$500 million; money that represented losses. Tropical Cyclone Ami, which struck the northern and eastern regions in 2003, caused social and economic losses of more than \$100 million, whilst the floods in April 2004 caused damage estimated at more than \$30 million (Hay et al. 2009). As a result people have to use resources they do not have to rebuild their lives which results in the dependency on Government. Unfortunately, the heavy dependence on Government assistance after disasters, coupled with high rehabilitation costs, not only has disrupted planned Government capital expenditures, it has eroded the resilience of local communities. The establishment of a National Disaster Relief and Rehabilitation Fund, with its own budget in 2004 is a major step in the right direction because it will stop the practice of Government vying from their development funds for recovery and reconstruction work.

According to the recently released Republic of Fiji National Climate Change Policy (Government of the Republic of Fiji 2012), the maximum daily rainfall of 200mm is likely to be less frequent in the future when the maximum temperature exceeding 35° C is expected to be shorter. The compounded effect of increased sea surface temperatures and ocean acidification will lead to the demise of coral reefs, a major habitat of the coastal fish and invertebrates. The data from the temperature logger program indicated elevated temperatures around the Fiji region in the years 2000 and 2002 when massive coral bleaching was observed in various areas in the Fiji waters (Lovell and Sykes 2008). The onset of such degradation is expected to occur even earlier in places where overfishing has removed the herbivores, which feed on the algae that normally impedes the growth of coral (Hughes et al. 2003, 2007) (Bell et al. 2010). Widespread coral

bleaching threaten the integrity of the whole coral reef ecosystem (Institute of Marine Resources 2010).

The vulnerability index in Fiji is expected to be around 3.17 out of maximum of 5 (Government of Republic of Fiji 2012). Climate change may be associated with an increase in cyclone intensity and frequency of cyclones and extreme *events*, such as droughts and floods associated with El Nino Southern Oscillation fluctuations and the repositioning of the South Pacific *Convergence Zone* (SPCZ) (Kenny, de Wet, Feresi 2000). These conditions prevailed between 1992 and 1999, when the country was affected by four cyclones and two droughts – the last (El Nino) drought (1997/98) was broken by *severe* (La Nina) flooding in the western region (January 1999) (Kenny, de Wet, Feresi 2000).

Sea level changes in Fiji are expected to range from 0.21 to 0.48 metres by the end of the century which would make the coastlines and coastal lowlands in even higher islands such as Gau vulnerable. These conditions are expected to hinder the growth of corals as well as crops (IPCC 2007). Fortunately Fijians have extensive experience living in small islands and have traditional knowledge and wisdom that can be part of the response and adaptation strategies and actions to address climate change and sea level rise issues (Veitayaki 2002).

Other issues that are likely to affect the life of people in the islands include: loss of natural vegetation, water contamination and shortage, the over exploitation of resources and alteration of coastal habitats. These impacts are expected to affect the agriculture and even the habitability of some portions of the coastal areas. With poor farming and waste management practices, the coastal ecosystems will be endangered unless good governance is adopted to promote sustainable development practices.

In 2012, Fiji launched its Climate Change Policy, which outlines some Adaptation Strategies (Government of the Republic of Fiji 2012:23), which emphasise the:

- integration of disaster risk reduction and climate change adaptation strategies and actions;
- the inclusion of vulnerability assessments and climate change impact projections in resource management planning;
- incorporation of climate change impact projections into infrastructure and rural development planning;
- development of sustainable adaptation technologies and systems that incorporate traditional knowledge;
- use of ecosystem-based management approach; recognizing that healthy ecosystems services increase resilience;
- employment of the Comprehensive Hazard Assessment and Risk Management (CHARM) tool to guide all rural development planning;

- assessment of poverty, health and food security issues to determine vulnerability to climate change.

The Strategies are welcomed as they offered a guide and direction that all the stakeholders can use. In Gau, there is excitement and assurance in the villages that the Strategies will enhance the community-based activities that the people have been working on over the last decade. The people are beginning to understand the reasons they need to be prepared for climate change and life in general. They are eager to share their activities, experience and lessons to communities across the Pacific Islands and throughout the Small Island Developing States.

Lomani Gau Approach

The community-based resources management work in Gau started in 2002 with awareness programs to promote the involvement of the communities in the management of their marine resources. This was a calculated move to engage and directly involve people in communities in global initiatives that are part of international treaties and agreements to promote sustainable development and improve the living conditions in rural areas. This initiative is critical because of the importance of the environmental services to people whose lives are dependent on the integrity and health of their environment. The local communities are offered the opportunity to take leadership and address the issues that related to their aspirations as well as show what they can accomplish with little assistance. In addition, local communities can also demonstrate to their country and government that they can make the difficult resource management decisions to ensure their long-term interests – something that the local communities have always done but which their governments are very slow to embrace. Community-based initiatives can also prove the advantages of involving the people who use, depend on as well as own the resources, particularly those that can incorporate traditional management practices. Compared to the contemporary government-led resource management system, the approach in Gau offers a cheaper alternative that yields instant results as it uses existing institutions.

Lomani Gau mandates that the people of Gau care for, deeply value and treasure their island home because of all the goods and services it offers to them. The healthy island environment is the source of the clean air, water and food which must be protected. Lomani Gau is the responsibility of all the people on the island who have been engaged through the participation, learning and action to care for their island environment. Resource management training and community consultations are regularly organised to strengthen the attachment and commitment by the people of Gau to the care, protection and sustainable use of the resources of their island for them and for their children in years to come (Veitayaki 1999). This is a challenge that has to be delicately handled given the desire by local people to use their environmental resources to improve

their lives and living standard. Some of the issues that are being addressed in Gau Island include the: unsustainable and poorly planned rural development activities that the people are involved in, ignorance of the impacts of development on the health and integrity of the island environment and the lack of appreciation of the importance of governance in rapidly changing social environments (Veitayaki 1997; 1998).

MMA workshops and training are regularly organised at the Island as well as village levels (Veitayaki 2010; Veitayaki and Sivo 2010). These workshops and training are critical to the engagement process because they allow the local people to identify the issues pertinent to them and how these can be addressed. Some of the issues that have been discussed include the environment problems that need to be addressed and action plans on how to do that, appropriate alternative sources of livelihood and income, good governance and the disaster risk reduction and management options that people need to adopt (Veitayaki 2005a; 2005b; 2006; 2008). The engagement process is necessary because of the villagers' limited experience and expertise with the issues that are new to rural areas and those who have not left their Island home. Moreover, engaging these people in additional activities that look to them trivial or some else's responsibility has to be undertaken skillfully to avoid local resistance. This approach gives people ownership over the process and convinces them of the relevance of their community-based activities.

During the follow up visits, community meetings, observations and monitoring are undertaken. The community meetings are taken to different villages to show what the different villagers are doing and encourage the sharing of information and knowledge. In addition, the partners comment on the villagers' aspirations and share as many new ideas as possible to allow the villagers to determine their development options. This is important to people in rural areas because they often are not fully aware of the total costs of their preferred development activities. Unfortunately some people and their development partners are known to exploit those in rural communities who are not fully aware or informed of the consequences of their environment and development decisions.

Good governance is important because of the nature of community-based activities. Local communities need good leaders to make realistic plans for the use of their environmental resources, a process that demands that they seek advice from those that are better informed of the issues involved. In addition, the choice of development activities needs to be carefully considered. The people should not focus only on the economic benefits but must also take into consideration the environmental costs, the local capacity, the choices people have and the importance of making good decisions. On top of all that, it is prudent to remember that environmental services are dependent on the health of the natural ecosystem which can be permanently altered because of development choices.

For these reasons, the Lomani Gau approach emphasises the following:

- participation, learning, action at the local level;
- learn lessons from experiences to reduce failure;
- highlight responsibilities of people to address all their issues and determine appropriate development;
- promote integrated rural development; resource management and new sources of income;
- use people's traditional knowledge and practices;
- involve local people in planning and implementing sustainable rural development;
- incorporate traditional arrangements and best scientific information;
- promote and maintain good visionary leadership in the community;
- pursuing contemporary development aspirations;
- protect food security;
- strengthen island governance;
- involve external partnerships.

Mositi Vanuaso to Lomani Gau

At a Japan International Cooperation Agency (JICA)-funded fisheries management workshop in 2005, the people of Gau agreed to form the Lomani Gau network to spearhead their quest for sustainable development on the island. Lomani Gau was to adopt the Mositi Vanuaso initiative that was being trialed in the five villages in Vanuaso district from 2002. A Lomani Gau Committee was chosen to steer the work of the network. The Committee which consisted of the representatives of all the sixteen villages was to meet regularly to coordinate and guide community-based work on the island and monitor the implementation of resource management and development plans from each of the villages.

The village plans highlighted what the individual villages wanted to address both their environment challenges and to improve the lives of their people. The plans were endorsed by the villages that are to implement them and constituted the resource management plan for Gau Island. This ensured that the people work as a group to attain their common goals to serve their own village needs and ultimately those of the island. Today, the Gau Island Council is enforcing the ban on the use of derris root or fish poison, wild fires, fishing in *tabu* (no take) areas designated by the villagers and promoting healthy living, good education and the involvement of people in development activities to improve their lives. Lomani Gau continues to support the Gau Island Council which it hopes will in time formulate island bylaws and regulations. Some of the areas that the Council can take a position on include the protection of clean water sources, the management of waste and waste water and the rehabilitation of their coastal habitats.

Although the villagers differ slightly in their observations of these initiatives, they are living with the difficult decisions they have made.

The different villages are pursuing their development activities, which are largely predetermined by their natural resource endowment. Farming, land use and fishing are encouraged as these are the fundamental skills that all villagers possess. Some of the villagers are now selling water melon, taro, yams, fish, coconuts and coconut products such as copra, virgin oil and bio-fuel to the main markets. They are also continuing with the cultivation of *yagona*, taro, yams, and the harvesting and sale of *bêche-de-mer*. The people are also supported in newer initiatives such as cattle and seaweed farming. Pandanus is now a bigger source of income for those that have these while mats have become an attractive source of income for the women. Pine forests on the island are now being sawn as local building materials. The villagers are hoping to tap into their extensive pine forests to replace their concrete dwellings.

Lomani Gau has collaborated with external partners from the very start. It has worked with the University of the South Pacific, the International Ocean Institute-Pacific Islands (IOI-PI), and JICA to fund and formulate the activities of the network of community-based marine managed areas in each village and the rural development activities that protect the environment resources and support the improvement of living conditions in the villages now and in the future. Biological surveys, monitoring and community awareness workshops and training have been undertaken by the local communities partners that include the USP's Institute of Applied Science, which has worked with villagers in Vanuaso and Navukailagi; WWE, which works with the villages in Sawaieke Tikina, Frontier-Fiji that conducted detailed biological survey and organized some community workshops on the state of the coastal habitats over the last seven years from 2000 and the Planetary Coral Reef Foundation (PCRF) that was in Gau for over a month in 2007 when it conducted underwater video monitoring in northern Gau. Nature Fiji Mareqeti Viti, a Fiji NGO, leads the awareness and monitoring on the status of the endemic Fiji Petrel (*Pseudobulweria macgillivrayi*) of Gau.

Regular activities and follow up meetings are organised to keep the focus on the project activities. With JICA and IOI-PI funding, follow up visits, meetings and activities have been organised on different topics in different villages in Gau. JICA funded seven surface Fish Aggregation Devices that were deployed in the western side of Gau to enhance the pelagic fishing capacity of the villagers while reducing their costs and also protect coral reef resources. In addition, the IOI-Pacific Islands has funded the Elizabeth Mann Borgese Memorial Scholarship at the Gau Secondary School to build the human capacity on the island and the Koro Vakasakiti e Gau competition where the village nurses and the Health Department staff on the island chose the three healthy, clean, planned, organized and functional villages on the island. In this manner, the whole island including the children, the Provincial Government representative and Island Council are involved in Lomani Gau activities.

IOI-Pacific Islands also funded alternative sources of livelihood that the villagers picked. Over the years, these alternatives included village stores, kava and *voivoi* buying operations, fuel vendors, copra purchasing ventures and micro finance operation. Although some of these ventures have folded, the people have learned from their commercial operations and have regarded the experience useful. A few of the operations including a mat buying arrangement, a *yaqona* selling operation, a youth store are still meeting the needs of the people that established them.

Ironically, the three largest self-helped village projects are the result of the villagers' own effort. In Nawaikama, the villagers secured funds to set up a Health Centre that now services that district. In Vadravadra, a villager resurrected seaweed farming that was trialed by the villagers in the 1990s. The farming activities have quickly diffused into seven other villages with the support of private sector partners. Gau villagers are currently one of the biggest suppliers of seaweed in Fiji. In February, 2013 the villagers were given six fibreglass outboard punts by the Government in recognition of their effort. The villagers are reveling with more income and are enjoying the enhanced fishing provided by the cultured seaweed. In Levuka, the villagers are now producing *noni* juice from their own plantation.

Adapting to Climate Change

Although Gau is a high island, it is not spared from the early impacts of climate change. Coastal erosion, salt water intrusion and inundation and flooding are all evident and have been targeted through the adaptation. Some villagers in Malawai have relocated to the hills because of the periodic flooding from tides. The network of MMAs around the island is being spared the use that other areas are subjected to and should be in a much healthier state to protect coastal areas and support fisheries.

Although Gau has its fair share of hard structures to protect its coastal areas, these seawalls were all provided through Government assistance or as part of the road construction around the island. In Nukuloa, Nawaikama, Sawaieke, Qarani, Nacavanadi and Malawai these walls have altered coastal features and in some cases exacerbated coastal erosion in the areas not covered by the walls. After ten to twenty years, the walls are beginning to fall over and disintegrate; requiring expensive replacements. In Naovuka settlement, the villagers had erected a local solution to the beach front erosion they were having. Using the rocks from the area, the villagers built a stone breakwater at sea to slow down and reduce the force at which the waves hit the shore. The end result has been the accretion of sand which has led to the expansion of the beach.

Since 2004, the villagers have been urged to plant trees to rehabilitate their coastal vegetation. Native hardwoods, coconuts and some littoral vegetation were planted to consolidate coastal habitats. Villagers in Malawai, Lamiti and Lovu have planted

mangroves to protect their shorelines as well as enhance their fisheries resources. About ten years on, the villagers are witnessing the effectiveness of having mangroves in their shores. These forests are accumulating sand and sediment and are building shores that are better protected from coastal processes. The women are fishing around these forests while standing dry on the beaches. With images and stories of these positive changes, the other islanders are motivated to do the same thing in their villages. All of the villages outside the mangrove belt that stretches from Vanuaso to Qarani are now planting mangroves to protect their coastline and enhance their coastal fisheries.

The planting of trees on land is to consolidate the land along the main river systems, change the state of regularly burned areas and provide shade. The target is to regenerate the vegetation in commonly burnt hillsides, along the rivers and in the water catchment. Many of the villagers are now planting trees as sources of building materials and income. Sandalwood, mahogany, coconuts have been planted for future generations. The ban on wild fires also complements the re-growth of the natural vegetation.

Better cooking apparatus have been provided to reduce the firewood required to prepare meals. Smokeless stove models have been given to the villagers to improve the condition in the kitchen as well reduce the demand for firewood and the cutting of trees. Villagers are encouraged to look after their pigs so that they can have their gardens in the coastal lowlands closer to them. This transformation is expected to reduce deforestation as people move their garden from one place to the next.

Waste water is becoming a threat in most villages where the tap water is not properly managed. In these villages, water logged spots and pools are common. These conditions can enhance the spread of diseases that are likely to worsen under new climatic conditions.

With funds secured from the GEF/UNDP Small Grants, Lomani Gau is now working on a coastal habitat rehabilitation scheme. The villagers are planting trees to rehabilitate their coastal vegetation. Each village has to plant at least three thousand trees to be given funds for their follow up activities. All the villagers are participating and twelve of the sixteen villages have already received their follow up funds and have established their alternative livelihood operation. The majority of these villagers have continued with the tree planting activities because of the importance of trees for coastal protection, enhancement of fishing grounds, income (coconuts, mahogany and native hardwood, pandanus and (sandalwood) and the general beauty and health of the island environment.

In Gau, the community-based resource management approach using both the traditional and contemporary methods has demonstrated that the people can contribute significantly to the solutions for the issues they face and to their wellbeing. By looking after their environment resources, the people not only are establishing the basis of a more sustainable existence for themselves and their children, they are also adapting to the climate

change threat and the uncertain future. The planting of trees and seaweed for instance will help absorb carbon dioxide from the atmosphere while protecting the farmland and the sea and providing income like never before shared on the island. The icing on this cake is that these are locally planned solutions implemented by local communities for a global problem that humanity is still grappling to meaningfully address.

Challenges

The success of community-based initiatives is dependent on how well the different challenges are addressed. Some of the main challenges on Gau include: the establishment of effective island governance; securing sources of income, use of appropriate technology that suit the capacity and skills of local people; attainment of the conflicting aims of utilising the resources while maintaining the integrity and health of the environment; building of local capacity and creation of awareness; improvement of infrastructure and economic activities; formulation of genuine partnerships; and securing of new sources of livelihood. The performance of the community-based activities in Gau is a measure of how well the challenges named above have been addressed by the Lomani Gau approach.

Governance in local communities continues to be transformed from the totalitarian rulers of pre contact times to today where the rule of law is the same for all and the people have rights under those laws. Traditional leaders have to demonstrate leadership in contemporary situation where the issues such as climate change, economic planning and development, marketing strategies, pollution, invasive species and ecosystem based management are features. They also must be well versed with their traditional obligations and responsibilities. It is the job of community leaders to lead their people as they navigate through life. Local governance therefore has to be up to date, fair, firm transparent, accountable and visionary. The leaders have to work with Committees and win consensus. They need to be well connected with those they have to deal with, solve conflicts and represent their people in various forums. Good strong leadership is needed as the people rely on their leaders for everything.

The choice of development activities to be undertaken in the communities is important because of their requirements. Alternative sources of income are required while appropriate technology is needed to harness the development potential of the local communities that are dependent on the local people's skill level, their access to capital and their development targets. Inappropriate technologies can be counterproductive and wasteful. Likewise, drawing the balance between the developments of the resources and maintaining a healthy environment can be potentially conflicting. This requires that serious thought is devoted to finding the balance. Development has to be within the capacity of the resource to replenish itself. Of course, over exploitation will result if the recruitment or the rate at which the stock is boosted with new members that have graduated as adults. With the use of natural resources over exploitation is a common result of the drive to maximise returns from the use of resources we know little about.

It is important that total allowable catch levels are determined as failure to do that accurately will result in the deterioration of the stock.

Infrastructure improvement is of paramount importance in rural areas and outer islands. Shipping requires jetties and ports to improve on its turn-around time. This is often not the case. In Gau, shipping is infrequent and may come once a month which makes it impossible to plan properly. This forces people to take risks which at times end in total loss. The poor state of the infrastructure makes shipping very expensive and inefficient. Improvements of economic activities on the island will not be expected until the infrastructure, market and the prices are attractive enough to make the people feel it is worth their while. Until that time, most people will be cautious to give it a go.

Building capacity and creating awareness are long term goals that though are important and essential do not attract funding. It is very important that local capacity is built and enhanced in the areas where the development activities may determine. Likewise, creating awareness will be difficult without the capacity. On matters of the environment and development, experts are needed. In Gau, it was fortunate to have the backing of educational institution, non-government partners and development agencies.

Rural development often equates with the need to secure new sources of livelihood. Relying on food sources as sources of income is not appropriate and can quickly lead to the over exploitation of the resources. Meanwhile, the introduction of new sources of livelihood has to be carefully planned as any slight alteration in the cost of production will upset the viability of the activity in Gau given all the limiting factors on the island.

Increase partnership will continue to open doors and new opportunities for local community groups. While there is now a proliferation of partners, the community groups need to choose carefully and strategically. Lomani Gau continues to benefit from the input of all its partners whose combined contribution makes the project what it is today.

Lessons Learned

Lomani Gau has provided useful lessons that can be shared with different community groups. There are lessons for those planning to start such a process or for those that need to get to the next stage. These lessons are the reasons why the Lomani Gau approach and processes are being written about repeatedly.

The experience in Gau has illustrated the importance of involving the island as the basis of the study. The island allows for the observation of integrated resources management. It also permitted the use of ecosystem based management as all the coastal villages have land claims that extend from the mountains to the reefs. This customary resource use arrangement helps the people appreciate the reasons why they have to look after their forests and land resources if their sea is to be healthy and productive. Lomani Gau has proven that resource and environment management make economic, cultural

and ecological sense and that it benefit people and communities. In Gau, the people's economic positions were elevated through the assistance and opportunities they were provided with. With better resources, the people were able to fulfill their cultural obligations while the environment was respected and recognized for its importance to people. People finally understood their position within their environment and the responsibilities that come with resource ownership.

Gau is huge and requires the input of a lot of people. Trying to convince people to change is not easy as village people often have established preferences. The project has to instigate changes quickly so was relying on Lomani Gau network members who are advised to be the changes they want to see made. These agents were trained and asked to be persuasive. In the end it was obvious that the agents would not be influencing the desired changes unless they are respected by the people they serve and that they are dedicated. It was also critical that the agents of change themselves must change to demonstrate their points.

Similarly, it was clear that the people will only change if they are convinced the changes they are being asked to make will benefit them. This is sensible because people lives are at stake and they cannot afford to take unacceptable risks. This is why Lomani Gau focused on meeting people's development aspirations particularly if these affect resource use and management. Furthermore, the work on meeting people's development aspiration often is more demanding and takes a longer time to address, which allows the project people to spend more time with the people – time to convince them of the partners' commitment and loyalty to their wellbeing and long term interests.

As in all avenues of human endeavour, good leadership is critical. People can be convinced if the changes they are asked to make are well planned and thought out. Good leaders are important to explain the reasons why people must change and what they should be prepared for. Of all the agents of change a community needs, a leader would be most important to guide and direct the activities,

Community-based projects will be less difficult to implement if government support is secured. Community-based initiatives need support that they do not have so government support is crucial. Otherwise, the initiative will be hindered by the people's lack of capacity to pay. In fact, it is hard to imagine people who do not have money to pay for their project activities. This is why the support from external partners including the NGOs has been so important. Funding for community-based projects are now accessible but a great deal of these groups still require some external partners to assist them secure the necessary funds to undertake their project activities.

Communities-based resources management activities are relatively easy to declare and organize but are a lot more difficult and expensive to monitor and control. All of the villagers in Gau have made resource management decisions including the declaration of more than 16 no-take zones within their customary fishing areas around the island.

Many of the marine managed areas are targeted by poachers who are familiar that these areas will be good for fishing. In many of the communities that have declared their desire to change, their management activities were abandoned because they could not monitor and control them effectively. Ironically, it should not be the responsibility of the poorest of our people to defend their resource management activities.

It is critical that all our success and failures in the area of community-based resources management should be widely shared so that the lessons are made known to others. There is so much to learn and benefits to share if people share their triumph and our losses. Such exchange will allow people to add to the lessons they have learned. In Gau, the enriching resource management experience in Vanuaso Tikina motivated the people in the rest of the island to embrace resource management. Starting small in Vanuaso was smart and logistically prudent. With all the lessons, it is now understood that for the future, local communities will require innovations, good planning and the involvement of all stakeholders. Climate change and sea level rise responses and adaptations have to be appropriate for our people. There cannot be too much of the high-tech and costly solutions but rather those that are cost effective and proven.

Lomani Gau has proven that community-based resource management is effective in engaging people in resource management. Using the communities' resource use traditions and close ties, the people in Gau proved that local communities are better than the government agencies in determining their resource use levels and the effective implementation of management decisions. The issue now is to demonstrate the sustainable development activities they can accomplish given the financial and technical support of their external expert advisers.

References

- Bell, J. , Batty, M. , Ganachaud, A. , Gehrke, P. , Hobday, A. , Hoegh-Guldberg, O. , Johnson, J. , Borgne, R. L. , Lehodey, P. , Lough, J. , Pickering, T. , Pratchett, M. , Sheaves, M. and Waycott, M. , (2010). Preliminary assessment of the effects of climate change on fisheries and aquaculture in the Pacific, *In: Fisheries in the Economics of the Pacific Island Countries and Territories*, Pacific Studies Series, Asian Development Bank, Manila, Philippines, pp. 451-469.
- Bunce, L. and Pomeroy, B. (2003). Socioeconomic Monitoring Guidelines for Coastal Managers in Southeast Asia: SOCMON SEA, World Commission on Protected Areas, Australian Institute of Marine Science, Townsville, Australia.
- Government of the Republic of Fiji, (2012). Republic of Fiji National Climate Change Policy. Suva: SPC.
- Hay, E. J. , Mimura, N. , Campbell, J. , Fifita, S. , Koshy, K. , McLean, F. R. , de Wet, N. , (2009). Climate Variability and Change and Sea-level Rise in the Pacific Islands Region *A Resource Book for Policy and Decision Makers, Educators and other Stakeholders*
- Hughes, T. P. , A. H. Baird, D. R. Bellwood, M. Card, S. R. Connolly, C. Falke, R. Grosberg, O. Hoegh-Guldberg, J. B. C. Jackson, J. Kleypas, J. M. Lough, P. Marshall, M. Nystrom, S.

- R. Palumbi, J. M. Pandolfi, B. Rosen and J. Roughgarden. (2003). Climate change, human impacts and the resilience of coral reefs, *Science* 301: 929-933.
- Hughes, T. P. , M. J. Rodrigues, D. R. Bellwood, D. Ceccarelli, O. Hoegh-Guldberg, L. McCook, N. Moltchanivskyj, M. S. Pratchett, R. S. Steneck and B. Willis. (2007). Phase shifts, herbivory, and the resilience of coral reefs to climate change, *Current Biology* 17: 360-365.
- IPCC, (2007). Climate Change 2007: The Physical Science Basis Summary for Policymakers Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change," Geneva: IPCC Secretariat.
- Institute of Marine Resources, (2010). 'Fiji background dossier', Engaging Scientists and Policy Makers in Fiji, Samoa, Tuvalu and Tonga, Global Change and Coral Reef Management Capacity in the Pacific, Fiji Workshop.
- Kenny, G. , De Wet. N. , Feresi, J. (2000). Scenarios. In Feresi, J. , Kenny, G. , de Wet. N. , Limaievu, L. , Bhusan, J. , & Ratukalou, I. (Eds.). *Climate change vulnerability and adaptation assessment/or Fiji*. Hamilton: The International Global Change Institute (IGCI), University of Waikato. 15 -20 pp. Retrieved from <http://researchcommons.waikato.ac.nz/handle/10289/1569>.
- Lal, P. N. , R. Rita and N. Khatri, (2009). Economic Costs of the 2009 Floods in the Fiji Sugar Belt and Policy Implications. Gland, Switzerland: International Union for Conservation of Nature.
- Lovell, E. R. and Sykes, H. (2008). Fiji report, *In: Status of coral reefs in the Southwest Pacific Node*, Morris, C. (Ed). *Unpublished Report*.
- Malo, M. (2012). Tribe Reunites 135 years on. The Fiji Times ONLINE. Tuesday 14, August.
- Marshall, P. and Scuttenberg, H. (2006). A reef manager's guide to coral bleaching, Great Barrier Reef Marine Park Authority, 163 pp.
- Reddy, M. (2000). Natural Disasters and the Island Economies: an examination of the Economic Costs of Natural Disasters in Fiji. *South Pacific Study* Vol 21 (1).
- Sem, G. (2008). Appraisal mission: managing the impact of climate change on and resources in the Pacific, *Climate Change in the Pacific Islands: Impacts and Scope for Action*, Sustainable Environmental Management Ltd, Auckland, New Zealand.
- South, R. , Veitayaki, J. , Limaievu, L. , Morris, C. and Bala, S. (2011). Global change and coral reef management capacity in the Pacific: engaging scientists and policy makers in Fiji, Samoa, Tuvalu and Tonga, *Scientific Capacity Building and Enhancement for Sustainable Development in Developing Countries*, Asia Pacific Network for Global Change Research.
- Veitayaki, J. (1997). Traditional resource management practices used in the Pacific Islands: An agenda for change. *Ocean and Coastal Management*, 37(1), 123-136.
- Veitayaki, J. (1998). Traditional and community based marine resources management system in Fiji: An *evolving* integrated process. *Coastal Management*, 26 (1), 47-60.
- Veitayaki, J. , (1999). Customary Marine Tenure and the Empowerment of Resource Owners in Fiji, Canberra, ACT: National Centre for Development Studies.
- Veitayaki, J. , (2002) Taking Advantage of Indigenous Knowledge: the Fiji case, *International Social Science*, Issue 173, 2002.

- Veitayaki, J. (2005). Addressing human factors in fisheries development and regulatory processes in Fiji: The Mositi Vanuaso experience. *Ocean Yearbook* 20. Chicago: University of Chicago Press.
- Veitayaki, J., A. Tawake, A. Bogiva, P. Radikedike, S. Meo, N. Ravula, R. Vave and S. P. Fong. (2005). Partnerships and the quest for *effective* community based resource management: Mositi Vanuaso Project, Gau Island, Fiji. *Journal of Pacific Studies*, 28 (2), 328-349.
- Veitayaki, J. (2006). Caring for the *environment* and the mitigation of natural extreme *events* in Vanuaso Tikina, Gau Island, Fiji: A self-help community initiative. *Island Studies Journal* 1 (2), 239-252.
- Veitayaki, J. (2009). Application of indigenous knowledge for disaster risk reduction in the Pacific Islands. In R. Shaw, A. Sharma and Y. Takeuchi (eds.), *Indigenous knowledge and disaster risk reduction* (pp. 241-254). New York: Nova Science Publishers.
- Veitayaki, J. (2010). Pursuing sustainable development on Gau Island, Fiji. In *Sharing innovative experiences. Examples of successful experiences in coastal community development* 16 (pp. 8597). New York: UNDP.
- Veitayaki, J., Manoa, P. and Resture, A. (2007) Addressing Climate Change and Sea Level Rise in the Pacific Islands, Kagoshima University Research Center for the Pacific Islands Occasional Papers, No. 48, pp. 1- 18.
- Veitayaki, J. & Liwaiono, F., Meo, S. & Tawake, A (2008). *Poverty alleviation in Pacific island communities through resource conservation and alternative sources of livelihood*. *Ocean Yearbook* 22. Chicago: University of Chicago Press.
- Veitayaki, J. and L. Sivo. (2010). Using Traditional Knowledge to Address Climate Change: the Fiji Scenario. In K. W. Painemilla, A. B. Rylands, A. Woolter and C. Hughes (eds). *Indigenous People and Conservation From Rights to Resources Management* (235-246). Washington DC: Conservation International.