

# CLIMATE CHANGE MATTERS

Issue 3 — July 2012

PHOTO: Funafuti, Tuvalu © L. McPake

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"The Pacific Environment—sustaining our livelihoods and natural heritage in harmony with our cultures"



**SPREP**  
Secretariat of the Pacific Regional  
Environment Programme

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## Director's Note



*Dr Netatua Pelesikoti,  
Climate Change Division Director  
SPREP*

Dear Readers

Welcome to *Climate Change Matters!*

In spite of their geographical and cultural diversity, the 22 small island countries and territories of the Pacific share similar economic and sustainable development challenges, including low availability of resources (with the exception of the larger Melanesian countries); a small but rapidly growing urban population; remoteness; susceptibility to natural disasters; excessive dependence on international trade; and vulnerability to global developments.

PICTs also have to contend with a lack of economies of scale; high transportation and communication costs; and costly public administration and infrastructure.

The climate of small island states is influenced by large ocean-atmosphere

interactions such as trade winds, El Niño and the monsoons. Tropical cyclones and hurricanes are also important components of the climate, as is sea-level rise.

These climate characteristics, combined with their particular socio-economic situations, make PICTs, among which are five Least Developed Countries, some of the most vulnerable countries in the world to climate change. This is despite the fact that PICTs produce such extremely low levels of greenhouse gas emissions.

Climate Change has influenced and changed the large 'drivers' of climate, worsening our existing vulnerability.

I hope you will enjoy reading this edition of *Climate Change Matters* with summary highlights of how SPREP support its members to respond to climate change.

## About Us

SPREP's Climate Change Division (CCD) is made up of three programmes:

- (1) Adaptation;
- (2) Mitigation; and
- (3) Policy and Science.

The work of the CCD is directed by the SPREP Strategic Plan 2011-2015 based on the climate change priorities of SPREP Members and consistent with the *Pacific Islands Framework for Action on Climate Change 2006-2015* (PIFACC) and other relevant and approved policy drivers such as the Pacific Plan and the Framework for Action on Disaster Risk Management.

SPREP's three (broad) climate change strategic priorities for 2011-2015 are:

1. Implementing adaptation measures;
2. Improving members' capacity, knowledge and understanding of climate change, and risk reduction; and contributing to global greenhouse gas reduction
3. Contributing to global greenhouse gas reduction

For more information visit our website at <http://www.sprep.org/Climate-Change/climate-change-about-us>

## Solomon Islands new Climate Change Policy to aid national efforts

30 June 2012



Stakeholders at the National Climate Change Policy Launch, Honiara, Solomon Is.

Click on link to view [Solomon Islands Climate Change Policy 2012—2017](#)

For more information, contact PACC Solomon Is Coordinator  
Mr Casper Supa at [ckasie@gmail.com](mailto:ckasie@gmail.com)

Solomon Islands reflected its response to the challenges of climate change during its recent launch of the country's National Climate Change Policy 2012 – 2017.

The launch held on the 29<sup>th</sup> of June 2012 was a historic one for the country and a significant achievement for the Pacific Adaptation to Climate Change Project, as the policy formulates a more national approach toward addressing the impacts of climate change and achieving sustainable development.

Solomon Islands Prime Minister Hon. Mr Gordon Darcy Lilo said that the policy demonstrates to the world that the national Government and the people intends to be more pro active, strategic and are taking ownership of planning and implementing adaptation, risk reduction and mitigation actions. [View full article](#)

## Water Resource Bylaw—Empowering Communities to Save Resources

30 June 2012



Ministry of Natural Resources and Environment at a community consultation on the Bylaw in Tafitoala

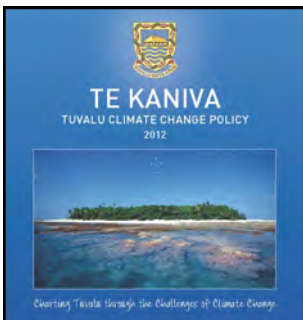
A Water Resource Bylaw is now in place for the small community of Tafitoala in Samoa as part of the Integrated Coastal Management approach established under the Pacific Adaptation to Climate Change Project.

The Bylaw is one of the provisions within the Water Resource Management Act 2008 and is taking on a Ridge-to-Reef approach to manage environment resources from the mountain ridges all the way down to the reef, recognising that land-based activities have a significant impact on our coastal and marine resources. [View full article](#)

For more information, contact PACC Samoa Coordinator Ms Moira Faletutulu at [moira.faletutulu@mnre.gov.ws](mailto:moira.faletutulu@mnre.gov.ws)

## Climate Change Policy and Action Plan for Climate Change and Disaster Risk Management for Tuvalu

30 June 2012



The Government of Tuvalu has recently endorsed its National Climate Change Policy (NCCP) and National Strategic Action Plan for Climate Change and Disaster Risk Management (NSAP). The policy and action plan have been developed to help small island nations like Tuvalu to clearly identify strategic priorities, roles and responsibilities to reducing the country's vulnerability to climate change and disaster risks and impacts. Both policies contribute to the implementation of the goals of the Te Kakeega II (Tuvalu's National Development Plan) specifically with addressing climate change and disaster risks of national development. [View full article](#)

For more information, contact PACC Tuvalu Coordinator Ms Loia Tausi at [jesekielu@yahoo.com](mailto:jesekielu@yahoo.com)

The PACC Project consists of 14 member countries; it is implemented by the United Nations Development Programme (UNDP) in partnership with the Secretariat of the Pacific Regional Environment Programme (SPREP). It is funded by the Global Environment Facility (GEF) and the Australian Agency for International Development with support from United Nations Institute for Training and Research (UNITAR) Climate Change Capacity Development (C3D+) Programme.



## Feasibility Study—Could Coconut Oil be a solution to Kiribati Island's Energy Security Problem?

23 June 2012

Socio-economic development in Kiribati is being bogged down by the country's limited natural resources; minimal potential for economies of scale due to its very small market size; and the sparsely populated remote island settlements. With such a negative scenario, Kiribati's power and transport sectors are seriously affected.

The high costs of fuel supply in small scale operations are effectively being translated to high costs shouldered by domestic end-users, and it would be safe to say that this could be the reason for Kiribati imposing the highest electricity tariffs in the world.

Kiribati's energy security is vulnerable to volatile world oil prices and if there is a global energy crisis, Kiribati is highly likely to be one of the first to be cut off from the oil supply chain.

Energy is crucial for economic development in any state, regardless of size. With the identified barriers to

economic advancement, the question remains as to whether there are options to enhance Kiribati's energy security. This needs investigation into the economic and technical viability of the only natural resource available in Kiribati that can substitute fossil fuel - coconut oil (CNO).

The Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP) had commissioned a feasibility study in late 2011 and early 2012 into the use of coconut oil to substitute fossil fuel in Kiribati Island (Line Islands in the far east of Kiribati) for power generation and transportation.

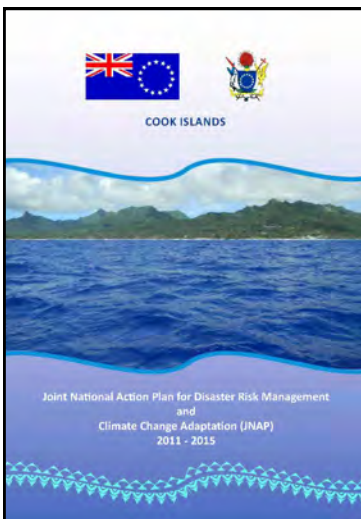
This feasibility study, conducted by Gehard Zieroth, concluded that CNO is technically, economically, socially, institutionally and environmentally feasible, hence could address the energy security issues of Kiribati Island and the whole of Kiribati.

[Click here to view full report](#)

For more information, contact PIGGAREP Mr Nixon Kua at [nixonk@sprep.org](mailto:nixonk@sprep.org)

## Cook Islands completes its Joint National Action Plan

20th June 2012



A coordinated effort by the climate change and disaster risk management community has resulted in a Joint National Action Plan (JNAP) to pool together human and financial resources and address issues relating to climate change and natural disasters in the Cook Islands.

With its development and collective well being under threat, the country recognises the

need to reduce its vulnerability and strengthen its collective resilience.

Cook Islands Prime Minister, Hon. Henry Puna, said that the JNAP will bring greater focus and coordination to their efforts in disaster management and disaster risk reduction, including climate change adaptation.

The Joint National Action Plan for Disaster Risk Management and Climate Change Adaptation 2011–2015 completed in January this year will add to the strategic suite of other sectoral plans and policies that help guide the country's own internal development resourcing mechanisms as well as those provided by donors.

"It is a medium term plan and over time we hope that the implementation of the JNAP will bring about a

change in our attitude and behaviour to disasters and indeed to development," said Hon. Henry Puna.

"Disasters are an inevitable part of our lives and we must all work together to ensure that we do what we can to reduce the risks so that we can become a 'safe, secure and resilient community' in accordance with our national aspirations."

A challenge faced was bringing disaster risk management and climate change adaptation to the forefront of national planning.

According to Director of Emergency Management Cook Islands (EMCI), Mr Charles Carlson, what was required was a drastic mind shift away from waiting until a disaster happens and acting retrospectively, to becoming proactive in doing what was needed to prevent natural and manmade hazards from becoming disasters.

"If total prevention is not possible, our actions will at least serve to reduce the impact of a disaster if it does happen."

EMCI, with Climate Change Cook Islands and the Central Policy and Planning Unit in the Office of the Prime Minister, will continue to ensure the right policies, legislation, plans and structures are in place to deal efficiently with any national emergency or disaster, including those exacerbated by climate change.

The Cook Islands JNAP was developed in collaboration with the Office of the Prime Minister, Disaster Management Cook Islands, and National Environment Service with regional support from the Pacific Islands Geosciences of Applied Sciences of the Secretariat of the Pacific Community, United Nations Development Programme and the Secretariat of the Pacific Regional Environment Programme.

For more information, contact Climate Change Adaptation Adviser Ms Diane McFadzien at [dianem@sprep.org](mailto:dianem@sprep.org)

## Robots that 'phone home' to be deployed near Kiribati as part of ocean research

23 June 2012



Thirteen ocean robots are being dropped into the waters over the equator near Kiribati to monitor the ocean there. The latest, high-tech versions of the Argo float, an automatic ocean sensing robot, will help scientists monitor and understand the ocean processes behind El Niño and La Niña events.

The latest generation of Argo floats is upgraded with satellite phones, which allow the data to be transmitted back to shore in minutes, compared with older versions which took hours.

Argo floats are named after the ship that Jason sailed to capture the Golden Fleece in Greek mythology. They collect temperature and salinity data between 2000 metres (6000 feet) depth and the ocean surface and send these data back to land ([www.argo.net](http://www.argo.net)).

[View full article](#)

For more information, contact PIGOOS Officer, Mr Philip Wiles at [philipw@sprep.org](mailto:philipw@sprep.org)

## Samoa hosts Tropical Cyclone Committee biennial meet

30 June 2012



*Severe tropical cyclone YASI seen intensifying over the Coral Sea on 1 February 2011; Yasi will likely be one of the names retired at the coming WMO RA V TCC Meeting in Samoa.*

A meeting that will continue to refine the Tropical Cyclone Warning System currently in place will be hosted by the Government of Samoa, from 16 - 20 July in Apia. Secretariat of the Pacific Regional Environment Programme (SPREP) Meteorology and Climate Adviser Mr Neville Koop said one of the most interesting aspects of the meeting will be reviewing past cyclone events and where appropriate retiring the names of particularly destructive tropical cyclones. [View full article](#)

For more information, contact Meteorology / Climatology Adviser Mr Neville Koop at [nevillek@sprep.org](mailto:nevillek@sprep.org)

## Auvae optimistic about meteorology training

By Maccarios Auvae



I'm Maccarios Auvae, a Scientific Officer for the Weather and Forecasting Division at the Ministry of Natural Resources and Environment in Samoa.

I am currently part of the twelve-month training on Meteorology at the Regional Training Centre for Region V (five) and the Southwest Pacific in the Philippines.

The training is being funded by the Philippines Atmospheric Geophysical Astronomical Services Administration (PAGASA) in cooperation with the World Meteorological Organization (WMO) and the University of the Philippines (UP).

The main objective of the training is to increase trainees' knowledge on weather patterns and enhance their forecasting ability, specifically in the Asia Pacific Regions.

The training syllabus is within WMO standards, policies and operating procedures. The meteorology instruments and facilities used are all calibrated, maintained and standardized in accordance with WMO guidance and procedures. We are optimistic about the quality and level of this training. After successfully

completing this training we should be in better positions to address some of the issues relating to weather and forecasting in our respective countries, as we are confident much of the knowledge gained will be used to cater to these needs.

This also is an opportunity for international participants to share their knowledge and technology skills.

In the light of climate change issues we recommend a continuation of studies and training for my colleagues who have yet to participate in this training.

Participants were from the Philippines, Papua New Guinea, Vanuatu, Kiribati, Brunei and Samoa.



For more information on the training, contact the WMO Programme Officer, Mr Henry Taiki at [henryt@sprep.org](mailto:henryt@sprep.org)

## New Climate Change Evidence

The latest research published in Nature Climate Change shows more evidence of anthropogenic climate change.

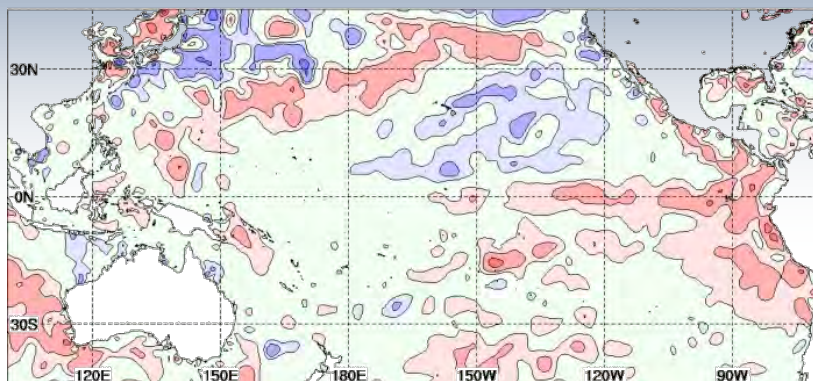
The ocean absorbs 90% of the additional heat from global warming and, when viewed on a large enough scale, the fluctuations of sea surface temperatures due to natural causes are shown to be less significant (than when using meteorological records alone). The most comprehensive study of ocean data so far shows that the ocean is indeed warming, and at a rate that far exceeds any change due to natural causes.

Link: <http://www.nature.com/nclimate/journal/v2/n7/pdf/nclimate1553.pdf>

As a note, the ocean warming and expansion accounts for about 44% of sea level rise (glaciers and land-based ice melting into the ocean accounts for about 39%).

# Weather Outlook for July

SSTA 1.0x1.0 NMOC OCEAN ANOMALIES (C) 20120611 20120617



*Sea Surface Temperature (SST) anomalies for the Pacific Ocean from the week between 11th and 17th June 2012; Image Courtesy Australian Bureau of Meteorology*

Clear and unambiguous observational data across the region indicate a significant El Niño event is developing across the tropical Pacific. Sea surface temperatures (SSTs) over the tropical Pacific Ocean have warmed by about a half degree Celsius (0.5C) in the past month alone with further warming expected through the southern hemisphere winter. Climate indices have now moved from values within the threshold of "neutral" into El Niño range.

Climate scientists refer to the El Niño and Southern Oscillation (ENSO) phenomena, recognising that this climate pattern is a coupled ocean and atmosphere event. Within the atmosphere, El Niño is quantified using the Southern Oscillation Index (SOI). The SOI has continued to fall steadily over the past two weeks. The latest (1 July) 30-day SOI value is -11.8, within values indicative of an El Niño. Values of between about +8 and -8 generally indicate neutral conditions while sustained negative values of the SOI below -8 typically indicate an El Niño event. The SOI is a measure of relative air pressure, comparing current conditions at Tahiti and Darwin against long term averages. Air pressure rises over Darwin and falls over Tahiti during El Niño events.

Within the oceanic component of ENSO, we have also seen SSTs in the NINO3.4 region (located along the equator in the central

Pacific Ocean east of the date line north of the Cook Islands) continue to rise with the latest value almost 1°C above normal. Likewise, further east in the NINO3 region, SSTs have also risen, and are nearly 1.5°C above normal. The SST anomaly chart for June 2012 (attached) shows the difference between current SST values and long term average SST. The western Pacific remains close to average; however the tongue of warmer than normal water (red shaded area) extending west from the South America coast is very much what would be seen in a developing El Niño event. Much of this region is experiencing SST over a degree above average. Sustained warm anomalies exceeding 1°C typically are associated with El Niño conditions.

Climate models indicate that the equatorial Pacific Ocean will continue to warm, with the majority of models indicating El Niño conditions will become firmly established by the end of winter. Some models still show a large spread in values, indicating uncertainty in the degree of warming that will occur in the tropical Pacific in coming months. It is likely that the spread in the models will decrease in coming months as we move into late winter and the warming trend becomes more well-defined.

El Niño conditions are generally associated with dry weather across the western and central Pacific either side of the equator. Rainfall is likely to stay close to average through the rest of winter and the first part of spring. Decreasing rain can be expected in the last quarter of 2012 and the first half of 2013. Drought conditions are most commonly observed during El Niño events in the western Pacific region. The risk of tropical cyclones, especially strong tropical cyclones, increases during El Niño years for island countries near and east of the date line. For countries such as PNG, Solomon Islands and Vanuatu the risk of cyclones is decreased.

## Upcoming Events

Event	Location	Date
Strengthening the Resilience of our Island Communities to Climate Change Inception Workshop	Cook Islands	2—6 July
Global Environment Facility Extended Constituency Meeting	Cook Islands	10—12 July
Pacific Adaptation to Climate Change Project Mid Term Review	-	8—22 July
Regional Workshop on Effective Tsunami Disaster Reduction Implementation Progress in Pacific Island Countries and PTWC Proposed Enhanced Products	Apia, Samoa	12—13 July
Third Meeting of the ICG/PTWS Regional Working Group on Tsunami Warning and Mitigation in the South-West Pacific Region	Apia, Samoa	14 July
Fourteenth session of Regional Association Five (South-West Pacific) Tropical Cyclone Committee for the South Pacific and South-East Indian Ocean	Apia, Samoa	16—20 July
Training on project management finance procedures for the USAID funded Pacific Adaptation to Climate Change Project	Suva, Fiji	23—25 June
Climate Change Mainstreaming Guide Workshop	Apia, Samoa	30—31 July
Pacific Plan and Smaller Island States Meetings	Fiji	30 July—01 August