THE PACIFIC AGRICULTURAL AND FORESTRY POLICY NETWORK NEWSLETTER

PAFPNet NEWS

November 2010

The Pacific Agricultural and Forestry Policy Network (PAFPNet) is a regional network that connects government policy-makers, non-governmental organisations, journalists and individuals in the Pacific with an interest in agriculture and forestry policy development.

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PAFPNet NEWS

Contents

Climate change, and its predicted effects on the agriculture and forestry sector, has generated a lot of discussion among PAFPNet members over recent months. This issue of PAFPNet News brings you a number of articles on the topic.

Uprooted tree along the coast of the Eastern Coast of Tongatapu

Climate change doesn't care, so we have to

In the course of human history, nature is the predominant force that controlled most of its development. The forces of nature continue to be a powerful influence today but this time it is human actions that are creating most of these new weather patterns. Every region of the world feels the impacts of climate change with some diverse and some similar effects. In Tonga the effects are both devastating and costly to its people and other species that depends upon the environment.

According to the Joint National Action Plan on Climate Change Adaptation and Disaster Risk Management 2010-2015, agricultural production is still the predominant contributor to the Tongan economy. But the effects of climate change in Tonga which includes rising temperature, changes in rainfall patterns, higher occurrences of heavy rainfall, rising sea level and an increased intensity of tropical cyclones threaten the ability of agriculture to continue to play this role.

This is because these various effects combine to cause problems such as soil erosion, destruction of crops, loss of soil moisture, increased soil salinity, pollution of low lying areas leading to a reduction of suitability of land for agricultural purposes. When the capacity for farming is reduced food security is also at stake.

The forestry sector is another susceptible sector. Coastal plants that are protecting the shores will be more prone to uproot due to the increasing intensity of cyclones.

Every sector of the community is vulnerable to climate change. Adjustments must be made and have been made to address these serious problems. These include replanting schemes and an intensification of education to not only heightens the awareness of people but also to implement a feeling of responsibility in younger generations because they need to be equipped with the skills to tackle these problems in the future.

By Siaila Jagroop, Tonga National Youth Congress

Climate change not the only threat to agricultural productivity

Climate change is often considered the main culprit behind many environmental problems, including poor agricultural productivity, but there are other clearly identifiable, non-climate change factors contributing to low agricultural yields. These often interact with each other so that climate change exacerbates existing problems, but this should not obscure the underlying issues. Adapting to climate change impacts will be even harder if we have not got the basics in terms of good soil, land and agricultural management practices right first.

> 'Adapting to climate change impacts will be even harder if we have not got the basics in terms of good soil, land and agricultural management practices right first.'

In a presentation made at the recent regional meeting of the Heads of Agriculture and Forestry Services (HOAFS) in Nadi, Dr Halavatau (Crop Production Adviser at the Secretariat of the Pacific Community) highlighted soil degradation as a key factor contributing to low agricultural productivity. Another factor is unsustainable farming practices — such as hillside farming — causing soil erosion and loss of top soil. Degraded soils in poor condition lack nutrients and starve plants of proper food, resulting in poor crop yields.

Pests and diseases also have a negative impact on agricultural productivity. In the Pacific, the management of pests and diseases is a major challenge to agriculture. The demise of the Samoa taro industry in the mid-1990s was caused by an introduced fungal disease; in Fiji, taro beetle damage accounts for up to 40% of post-harvest losses of export taro; on Butaritari Atoll in Kiribati, a breadfruit anthracnose disease is affecting the yield of this important staple food crop; and, on some Pacific Islands, kava dieback disease has severely reduced kava production.

Dr Halavatau said that a loss of biodiversity and erosion of traditional knowledge in food production, preparation and preservation also contribute to declining productivity, and occur when we select only a few varieties of food crops, thereby diminishing the genetic base and broader productivity.

Dr Halavatau also discussed some proven sustainable practices that can help counter decreasing land productivity and at the same time build resilience to future climate change impacts. He gave contour farming as an example of a recommended farming practice for steep land agriculture. The contour planting of vetiver grass on hillsides prevents soil erosion and maintains the top soil. Sustainable farming practices, including contour farming, contribute to maintaining productivity from sloping lands.

Agricultural productivity is also affected by crop varieties. High yielding and adaptable varieties of sweet potato, taro, banana and cassava are now available to the region from the Centre for Pacific Agriculture Crops and Trees. Some of these varieties have been distributed to atolls and larger islands to evaluate their effectiveness under varying growing conditions.

Water availability is critical to plant growth, and to land productivity. Water can now be managed in ways to improve its availability to plants. For example, the bucket irrigation system, developed under the Development of Sustainable Agriculture in the Pacific Project, conserves water and distributes it directly to plants. Bucket irrigation is recommended practice for dryland areas. There are also available natural, absorbent media that double in size when water is added, allowing more water to become available to plants.

Maintaining the integrity of the soil is essential to obtaining good crop yields. Using natural plant-derived pesticides to control pests also contributes to improving the condition of the soil. Derris, *neem* extract and chili can be sprayed on food crops to repel insect pests, and

aromatic plants grown around crops also helps to repel insects. The use of organic pesticides in farming is beneficial to the soil's diversity of microbes.

Activities that specifically address declining agricultural productivity on atolls are the focus of the efforts of the Centre of Excellence for Atoll Agriculture Research and Development in South Tarawa, Kiribati. The Centre hopes to attract more researchers from the region and, in partnership with the international community, conduct studies on atoll agriculture. An atoll agricultural conference held at the Centre in April 2010 drew an international audience of researchers and donor partners to map the way forward for atoll agriculture. The conference communiqué acknowledged the special challenges faced by atolls, including poor soils, climate change and rising sea level, and it advocated an integrated, multi-sectoral approach. Special mention was made of traditional agricultural knowledge and practices to help improve resilience to these environmental changes. The conference was supported by the International Fund for Agricultural Development, the UN Food and Agriculture Organization and SPC. Key development partners included the University of the South Pacific, the Taiwan Technical Mission, the World Vegetable Centre, and the UN Development Programme.

For more information on atoll agriculture, please contact Dr Siosiua Halavatau: *SiosiuaH@spc.int* or *lrdhelpdesk@spc.int*.

Message posted in response to the previous article circulated via PAFPNet from Grahame Jackson

It was very good to read this paper by Siosiua presented to the HOAFS in September, 2010. At a glance we can see all the important factors that interact to effect crop production, and imagine how, with a warming planet, these will be affected. It is right to stress the need to take greater care of soil, as Siosiua says, whether it be by avoiding hillside farming, using legumes or manure, planting barrier crops to stop erosion or using irrigation systems. There are examples of ways of maintaining soil fertility, but they are labour-intensive, and I wonder if farmers consider them to be cost-effective. I expect farmers will continue to gauge the advantages from new technology, both in terms of economics and also health. And nowhere will such considerations be more important than on atolls.

This reminds me of the sweet potato work of Paul van Wijmeersch and Elik Guaf in Papua New Guinea (PNG). It always struck me as significant that some of the best varieties in terms of yield were those from atolls in PNG. This is not surprising, I suppose. PNG has a huge germplasm of sweet potato and people would have transferred varieties from the mainland to the atolls to see how they grew, as they have done with bananas and other crops. PNG's National Agriculture Research Institute runs an atolls project, and I hope that PNG is a part of any future atoll research initiativein the region. It has not been in previous programmes, to their detriment.

Some years ago I was fortunate to evaluate the Pacific Regional Agriculture Programme activities and in Tuvalu I interviewed women vegetable growers.

> 'It is right to stress the need to take greater care of soil, as Siosiua says, whether it be by avoiding hillside farming, using legumes or manure, planting barrier crops to stop erosion or using irrigation systems.'

This was memorable experience. The women were very frank. They said they understood about the importance of vegetables in their diet, and those of their families. They knew about the importance of foods with beta carotene, and also iron to prevent anemia. But it was hard work growing vegetables; they needed constant attention. Everything was against the grower: they needed to improve the soil, the vegetables needed constant watering and they needed to be fenced against chickens and pigs. It was indeed hard work. The only way they could stay motivated was to have competitions amongst themselves to inspire each other to try harder. What a great story!

The point of the story is that people know how to do things; they are willing to adapt and experiment, if the reasons are clear and imperative.

Another chance for our forests

– Reducing emissions from deforestation and forest degradation

By Felix Ries, Technical German Cooperation (GTZ)

Timber is a valuable commodity and one that brings in significant revenue for resource owners and governments in the region. But imagine an alternative way of being paid for your forests? And the best thing is, you don't even have to harvest it; just waiting is enough! Or imagine you want to save the climate and reduce greenhouse gas emissions by 15%. What if there was an international mechanism to finance measures to reduce deforestation – wouldn't this fulfil these expectations? While the international community is currently working on such a mechanism under the label of REDD+, it is unlikely to fulfil the hopes of easy money nor of the quick fix of the world's climate, but it will, nevertheless, make the conservation of forests under threat feasible.

REDD+ stands for 'Reducing emissions from Deforestation and Forest Degradation in Developing Countries' and is currently under negotiation at the international level in the context of the United Nations Framework Convention on Climate Change (UNFCCC).

How would REDD+ work?

The idea behind REDD+ is that countries and forest owners who reduce emissions from the forest sector will be financially compensated for tackling the drivers of deforestation and the forgone income. Forests play a vital role for the local microclimate and, at the global level, they are a carbon sink. For these reasons, the international community is interested in keeping the ecosystems of the forests intact – and is willing to pay for it.

That sounds pretty easy, but many challenges have to be overcome to ensure REDD+ has environmental integrity and is an accurate and conflict-free mechanism. To estimate the saved emissions from a given project or country, a reference scenario – what would have happened without the project – has to be established. The exact amount of carbon stored in the trees has to be measured and monitored to obtain accurate figures on the saved emissions. And it has to be guaranteed that the logging does not just shift to another forest or country, a problem referred to as 'leakage' in the debate on REDD+.

The governance, legislative and institutional structure for REDD+ will be crucial for its success. Questions like the ownership of the carbon stored in trees and how benefits are shared among the forest owners, the community and any other stakeholders involved have to be solved.

In the Pacific where most of the land is customarily owned, the resource owning communities constitute the most important stakeholder groups; they have to be involved from the beginning and they have to benefit from such a scheme.

Setting up the right institutions, structures and precise monitoring mechanisms for forest carbon is a prerequisite for a country's participation in REDD+. This process of preparing the necessary elements is called 'REDD readiness' and some Pacific Island countries, such as Fiji,

'In the Pacific where most of the land is customarily owned, the resource owning communities constitute the most important stakeholder groups; they have to be involved from the beginning and they have to benefit from such a scheme.'

Vanuatu and Papua New Guinea (PNG), have already started this process. PNG endorsed its REDD strategy recently and Fiji is about to finalise its REDD+ Policy. Development partners, like the German government through GTZ, AusAID and the World Bank, support countries in becoming 'REDD ready'. A new regional programme by SPC and GTZ will support a regional policy approach and various elements of REDD+ readiness in the Melanesian countries.

While it is important for countries that want to participate in REDD+ to set up all the necessary systems to be ready, the international climate negotiations have to agree on rules for REDD+ before the main funds start flowing. At the most recent negotiation meetings there were still a few issues unresolved. Some of these were on the topic of where the money for REDD+ should come from. Should the industrialised countries be allowed to 'offset' their emissions by buying certificates from REDD+? And which social and ecological safeguards should be included in the rules? What role will civil society play in the process?

From the perspective of the Pacific Island countries, the agreement should keep the environmental integrity of the upcoming treaty, support the conservation of eco-systems in an effective manner and improve the living conditions of forest owners and users. A sound UNFCCC agreement would help to put an end to the uncertainties and scandals surrounding some of the early initiatives on REDD+. Let's keep our fingers crossed that the negotiations at the Conference of Parties 16 to be held in Cancun, Mexico in December make substantial progress.

Why the plus in REDD+?

The debate on financial compensation for reduced deforestation at the beginning focussed only on reducing deforestation, adding forest degradation later. But what about countries that did well in conserving their forests and kept heavy logging to a minimum? What about new forests? To take these important aspects into account, the scope of REDD was broadened to REDD+ and now includes:

- reducing emissions from deforestation;
- reducing emissions from forest degradation;
- conservation of forest carbon stocks;
- sustainable management of forests;
- enhancement of forest carbon stocks.

For more information, please visit LRD's website to download a number of useful REDD resources. *http://www.spc.int/lrd/index.php?option=com_content&view=section&layout=blog&id=12&Itemid=19&lang=en*

Youth In Agriculture Essay, News, Art And Photography Competition

The PAFPNet Secretariat would like to take this opportunity to say a big Vinaka vakalevu to all the participants for entering the contest!! In total there were 20 participants from around the Pacific region for the PAFPNet Youth in Agriculture Essay Competition.

The winners are:

1st Prize of FJD 1,000 – Ms. Alana Tukuniu of Niue

2nd Prize of FJD 750 – Mr. Timothy Massing of Vanuatu

3rd Prize of FJD 500 – shared between Mr Corzzierrah Posala of Solomon Islands and Ms Chrisnrita Tolonga Aumanu of Fiji Islands.

Congratulations to all the winners. We wish them all the best in their future endeavours!!!

Ms. Alana Tukuniu's essay can be read on the next page and the winning essays and other entries deserving of commendation are available at *http://www.spc.int/lrd/index.php?option=com_docman&task=cat_view&gid=347&Itemid=130*

What advice would you give to a young person wanting to start up their own agricultural enterprise? Who can best support them and how?

By Alana Tukuniu, Niue

Agriculture is not an occupation that comes with a desk, PC, and a comfortable fallback chair. No, Agriculture is so much better than this, it comes with a connection, to our ancestors, to the earth, and most importantly, and too often overlooked, to the very core of human survival – eating. Without food we will not survive. My generation is one that has been weaned on processed baby food from a bottle made in another far away country, the Nane that was instrumental in my grandmother's childhood is now a delicacy that I look for at village show days each year. Why? Because the value and importance of Agriculture is too often understated. Eating is just that, eating, and agriculture is just that, agriculture, they are separated as two different entities. It needs to be shown that eating is part of the chain that started off with the seeds sown by a farmer. Without farmers, there will be no food.

Humans can survive without a laptop, but we cannot survive without food. So what is my advice to a young person wanting to start up their own agricultural enterprise? Start small, and work your way up to expansion. Do not think of farming as a monetary commodity alone. Agriculture is much more than this, and it's this understanding of Agriculture's importance and its broader scope in our life that will help young farmers through the tough times, because in farming, let's face it there are more variables to contend with, than in an occupation such as IT. It should be known that my advice is in the context of my Niuean life.

I am not a full time farmer, but I do grow my own vegetables, some of which I have sold. I also keep a small flock of chickens and my partner raises pigs, so my advice is not from the experienced mouth of a Niuean farmer, who has practiced farming through the many changes that has occurred but I do ask my family question after question about farming and I constantly work through offered solutions. I continue to experience the challenges that face farmers each day, the persistence of pests and disease, issues surrounding soil fertility, and difficulty in accessing to capital to begin an agricultural enterprise. I do consider myself a farmer nonetheless.

My day always starts with nourishing my chickens with their feed, and ends after work each day with a trip to my plantation, As I make my way to my plantation and tend to the crops that I grow, I am often faced with depleted crops, victims to the hungry mouths of caterpillars and snails, or struggling due to a nutrient deficiency, and still, I continue to grow crops. I have experienced the monetary rewards that come with a successful harvest, and I have experienced the frustrations at a failed crop, and this is why my advice is to not look at farming as a monetary commodity alone, but instead perceive agriculture as a partnership of money, culture and our environment. You will need this perception to keep pushing you through those hard moments.

We do now live in a cash economy, and we do need income, so why is agriculture not a monetary commodity alone? Because as a farmer you are contributing so much more. Agriculture is instrumental in keeping our culture alive, in addressing climate change issues, health issues and in preserving the environment. Our culture is lived through many things, including our traditional foods, they are at the backbone of our cultural festivities such as haircutting ceremonies or the opening of the yam season, I cannot imagine boxes of KFC hanging on the kafika as gifts to those that have supported us, or cold McDonald burgers replacing the puaka as the centrepiece on the table. It's not only our cultural ceremonies, which are dependent on agriculture. Our crops are the staple in our umu; it is unthinkable to think that it could be replaced by New Zealand grown potatoes or otherwise. Food is a cultural link, and growing it locally supports our culture as well as our environment. It's these thoughts which keep me growing.

'Humans can survive without a laptop, but we cannot survive without food. So what is my advice to a young person wanting to start up their own agricultural enterprise? Start small, and work your way up to expansion.'

As young people, we are becoming more aware of the effects of climate change. It is our future, in which we will live in, and therefore our future that we need to protect. When we grow food for our communities we are reducing the impacts of climate change, through the reduction in imports amongst other things. We address health issues because eating local food is much better for us than eating imported processed food. It's for the above reasons that agriculture is not a monetary commodity alone, it's the link to our culture, health and environment that will push us through the hard times, when money alone does not stand to reason for our time spent working the land. It's these thoughts which keep me growing.

Our time on the land need not be spent alone. Support is always available in its many forms. The Agricultural Ministries are always looking to support farmers. Let your local Ministry know that you want to be involved in farming programs that may run; at the very least they may be able to help with an input starter kit that enables you to start off a small enterprise. Talk to you youth council members so that they can lobby for youth involvement in agriculture/ business venture programs at higher levels of dialogue. Our communities are always looking to empower our population, as young people we need to ask, and keep on asking, until we are heard and receive what we need, and this includes information and advice on farming methods.

In saying this it is easy to overlook the most basic levels of support and who can best support us. Look to our own community for support. When we investigate our history in traditional farming, our forefathers did not have mechanised tools from which to work the land, they did not need cash to produce food. Seeds were shared amongst families, and this practice is continued onto this very day, most people in our families have a pig pen, and this is a free source of fertilizer. To begin a farming venture, you only need to ask for the little things that will enable you to begin your venture. In our community there is always someone willing to help you, it may not be the first person you ask but there will be someone, because that's who we are as Niueans.Agriculture is a pathway to reclaim and conserve our heritage, sometimes we need to look to the past so that we can sustainably move forward. It's these thoughts which keep me growing.

What value do we place on possessions, when they are merely given to us? Not nearly as much as those for which we will always remember how hard we worked for, and how we laboured in order to achieve them. The most effective support will always be ourselves, as individuals and together as a community. Why? Because in the end it will be in our future in which we need to survive, and our culture which we need to preserve. The future is not in ten years, it is tomorrow, when we wake up and look in our cupboards and ask ourselves what are we going to eat today? Instant noodles or puaka and taro? It's these thoughts that keep me growing.

Being a farmer is like becoming a famous musician, you work hard, but know ones how hard you truly worked to make it, except yourself. Success can be measured when someone comes to you and buys your produce. And keeps on doing so. Making the decision to engage in agriculture is an affirmative decision for our culture, our environment and ourselves.

CURRENT EVENTS

Youth finding solutions to challenges in agriculture and rural development using ICT!

CONGRATULATIONS to ALL the finalists of the Agriculture, Rural Development and Youth in the Information Society (ARDYIS) essay contest!!!

The essay contest was held by CTA (Technical Centre for Agricultural and Rural Cooperation ACP-EU), in collaboration with various partners, including the Pacific Agriculture and Forestry Policy Network (PAFPNet). About 180 youth (35% women) from 33 African, Caribbean and Pacific (ACP) countries submitted essays.

Participants included students enrolled in communication, economics, data computing, agricultural studies, young farmers and young professionals in various sectors.

After deliberation, the following Pacific candidates were short-listed as finalists by an international jury:

Pacific

- Riten Gosai Chand (Fiji)
- Ruben Nui (Papua New Guinea)

Congratulations Riten and Ruben!
They will present their essays in **South Africa** on **22nd and 23rd November 2010**, as part of the CTA week events. One winner per ACP region and an overall winner will be selected. The six regional winners will each receive a sum of Euros 1000. The overall winner will be selected from the regional winners and he/she will receive an additional sum of Euros 500 (ACP Prize).

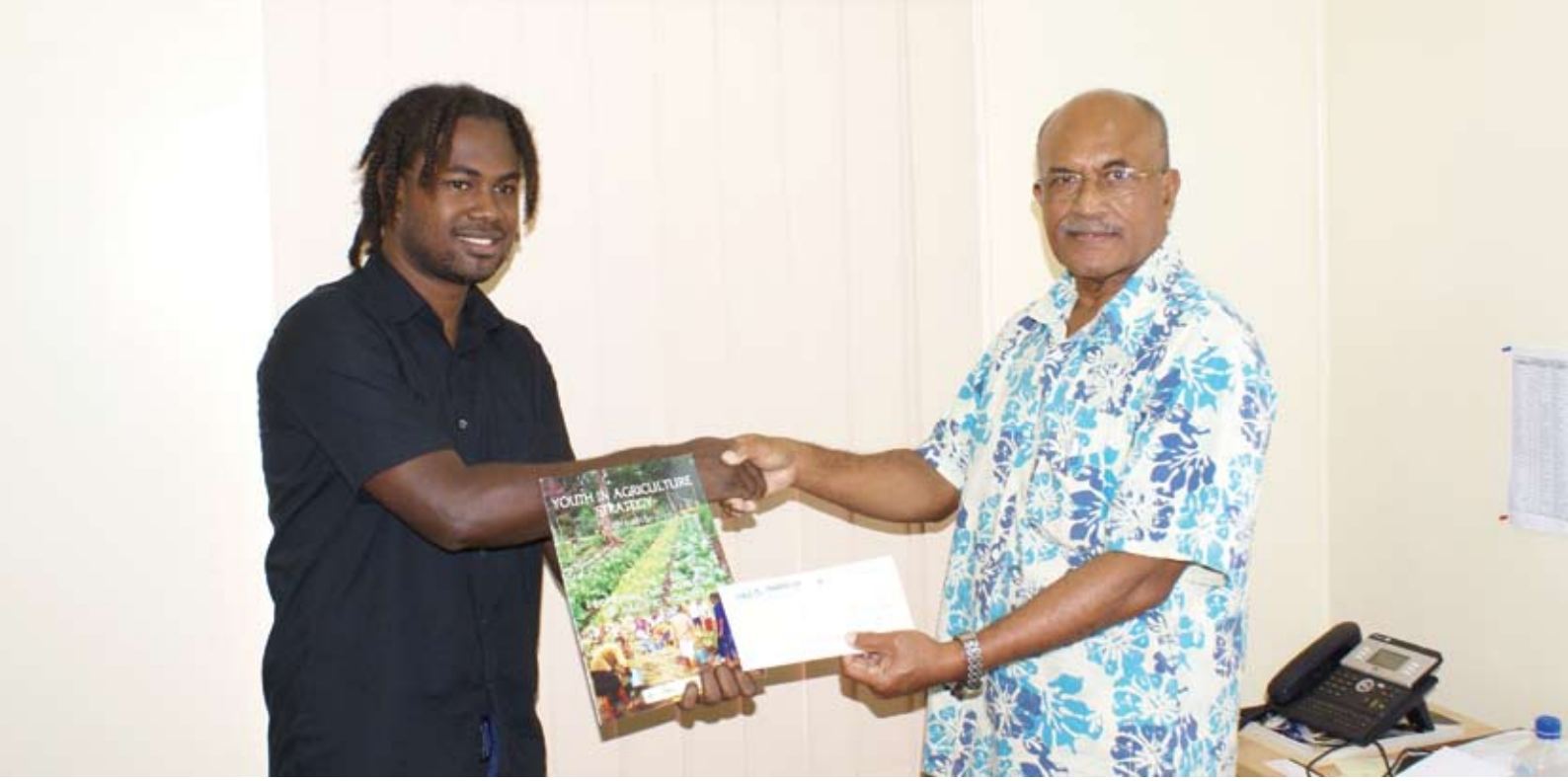
For more information please visit the following Link:
http://annualseminar2010.cta.int/cta-npca-week

Below are short extracts from each of the two finalists from the Pacific Islands

The use of information and communication technology to address information poverty and reluctance of farmers to commercialize in the Fiji Islands

By Riten Chand Gozai , Fiji Islands

Increasing the efficiency, productivity and sustainability of small scale farms is an area where ICT can make a significant contribution. Key improvements stem from information about pests and disease control, early warning systems, quality control, agro-meteorological services, agro-technology transfer and what is being done around the world (McNamara, 2009). Climate change is a major threat to Pacific food security. New



Animal Health and Production Advisor & OIC at SPC, Dr Cokanasiga (right) presents USP student, Mr. Posala with his award.

techniques to optimize production are being developed which need to be conveyed to the farmers. For instance, after researchers in Burkina Faso identified the best crop varieties for the Sissili region, the Federation of Farmer Organization of Sissili, intensively used digital photos, video camera and video presentations to explain the new growing techniques, hence production increased by nine folds (Lenoir, 2009, p. 4-5). Similarly, the OSCAR (open source simple computer for agriculture rural areas) project in 2006 developed a software program to identify weeds using photographed images. It then provides the weed description, variety and control methods (Lie and Balasubramaniam, 2006, pp. 29). Such technology can be highly utilized in a country like Fiji where expert and skilled personnel are limited.

> "As many people in the rural areas in PNG are using the Digicel phones, the introduction of this service has enabled farmers to know about market situations in other major centers in the country."
>
> Ruben Nui, Mt. Hagen, Papua New Guinea

Mobile Market Information Service for fresh produce growers, vendors and consumers in Papua New Guinea

Ruben Nui, Mt. Hagen, Papua New Guinea

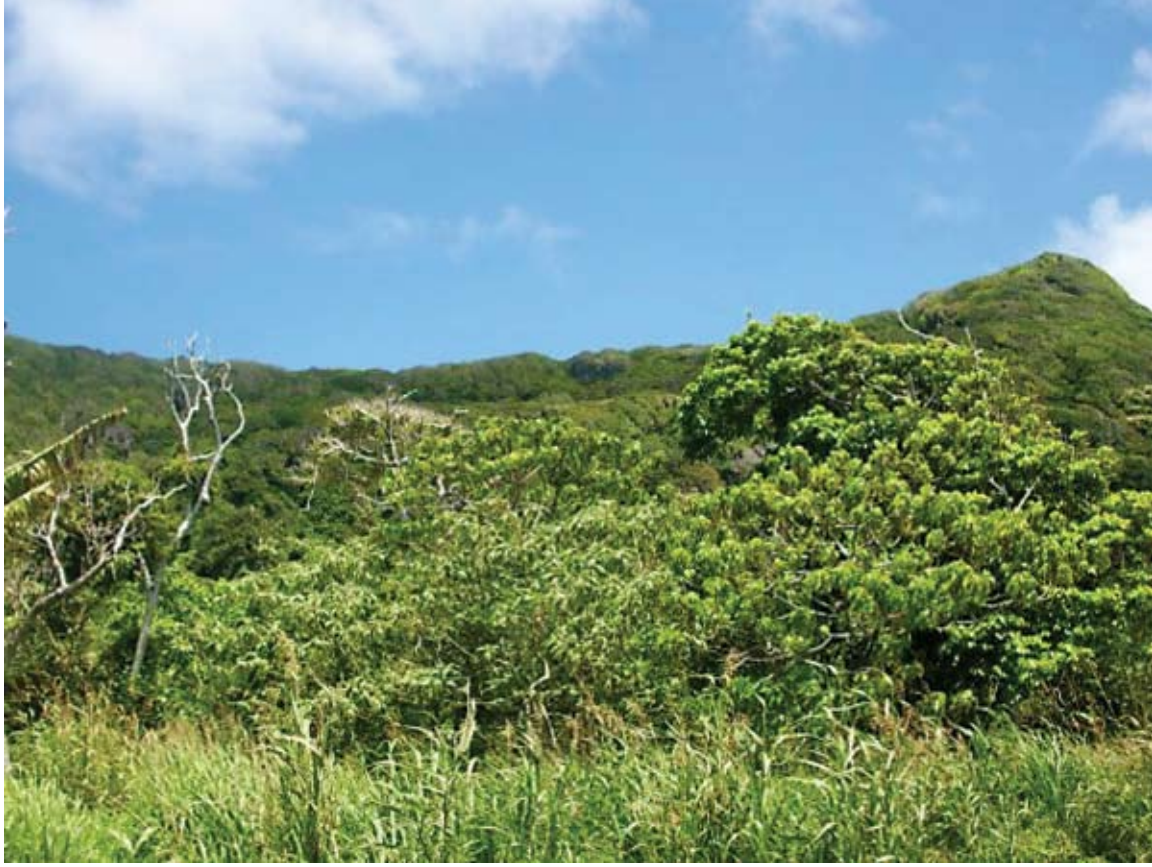
Accessing market information in a timely manner is important to make informed marketing decisions. The mobile market information service provided by Fresh Produce Development Agency (FPDA) and Digicel (PNG Limited) with support for AusAID for fresh produce growers, vendors and consumers in PNG is a brilliant concept. As many people in the rural areas in PNG are using the Digicel phones, the introduction of this service has enabled farmers to know about market situations in other major centers in the country. However, for this essay I would like to describe how this innovation works and my own experience of using the service as well as the lessons learnt and what I think could be done to improve the system.

How information is accessed is very simple. The user types the information needed and sends to using the access code which is 4636. For example, if a farmer wants to obtain information on price for cabbage sold, the following steps are followed:

- Step 1: Create a text message
- Step 2: Type CAB, then leave a space
- Step 3: Type price
- Step 4: Send to 4636

A text message is received. This contains information on price for cabbage for the eight centers. Steps 2 and 3 can be changed to suit the type of variable (price, quality or supply) but steps 1 & 4 remain the same. To access information for different crops, initials or codes for each crop are used. For the use of the service, a fee is charged by Digicel at commercial rate.

When I first heard about the service in December, 2010, during awareness by FPDA, I was very much interested because I wanted to make comparison for price of different produce and sell markets that could fetch good price.



Climate Change Adaptation Projects Focusing On Food Security

The primary food-producing sectors (agriculture, forestry and fisheries) are particularly vulnerable to the effects of climate change. Providing support to communities and farmers who are adapting to the projected changes in temperature, rainfall patterns, water availability and saltwater intrusion is a vital part of minimising the impacts on food security. A number of existing and proposed climate change adaptation initiatives in the region focus on food security. This section highlights a few of those.

Pacific Adaptation to Climate Change (PACC) project

Solomon Islands is participating in the Pacific Adaptation to Climate Change (PACC) project, a regional program implemented by the Secretariat of the Pacific Regional Environment

Programme (SPREP) and the United Nations Development Programme (UNDP) and funded by the Global Environment Facility (GEF). The focus of PACC in Solomon Islands is on agriculture and food security. Through the project, a pilot programme to assess the impacts of climate change in vulnerable parts of Solomon Islands will be established in Ontong Java, Malaita Province. This will be supported by information from work in Sikaiana in Malaita Province and the low-lying atolls in the Reef Islands in Temotu Province. The project is jointly coordinated by Ministry of Environment, Conservation and Meteorology (MECM)and the Ministry of Agriculture and Livestock.

For more information, please contact Mr Casper Supa at the Ministry of Agriculture and Livestock on +677 22143.

Source: *Solomon Islands, Ministry of Environment, Conservation and Meteorology, Climate Change News*

The PACC project is also focusing on food security in Fiji, Palau and Papua New Guinea.

For more information please visit the SPREP website: *http://www.sprep.org/climate_change/index.asp*

Solomon Islands project to benefit from global Adaptation Fund

Solomon Islands was one of four countries to be endorsed for adaptation funding at the tenth meeting of the Adaptation Fund Board, held from 14–16 June 2010 in Bonn, Germany.

The Solomon Islands project will focus on dealing with the impacts of climate change on agriculture and food security. The funding amounts to USD 5 million and will be delivered over four years, with United Nations Development Programme (UNDP) acting as the national executing entity.

The project will include support to communities, institutional strengthening, and information and knowledge management. A technical working group is assisting with the design of the project, and a full proposal will be submitted later in 2010.

MECM would like to acknowledge the efforts of the Permanent Secretary of MECM, Rence Sore, and Ambassador Collin Beck, as well as the assistance of UNDP.

'The Solomon Islands project will focus on dealing with the impacts of climate change on agriculture and food security.'

For more information about the project, please contact the Climate Change Division on +677 24074. For more information about the Adaptation Fund, go to: *http://unfccc.int/press/news_room/newsletter/in_focus/items/5653.php*

Solomon Islands, Ministry of Environment, Conservation and Meteorology Climate Change News

SPC/GTZ programme update: Pilot sites established in Vanuatu and Tonga to trial adaptation approaches

As part of the SPC/GTZ 'Adaptation to Climate Change in the Pacific Island Region' (ACCPIR) programme,

pilot sites have been selected in Tonga and Vanuatu for trialing adaptation approaches at the community level, and various activities have commenced. The sites were selected by the programme steering committees in the two countries, following an assessment process and in consultation with the local communities.

Vanuatu

The three pilot sites selected in Vanuatu are Pele Island (North Efate), Teouma community (South Efate), and Hasevaia community (South Santo). Activities to be piloted are included in Vanuatu's National Adaptation Programme for Action, and include introducing climate-resistant crops, breeding livestock adapted t o extreme weather, developing community land-use plans, trialling new agroforestry and soil stabilisation methods, and undertaking innovative climate adaptation education programmes.

These activities will be directly implemented by Vanuatu's project partners: the Department of Agriculture, the Department of Forests, the Department of Quarantine and Livestock,the Department of Environment and Conservation, Wan Smolbag Theatre, Live and Learn Vanuatu, the Vanuatu Farm Support Association, and the Vanuatu Agricultural Research and Technical Centre.

Tonga

The two pilot sites selected in Tonga are 'Eua Island and Nakalo (Tongatapu).

The focus of the project in 'Eua is the development of a land-use plan:

1. to assess and reduce the vulnerability of 'Eua's forests and the whole island and community to anticipated climate change impacts;
2. to promote sustainable agriculture practices and sustainable land management technologies to ease the pressure on forest areas and to cope with anticipated climate change;
3. to increase awareness and understanding of the 'Eua community of climate change impacts and adaptation measures such as sustainable land management

Agroforestry and mixed cropping systems will be the focus of this programme, and appropriate climate resilient crop varieties will be identified to ensure food security.

The project will also support the establishment of forest monitoring

plots and subsequent monitoring to record forest dynamics, carbon/biomass and biodiversity.

The focus of the project in Nakolo are:

1. the establishment of sustainable land management technologies to reduce the vulnerability of the site;
2. the identification and implementation of suitable technologies to restore the productivity of the farmland soils;
3. the identification of appropriate adaptation technologies, such as drought-resilient tree and crop species and systems to ensure food security.

All project activities are guided by the national project steering committee, chaired by the Director of the Ministry of Environment and Climate Change. Members include the Forestry Division, the Agriculture Division, the Lands Department, civil society organisations, the Meteorology Department, the Tonga Water Board, women's association and GTZ as secretariat.

For more information on the SPC/GTZ programme, please contact *lrdhelpdesk@spc.int* and visit *http://www.spc.int/lrd/index.php?option=com_content&view=section&layout=blog&id=12&Itemid=19&lang=en*

The Centre for Pacific Crops and Trees and its Climate Change Collection

The Australian government under the AusAID International Climate Change Initiative (ICCAI), the US government and the French Pacific Fund have made funding available to the Centre for Pacific Crops and Trees (CePaCT) to establish and evaluate a 'climate ready' collection. Collecting has been conducted in several countries, e.g. aroids (Alocasia and Xanthosoma) in Samoa and French Polynesia, and swamp taro in Kiribati and Tuvalu. The funding provides the resources to carry out the collecting, establish the plants in tissue culture and, importantly, virus test the material sourced locally so that it can be distributed and evaluated. Components of the climate change collection, known as the climate ready collection, are being tested in 14 SPC countries and territories.

The climate ready collection consists of varieties of well-known crops (e.g. taro, yams and bananas) with desired climate-ready traits, such as tolerance to drought, salt, high temperature and waterlogging. In addition, CePaCT is also accessing genetic resources from outside the region, mainly from the International Agriculture Research Centres (IARCs), e.g. sweet potatoes that are tolerant to drought and salt from the International Potato Centre in Peru.

The IARCs have the capacity to use advanced molecular techniques, enabling them to identify and select for genes controlling stress tolerance. These techniques are especially important for successfully transferring desirable traits from crop-related wild plants into commercial varieties of domesticated species. For example, researchers at the International Tropical Agriculture Institute (IITA) in Nigeria are evaluating cassava in the semi-arid regions of East and West Africa to determine what mechanisms enable the crop to withstand dry spells. Using the tools of molecular biology, the genes for this trait can be identified, which will further enhance the drought tolerance of cassava.

The aim of a climate ready collection is to provide farmers with diversity so that they are better able to manage climate change. Having crops and varieties with different traits, farmers will have more options to meet the challenges of climate change.

For more information on the climate ready collection please contact *lrdhelpdesk@spc.int.*

'The aim of a climate ready collection is to provide farmers with diversity so that they are better able to manage climate change.'

Climate Change and Food Security: Identifying sound adaptation technologies

By Rowena Valmonte-Santos, International Food Policy Research Institute (IFPRI)

The International Food Policy Research Institute (IFPRI)recently embarked on a study funded by the Pacific Department of the Asian Development Bank to assess the impacts of climate change on the security, availability, and accessibility of food in the Pacific Islands, and determine how this influences the livelihoods of the region's most vulnerable communities. Using three case study countries—the Fiji Islands, Papua New Guinea, and the Solomon Islands—the study will identify a mix of adaptation mechanisms and coping strategies that could ensure food security and enhance rural communities' livelihoods. The study will also outline specific ways in which national governments and regional and international organizations can fashion policies and programs that boost the region's agriculture, fisheries, and food security.

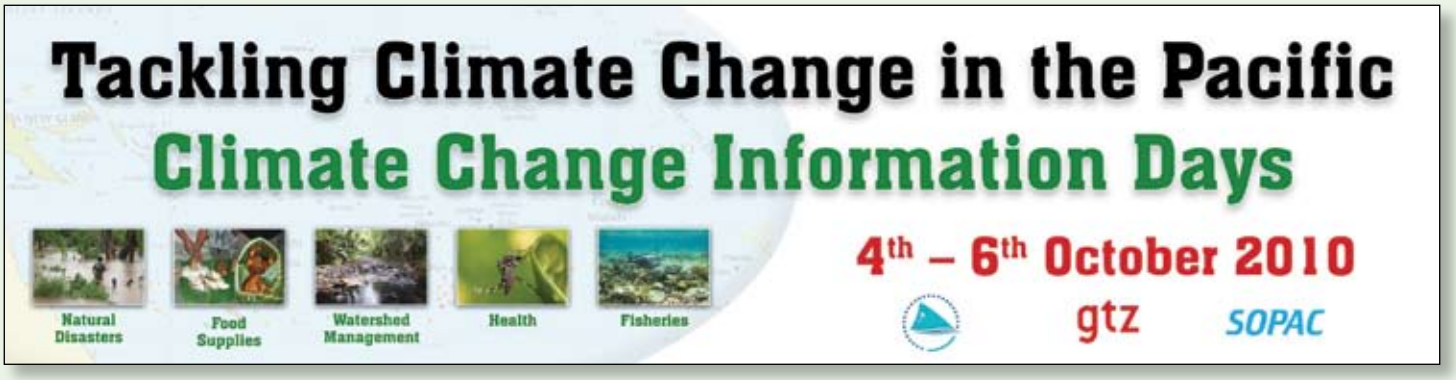
'Pacific island communities are diverse—but they all share their vulnerability to the climate and their traditional dependence on local crops and fisheries for food and income.'

One set of adaptation options crucial to the Pacific Islands reduce the adverse effects of rising sea levels. These measures include the erection of dikes, the shift from farmland to aquaculture, the adoption of salt-resistant varieties and crops, and the re-planting of mangroves. Other adaptation measures seek to address extreme weather events—from drought to flooding—caused by climate change. These include the adoption of flood or drought resistant varieties and crops, improved access to and efficiency of irrigation systems and other water uses, and improvements to drainage in overly wet areas—a particular problem for the Pacific Islands. Finally, adaptation mechanisms that improve agricultural productivity more broadly help to increase resilience to climate change impacts: for example boosting returns to food production through enhancing marketing expertise improving agricultural extension and research, introducing crop and farm insurance, and investing in rural road construction. Additional measures that could improve agricultural resilience include: Shifts in planting months and crop rotation, the introduction of new varieties and crops, changes to planting density and nutrient treatment, and precision agriculture.

Pacific island communities are diverse—but they all share their vulnerability to the climate and their traditional dependence on local crops and fisheries for food and income. IFPRI anticipates that this project will help these communities to continue to benefit from the diets and livelihoods that have sustained them for centuries.

IFPRI would welcome feedback and collaboration with regional research and educational institutions with expertise in this area and would be very happy to hear from interested individuals and organizations.

Please contact Rowena (*r.valmonte-santos@cgiar.org*) for further details.



A three-day Climate Change Information Days event was co-hosted by the SPC library with officers from SOPAC and GTZ from 4th – 6th October in Nabua, Suva, Fiji Islands with the theme "Tackling Climate Change in the Pacific".

The aim of the event was to raise information awareness among staff members of the three organisations and to establish a more structured, coherent and free-flowing information network environment on climate change mitigation and adaptation work in the Pacific region.

A comprehensive array of audio-visual and published materials was on display throughout the three days. These included posters, kits, books, brochures and pamphlets on water resources, renewable energy, measuring carbon foot-prints, reforestation, crop diversity, rising sea-level experiences and the human rights of displaced populations. The SPC library displayed its budding collection of climate change references with a demonstration on how to use the library's online catalogue to research climate change (http://opac.spc.int/cgi-bin/koha/opac-search.pl).

A panel discussion was also held with the challenging topic – **"If you had to advocate for one adaptation response that would improve the resilience of Pacific Islanders to climate change impacts on their livelihood, what would it be and why?"**

And this is what some of the panellists had to say:

"Existing natural forests should be managed in a suitable manner, and degraded forests should be either reforested or rehabilitated through agroforestry and other practices. A sustainable forest and tree management system is one where the elements of sustainable harvesting, forest conservation, protected forests, watershed management, coastal forest management, forest restoration, rehabilitation and agroforestry, are all considered.

Managing our forests in this way will improve the supply and quality of products and services from forest conservation, protected forests and tree resources, and also enhance a forest's capacity to cope with the impact of climate change."

Sairusi Bulai,
Forest and Trees Coordinator, LRD, Secretariat of the Pacific Community

"Changes in weather conditions – rainfall, temperature, humidity, moisture, sunshine hours and wind speed, etc. will affect the food sources, shelters and nesting areas or breeding grounds that living organisms dwell or thrive in.

Climate change causes organisms to move or migrate in response to changing conditions. Therefore, conserving and maintaining the biodiversity of plants and animals, i.e. maintaining or conserving the environment to maintain food sources, shelter sites and breeding grounds, is one adaptive response mechanism to combat climate change."

Roy Masamdu,
Biosecurity and Trade Facilitation officer, LRD, Secretariat of the Pacific Community

"Any good adaptation measure must take all these into account – vulnerability, mitigation, adaptation and resilience. But there is no one shoe that fits all.

A good adaptation measure reduces overall vulnerability to climate change. This involves reducing exposure to climate change impacts and increasing adaptation capacity.

The following strategies should be applied:

1. Reduce overall vulnerability to non-climatic and climatic shocks – an adaptive strategy
2. Manage their impacts– a coping strategy

Examples of measures to improve resilience include:

1. selecting and breeding locally adapted crop varieties and animal breeds for resistance to disease, pests and harsh weather conditions;
2. using biodiverse agriculture to build soil organic matter through crop rotation, composting, green manuring, cover crops and charcoal, which enriches the soil for better yields and drought and salinity tolerance. "

Dr Siosiua Halavatau, Crop Production Team Coordinator, LRD, Secretariat of the Pacific Community

SCHOLARSHIPS

POSTGRADUATE DIPLOMA AND SCHOLARSHIPS FOR POSTGRADUATE STUDIES IN CLIMATE CHANGE

POSTGRADUATE DIPLOMA IN CLIMATE CHANGE

In 2011, USP will offer a Postgraduate Diploma in Climate Change (PG Dip CC). Like other PG Diplomas, it comprises of 4 courses over 1 year full-time or 2 years part-time. All students taking this Diploma will be required to take the course on (EV414*) climate change impacts and adaptation and are strongly recommended to take (EV415*) climate science. Some of the other courses which can form part of this Diploma include: environment impact assessment (EV425*), environmental economics (EC415), environmental law (LW452*), research methods(SC400), natural resources and environment (EV402), pacific biogeography (GE407), biodiversity (BI442), international affairs of island states (PL402), environmental change (GE409), photovoltaics (PH414), and green development (DG414). Other relevant courses can be included with the approval of the PACE Director. The courses marked (*) will be offered by DFL (online) in 2011.

This Postgraduate Diploma will be relevant to one engaged in planning for natural resources, economic and social development, and/or the natural environment, especially graduates working in governments or NGOs who are not yet familiar with climate-related issues but need to be so.

Applications to enroll in the PG Dip CC are invited from graduates in relevant science or humanities subject. Candidates should have a grade-point average of 3.0. In exceptional circumstance applications can be made under the criteria of Admission with standing. Application forms for new students can be obtained from your local USP Centre or downloaded from http://www.usp.ac.fj/student, and should be sent to Mr Pranesh Kishore, Graduate Assistant Officer, Faculty of Science Technology and Environment, USP, Suva [kishore_p@usp.ac.fj, ph +679-323 2804]. **Applications are due by 31 January 2011.**

SCHOLARSHIPS

Thanks to the generous support of the Australian Government, there will be 6 scholarships available to citizens of Pacific Island countries to study full-time at Laucala (Suva campus) for the PG Dip CC. Each scholarship pays all tuition fees and fares from home country (if outside Fiji) at beginning and end of the scholarship, and a living allowance of up to F$11,088 per year, which is the current Graduate Assistant rate (plus an allowance for accompanying dependents in some circumstances); scholars are not permitted to be in paid employment while holding a scholarship. **All those whose applications for enrolment in the PG Dip CC are received by 6 December 2010 will be considered for these scholarships**.

COURSE ON CLIMATE CHANGE IMPACTS AND ADAPTATION (EV414)

This postgraduate course focuses on the vulnerability of the Pacific Islands to climate change, and examines strategies to manage the risks it poses. It is a core course of the new PG Dip CC, but can also be taken as a single unit, or (with approval of the PACE Director) as part of another related postgraduate diploma. This course will be taught in Semester 1 of 2011 in hybrid DFL/ on-campus mode, with most of the course conducted online by directed reading. Students will also be expected to attend the Laucala campus for a 2-week intensive period in mid-semester (Some financial support may be available for students from outside Fiji for this purpose).

COURSE ON CLIMATE SCIENCE (EV415)

Climate change, climate variability and sea level rise threaten the sustainable development of water supply, agriculture, coastal zones, tourism, health, and many other sectors in the Pacific Islands. To deal with these threats Pacific Island countries need professionals who understand and can explain the scientific basis of these threats to stakeholders. EV415 is intended to provide a reasonable background in climatology and an essential background of the science of climate change for those intending to work, for example, with regional meteorological services, either directly or as users or providers of relevant technical information. Students in the PG Dip CC must have sufficient background in elementary science such as physics and mathematics. In contrast to EV414, this course focuses on the science and analytical approaches, and does not touch on response measures (such as adaptation or emission reductions or political responses).

Enrolment is by the standard procedure for postgraduate courses, described above. Potential students are advised to also directly contact the Pacific Centre for Environment and Sustainable Development at (rani_k@usp.ac.fj) for further information.

SCHOLARSHIPS FOR RESEARCH STUDENTS IN CLIMATE CHANGE

USP invites applications from graduates in any relevant subject who wish to pursue a Masters or PhD degree though research on climate variability and change.

Possible research topics in climate change include: (a) Climatological analysis and interpretation of the observations or model generated data sets, (b) Scientific analysis of the impacts of likely climate change on a particular community or sector, (c) Developing a scientific or technical aspects of community adaptation project, (d) Evaluating the effectiveness of a particular community adaptation project, (e) Social or economic analysis of adaptation projects or policies, (f) Analysis of governance or social issues affecting vulnerability to, or measures to adapt to climate change.

SCHOLARSHIPS

The Australian Government has generously agreed to fund a number of scholarships for this purpose. These scholarships are available only to citizens of Pacific Island countries. A suitably qualified applicant may be considered for a PhD candidature and scholarship.

GENERAL INFORMATION ABOUT RESEARCH DEGREES

A Masters degree at USP requires at least 1 year of full-time study, in the form of a supervised research project. Applicants for a Masters degree should normally have completed a Postgraduate Diploma (or equivalent) while applicants for a PhD should normally have completed a Masters degree. The University recognises that there are special circumstances in which some applicants without these pre-requisites may be eligible for enrolment in these degree programmes. More details in the University Calendar at www.usp.ac.fj/calendar. A PhD normally requires at least 3 years of full-time study.

GENERAL INFORMATION ABOUT SCHOLARSHIP CONDITIONS

These scholarships are for full-time study, usually based at USP's Suva campus, though there may be extensive field work elsewhere in the region. The scholarship covers tuition fees and air fares from home country (if outside Fiji) at beginning and end of the scholarship. Each scholar receives a living allowance of about F$11,088 per year, (plus an allowance for accompanying dependents in some circumstances). The university will also pay towards reasonable research costs. Scholarship holders will be expected to contribute to USP's ongoing teaching and research activities. Scholars are not permitted to be in paid outside employment while holding a scholarship. (These conditions may be subject to minor variation.) Successful applicants will be expected to take up their scholarships in first semester of 2011.

APPLICATIONS

Enrolment forms for postgraduate degrees are available from your local USP Centre, or the USP website www.usp.ac.fj/students. Completed forms and accompanying documentation should be sent to the FSTE Postgraduate Officer, USP, Suva, Fiji (email: kishore_p@usp.ac.fj). **If you submit your completed enrolment form by 6 December 2010, you will be considered for a scholarship.**

Applicants should indicate a broad research topic and specify whether they are interested in pursuing a Masters or a PhD degree. For preliminary academic inquiries about climate change research at USP, please contact the Director of the Pacific Centre for Environment and Sustainable Development, email: lal_m@usp.ac.fj or see www.usp.ac.fj/pace

Policy updates

The 'State-Wide Assessment and Resource Strategies (SWARS)' are a tool for islands to identify their highest priorities for forest resource management and seek implementation of their strategies, with on-island partners and with assistance from the United States Department of Agriculture (USDA) Forest Services (FS).

The Federated States o f Micronesia and Guam have recently developed a 'Statewide Forest Resource Assessment and Resource Strategy'. *www.islandforestry.org/pdf/2010/guam.pdf*

New policy briefs entitled 'Developing a policy framework for extension systems' and 'Harmonisation of Biosecurity Laws in the Pacific' are now available online.

They have been developed by the Secretariat of the Pacific Community (SPC) in collaboration with the Pacific Agricultural and Forestry Policy Network (PAFPNet).

All publicly available agriculture and forestry policy documents are available at

http://www.spc.int/lrd/index.php?option=com_docman&task=cat_view&gid=287&Itemid=130

Please notify PAFPNet of any newly published/ updated policies that can be uploaded to the website by emailing lrdhelpdesk@spc.int. Policy briefs, prepared by PAFPNet, highlight important issues for policy makers, recommended policy responses and can be accessed at

http://www.spc.int/lrd/index.php?option=com_docman&task=cat_view&gid=286&Itemid=130

PAFPNet WIKI

The Land Resources Division (LRD) of the Secretariat of the Pacific Community (SPC) acts as the secretariat for the Pacific Agricultural and Forestry Policy Network (PAFPNet). PAFPNet aims to facilitate communication, information dissemination, capacity building and enhance awareness on issues related to agriculture and forestry policy. As part of continual efforts to improve access to policy relevant information a PAFPNet wiki was developed that provides an overview of the agriculture and forestry sector in each country and links to further information and data sources. Latest Web 2.0 ICT tolls such as wikis and discussions forums can assist in stimulating interest in the PAFPNet website and increasing participation in policy processes whilst recognizing that internet access is still a constraining factor in many countries.

PAFPNet website link: *www.spc.int/lrd/pafpnetwiki*

PAFPNet NEWS






PAFPNet SPREP fspi FAO NARI SOPAC

Growing the Pacific. Growing our future together. L'Océanie, le terreau de notre avenir.

SPC Land Resources Division