

# OUR ENVIRONMENT OUR HERITAGE

## Samoa updates Climate Risk Profile under SNC (Second National Communication)

Under the SNC project approved in January 2006, Samoa will update its Initial National Communication (INC) (submitted in 1999) and also work toward incorporating initiatives, measures and strategies to reduce vulnerability to climate change into the national development process.

The SNC is being implemented through the Ministry of Natural Resources and Environment (MNRE). From February 19-March this year, the MNRE collaborated with a regional consultant to deliver advanced training to V&A (Vulnerability and Adaptation) sectoral experts to assist them with the skills required to prepare high-quality V&A reports. Part of this process included updating Samoa's Climate Risk Profile (CRP), which assesses the current and future climate risks for Samoa.

**Two key messages about Samoa's CRP can be highlighted:**

**1. Samoa's climate is already changing:** Based on observed data (see table below), an extreme event of daily rainfall of 200mm was an 11-year event for the period 1960-1979. This same extreme event now has a return period of three years. (A return period is the average number of years between a given extreme event.) Similar trends have been shown for other extreme events, such as extreme maximum temperatures, sea-level rise, and droughts, which clearly indicates that Samoa's climate is undergoing significant changes.

**2. Samoa's climate will continue to change:** Based on recorded data and global climate models, projections show Samoa's climate will continue to change, taking into account a certain degree of uncertainty.

### Experience gained from SNC V&A activities

An integrated, inter-sectoral approach was achieved by combining the diverse talents of individuals and multi-ministry and multi-agency teams. There was a high level of commitment from sectoral experts, teams, ministries and agencies. Drafts of the sectoral reports have been completed and Samoa is well advanced to delivering a comprehensive V&A assessment. The assessment followed IPCC, UNFCCC and Pacific community-based V&A methodologies. These were adapted for Samoa using a risk-based approach, where appropriate, to facilitate a strong link between impacts and adaptation. Assessments were grounded in up-to-date, factual, and often quantitative information and built upon a considerable body of existing information rather than starting from scratch.

Samoa has learned from this experience that good vision, planning and preparation, and leadership - overall and in sectoral teams - is critical, as is continuity of participation, commitment and cooperation by team members. Support from organisations and superiors, and sectoral and climate experts, is also needed, along with relevant, reliable information and flexible, adaptable procedures. Not all sectors may be willing to engage in inter-sectoral studies and information management practices may need strengthening in order for inter-sectoral efforts to be successful.

**Table 1: Observed data for Samoa comparing changes in return periods for extreme daily rainfall events for the periods 1960-1979 and 1980-2006**

Daily Rainfall of at least (mm)	1960 – 1979	1980 – 2006
200	11.6	3
250	60	5.5
300	318	10
350	1700	21

(Young, W (2007) Climate Risk Profile)

**Gaps and uncertainties remain. For example, Samoa has insufficient information to describe the baseline (i.e., current) conditions as well as incomplete information on:**

- Future climate at specific locations and for relevant variables;
- Future economic, social, cultural and environmental changes;
- Future impacts of climate change; and
- Adaptation measures that will reduce adverse impacts.

**Based on Samoa's experiences to date, the following recommendations can be shared with teams carrying out V&A studies:**

- Build on traditional knowledge and practices, existing coping mechanisms, and existing information to identify consequences of current climate variability and extremes.
- Develop simple models to illustrate impacts of climate change on key sector components and assess effectiveness of adaptation measures.
- Fill gaps (e.g., lack of representation from key sectors such as tourism) and reduce uncertainties through improved access to information.
- Most importantly, encourage and improve the involvement of NGOs, the private sector and community stakeholders, and institutionalise the technical base of the national climate change team through the use of sectoral team leaders.



(This article first appeared in the National Communication Support Programme Newsletter Edition 6 April 2007. By Anne Rasmussen Principal Climate Change Officer - MNRE)



### Impacts of Climate Change:

Climate Change has the ability to adversely affect society and the environment. Limits placed on natural resources caused by the impacts of climate change are most acutely felt in small island states such as Samoa.

### Key impacts of climate change are:

Sea Level Rise due to the thermal expansion of the upper layers of ocean is expected to place great stress on coastal ecosystems. Shorelines will undergo erosion and coastal areas will be more prone to flooding which can effect habitation, water supply, agriculture, forestry

and suitable energy.

Extreme weather events such as cyclones, wind damage, storm waves, heavy rains and floodings are likely to increase in frequency and intensity with climate change.

Industry and human settlement concentrated along the coast, especially in areas where the sea is a major source of income through fishing, tourism and transport, will be most vulnerable to sea level rise as a result of climate change.

Human health - higher temperatures may lead to a higher incidence of hear and respiratory disease and rises in mortality due to heat stress. Warmer conditions can also increase the population of disease carrying organisms, such as mosquitoes, and hence cause a rise in vector and water borne diseases.

Agriculture - crop yields and productivity will be affected due to changes in rainfall patterns and the proliferation of plant pests and insects from warmer and wetter conditions.

Tourism - Beaches are key attractions for the tourism industry in Samoa. Change in climate may lead to: the loss of beach due to erosion and inundation, salt water untursion which would affect freshwater supplies; increased strain on coastal ecosystems; and damage to infrastructure from tropical storms.

Loss of habitat can affect the plant and animal life and damage the overall biodiversity of Samoa.

### The Climate System:

The term 'climate' refers to the long-term pattern of weather which is observed at a particular area. Although climate changes frequently, the annual pattern of weather in a specific location is relatively constant over time. The global climate system is a complex and interactive network of natural physical processes which are influenced by the interactions of solar energy, the Earth's surface and the atmosphere.



**For more information contact our Meteorology Division - Climate Change Section ph# - 20855 / 20856**



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## Children's Corner



Children aged 9-15 are invited to answer the following corner. The name of 3 students with top scores at the end of every month will be posted under the "Children's Corner" for special prizes. "Children's Environment Awareness 2007 Awards will be given to 10 students with top total scores at the end of the year.

### PLURAL FORM

Write the plural form of the words below

- measure \_\_\_\_\_
- strategy \_\_\_\_\_
- initiative \_\_\_\_\_
- vulnerability \_\_\_\_\_
- skill \_\_\_\_\_
- activity \_\_\_\_\_
- resource \_\_\_\_\_
- assess \_\_\_\_\_
- country \_\_\_\_\_
- current \_\_\_\_\_



The term 'climate' refers to.....

### ACRONYMS

State the long form for the following acronyms:

- SNC \_\_\_\_\_
- INC \_\_\_\_\_
- CRP \_\_\_\_\_

### FILL IN THE GAPS

Samoa's \_\_\_\_\_ will continue to change: Based on recorded \_\_\_\_\_ and global climate models, projections show Samoa's climate will \_\_\_\_\_ to change, taking into account a certain \_\_\_\_\_ of uncertainty.

Climate Change has the ability to.....

Although climate changes \_\_\_\_\_, the annual pattern of weather in a specific \_\_\_\_\_ is relatively constant over time.

Extreme weather events such as cyclones.....

## ACKNOWLEDGEMENTS

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- Business System Ltd
- West End Company Ltd
- McDonald's Family Restaurant

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