

**Title**

Reducing the Vulnerability of Coastal Communities in Samoa: A Partnership Approach

**Abstract**

Many Pacific Island coastal communities are highly vulnerable to coastal hazards such as cyclones, tsunami and storm surges. Increasing coastal development and often limited land use planning practices increases these communities' exposure and reduces their capacity to adapt to climate change.

A project undertaken in Samoa attempted to reduce the vulnerability of coastal communities and strengthen institutional and community capability to manage disasters. The project integrated infrastructure mitigation, environmental management and land use planning at the community level with practical disaster management actions. The project also involved private sector organisations in developing the National Disaster Management Plan and integrating national response arrangements into individual organisation's response and crisis management plans.

The project demonstrated how effective partnerships between village, districts and central government, and between public and private organisations, can greatly enhance the sustainability and effectiveness of disaster risk management programmes.

Vulnerable community infrastructure (schools, roads, churches, etc) and practical mitigation solutions were identified through an intensive village level community consultation process. There was a strong focus on better integration of environmental management and land use planning with preparedness and response activities.

Community preparedness measures were incorporated into a comprehensive village infrastructure management and disaster response plan. In a parallel process, community development agencies, government ministries, first responders and utilities (e.g. power, water, telecommunication) worked together to improve a national disaster management structure for Samoa, which included legislation, a National Disaster Management Plan, and consistent and integrated agency response plans. A key focus of the project was increasing the capability of the National Disaster Management Office through the establishment of an emergency operations centre, an emergency communication network, a programme of simulations, mentoring and professional development.

**The Initiative**

The project was a World Bank funded initiative and lead locally by the Planning and Urban Management Agency (PUMA) and National Disaster Management Office (NDMO) of the Ministry of Natural Resources and Environment (MNRE) of the Government of Samoa. The Government of Samoa commissioned Beca International Consultants (Beca) and Kestrel Group, both New Zealand based consultancies, to undertake the project.

The two major integrated streams of work were:

1. Development of a national level policy for the management of coastal infrastructure and local implementation plans (known as Coastal

- Infrastructure Management Plans – CIM Plans) for all Samoa's coastline (approx. 303km).
2. Development of a national level framework (legislation and national plan) for disaster management, institutional strengthening of the National Disaster Management Office and engagement of private sector response agencies in disaster risk management.

Specific outcomes of the project included:

- A Coastal Infrastructure Management Strategy.
- A total of 41 CIM Plans covering the entire coastline of Samoa and which included a prioritised list of mitigation actions assigned to various government departments and local villages for implementation.
- Samoa Disaster and Emergency Management Act (2007).
- Samoa National Disaster Management Plan (2006), which included as part of its development a national risk assessment, gap analysis and a 5-year implementation programme.
- A Disaster Awareness Community Strategy.
- Over 20 individual agency response plans.
- Three national simulations (response exercises).
- Strengthened in-house capability in the areas of community consultation, land-use planning and disaster management.

The CIM Plans also provide a framework for:

- local village land use planning,
- the processing of development consents,
- public:private investment through the identification of specific mitigation and development projects that private investment can support.

The project was completed in two stages:

- Stage 1 (pilot) (2000-2002) covered 15 districts, 92 villages, with approximately 1,000 people directly consulted and resulted in the development of 15 CIM Plans.
- Stage 2 (2005-2007) covered 26 districts, 191 villages, with approximately 5,000 persons directly consulted and resulted in the development of 26 CIM Plans. In addition, 42 organisations participated in the development of the disaster management framework, including the development of individual agency response plans and participation in simulations.

Ongoing work is being undertaken by PUMA and the NDMO which includes:

- Development of statutory land-use plans over the next 10 years with a focus on urban areas such as Apia.
- Extension of the response plan component of the CIM Plans to other hazards such as tsunami and pandemic.
- Identification of villages requiring additional DRM support.

## **Goal and Objectives**

The main goals of the project were:

1. Identify specific actions (in the CIM Plans) that would improve the resilience of local communities to the effects of cyclones, coastal erosion, inundation and landslips.
2. Strengthen the disaster management capacity and capability of the country.

### **Outcomes and Activities**

Coastal state of the environment reporting was undertaken for the entire 303km coastline. This base line information along with historical data on cyclones and coastline locations formed the basis of hazard mapping (including the identification of coastal erosion, flooding and landslide areas) for the CIM Plan project. Aerial photography was used as a digital GIS base for plan development and on-going data capture/management.

The CIM Plans provide a description of the existing environment; identify and assess the resilience of existing infrastructure (roads, electricity, power, water supply, churches, schools, airports, hospitals etc) against coastal hazards and provide potential solutions and ways to reduce susceptibility to coastal hazards (cyclones, flooding, erosion etc).

Actions are assigned to various government departments and local villages to implement. The CIM Plans were formally signed by Village representatives, the Ministry of Natural Resources and Environment and the Government (Minister). This cemented the partnership between the key participants to implement each Plan's provisions and signified an acknowledgement by each party of the roles and responsibilities of the other. An additional incentive is that completion of a CIM Plan by a village is a requirement for access to government funds for village mitigation projects.

At the same time, community preparedness, response and immediate recovery measures (for cyclones) were discussed with the villages and incorporated into the CIM Plan. The villagers did not see any separation between risk reduction and response and wanted a conversation about all aspects of disaster management.

In a parallel process, community development agencies, government ministries, first responders and utilities (e.g. power, water, telecommunication) participated in a series of workshops and simulations designed to increase understanding of the national response arrangements and the roles and responsibilities of various agencies in an emergency. The process resulted in increased levels of inter-agency cooperation and understanding of how agencies are dependent on each other (in terms of services; resources; skills) to respond to and recover from a disaster. Agencies were encouraged to improve or develop their own response plans and this resulted in a greater appreciation of the importance of business continuity management as a key component in an individual agency's disaster resilience. The Ministry of Natural Resources and Environment awarded a certificate to all agencies who participated in the programme.

### **The Good Practice**

The elements of good practice in this project are:

- Recognition up front of the importance of partnerships and meaningful consultation:
  - Identifies what the government can and will do and what villages and private agencies can and will do – mutually supportive roles and consensus decision making.
  - A partnership approach creates better ownership of risk by the wider community and acceptance of responsibility for managing risk.
- Meaningful implementation:
  - A CIM Plan is required to secure access to Government small projects fund and used to support land use decision making.
  - CIM Plans are used to prioritise villages for additional DRM support.
- Recognition that sustainable management requires DRM as a component:
  - Integration of land use planning as a component of risk reduction, with preparedness, response and recovery.
- The integration of village based local planning within a framework provided by a national policy document (both for environmental management and disaster management)
  - This leads to consistent messages, increased village ownership of risk and better support across national, district and village levels.

Key success factors have been:

- Style of consultation.
  - The significant national scale and method of consultation involved in developing the CIM Plans was highly creative and innovative. The scale of consultation was very substantial with approximately 6,000 people, representing around 8% of total adult population of country, being directly involved in developing the 41 District CIM Plans. The project involved almost 300 Village meetings, each lasting most of a day and 120 plus District meetings, of approximately a half day duration each. In order to undertake such extensive consultation a large number of personnel were deployed from both the Consultants staff and Ministries of the Government of Samoa staff. Staff training in consultation was an important part of the project. Approximately 40 persons were directly involved, from the Ministry of Natural Resources and the Environment (PUMA, Mapping, Survey, Meteorology, Disaster Management Divisions) and the Ministry of Women, Community & Social Development. The Government of Samoa now has a substantial developed capacity to maintain and update the CIM Plans.
  - Until recently (Planning and Urban Management Act (2004)), consultation by the government with local villages was not common. In the past infrastructure (roads, seawalls, schools etc) had been established without direct consultation or comment by landowners. The CIM Plan project involved a systematic and coordinated approach using the village Pulunu'u (mayor) to coordinate village meetings. The project team adopted a conventional New Zealand style consultation process adapted to reflect the particular social and political structure prevailing in Samoa. These included the concepts of "fa'a Matai" and "fa'a Samoa" which loosely translated are "the way of the matai'i (chief)" and "the way of Samoa". Both concepts relate to the traditional model of community decision making by consensus under the leadership of the Matai'i.

- Another creative addition to the consultation methodology instigated in Stage 2, was the departure from the traditional meeting involving matai, high chiefs, and orators only, to invite women and ali'i (untitled youths) to participate. The Samoan culture has a hierarchy where everyone has a clearly defined position and role in society. It is highly unusual to include the latter groups in formal village consultation. To facilitate discussions (because women and youths aren't typically allowed to speak if they don't have a matai title) smaller groupings of matai, orators, and mixed groups of women and youths were created. In a further development, a village representative committee was established with a matai, an untitled youth; a women's representative and the pulunu'u which attended district meetings. Meetings were conducted in Samoan so a basic understanding of the language was required. District level meetings were also held to address cross boundary risks and management issues.
- National frameworks, support and commitment at government level. These have been important to ensure sustainability, build trust and give credibility to the partnerships.
- Innovative use of materials – aerial photo based hazard maps which were developed in a way that lay people could understand them, including being developed in Samoan (and English), being shown at a large scale with landmarks clearly identified.

## **Lessons Learned**

Key lessons learned:

- The importance of integrating DRM into environmental management,
- The value of a partnership approach,
- The value of consensus decision making and a grass roots approach to consultation,
- The importance of a commitment from government and national policy and frameworks in place or being developed concurrently to support implementation.

Major challenges:

- Scale of consultation (managed with careful planning),
- Keeping all agencies motivated and engaged throughout the process (managed through incentives, a focus on building relationships and demonstrating the value of the process from a business perspective).

## **Potential for Replication**

This initiative should be able to be replicated relatively easily elsewhere.

While this project covered all of Samoa's coastline (and therefore the majority of the country's rural villages), the scale and context could be modified for:

- A more rural/urban mix of villages
- Inland villages as well as coastal (depending on the hazard context)
- Different hazards
- Climate change adaptation

Specific adaptations would need to be taken into account:

- The consultation style would need to be adapted to the culture and traditions of the country or area concerned
- The style and structure of the CIM Plan may differ depending on the land-use planning framework in place. In Samoa, statutory landuse planning was in its infancy and the CIM Plans will form the basis for assisting with land-use planning over the next 10 years.
- The long term success (sustainability) of the benefits of undertaking the project will rely on national policy and frameworks being in place, or being developed as part of the project.
- Some basic hazard mapping, preferably on a GIS platform, for some or all of the areas concerned would be needed – this can be built in to the project as it was in Samoa.

### **Contact Information**

Ms. Filomena Nelson  
Principal Disaster Management Officer, NDMO, MNRE,  
Government of Samoa  
E-mail: [filomena.nelson@mnre.gov.ws](mailto:filomena.nelson@mnre.gov.ws)

Mr. Graeme Roberts  
Beca International Consultants Ltd  
General Manager  
E-mail: [Graeme.roberts@beca.com](mailto:Graeme.roberts@beca.com)

Ms. Michele Daly  
Kestrel Group Ltd  
Director  
E-mail: [md@kestrel.co.nz](mailto:md@kestrel.co.nz)