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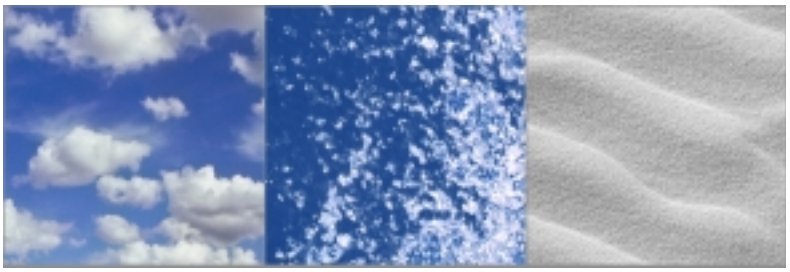

April–June 2000

environment NEWSLETTER

Editor's note: In Issue 59, the photo of solid wastes in Kiribati (appearing in the insert to the newsletter) was taken by John Morrison.

The Biosafety Protocol: What does it mean to the Pacific islands?

This article covers the Biosafety Protocol and its implications for Pacific island nations. It provides a status report of the Pacific's involvement both in signing the protocol and the negotiations process. Information is also provided as background for people interested in the Protocol and how it relates to the Pacific. Most of this information is contained in the Convention on Biological Diversity Information Package soon to be published and distributed by SPREP to its Members.

Samoa joined 64 other countries in signing the Biosafety Protocol to the Convention on Biological Diversity (CBD) on 24 May 2000, in Nairobi, Kenya. The Protocol sets out the mimimum international standards Parties must comply with when trading in living modified organisms (LMOs). It does this by describing the procedure to be followed and the the rights and obligations of the importing and exporting parties.

New Zealand was the only other country from the Pacific region to sign the Protocol, although other Pacific island countries have expressed their interest in signing. In March 2000, during a CBD related regional workshop, SPREP was asked to conduct a workshop on the benefits and costs of becoming a Party to the Biosafety Protocol. The workshop is scheduled for late 2000.

In the meantime, countries have until 4 June, 2001 to sign the Protocol at the United Nations' Headquarters in New York. The Protocol will enter into force once 50 ratifications have been made. The CBD Secretariat is optimistic that the Protocol will enter into force quickly.

A number of Pacific island countries were involved in the protracted negotiations to conclude the Biosafety Protocol which lasted five years. Notable appearances and input were provided by Cook Islands, Federated States of Micronesia,

continued on page 7

Samoa's Director for Lands, Surveys and Environment, Dr Ieti Tu'u'u signs the Biosafety Protocol. Looking on is SPREP's Legal Officer, Mr Andrea Volentras (far left).

WMO Sub-regional office update

World Meteorological Organization Regional Director Mr Eisa Al-Majed says he is pleased with progress at the WMO Sub-regional Office for the South West Pacific located within the SPREP Secretariat. Mr Al Majed was in Samoa to inspect the office set up last year, and to get an update from its Programme Officer, Mr Henry Taiki.

"The purpose of establishing the sub regional office here is to have more of a presence, in assisting (WMO) member countries in cooperation with SPREP. We can do a lot together to enhance the SPREP Action Plan as well as the different meteorological services in the Pacific."

"The main objective of establishing the WMO sub regional office … is for questions or inquiries to be satisfied quickly and to assist its network of countries. I think the main strategy of the National Meteorological Services is to enable them to make accurate climate and seasonal predictions and the capacity to implement both of them."

The sky as it looked for the last time in the old millennium. Sunrise at Apia harbour on 31 December, 1999.

"But I would like to thank the SPREP Secretariat and the Director, and the Government of Samoa for providing the facilities here for our sub-regional office."

Based at WMO headquarters in Geneva, but a native of Quatar, Mr Al-Majed says he felt right at home with the often humid Samoan weather.

"It is so good to be here. I am enjoying the islands. In Quatar it is usually 40 degrees or more so this is just nice and mild."

The five day visit came on the back of the international Rarotonga Climate Change Conference (see other story) where he delivered one of the keynote addresses.

"WMO does not have any political borders in between. It is just like the weather."

He said it was important for the sub regional office and National Meteorological Services to work in tandem in the process of information sharing and exchange.

"The thing you know (is) that we have to operate and develop the capacities of meteorological facilities in the region, and also acquire the staff to ensure the right standards are met."

"We need time though to establish our links here in the Pacific and then really establish some joint activities…seminars with the World Health Organisation (WHO) and more joint activities with SPREP." he said.

Mr Al-Majed emphasised that WMO was keen to encourage countries and territories not involved to join the organisation.

Mr Eisa Al-Majed and Henry Taiki of the WMO Sub-regional office at the SPREP Secretariat.

SPREP benefits from Chinese generosity

The Government of the Peoples' Republic of China recently signed over one million Yuan (approximately US$120,000) to SPREP. The six figure sum will most likely be used to buy furnishings, either locally or overseas, for the new SPREP Centre due for completion in late July 2000.

The Peoples' Republic of China's Charge d'Affaires, Mr Deng Wenyu and SPREP's Officer in Charge, Ms Neva Wendt, signed the agreement for the grant at the organisations existing Vaitele headquarters.

Ms Wendt says the unsolicited contribution was a further indication of the continued friendship and cooperation between the Peoples' Republic of China and SPREP.

"It's more than just lip service, it's about flexibility and a really strong willingness by the People's Republic of China to help SPREP provide the best services possible to its membership. This is a magnanimous gesture", she said.

The Peoples' Republic of China had also, in November 1999, contributed US$100,000 towards the cost of construction of the new SPREP Centre, said Ms Wendt.

Ms Neva Wendt accepting the assistance from the Peoples' Republic of China for the SPREP Centre. Mr Deng Wenyu officiated for the Chinese Embassy.

From the Director's Desk

Mr Tutangata, Director of SPREP

Dealing to the Dirty Dozen

A survey carried out by SPREP, has identified some significant stockpiles of chemical pollutants that need to be removed safely to help preserve our environment. Environmentalists call them Persistent Organic Pollutants (POPs), toxic chemicals that do not break down readily in our natural surroundings. Instead, they bio accumulate through the food chain and can have adverse effects on our health and environment. Some contaminated sites around the region have also been found, due to the past use of POPs and their inappropriate disposal. Of the twelve hazardous chemicals our friends at the United Nations Environment Programme (UNEP) have labelled "the Dirty Dozen", there are several that impact on us directly. In SPREP's neck of the woods, DDT is still being used by some member countries to kill mosquitoes, despite effective alternatives like Malathion being available. The continuing preference for DDT appears to be driven solely by cost considerations. With Poly-chlorinated Biphenyls (PCBs) there are still significant stockpiles previously used as transformer oils in a variety of industrial applications. All up we've calculated that there are about 180 tons of these toxins scattered and dumped around the region.

The United Nations describes POPs "as international travellers without passports". Left to their own devices, these chemicals spread themselves through the environment, and over time accumulate in our bodies. Able to transit through both air and water, human exposure usually occurs through the fish food chain. With Pacific islanders' heavy reliance on the sea for subsistence, and an increase in fishing as a cash crop, the ramifications are obvious. Everyone has traces of PCBs in their bodies, due to the millions of tons discarded over the last half century by technologically advanced countries. We now know that some PCBs are confirmed human carcinogens, while exposure during pregnancy can result in developmental problems in the foetus.

Since 1998, 130 countries have been looking at drafting a convention to reduce the number of chemical pollutants, and outlawing others. UNEP has been tasked with overseeing the preparation of this document. The penultimate round of talks was held recently in Bonn, Germany in May. A two-person SPREP delegation was there together with government delegations from five Pacific island countries. Naturally getting 130 villages, much less 130 countries to agree on the same matter can be difficult to say the least. One of the more contentious issues still needing to be resolved is who or where the funding will come from to carry out what is encompassed in the convention.

When the issue of funding was raised at the Bonn meeting, it split the participants into two camps, the developed countries and the developing countries and territories. From a Pacific perspective, a key requirement for success would be the provision of adequate training of government personnel, and related institutional strengthening to ensure Pacific people are able to effectively carry out their work. Financial assistance will be required for the removal of existing stockpiles of unwanted POPs and the clean up of contaminated sites.

Financial assistance is needed to remove existing stockpiles of unwanted POPs and the clean up of contaminated sites. There are currently more than 50 contaminated sites in 13 PICs.

Emphasis could also be given to ensure that developing countries have ready access to alternative waste disposal systems, and to new energy technologies that could lead to reductions in the use of fossil fuels, that potentially are a significant source of POPs emissions. It will be difficult (but not impossible) to implement the convention without the appropriate levels of financial aid and technical assistance. But we firmly believe that the POPs Convention will eventually provide the mechanism and impetus to meet that end.

Once countries become parties to the convention they will each be expected to identify all their existing uses of stockpiles of chemicals.

With financial support from the Australian government through AusAID, SPREP has already gone some way toward achieving this, through an inspection and cataloguing of stockpiles of waste and obsolete chemicals, plus a preliminary inspection of contaminated sites in 13 countries and territories. The Pacific also has the Waigani Convention which aims to ban the importation and movements of hazardous wastes around the region. Already, five countries of the ten signatories needed to ratify Waigani have signed. Upon coming into force, SPREP will act as the Secretariat to the convention.

Although the Pacific's overall contribution is small, the complete impact of our action or inaction will be felt fully right here. So cleaning up our own backyards first, then trying to dissuade larger industrialised countries from using or producing the offensive chemical products could be the way ahead.

SPREP intends to play its part in encouraging member countries and territories to ratify the POPs Convention. The final round of discussions has been set down for November in South Africa, before a meeting of the Parties in Stockholm for ratification and signing in May of 2001. A positive outcome means another step towards making our global environment a better and safer place for everyone. Now that's something we can all smile about.

Biodiversity Success Indicators face the Test

Uafato Conservation Area

Children of Uafato village

Fish population

The Uafato Lagoon

The endangered Manumea (tooth-billed pigeon)

Its always been a challenge for environmentalists to work out scientific ways of revealing the true condition of the natural world we inhabit. In the village of Uafato on Samoa's north west coast, the South Pacific Biodiversity Conservation Programme (SPBCP) is running the first of a series of indicator trials to find out the effectiveness of the communal villages approach to biodiversity conservation. The results of these findings could have regional implications.

The aim of the Uafato trial is to run tests using socio-economic and biological indicators. If successful the end result would lead to a major breakthrough in helping Pacific islanders use their natural environment in a more sustainable way.

Indicators are like signposts telling one what to do, where and how far to go and so on. For example, low unemployment and a high volume of exports are indicators of a country in good economic shape.

Uafato is one of 17 SPBCP Conservation Areas (CAs), in 12 member countries covering more than 1.6 million hectares of land and water.

Dr Trevor Ward, the team leader of the SPBCP Indicators Development Project, was at SPREP recently to provide an update on the latest developments at Uafato.

He explained that the framework for the project is in three phases. Initially the owners of the CA are consulted. Once an agreement is reached, a set of preliminary indicators is put in place before the first trials take place.

"We are just ending phase two (preliminary indicators) now. Ideally you'd like the monitoring to go on idenfinitely, you'd like years and years of data." says Ward.

A series of indicators covering biodiversity, revenue sources and household arrangements has been put together. Some examples of the type of indicators being recommended for use in the Uafato CA trials include fish populations, lagoon conditions, bird populations and species composition.

Fish populations

If moving gradually further out to sea, there is an observed decrease in the varieties and numbers of fish being caught, this is a clear indicator that something is happening to the fishing grounds where people have fished for many generations, and to the stock and types of fish they used to catch.

Bird population and species composition

If there is a decrease in the number of pigeons or flying foxes found near or around a village, this indicates that too many birds or their eggs/young are being used for food or destroyed.

Children's growth statistics

A village with healthy children and babies is an indicator that the mothers or care givers are practising good habits of eating a balanced diet of local foods. Conversely high blood pressure, diabetes, obesity or heart problems signal poor dietary habits including the high consumption of imported or processed foods.

Lagoon conditions

Green moss-like weeds growing along the watermark lines of the beach and in lagoons are indicators of pollution.

Although the final testing phase started in March, villagers have already identified a number of biodiversity changes consistent with similar patterns documented in other Pacific island countries. Swathes of *Ifilele* forest, a timber used for woodcarving to earn income, have vanished due to over harvesting. Edible bird life is dwindling and out on the lagoon, the fish catches have steadily dropped in tandem with the declining condition of the lagoon.

The Conservation Area Database: A Database of Key Information on South Pacific Conservation Areas

What is the Conservation Area Database? It is a database of key information on conservation areas developed with the assistance of the South Pacific Biodiversity Conservation Programme (SPBCP). It was established in 1997 and is updated with new data on a regular basis. Originally established as an application in Microsoft (MS) Access '95 ©, it has now been converted to MS Access '97 ©.

Since its establishment, data from the 17 SPBCP facilitated conservation areas have been entered under two major categories:

i. *CA Features*: Information on the natural, historical and cultural features of each SPBCP conservation area, along with maps and photographs.

ii. *Project Information*: Information on conservation area project activities such as project objectives and outputs, research surveys and inventories, biodiversity indicators, consultancies, staff and addresses, budgets and expenditures and references.

The CA database has three main functions:

- *Viewing and entering data on conservation areas*. CA data can be viewed in a series of forms. If required, these forms can be printed.
- *Searching for references*. If you want to learn more about some aspect of a CA, you can perform a search under reference title, author, or publisher to get full reference details.
- *Producing reports*. The CA database can produce a number of standard reports, which are already specifically formatted and can be printed easily.

Who is the Conservation Area Database for?

The CA database has been developed with two main users in mind: SPBCP staff, and Conservation Area Support Officers (CASOs) in conservation areas. Other potential users include environmental agencies, academic institutions and researchers. Although the database is still under development, it is hoped that a prototype version will be released to CASOs at the next CASO workshop in Samoa in August 2000.

If you want to know more about the CA database please refer to:

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Pacific Framework for Action on Climate Change

The Climate Change, Sea Level Rise and Vulnerability Conference in Rarotonga, Cook Islands in April produced a wealth of scientific information on the state of the region, and a Draft Pacific Islands Framework for Action on Climate Change, Sea Level Rise and Vulnerability.

The 22 Pacific island members of SPREP, hundreds of delegates plus scientists from international climate organisations including the World Meteorological Organization were involved in the five-day meeting. The main impetus of the conference was to brief government policy-makers on what needs to be taken into account in planning to cope with the effects of higher sea levels and climate change in their homelands.

Gerald Miles, Head of SPREP's Environmental Management Planning Division said before the meeting that the situation has to be given plenty of consideration by SPREP member countries.

"Pacific islands people are noticing changes. The scenarios predict island countries will be among the most vulnerable. The balance of evidence continues to point to the need for urgent action to reduce greenhouse gas emissions and to adapt to changes already in the climate system." Pacific islanders could well face having to modify or abandon their traditional coastal lifestyles.

Written with the input from all countries and territories attending, the 11 page *Draft Pacific Islands Framework for Action on Climate Change, Sea Level Rise and Vulnerability* makes interesting reading. Amongst the scientific findings presented, was research indicating a 0.5 to 0.8 degrees Celsius rise in regional surface temperatures during the 20th century but less warming in the northern hemisphere, a trend that had been monitored since the 1970s.

So far the word from scientists and experts is that the changing climatic conditions is causing the sea to rise by about 1 mm or so annually. This rate may increase by up to four times a year this century, and that this scenario is causing frequently stormier weather, more cyclones and droughts. As a result, Pacific island countries are continuing to experience certain effects consistent with the anticipated impacts of global climate change such as drought, the decline in agricultural production, and adverse effects on human health.

With the amount of qualitative data mounting, the draft plan says, "Pacific island countries need to improve their understanding of the situation and strengthen their ability to respond".

The Plan is to be elaborated on by SPREP and stakeholders prior to its delivery to SPREP's governing body (the SPREP Meeting), which this year will involve environment ministers in Guam this October. The framework will then be submitted to Pacific leaders at the Pacific Forum Meeting in Kiribati for final endorsement ahead of the important Sixth Conference of the Parties to the Climate Convention in November in the Netherlands this year.

Marine Pollution Risks on the Pacific Ocean

by Jennifer Robinson,C-SPOD Media Relations

It's never ending. Each year thousands of ships, people and containers of cargo voyage across the Pacific Ocean.

Most navigate through without notice, but other vessels leave signs of their passage in the form of oil slicks, wastes and invasive species, caused when dumping ballast water.

Marine pollution is now the number one threat to the world's oceans. Although the majority of marine pollution originates from land-based sources, a significant amount can come from ship-based sources with catastrophic results.

Located on the world's largest blue water ocean the Pacific islands and territories rely heavily on shipping. But despite the range of potential environmental hazards shipping can cause, there is still a shortfall of information at the national and regional levels, as to the best response.

With that in mind the South Pacific Regional Environment Programme (SPREP) has set up the Pacific Ocean Pollution Prevention Programme (PACPOL).

As a starting point, SPREP hired Canadian oceanographer, Mr Ed Anderson, to manage and conduct a marine pollution risk assessment of the region, on an individual country and port basis.

Anderson is returning to Oceania after four years of teaching marine pollution at the University of the South Pacific (USP).

"It's an interesting challenge and different work than I'm used to doing," he says from the USP campus in Fiji.

"I usually do hands on at the end of the pipe type of studies. This is a much larger study – it's immense. It's half the Pacific Ocean almost."

Joining the project team are regional shipping expert Sione Tu'itupou Fotu of the Tonga Ports Authority, Francis Hong-Tiy of Shipping Services Fiji, and Ms Batiri Thaman of the USP Institute of Applied Sciences assisting with environment data management.

In order to become familiar with the shipping type of marine pollution, the team will spend up to eight months gathering data to produce a Geographical Information System (GIS) database of shipping patterns. The database will include details on shipping lanes, types, cargoes carried, frequencies and intensities, plus the locations and descriptions of ports and hazards.

Mr Sefanaia Nawadra, SPREPs Marine Pollution Project Officer says the project marks a first for the region.

"Different shipping companies have done bits and pieces, but what we want to do is provide a regional overview."

Of course the goal of the project is to help avoid shipping and pollution accidents by pinpointing the hazards of shipping routes, such as locations where ships run aground and potential areas of intrusion by invasive species and oil pollution incidents, says Nawadra.

So an area found to have plenty of shoals could be identified on the GIS database, then have a 10-kilometre "no go zone" around it to prevent ships from entering and having accidents.

The assessments are being done using a three tier approach: every capital/port within each territory or state; the 200-mile EEZ of each Pacific island; and then the region as a whole. All ships defined by the International Convention on the Prevention of Pollution from Ships 1973, and its 1978 protocol, are included in the study, plus fishing vessels from distant fishing nations. Military vessels and those transporting nuclear waste are not covered in the project.

Once complete, the database will give individual countries and the region a snapshot of what is coming and going in the Pacific, says Nawadra. In turn, the database will also identify high-risk areas and enable countries to develop focused actions to address the problems.

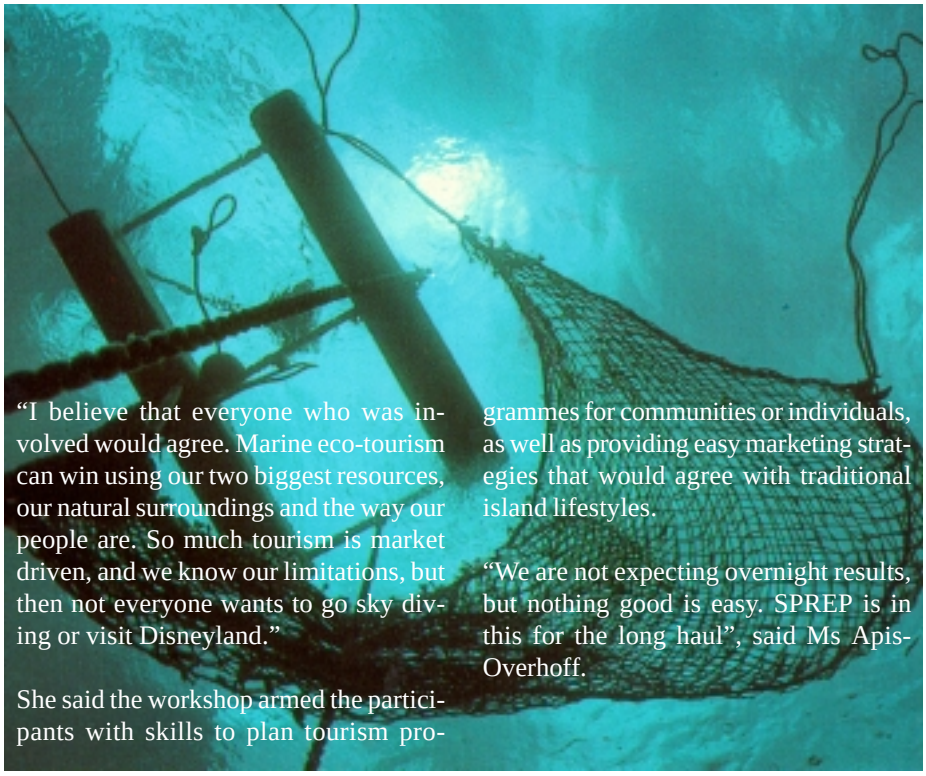
The project is part of the Canada-South Pacific Ocean Development (C-SPOD) Program, Phase II, which is funded by the Canadian International Development Agency (CIDA) and coordinated by the South Pacific Forum Secretariat and LGL Limited, Canada.

C-SPOD projects are developed and implemented by the participating regional organisations, and approved and managed by a Programme Management Committee including CIDA, the South Pacific Forum Fisheries Agency, the South Pacific Forum Secretariat, SPREP and USP. All C-SPOD projects aim to ensure equity and balanced benefits for all Pacific islanders.

Community-style Marine Tourism on the way

It's good, and it's going to get better was the message at a SPREP workshop on marine tourism in the Cook Islands. Twenty participants from around Polynesia wound up two weeks of discussion on how to get tourists and village communities into tourism using the regions main resource—the Pacific Ocean.

The Pacific's main resource—the Pacific Ocean (photo by J. Morrison).



As the close of the workshop Cook Islands Deputy Prime Minister Norman George spoke of the importance of passing on the message of sustainability, without hindering peoples right to earn a living.

"I challenge you to use the knowledge and skills you have learned from this workshop in marine ecotourism ... to ensure that communities can continue to sustain their lives and livelihoods from their marine resources and environment without depleting or destroying those resources."

When that is achieved any threat of the Pacific region being degraded and depleted would be removed, said George.

Workshop Coordinator, Ms Lucille Apis-Overhoff said she was "rapt over the results".

"I believe that everyone who was involved would agree. Marine eco-tourism can win using our two biggest resources, our natural surroundings and the way our people are. So much tourism is market driven, and we know our limitations, but then not everyone wants to go sky diving or visit Disneyland."

She said the workshop armed the participants with skills to plan tourism programmes for communities or individuals, as well as providing easy marketing strategies that would agree with traditional island lifestyles.

"We are not expecting overnight results, but nothing good is easy. SPREP is in this for the long haul", said Ms Apis-Overhoff.

continued from page 1: Biosafety Protocol: What does it mean to the Pacific islands

Kiribati, Papua New Guinea, Samoa, Solomon Islands and Tonga in the 1999 and 2000 negotiating sessions.

Under the Cartagena Protocol on Biosafety, governments will signal whether or not they are willing to accept imports of agricultural commodities that contain LMOs by communicating their decision to the world community via an internet-based Biosafety Clearing House. In addition, shipments of commodities that may contain LMOs are to be clearly labelled.

Stricter Advance Informed Agreement procedures will apply to seeds, live fish and other LMOs that are to be intentionally introduced into the environment. In these cases the exporter must provide detailed information to each importing country in advance of the first shipment. The aim is to ensure that recipient countries have both the opportunity and the capacity to assess risks involving the products of modern biotechnology.

Until the Protocol had been adopted, there was no internationally accepted minimum standard dealing with the regulation of trade in LMOs and countries had to rely on their domestic regulatory measures. No Pacific island country is a Party to the Protocol as yet, although Samoa and New Zealand have taken steps in the right direction by signing in Nairobi. There are also virtually no national guidelines, policies and laws in place in the Pacific islands dealing specifically with the regulation of trade in LMOs. This was confirmed in an AusAID funded/SPC regional workshop conducted in Nadi, Fiji in 1999.

In the absence of regulatory measures, LMO trade in the Pacific will continue unimpeded with potentially negative effects on Pacific environments—well documented to be among the most ecologically fragile in the World.

The Pacific delegation at the 1999 Cartagena conference. Back row (l-r): Desna Solofa (Samoa), Adi Litia (Fiji), Andrea Volentras (SPREP), Tom Daniels (Cook Islands). Front: Tererei Abete (Kiribati) and Francis Itimai (FSM).

Learning from the Experts

Mrs Easter Galuvao is the Chief Environment Officer at Samoa's Department of Lands, Surveys and Environment. She recently survived a two week attachment to SPREP's Information and Publications Unit to produce the Samoa Environment Forum 2000 booklet. Here's how she did it in her own words.

Easter Galuvao with SPREP colleagues Chris Peteru and Mahendra Kumar (standing).

After putting together papers from the National Environment Forum at the close of last year, the Department of Lands, Surveys and Environment (DLSE) went looking for assistance towards the printing of the papers. This often happens when we have very little money in our budgets. Luckily enough, SPREP came to the rescue and approved financial assistance for the printing of the document. An attachment was proposed for someone from DLSE to work with SPREP's publication team in finalising the National Environment Forum document.

When I was told about the attachment, I thought the work was going to be easy as the layout had already been done. I assumed it should not take more than five days. To my surprise, I ended up completing the full two weeks.

My schedule was quite intensive as I only had ten working days to complete the layout. I was first introduced to Page Maker, a software programme for publication purposes. According to the SPREP publication people, PageMaker is the way to go and I was going to use it. I had no objection, although it was not quite what I had in mind!

The first three days were spent learning basic skills and techniques. Fortunately I was able to practice on the Environment Forum document, which was a real help. Learning about publications is not as easy as one might think. It involves knowledge of a lot different techniques and requires you to be creative. Still, it's a lot of fun when you have the interest and determination to do it. Working with images also brings enjoyment to the work. There is nothing better than messing around with photos, like placing a gecko on someone's forehead (for practice only!). Trying out all sorts of fonts and importing files from other programmes were some of the skills that I picked up while working on the final edit.

The two weeks I spent with the SPREP Publication Unit was a great learning experience. I must also mention the enjoyment of working in the SPREP environment—although I often missed out on the popular morning teas due to the slave driving Publications people. The only regret I have is the limited time I was able to spend with the Publications team, and learning from the experts. Nevertheless, I am positive that there will be more opportunities in the future for myself or my DLSE colleagues to train with SPREP's Information and Publications Unit.

I would like to express my sincere gratitude and appreciation to the Director and everyone at SPREP for your kindness and support during my attachment. May God bless you all. Faafetai tele lava.

Budding foresters in Niue

It was a memorable experience for a group of young people living on Niue—the world's biggest raised limestone atoll. Mixing theory and practice has long been held as an effective way to get the result. And so it was recently when Niue (pop 2000) put together an ecology camp for the youth of the island.

Activities and those involved during the three-day camp (photos supplied by Joslin Heyn).

Organised by the Niue Forestry Division (NFD) the camp focused on teenagers with an interest in global and local environmental issues.

Joslin Heyn, a Peace Corps Volunteer on attachment with the NFD, described the three days as "amazing".

During the first two days 20 participants took part in seminars and field trips on alternative farming. These included hydroponics and organic cultivation. Other seminars related to the protection of local coral reefs, eco-tourism and managing forest sustainably.

On the final day the group was joined by about 50 other young people gathered at the Hakupu Heritage Park.

"The plan was to plant 1,000 tress in an area that could later be used as a tourist attraction, conservation area, recreation area, educational tool and research site", says Heyn.

Despite the humid early morning heat, by mid-day the job was done.

"It took a lot of hard work in the sun but by noon at least 1,000 trees were in the ground. It was a very productive day and I think both the youths and the community feel very proud of what they have accomplished", says Heyn.

As a follow-up to what was learnt, a group of teenagers have set up a maintenance and monitoring system overseen by the Forestry Division. Plans are now being made to further develop awareness of other environmental issues affecting Niue.

The camp was jointly funded by the U.S Peace Corps Small Projects Assistance, the South Pacific Regional Environment Programme (SPREP) and the SPC/Pacific German Regional Forestry Project (GTZ).

Biosafety Protocol Information Kit

What is the objective of the Biosafety Protocol

The objective of the Protocol is, in accordance with the precautionary approach contained in Principle 15 of the Rio Declaration, to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of LMOs, taking also into account risks to human health, and specifically focusing in transboundary movement.

What the Biosafety Protocol does not cover

- Products of LMOs.
- Most pharmaceuticals for humans.
- LMOs in transit to a third Party.
- LMOs intended for contained use.
- LMOs for food, feed and processing.
- LMOs declared safe at a meeting of the Parties.

For further information contact: Mr Andrea Volentras at SPREP
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photo by Craig Wilson

Living Modified Organisms or Genetically Modified Organisms?

Living Modified Organisms (LMOs) as referred to in the Biosafety Protocol, are also more commonly known as Genetically Modified Organisms (GMOs). During the negotiations of the Convention on Biological Diversity, the word "genetically" was dropped to downplay the semantic connotations of the term and replaced with the word "living".

LMOs–What are they?

LMOs are organisms produced using modern biotechnology techniques whereby genetic material from one species is inserted into another species in order to introduce specific desired novel characteristics.

Why should LMOs be regulated?

While modern biotechnology and applications of LMOs offer potential benefits (for example, pest resistant or herbicide resistant crops, plant varieties designed to produce increased yields, fruit with delayed ripening characteristics), concerns have also been expressed about the potential risks to the environment, particularly biological diversity, posed by the release of LMOs into the environment.

These concerns are heightened given the relatively small amount of experience with releases of LMOs to date and adverse effects that may be manifested over the longer term. It has been suggested that LMOs released into the environment may pose similar types of risks to those presented by alien invasive species. In relation to the deliberate release of LMOs into the environment (for example, for the field-testing or commercial growing of genetically modified crops, or the release of genetically modified fish in aquaculture or mariculture projects), concerns about the biological diversity tend to relate to, for example:

- the potential dispersal of the LMO in the environment e.g. through invasiveness or enhanced competitiveness;
- the potential transfer of the inserted genetic material (and related characteristics) to other crops or native plants e.g. through cross-pollination;
- potential adverse effects of genetically modified crops on non-target species for example, some studies have suggested that crops modified to be resistent to insect pests may also have adverse effects on beneficial insects and birds;
- potential impacts on soil bacteria and the nitrogen cycle; and
- indirect effects on the environment i.e. where changed agricultural practices associated with the management of a genetically modified crop rather than the crop itself has impacts on the environment.

Concerns have also been raised about the possible effects on human health arising from the consumption of food containing or produced with LMOs. Products of LMOs are not covered under the Protocol. A way for Pacific islands to address labelling of LMO products (a big consumer issue worldwide) is through regulation at the domestic level. Australia and New Zeland plan to introduce the strictest labelling regime in the world for genetically modified food.

Advance Informed Agreement and the Protocol

The Advance Informed Agreement Procedure is the backbone of the Protocol. The Party of Export is obliged to notify (or ensure notification), in writing to the Party of Import, before the first intentional import of any given type of LMO. The Party of import then has 90 days to acknowledge receipt of the notification, and advise that it intends to proceed with the Protocol's decision procedure, or according to its domestic regulatory framework.

Implications to Pacific Islands Parties–some costs

- Developing and implementing appropriate national regulations to control imports of LMOs is likely to require significant human, financial and technical resources. For example, Parties will need to undertake risk assessments in order to make informed decisions. The relevant areas that might be involved in risk assessment are: microbiology, plant or animal pathology, food safety, genetics, ecology, virology, molecular biology, entomology, biochemistry, public health, quarantine and agriculture. IT experts are also needed to establish, operate and exchange information through the national Clearing House Mechanisms that the Parties are obliged to set up.

Implications to Pacific Islands Parties–some benefits

- The Protocol provides an minimum international standard for Parties who trade in LMOs and signals the measures countries should look at when considering national regulatory frameworks.
- The Protocol promises to provide assistance to Parties that do not have the capacity and financial resources to adequately address biosafety that may affect the environment and human health. In the short term, it is important that Pacific islands identify their priority capacity building needs in biosafety. For example, the responsible authority for overseeing and assessing biosafety; availability of human resources for risk assessment and decision-making; existing relevant legislation; technical and financial assistance needed for effective implementation of the Protocol; and a national biosafety framework and appropriate mechanisms for information exchange.