



## Environment Newsletter

### *The Last Word ...*

*from the Editor*

**T** alofa lava, and welcome to the new-look SPREP for 1992. We must first apologise for taking so long to get out a new issue of *Environment Newsletter*, but with the move from New Caledonia to Western Samoa, it has taken some time to set up staff and equipment, especially when Cyclone Val decided to interfere! Our thanks go to the Government of Western Samoa, which made our transition after Cyclone Val relatively trouble-free.

The move to Apia is now almost complete, with Noumea-based staff arriving in Apia. New staff have also started: meet them on page 10.

Your new editor is Wesley Ward, the new Information and Publications Officer,

who will ensure that the newsletter comes out on time.

This issue focuses on preparations for the upcoming UNCED meeting in Riode Janeiro in June 1992. This major international event will direct world attention on the environment and sustainable development. It is already "heating up" for Pacific delegates with disagreements between this region and other countries over limits to "greenhouse gases", and the different definitions of "sustainable development" being used!

We are trying out a new format for the *Newsletter*. In a few issues, we will survey you for what you think of the *Newsletter*. We urge you to complete and return this survey to give us the information we need to better serve you.

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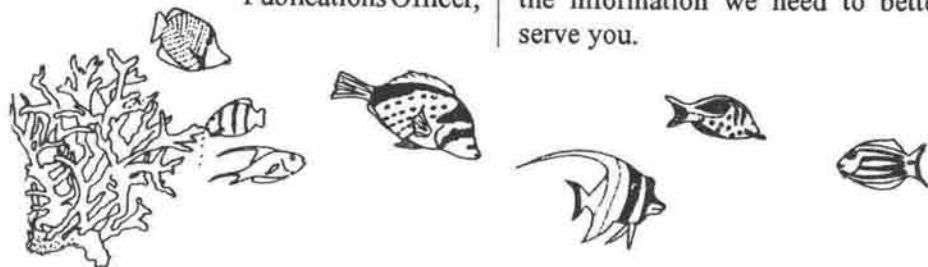
June 1991 to March 1992

**Apologies to libraries for the combined issue. We will now continue to be published quarterly.**

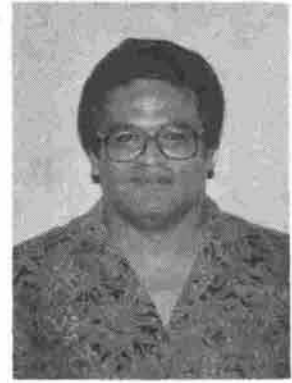
**ISSN: 0257 - 1962**

We include a list of acronyms on page 12 to make it easier for you. Acronyms save space, but not everyone knows them!

Read on and enjoy the first issue of *Environment Newsletter* for 1992.



## From the Director's Desk ...



**G**reetings and *Talofa* from SPREP's new home in Apia, Western Samoa. Since this is our first newsletter for 1992, your Secretariat wishes you a belated "Happy New Year", and hopes this message reaches all members of SPREP's family, wherever you are.

This year is proving to be historical and full of future challenges for SPREP. Our relocation to Apia went as smooth as can be expected for such a large undertaking. We recognise the tireless efforts of the Government of Western Samoa, even when our needs competed with others after the devastation of Cyclone Val. The help of the New Zealand Government and the generous assistance of the Australian Government ensured the relocation was on time. I also thank you for your patience with us during this transition period.

Since the last issue of the *Environment Newsletter*, we have added many new professional staff. Mr Don Stewart joined the Secretariat in January 1992 as the Deputy Director, and was responsible for co-ordinating the relocation from the Apia end. He was the first professional staff in SPREP to be recruited directly to Apia. Don brings a wealth of administrative experience to SPREP, especially in institutional building. This helps establish the "lean" organization discussed at the 1991 SPREP Inter-Government Meeting (IGM).

Other staff recently joining us include:

\* Mr Laisiasa Tulega from Fiji, as Environmental Contaminant Officer. Laisiasa graduated with an M.Sc. in Environment Engineering, and spent many years as Senior Environment Health Officer in Fiji.

\* Mr Nuku Jones from New Zealand, as Finance Manager. Nuku spent many years with the Forum Fisheries Agency (FFA), and was instrumental in setting up their much-hailed finance system.

\* Mr Komeri Onorio from Kiribati, as Environmental Impact Assessment Officer. Komeri is an experienced civil servant, with a post-graduate degree emphasising the use of EIA criteria for small island states.

\* Ms Adrienne Fargo from the Victorian Environmental Protection Agency in Australia, as Biological Diversity Conservation Officer. She has years of experience, and brings a wealth of expertise in technical and policy matters in Conservation.

\* Mr Wesley Ward from Australia, as Information and Publications Officer. Wes is no stranger to Apia and to the region, as he was the Information Officer for the Institute for Research, Extension and Training in Agriculture (IRETA) at USP's Alafua Campus. His experience will, no doubt, streamline our information system.

\* Ms Gisa Gaufa Salesa-Uesele, of Western Samoa, as the Environment Education Officer. She brings years of experience in developing curricula for secondary and primary schools, as well as raising awareness in the general community. Gaufa and Wes join forces to strengthen the area of Environment Awareness.

We expect a Legal Officer from France to join us soon. We have also been fortunate to obtain the services of Craig Hansford, a computer expert and a United Nation Volunteer, while Mr Iosefatu (Joe) Reti heads a team of four experts preparing project proposal documents for the Global Environment Facility's (GEF) South

Pacific Biodiversity Conservation Programme. Mr Bismarck Crawley also recently started as the Environment Data Analyst to set up a GRID database in SPREP, with UNEP assistance. (These projects are explained later this issue. *Ed.*)

The Secretariat's preparation for UNCED is on schedule. The "Pacific Way ..." report was launched several weeks ago. Responses from member countries, and the international community, have been most encouraging. A video for UNCED should be completed by May 1992. It reflects, again, the Secretariat's attempts and determination to have our concerns heard in Brazil. Your Secretariat is grateful for all the help it received in its race with time to have our voices heard in the Prep. Comm. negotiations, and in UNCED itself.

The GEF Biodiversity Programme (SPBCP) is progressing well. Other sections of our work programme were, no doubt, affected by the move to Apia. I assure you, though, that all efforts were made to minimize these unavoidable disruptions.

SPREP's new finance system has been established, and we now look after our own financial affairs. Local support staff are in place, and our containers of office furniture and equipment have arrived. The office is taking shape, and staff are settling in.

I look forward to welcoming you to your Secretariat's new Headquarters at the next IGM in September 1992.

UNCED '92:

# The Earth Summit



Preparations are nearly complete for the major international environment meeting in this decade, the United Nations Conference on Environment and Development (UNCED). This is a unique chance for Pacific Island nations to voice concerns on vital environment and development issues for themselves and the region.

The meeting will be held at Rio de Janeiro, Brazil, on 1 - 12 June 1992, with government leaders and senior officials from around the world. They will discuss the vast interlocking problems and issues in attaining sustainable development, development which will not destroy our planet in the process.

Gerald Miles, SPREP's coordinator for UNCED preparations, and Chalapan Kaluwin, SPREP's Climate Change Officer, have attended meetings in Australia and New York with Pacific Island representatives to help press the region's views in many important issues, especially global warming (see inset).

A report prepared by SPREP, *The Pacific Way: Pacific Island Developing Countries' report to UNCED*, outlines problems threatening the environment and development in the Pa-

cific. This was widely distributed at the New York meetings, to press the case of the Pacific. It stressed many concerns, including:

- global warming and rising sea levels,
- limited land resources for many countries,
- fragile ecosystems, especially along coasts,
- rapidly-growing populations, growing cash economies, which diminish traditional culture and values, and the subsistence economy,
- threats to living marine resources, including driftnetting,
- nuclear testing and waste dumping, and
- limited community understanding of how important the environment is to long-term economic development.

Pacific Islanders hope that the rest of the world understands the unique nature and problems of the region, as outlined in the report. From this understanding can flow help and co-operation in solving or managing some of these problems. This is especially needed for problems outside of the influence and authority of the Pacific, particularly global warming and nuclear testing.

Pacific delegates are still meeting with interested parties in New York to press for co-operation on global warming from other nations, especially the industrialised North. It is hoped that a convention on climate change will arise from this, setting limits on the emissions of "greenhouse gases" in time to arrest the world's warming trend. ■

## Small Forum Countries Call for Action

Rising sea levels was a major issue at a recent meeting of small South Pacific Forum countries in Rarotonga, Cook Islands. Leading politicians from the Cook Islands, Kiribati, Nauru, Niue and Tuvalu expressed concern at the rising sea levels caused by the "greenhouse" effect. Small islands are very vulnerable to rising sea levels: they are low, have fragile ecosystems, and depend on the sea for survival, economic growth and culture.

To voice this concern, they signed a "Declaration on the Environment" at the South Pacific Smaller Island States Economic Summit on 17 January 1992. The governments present noted that global warming is due to industries and other sources emitting "greenhouse gases", especially carbon dioxide. So they called on industrialised nations to reduce emissions below 1990 levels by 2000, and to contribute to an insurance fund against damage to small nations due to rising seas.

The problem is still growing; it is not going away. These small Forum countries know that the world community must take more responsibility for the damage caused by humans to this planet. ■



## Pacific Islands Disappointed with Global Warming Talks

Delegates at the 4<sup>th</sup> PrepCom Meeting for UNCED, in February 1992, were disappointed at the poor consensus among delegates from the rest of the world for an international convention limiting "greenhouse gas" emissions. Global warming results from these emissions, and is a vast problem outside the control of the Pacific region.

Gerald Miles, SPREP's UNCED Co-ordinator, said that "the global warming issue goes beyond vulnerability to one of livelihood -- other countries (will) actually negotiate the future existence of another state". IPCC predicts that sea-levels will rise 20 cm by 2020, and 40-110 cm by 2100. If this is so, low-lying atoll countries such as FSM, the Marshalls, Kiribati, Tokelau and Tuvalu will be in deep trouble. In fact, as Miles points out, "they will cease to exist."

There are many associated problems with global warming and rising sea levels: more salty freshwater sup-

plies, more coastal erosion, threats to coastal building developments and tourism, more risk to roads, water and power supplies along coastlines, lost agricultural and village land, threats to vital reef and lagoon fisheries and ecosystems, threats to mangroves, higher storm surges, and more intense cyclones more often to name a few. Surrounding fringe coral reefs may keep growing, but these other problems may also engulf them.

Miles continues: "we only hope that a proper compromise is found so that we can progress towards a Convention that is effective and contains commitments." The Pacific is part of the larger Alliance of Small Island States (AOSIS), which also includes countries from the Caribbean Sea and the Indian and Atlantic Oceans. They are pushing for more stringent emission controls in the Convention, and for more co-operation from industrialised nations such as the United States of America, and from oil-producers such as Saudi Arabia. Pacific Island countries charge that industrialised countries bear the main responsibility for producing, and so reducing, greenhouse gases. International action is needed.

Talks resume in April, when it is hoped that a strong Convention will be negotiated for ratification at UNCED.

*"We only hope that a proper compromise is found so that we can progress towards a Convention that is effective and contains commitments."*

Gerald Miles  
SPREP's UNCED Co-ordinator



## Managing the Coastal Zone

Delegates from around the world gathered in February 1990 to discuss managing coastlines in the face of global warming. The book from this workshop, *Adaptive Responses to Climate Change: Coastal Zone Management Workshop - The Proceedings*, is now available from SPREP.

Over 80 delegates met in Perth, Australia, to reflect on climate change and its influence on coastal management. Under the auspices of the Intergovernmental Panel on Climate Change (IPCC), it was the first comprehensive meeting of LDCs to look at this vital and growing problem.

The meeting was critical of the lack of interest shown by developed countries in problems LDCs faced with global warming, where developed countries were largely the cause of the problem. To date, most resources were directed to the northern hemisphere, to investigate the effects of climate change and rising sea levels there. As noted by the meeting, however, problems in the less developed South will affect the North; physically, economically and socially.

The meeting investigated some solutions:

- \* holding back the sea, both "hard" and "soft" options,
- \* retreating from the shore, and the legislation needed, and
- \* abandoning and resettling, and the need for prior planning.

(Cont'd on Page 7)

# Planning a Better Environment

Conserving the environment has often been an *ad hoc* affair in the Pacific. Administrators or project leaders may want to save a particular forest or reef, and so ask the government to pass laws to protect it. This is sometimes done without talks with landowners, other government ministries, NGOs and community groups, or other users of the resource. Without prior planning, other activities and laws may be seriously affected by this decision.

This situation leads to misunderstanding, confusion and even conflict between the government and local people. And it is a waste of resources, especially people, time and money. This cannot be afforded in these hard economic times.

National governments are realising that this "piecemeal" approach is not the best way to use scarce resources. They see the need for a planned and co-ordinated national approach to saving the environment, involving many people and groups.

The questions then arise: "How do we do this? How do we deal with local landowners to lessen ownership problems? How do we conserve our land and water resources without jeopardising the economic development of our country? How can we afford to set up and maintain conservation areas? Can we afford to drastically change our land and sea?"

*"(There must be) a wide range of people, especially landowners and community, in planning and management"*

Peter Thomas  
The Nature Conservancy

A US\$30 mill. 5-year UNDP/SPREP project, the "South Pacific Bio-diversity Conservation Programme" (SPBCP), will address these and related issues. Muliagatele Iosefatu Reti, a former Director of SPREP, heads a consultation team that will start the project around three aims:

1. Starting sustainable conservation areas,
2. Conserving local plant and animal species, and
3. Helping make people of the region understand the need for and use of conservation.

The team met in February at the new SPREP office in Apia, Western Samoa, to plan the project. Mr Reti said that they are now visiting government administrators, NGOs and associated institutions in the region to match the aims and means of the project with the economic, social and physical means of the region.

Mr Reti is very keen to involve local communities and NGOs, as well as all relevant government ministries, in planning and running conservation areas. This is a new approach in many countries, as these new areas will not be national parks, but areas where sound management practices are carried out that will respect and enhance important natural habitats. He explained that this will need a "grassroots" approach to conservation, with local communities being responsible for carefully managing the conservation, and surrounding, areas. However, provision will also be made for the use of the area for the economic well-being of local people.

Mr Peter Thomas, a former SPREP officer now based in Hawaii with the Nature Conservancy, is also on the planning team. He was impressed by the initial interest shown in the programme by the governments of Western Samoa and Tokelau, and anticipated similar support elsewhere in the region. He said that "this reflected the growing awareness of conservation in the region."

"(There must be) a wide range of people, especially landowners and community, in planning and management", said Mr Thomas. He emphasised that these areas will involve using sustainable practices such as tree planting for watershed management, agriculture using mixed annual and perennial crops, and agroforestry in areas surrounding conservation areas.

SPREP is involved in strengthening national environment legislation through its National Environmental Management Strategies (NEMS) programme - see *SPREP's Environment Newsletter* no. 23-24. SPBCP will build on links made by the NEMS process in each country to produce new actions to conserve bio-diversity. Adrienne Farago, SPREP's new Biological Diversity Conservation Officer, works closely with the project team which is based at SPREP.

For more information, contact:

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Apia, WESTERN SAMOA  
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Fax: (+685) 20 231.

# GIS: Making Sense of Paper Mountains

Ever had a pile of maps, surveys, photos and other data, and had to make sense of it? Ever tried to write a useful report on a survey using this information? If you have, or if you are thinking about it, there is a computer tool that can help store and repackage the information so you can get the answers you want.

Geographic Information Systems (GIS) use computers to analyse and present data in a meaningful way, using maps to show information you want. It uses data from a number of sources: maps, surveys, remote sensing methods and others.

Remote sensing uses planes and satellites to gather radiometric data: visible light, infra-red, radar reflections, changes in geomagnetism and so on, over a certain area. This information is fed into a computer to produce images not normally be seen by the naked eye. Some commercial satellites carry out this work, and clients buy this information for the

area of interest over a set time period.

This information is fed into a GIS program, which sorts and processes the data. The processed information produces coloured maps, showing where a factor that you are investigating occurs, such as where erosion is likely to happen or where there is excessive sediment in a lagoon.

What does it mean for the environment? A big problem with information is that it is always growing. As we get more, we get bogged down under the mass of paper and data, trying to understand it. Inevitably, we lose some under the weight. GIS is a way of handling environmental information to assess and manage natural resources. The information produced is used by researchers, planners, demographers, policy makers and others. It is a simple way of showing a mountain of paper in a pretty picture.

This sounds wonderful, but there are problems. GIS needs powerful,



Bismark Crowley

## GRID Starts at SPREP

The Pacific is one step closer to having its own GIS database, with Bismark Crowley appointed as the Environment Information Data Analyst to run the GRID Programme at SPREP.

Bismark, formerly with the Western Samoan Meteorological Service, has previous experience in GIS, with six months training with UNEP / UNITAR (United Nations Institute for Training and Research), in Switzerland. His project applied remote sensing to managing land resources around Apia, Western Samoa.

Bismark is now preparing a survey for relevant personnel in Island governments to find out their needs for a GIS, and the amount of information already available in the Pacific. "This is very important", said Bismark. "We have to make sure that our system is what the governments want, and that it will be used by them. It is no use setting up a big computer database that no one knows about or uses! Please fill in this survey!" This survey is now being distributed.

He is off to Bangkok in April for intensive training in GRID, and to assess computer programs for use in the Pacific GIS. He will also set up some pilot databases so that he show the benefits of GIS to the region.

The GRID Programme Coordinator is Wes Ward, the new SPREP Information and Publications Officer. He will work closely with the SPREP Programme Officers for NEMS and Biodiversity Conservation to ensure GRID is best developed for the benefit of Island governments.

For more information, or if you can help, contact Wes or Bismark through the Director at SPREP. ■



## Talking to the Sky ...

**E**nvironmentalists in the Pacific are talking to the sky ... and the sky is talking back! No, it is not a form of collective madness, or a divine miracle, but space-age technology bringing people together.

Two environmental NGOs are using the Pan-Pacific Education and Communication Experiments by Satellite (PEACESAT) satellite communications system to meet regularly and discuss common environmental issues. The O Le Siosiomaga Society of Western Samoa and Le Vaomatua in American Samoa also meet with local experts to discuss problems and seek solutions.

PEACESAT greatly simplifies communications between the groups. They use the facilities at USP Alafua Campus, Apia, and at the Community College in Pago Pago. They recently met to discuss the feeding and care of fruit bats after Cyclone

Val. This meeting allowed them to speak freely together, and to put together a practical plan to save and protect the bats. It also saved much money in phones, faxes and air travel.

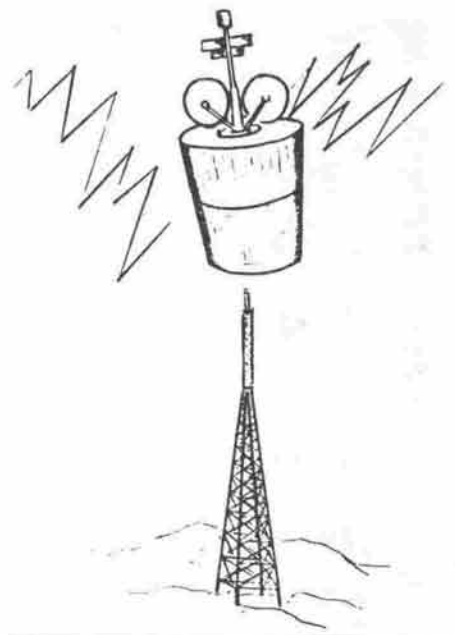
PEACESAT terminals are also now available in the Cook Islands, CNMI, Fiji, FSM, Guam, Hawaii, Kiribati, New Caledonia, PNG, Solomon Islands, Tonga, Tuvalu, and Vanuatu. The system is growing, so new terminals are always appearing around the Pacific.

For more information on PEACESAT, contact:

The Network Manager  
PEACESAT  
Bldg 31, Soc. Sci. Res. Instit.  
University of Hawaii at Manoa  
Honolulu, HI 96822.

USA  
Phone: 1-808-948 7794  
Fax: 1-808-942 5710;

or contact your nearest PEACESAT facility. ■



## Managing the Coastal Zone

(Cont'd from Page 3)

Pacific delegates were critical of the push for structural "hard" options to hold back the sea: they were too expensive, far beyond the means of island nations. There was also not enough appropriate information available, with many researchers showing little understanding of the natural systems of the Pacific. So, there is a risk of poor options being used by Island governments. In some countries, there is not even enough materials to build these structures.

They agreed that the best option for the Pacific is to strike at the source of the problem: limit emissions of "greenhouse gases". This would hopefully lessen global warming and limit rising seas. This would then cut the social and economic costs of climate change.

For a copy of the *Proceedings*, contact:

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## GIS:

### Making Sense of Paper Mountains

(Cont'd from Page 6)

expensive computers, colour plotters, large amounts of data storage, and suitable "digitised" maps. It also needs a lot of initial data gathering and the trained people to run the program. And of course, all this needs money, a constrained resource for Pacific Islands governments.

SPREP is establishing a new programme to overcome these constraints. ESCAP is funding the initial phase of the SPREP / GRID (Global Resource Information Database) Programme, basing a GIS unit at SPREP for use by the region (see inset). GRID is run by UNEP, with the Asia / Pacific database being developed in Bangkok, Thailand.

SPREP will become the Pacific sub-regional centre for GRID. Ini-

tially, the Programme is training personnel and buying the needed equipment. Then it will search for all useful information, such as maps, aerial photographs and environment surveys, to set up the GIS. To do this, SPREP needs the co-operation of all governments, libraries and people who have access to this information, so that it can be used in the database.

When it is established, Island governments and others will be able to tap into this unique resource. They will be able to base development decisions on sound information, which will be easier to see and interpret than the current masses, or lack, of information that often besets these important decisions. ■

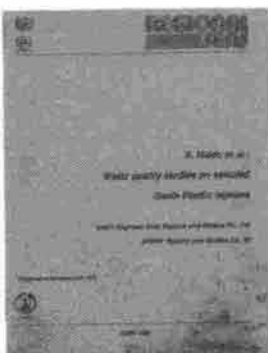
## Environment Book Review

### Water Quality in Lagoons

The peoples of the Pacific grew up by the sea. They relied on the lagoons for food, trade, and other supplies. They tended the reefs and, with low populations, were able to harvest the lagoons without damaging them. Lagoons and reefs were places of deep cultural significance in many areas.

Times have changed in the Pacific. As populations rise, lagoons are placed under greater strain to produce food. They also have to cope with the by-products of economic development: pollution from new factories, more sewerage from growing towns and cities, excess fertilizer and pesticides in streams that flow through areas with cash crop agriculture, and excess sediment from poor agricultural and forestry practices.

How are the lagoons taking the strain? Is pollution growing too quickly? What are the levels for polluting chemicals in an "untouched" lagoon?



SPREP's Environment Newsletter

### EIA for Western Samoa Power Station

Pacific Island nations must develop infrastructure to survive in the modern world. However, they should also seek to minimise the impact of development projects on the environment. Major projects influence the use of natural resources and the environment. Sound planning is important for the long term success of these projects.

Environmental Impact Assessment (EIA) should be integrated into project planning and monitoring. EIA assesses the project's impact on the environment, points to major problems, and suggests ways to overcome it. Unfortunately, it is often a case of "too little, too late".

New Zealand's Department of Conservation, in association with SPREP, carried out an EIA for the Afulilo Hydroelectric Power Project in Western Samoa in 1991. This project will finish in 1993, and aims to produce more than half of the electricity needs of the main island, Upolu. It will reduce dependence on imported diesel to run back-up generators, and also lessen air pollution from them.

The EIA report addresses a number of environmental, technical and so-



cial concerns, and suggests ways of lessening the impact of the project. It also suggests that an Afulilo catchment management group be started, with members from government departments, NGOs, and local communities. This group should develop a sustainable management plan for the catchment area.

The report also suggests that the environmental effects of the scheme be closely watched. Large catchment projects such as this influence areas outside the immediate area, due to links between habitats via flowing streams. With rainfall of over 5000 mm annually and steep terrain, any bare areas should be revegetated as soon as possible to stop erosion.

For more information on the EIA, contact:

Roger Cornforth  
Environment Division  
Dept of Lands and Environment  
Private Mail Bag  
Apia, WESTERN SAMOA.

These are some of the questions asked in a set of water quality studies carried out for SPREP by researchers from USP's Institute of Natural Resources (INR) in 1987 and 1988. They selected South Pacific lagoons with different levels and types of pollution in them: Laucala Bay and Suva Harbour, Fiji; Port Vila and Erakor Lagoon, Vanuatu; South Tarawa Lagoon, Kiribati; Fanga'uta Lagoon, Tongatapu, Tonga; and Marovo Lagoon, Western Province, Solomon Islands.

Local personnel helped these researchers carry out a series of water analyses at a number of sites in each lagoon. The results and conclusions were recently published in *Water Quality Studies on Selected South Pacific Lagoons* by S. Naidu et al. (SPREP Report no. 49).

The first four sites showed the need for serious concern, and action. The main culprit at the sites in Fiji, Vanuatu and Kiribati was sewerage, which is a major human health risk.

(Cont'd on Page 9)



# Workshop Reports

*This section reviews SPREP workshops in recent months, and discusses useful information to come from them.*

## EIAs and Coastal Mines

Mining is a growing industry in the South Pacific, especially in Melanesia. It can also be a major source of pollution in air and water, and for soil erosion, silted streams, and damaged reefs and lagoons. Pacific Island governments and local people are becoming aware of their potential damage to the environment. It can also damage natural resources used by locals for food and water.

Environmental Impact Assessment (EIA) is one method of assessing this damage. SPREP is keen to promote EIA as a way of allowing economic development, but not losing sight of the longer term environmental impact of mining.

The Canadian International Development Agency (CIDA) funded a workshop held at Honiara, Solomon Islands, with participants from Fiji, PNG, Solomon Islands and Vanuatu. The workshop facilitators, Derek Ellis and Philip Hughes, guided participants to the main aim of producing a set of guidelines for the environmental management of coastal mines. The purposes of these are to:

- minimise damage during mine development and operation,
- identify the environmental risks, and
- place avoidance, recovery and compensation costs on the mine.

## Writing Environment Courses

Children are the long-term key to success in changing the way our societies look at the environment. Teachers are the pivot points for their education, and so success in environment education rests with them. But what if they do not have the materials to successfully teach environment education? What if the needed references are not available or are unsuitable?

SPREP and USP's Institute of Education (IOE), with financial help from the Australian government, ran the second curriculum writing workshop

These guidelines were specifically for discharging mine tailings through a submarine pipeline. Experience has shown that this disposal method causes least damage to the land and sea environment if properly constructed and maintained. Disposal into rivers causes major damage through silting and coastal damage. This method is not suited to the Pacific. These guidelines will be edited and published by SPREP.

Recommendations from the meeting include:

1. making a short "awareness" video on the environmental management of mines, the problems of uncontrolled mining, and possible solutions.
2. a follow-up workshop on monitoring environmental standards, to teach sampling techniques and simple analysis of samples.

Participants came from various government departments and institutions, as well as a landowners' representative, who was a "real bonus", as it brought a touch of the real world into discussions.

in Kiribati to address this problem. Fifteen participants produced teachers' guides, with detailed lesson plans, and pupils' booklets for use in primary schools.

Teachers also learnt something. The course co-ordinators, IOE's Neil Taylor and SPREP's Gisa Gaufa Uelese-Salesa, discussed unit writing and editing techniques, and how to set out the booklets. Gisa commented on the dedication and enthusiasm of the teachers in finishing the writing section of the project.

The drafts will now be further edited, and these booklets printed with common covers and colour coding for easy use by teachers. Another workshop is planned for August or September 1992.

## Water Quality in Lagoons

(Cont'd from Page 8)

Levels of pollutants have not improved since they were last tested. The Tonga site showed potential for serious problems given recent developments on the shore, and the site in Solomon Islands was very good, but there was potential concern from new mining, intensive agriculture and forestry in the area.

The reefs themselves are also in trouble with high nutrient levels in many test sites. These interfere with coral growth, and so affect the lives of many reef users, especially at Tarawa and Marovo where the reefs are so important.

These results can also reflect likely problems occurring elsewhere in the Pacific. They must be of interest to local authorities and concerned people who suspect similar problems are occurring in their lagoons.

For a copy of this book, contact:

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P.O. Box 240  
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# New Faces at SPREP

With the SPREP's big move to Apia, Western Samoa, in January 1992, new staff have joined to improve its services to the region. We welcome them to SPREP and introduce them to you, their clients.



**Don Stewart**

Don is the Deputy Director, a position created to keep pace with the dramatic increase in the number of staff and programmes undertaken by SPREP in recent years. Don, a New Zealander, was recently with the Forum Secretariat in Suva and SPC in Noumea.



**Adrienne Farago**

Adrienne hails from Australia, and joins us as the Biodiversity Conservation Officer. She aims to help national governments establish and manage conservation areas, to protect the birds and animals of the Pacific.



**Gisa Muagututia  
Gaufa Salesa-Uesele**

Gisa, a Samoan, is the Environmental Education Officer. She seeks to improve environmental education in all its forms: from schools to the general community.

**Laisiasa Tulega**

Laisiasa, from Fiji, is the Environmental Contaminants Officer. His job is to establish and encourage the use of standards in pollution control around the region.



**Wesley Ward**

Wes is the Information and Publications Officer, and an Australian. He will collect and distribute environmental information on request, publish SPREP publications, and edit the *Environment Newsletter*.



**Komeri Onorio**

Komeri, an I-Kiribati, is the Environment Impact Assessment Officer. He will promote and encourage the actual use of EIA as a management tool for sustainable development in the Pacific.



**Craig Hansford**

Craig is our Computer Services Manager, and an Australian UN Volunteer. He will establish an effective computer system in the new SPREP office.

The "stalwarts" from Noumea are also with us:

<i>Director</i>	Vili Fuavao
<i>UNCED Project Officer</i>	Gerald Miles
<i>Team Leader RETA</i>	Dave Sheppard
<i>Team Leader NEMS</i>	Neva Wendt
<i>Project Scientist</i>	Paul Holthus
<i>SPBD Programme</i>	Iosefatu Reti
<i>Climate Change Officer</i>	Chalapan Kaluwin

**Nuku Jones**

Nuku Jones, from New Zealand, is our Financial Manager. He will ensure we have the money to run our programmes!



# Environment Meetings 1992

These dates are subject to change without notice. Dates and venues for later meetings will be added when available.

## April

- 6 - 10 2nd SPREP Intergovernmental Meeting on Climate Change and Sea Level Rise in the South Pacific Region, Noumea.
- 6 - 10 1992 Pacific Basin Conference on Hazardous Waste, Bangkok.
- 12 - 15 Commonwealth/UN International Pre-UNCED Consultative Conference, London.
- 13 - 16 National Predator Management Workshop, Canterbury, NZ.
- 22 - 23 Conference on Ocean Issues and Environmental Concerns, Hawaii.

## May

- 1 - 3 or 4 Marine Conservation Conference, Auckland.
- 4 - 6 33rd IUCN Council Meeting, Gland, Switzerland.
- 11 - 15 Meeting of the Intergovernmental Negotiating Committee for the Convention on Biological Diversity, Nairobi.
- 18 - 20 Plenipotentiary Session for the Convention on Biological Diversity, Nairobi.
- 26 - 29 "Exploring Land, Culture and Development in the Aquatic Continent" Conference / Workshop, Kapalua Pacific Centre, Maui, Hawaii.

## June

- 1 - 12 UNCED, Rio de Janeiro, Brazil.

## July

- 8 - 9 23rd South Pacific Forum, Honiara.

## September

- SPREP IGM, Apia.
- SOPAC Governing Council Meeting.

## October

- 32nd South Pacific Conference, Suva.

## November

- 33rd Meeting of the IUCN Council, Gland, Switzerland.

## Conference:

### Land, Culture and Development

The Kapalua Pacific Center is running its second regional conference / workshop on "Land, Culture and Development in the Aquatic Continent". It will look at land tenure policies and practices of Pacific Island countries, and their influence on:

- \* preserving the environment and natural resources,
- \* sustainable economic development,
- \* preserving traditional culture, and
- \* the role of education in these issues.

The conference is especially open to policy makers and administrators from Pacific Island countries.

**Where?** 26 -29 May 1992

**When?** Kapalua Bay Hotel,  
Hawaii, USA.

For more information, contact:

Kapalua Pacific Center,  
590 Lipoa Parkway  
Kihei, HI. 96753.  
USA.  
Fax: (1) 808-879 0011

## Courses:

### MSc in the Netherlands

Wageningen Agricultural University, the Netherlands, has a sound international reputation for training resource managers (researchers, administrators and extension officers) from many LDCs.

The MSc programme offers a wide selection in applied environmental sciences: ecological agriculture, geographic information systems, soil and water studies, and tropical forestry. These run for 17 months, and include research. Many courses are specific to the tropics.

Nationals from ACP countries can apply for EDF Fellowships to pay for course fees and living allowances. Information for these is available from the appropriate Ministry or government agency in your country. Note that Wageningen cannot process applications without prior written confirmation from the applicant's national government that he or she has asked for a fellowship.

For more information on these courses, contact the SPREP Information Officer in Western Samoa. For information on EDF Fellowships, contact your national EC delegate or your national government.

## Acronyms

We use acronyms in the interest of saving space. However, many people do not know their meaning. So, here is a alphabetical list to make life that little easier. Associated organisations are in brackets.

ACP African-Caribbean-Pacific (EC)  
CNMI Commonwealth of Northern Mariana Islands  
EC European Community  
EDF European Development Fund (EC)  
EIA Environmental Impact Assessment  
ESCAP Economic and Social Commission for Asia and the Pacific  
EWC East West Center  
FS Forum Secretariat  
FSM Federated States of Micronesia  
GEF Global Environment Facility  
IPCC Intergovernmental Panel for Climate Change  
IUCN World Conservation Union  
LDC Less Developed Country

NEMS National Environmental Management Strategies  
NGO Non-government Organisation  
PEACESAT  
Pan-Pacific Education and Communication Experiments by Satellite  
PNG Papua New Guinea  
SOPAC South Pacific Applied Geoscience Commission  
SPC South Pacific Commission  
SPREP South Pacific Regional Environment Programme  
UH University of Hawaii  
UN United Nations  
UNCED United Nations Conference on Environment and Development (UN)  
UNDP United Nations Development Programme (UN)  
UNEP United Nations Environment Programme (UN)  
UoG University of Guam  
UPNG University of Papua New Guinea  
USP University of the South Pacific

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