



Tongan Minister Calls for More Regional Co-operation at Fifth Parks Conference

Tonga's Minister for Lands, Survey and Natural Resources, Hon. Dr Samuela Ma'afu Tupou, called for closer co-operation between Pacific island countries in environmental issues in his opening address at the start of the Fifth South Pacific Conference on Nature Conservation and Protected Areas, held in Nuku'alofa, Tonga, on 5-8 October.

Dr Tupou invited the 140-plus participants from around the Pacific region to assist each other by sharing experiences and resources,

especially where useful ideas and concepts have already been translated into practical initiatives and solutions. He noted that ideas and practical initiatives often did not go together, as there either may be no means to realise the practical initiative, or people with the ideas and those with the practical solutions cannot communicate together properly.

Dr Tupou placed equal importance on the need for more co-operation at the community level, reflecting the theme of the conference: community involvement in conserving biodiversity in the South Pacific.

In his opening remarks, SPREP's Director Dr Vili Fuavao reinforced the Minister's comments in the need to involve people in the protection of their environment. "The degradation of natural ecosystems ... is resulting in the rapid loss of the region's natural biodiversity and is undermining the ability of island governments to support their populations", said Dr Fuavao.

"Local communities ... are the most important owners and managers of the resources that we would like to protect - and without their support, understanding and more importantly involvement, conser-

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vation objectives will not be achieved", continued Dr Fuavao. He applauded the attendance of a large number of local and international NGOs who often represented views of the local peoples.

An international award was also presented at the end of the Conference to the Arongo mana of Atiu, Cook Islands, for efforts in establishing a Wildlife Sanctuary at Takutea Island in the Southern Cooks Group. This sanctuary shelters important seabird colonies and their protective forest (see article on page 2).

The Conference will be held every four years, with the next to be hosted by Pohnpei, FSM, in 1997. This year, it was held at the Queen Salote College in Nuku'alofa.

Participants also attended a field trip around the main island of Tongatapu after the formal end of the Conference.

Conference reports and papers will be published by SPREP, and these should be available by early 1994.

(More stories on page 2)



Representatives of NGOs, governments, international organisations and academics in close discussion during the Conference.

Photo: SPREP

Cook Island Landowners Receive International Award



Mr Tauraki Raea accepts the award from Mr Bing Lucas, of IUCN-CNNPA.

Photo: SPREP

The vast majority of land and lagoons are owned by local landowners in the Pacific. Strong commitments from landowners are vital for conserving important ecosystems, endangered species and limited natural resources.

The Arongo *mana* of Atiu were recently recognised by the IUCN-Commission on National Parks and Protected Areas (CNPPA) when it received an international award for conserving Takutea Island as a Wildlife Sanctuary. Mr Tauraki Raea of the Cook Islands Conservation Service accepted the Fred Packard International Parks Merit Award on behalf of the Atiu landowners at the end of the recent

Fifth South Pacific Conference on Nature Conservation and Protected Areas in Tonga.

In his speech, the Chair of CNPPA, well-known conservationist Mr Bing Lucas, hailed the efforts of Arongo *mana* as trustees of Takutea, a coral cay 22 km north of Atiu. The *mana* decided that Takutea should remain uninhabited. This decision allowed most of the forest on Takutea to regenerate and for the protection of the largest and most important seabird colonies in the Southern Cook Islands.

Mr Raea thanked Mr Lucas on behalf of the *mana*, and highlighted

the importance of Takutea to the biodiversity of the South Cook Islands, and the efforts of the *mana* to preserve it. He also noted the use of the cay as a teaching resource for the students of Atiu High School in learning about their natural heritage.

The Arongo *mana* received a certificate and a cheque from IUCN-CNNPA for their efforts.

Recommendations of the Fifth South Pacific Conference on Nature Conservation and Protected Areas: A Summary ...

The Conference recommended that:

- ♦ SPREP, with governments and NGOs, develop guiding principles for organisations to develop effective partnerships with local people for developing and managing conservation areas;
- ♦ communities be provided with appropriate incentives to help them manage and conserve their lands and waters for conservation;
- ♦ governments and NGOs develop proposals for community-based conservation areas;
- ♦ governments and NGOs work within established community and village structures in developing conservation areas;
- ♦ governments and NGOs encourage traditional resource management rules which contribute to sustainable use of resources,
- ♦ and assist communities to apply these rules;
- ♦ appropriate educational syllabi, EIAs and training programmes be used to educate local landowners;
- ♦ governments and NGOs improve communication, information exchange and dialogue between them, especially for establishing conservation areas;
- ♦ SPREP, governments and NGOs work closely with Church organisations to further conservation and environment programmes in the Pacific;
- ♦ SPREP co-ordinate governments in developing strategies that involve local people, all levels of government, and international organisations, to ensure long-term sustainability of natural resources;
- ♦ SPREP promote the importance of innovative funding mechanisms, including trust funds, to support urgent conservation initiatives;
- ♦ member countries sign and ratify the International Convention on Biological Diversity;
- ♦ SPREP to assist countries with developing and implementing appropriate national conservation legislation;
- ♦ governments enact conservation legislation that accounts for or is based on traditional management systems and the concerns of local communities;
- ♦ governments include local communities in planning and managing conservation areas;
- ♦ countries become Parties to the *Apia Convention, Biodiversity*

(Cont'd on page 3)

From the Director's Desk



As we come to the last issue of our Newsletter for 1993, it is time to cast our minds back to the beginning of the year and assess our activities, re-evaluate our performance and ask ourselves the question - has this been a successful year? I believe the answer lies in the activities undertaken during the year.

On SPREP's domestic front, we saw the signing of the Agreement Establishing SPREP as an independent organisation, the successful establishment of our finance system, the refinement of our work programme and budget process, the start of a financial reserve for the organisation, the recruitment of technical staff in some key areas of environment, refinement of some policies to streamline the imple-

mentation of our work programme, and the implementation of staff conditions approved by the SPREP Meeting.

On the work programme front, much effort was directed into following up the Earth Summit, which included the launch of the long-awaited South Pacific Biodiversity Conservation Programme and the co-ordination of the Pacific's inputs into the upcoming Barbados Conference in April 1994.

Our work programmes activities cover a wide area, including environment planning and management, environment impact assessment, planning and managing the coastal zone, climate change, conserving biological diversity, avoiding and managing pollution, information, education and awareness,

environmental legislation, implementing Agenda 21, and various conferences, meetings and workshops. You have read reports of most of these activities in recent issues of the Newsletter.

I will not go into details on these points as I risk repeating myself. However, I simply wish to say that I believe that 1993 will go down as a most successful year for SPREP.

On behalf of all SPREP staff, I thank you for supporting us, and look forward to working closely with you in 1994. May you all experience the peace of Christmas and the joy of the New Year.

'Ofa Atu,
Vili A Fuavao,
Director.

Recommendations

(Cont'd from page 2)

Convention, Bonn Convention, CITES, Ramsar Convention, and the World Heritage Convention;

- SPREP, IUCN, international NGOs and national agencies collaborate to produce a revised Directory of Protected Areas in the South Pacific for the next Conference;
- donor agencies support SPREP, governments and NGOs in ensuring that local communities play the major role in establishing and managing marine conservation areas;
- SPREP ask the IUCN-Species Survival Commission to undertake a review of conservation problems caused by invasive species in the region; and,
- SPREP ask the IUCN-Species Survival Commission to give practical advice on preventing introductions of invasive species, on dealing with them when they occur, and on restoring invaded ecosystems.

Funding

Who?

Pacific Development and Conservation Trust

From? NZ Government trust

For? Promoting *sustainable development and conservation of the Pacific environment*, natural and historic resources, and the cultural heritage of the South Pacific.



Guidelines:

Projects must:

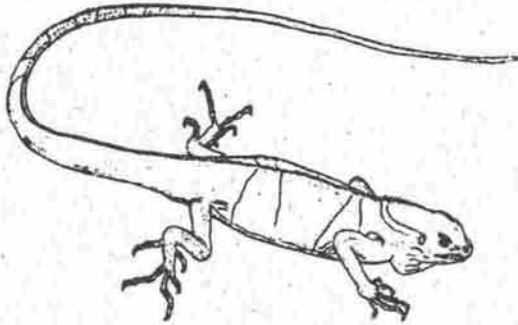
1. be proposed by NZ or South Pacific citizens;
2. meet the objectives of the Trust;
3. benefit South Pacific countries;
4. be for charitable purposes only - no commercial enterprises; and,
5. have a proven, existing achievement record.

For more information and application forms, contact:

The Trust Administrator
Pacific Development and Conservation Trust
PO Box 10 345
WELLINGTON, New Zealand
Tel: (64-4) 495 7200
Fax: (64-4) 499 1865

Next closing date for applications:

1 March 1994.



Fiji:

Landowners Support Iguana Sanctuary

Just over a decade ago, while working on Yadu Taba in Fiji, a scientist, the late Dr John Gibbons, discovered a unique form of crested iguana - a strange reptile found in few countries on the planet.

Conservationists and scientists realised that this creature would be extinct if its island habitat wasn't protected. So a co-operative effort began, with the landowners, scientists, conservationists and the Fijian Government establishing an unconventional Sanctuary on the small island just west of Vanua Levu.

Dr Dick Watling, a zoologist involved in the first major fauna survey of Yadu Taba, explained that the Sanctuary protects a rare form of the crested iguana. The Yadu Taba form is over a meter long including its tail, though body is only about 30 centimeters long. It is larger than other forms of crested iguana found on nearby Mananuca and Yasawa Islands.

Yadu Taba is the last island with a viable crested iguana population, and with a good conservation potential. The other islands are inhabited and have introduced predators such as rats and cats. These islands also have a lot of fire, so the original forested habitat of the iguanas are now reduced to a vestigial state. Yadu Taba really is the last island with potential for conserving the crested iguana.

The Sanctuary was constituted by a formal agreement between the chief and landowners of Yadu Taba and the Fiji Government has existed. The agreement was acceded to in 1981, with assistance from WWF and IUCN. The National

Trust of Fiji, which looks after natural and cultural heritage in Fiji, is in charge of administering the Sanctuary. This situation was last reviewed in 1990.

The agreement was negotiated with the help of two government ministers. They approached the traditional head of the area, with also the District Officer and the Provincial Head. It was agreed that the National Trust pay an annual sum to the traditional head, who would then ensure for the Trust that all the management practices were carried out to safeguard the iguana.

This Sanctuary is succeeding in conservation, with no fires on the island since the start of the agreement, and so the island's grasslands on the higher ridges have recovered. Also, most goats have been removed.

The Trust is now negotiating a formal lease over the Island which will allow longer term protection of the Island. The management situation on the Island is sound, because the head of the landowners has cooperated with all scientists and visitors to Yadu Taba. However, the owner is aged and there may be difficulties with the new head of the landowners. So a formal lease would improve the chances of maintaining the Sanctuary.

The landowners play an obvious role in managing the area. The landowners and associated members on the adjoining island have developed a sense of pride in something unique and rare in their local area. This they guard jealously. The landowners provide an honorary warden, with other landowners boarding visiting yachts and keeping information about them such as

nationalities and passport numbers, and destinations. These are important for combating the threat of smuggling the iguanas overseas.

The success of this has been through a very powerful and vocal chief, who also has fishing rights over the area. He agreed to the terms and conditions proposed by the Trust in establishing the Sanctuary in a traditional manner. The Agreement was sealed with the exchange of tabuas, whales' teeth. The tabua has more value than money in Fijian society, so it was a strong commitment.

However, the islanders must still have access to development, so there must be some economic return for the land owners. Low-impact tourism could be one alternative for their benefit. Within the next five years there could be an eco-tourism project based on an exclusive booking system. There will be no camping on Yadu Taba, but there will be limited accommodation on the adjoining island so the Island's ecology will not be put under stress by too many people. However, this tourism must be carefully controlled.

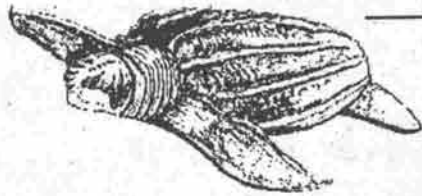
Ed.: Adapted from interviews with Dr Dick Watling and Mr Barendra Singh on the "One World" radio program, 19/7/93, broadcasted by Radio Australia.

The opinions expressed in this article are not necessarily those of SPREP, the Director or the Editor.

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Did this Newsletter arrive at the correct address? If not, please send your corrections today!

Year 1995 Declared "Year of the Sea Turtle"



A regional meeting on marine turtles in July 1993 at Apia, Western Samoa, proclaimed 1995 as the "Year of the Sea Turtle". This was confirmed by the member governments of SPREP at Suva, Fiji, in September.

The turtle meeting also called for Pacific island countries to ban international trading in turtles and turtle products, and for countries to only allow turtle harvesting for subsistence and cultural uses, and where possible place a moratorium on the in-country commercial trade in turtles and turtle products.

Why all this attention? Why have two regional meetings called for restraint in the killing of all turtles for commercial and subsistence uses?

The Pacific region contains some of the last remaining significant populations of sea turtles in the

world. Three of the seven turtle species found in the world commonly breed in the Pacific. Three other species are found here, but are less common. Turtles also migrate across and outside the region, so they are a shared resources that must be managed by common agreement by a number of countries.

Turtles have special local value - as food and culturally - for many Pacific island peoples. Turtles can be harvested from the sea - but the number caught must not exceed the number replacing them from the stocks of young turtles that are replacement breeders.

Unfortunately, this is not happening. Turtle populations are declining rapidly in the region because of increasing commercial and subsistence harvesting. Turtles are now being killed faster than they can grow.

Turtles live a long time and grow slowly. They take twenty to fifty years to start breeding. So if large numbers of breeding females are killed now, the decline in the population is not noticed till much later. The current decline in turtle numbers is due to actions taken many decades ago. In the same way, the greater numbers being killed now will not be felt for some decades - by which time it may be too late to act and conserve them, as the turtles may have have disappeared.

There are a number of reasons for the rapid decline in turtle numbers: firstly, there are rapidly growing numbers of people in the region, who are demanding more turtles for food and for cultural needs. Secondly, more turtle can be caught using modern fishing techniques and equipment. Thirdly, the traditional restrictions on when and how turtles were caught are disappearing, so more turtles are being caught and eaten. Lastly, marine pollution and fishing nets accidentally drown many animals.

So what can be done about the demise of sea turtles in the Pacific? SPREP runs a regional turtle conservation programme that monitors the numbers and movements of tagged turtles around the region. If you catch a tagged turtle, send the details on the tag to your local fisheries or conservation officer, and release the turtle.

Secondly, if you must catch turtles, then leave females alone, especially if they are about to nest. If you must take eggs, only take a few and leave the rest.

The Pacific's sea turtles are endangered animals. Every nesting female caught means fewer turtles for our grandchildren. We must act today to conserve our natural heritage and our resources for the future.

Plantation Forests Have a Role

Plantation forests - trees planted on formerly forested land - are becoming more common in some Pacific island countries, notably Fiji. They are seen as a method of "rehabilitating" clear-felled land, and for long-term investment through the wood growing on the land.

Tree plantations are not a satisfactory substitute for natural forest. The timber and non-timber products from plantations do not match those from the rich and diverse natural forest eco-systems. Plantations can, however, play an important complimentary role in preventing pressures caused by felling natural forests.

Successful sustainable plantation forestry enhances national and local economies. It has four main strategies:

1. Plantations of "*pioneer species*" for domestic or export markets. These do not displace important natural ecosystems or rich agricultural land;
2. Planting *nitrogen-fixing trees*, which are controlled by local landowners;
3. Planting trees to *augment farming systems*, so diversifying sources of income and farming systems; and,
4. Planting trees that *reduce erosion or rehabilitate* waste or degraded land.

The challenge is to establish plantation systems that can be sustainably managed by present landowners, and so conserving existing important natural eco-systems for future generations.

(From ITTO's *Tropical Forest Update*, 33, October 1993, p5.)



The Dangers of an Urban Pacific Future

David Robie
Journalism Department, UPNG.

At the rate Pacific urban areas are growing, many could soon be unsustainable. Some areas, such as around Ebeye, Port Moresby and Papeete, already are.

However, a USP academic warns many towns and cities are under threat from urban environmental degradation unless farsighted planning begins now.

According to geography senior lecturer Dr Jennifer Bryant-Tokalau, population growth, environmental degradation, land distribution and tenure, and unemployment must be urgently addressed to avoid "doomsday" scenarios for the future. Unsafe drinking water supplies, polluted lagoons, spreading disease and massive loss of topsoil are already realities in the Pacific.

Dr Bryant spoke at the Waigani Seminar at UPNG, describing the sharp fall in the quality of life in many Pacific urban centres.

Although many commentators and researchers have addressed some of the issues of overcrowded towns in the past, Dr Bryant focused on the environmental sys-

tems and human issues of urban development.

Opening Waigani

The seminar was a major contribution towards PNG's National Sustainable Development Strategy. It was opened with an attack on foreign exploitation by PNG's Governor-General, Sir Wiwa Korowi, and closed in a visionary note by the country's ambassador to the United States, Meg Taylor.

The Wingti government also seized the opportunity to announce it would immediately begin implementing the controversial new forestry guidelines in spite of bitter opposition from logging companies, officials from the giant Ok Tedi mine were on the back foot over renewed accusations by landowners over pollution of the Fly River, and a government adviser pledged the National Sustainable Development Strategy was intended as a genuine action plan and would not "sit on a shelf".

Changing Patterns

In spite of perceptions that the Pacific Islands are predominantly rural societies, the region's population pattern has changed dramatically in the past decade.

(Cont'd on page 7)

Waigani Seminar '93: Environment and Development: From Rio to Rai

Landowners, villagers, public servants and politicians joined academics in the 20th Waigani Seminar at UPNG on 20-28 August, to address this year's theme of "Environment and Development: From Rio to Rai".

It was a stimulating forum which addressed some of the pressing problems in reconciling economic development with conserving PNG's natural, and social, environment. With the country's incredible untapped natural resources on one hand, and the potential for massive environmental exploitation and destruction on the other, this was a timely meeting of parties interested in the shape of PNG's future development.

Topics addressed by keynote speakers from the Pacific, Africa and Asia addressed sustainable development, rural development strategies, the degradation of the urban environment, and development priorities. These speakers were well covered by the local media.

Other topics covered included biodiversity; mining and petroleum; chemicals and waste; forestry and fisheries; water, energy and ecotourism; people, participation and responsibility; and information and training. Recommendations were forwarded from these areas to a final session. The final set of recommendations were forwarded to the PNG Cabinet to be considered when assembling PNG's Sustainable Development Strategy, which is akin to the NEMS now in place or being completed by most other SPREP member countries.

UPNG and SPREP will publish the Waigani '93 Seminar meeting report and papers during 1994.



Growing piles of rotting waste - a visible problem of the urban explosion in the Pacific.

Photo: Douche, Tahiti



The Dangers of an Urban Pacific Future

(Cont'd from page 6)

Now only Niue, Papua New Guinea, Solomon Islands, Vanuatu and Western Samoa have less than a quarter of their population in urban areas, while seven countries are more than 50 percent urbanised.

Solomon Islands will also have 26 percent of its population living in urban areas by 2006 and Papua New Guinea will be 33 percent urban by 2005, given present growth rates. Some estimates say Vanuatu will also be more than 25 percent urbanised by 2000.

The two other countries with lower urban populations, Niue and Western Samoa, have high migration rates, with the majority of their populations living abroad in urban areas.

However, Dr Bryant said: "The definition of urbanisation, and the recently changing economic circumstances in Western Samoa in particular - with the establishment of factories employing large numbers of women - make the calculation of the urban population difficult as it is obviously changing rapidly."

Some predictions place Western Samoa's urban population at 25.5 percent by 2000. Moreover, adds Dr Bryant: "It is quite possible that with return migration, particularly from New Zealand which has increasing unemployment levels - especially among Maoris and Pacific Islanders, pressure on Apia (the capital of Western Samoa) will increase as return migrants seek work in the urban area."

The impact of migration from outer islands and from highlands to coast includes pressure on land ownership and access, the breakdown of and challenge to traditional behaviour patterns and major political upheaval.

"These are likely to continue," said Dr Bryant, "particularly with higher levels of education and alienation of people from their land, overcrowding of housing, greater competition for education and health

care, and a deterioration in basic services.

"Urban poverty is becoming increasingly obvious, and the urban areas of the South Pacific are manifesting lifestyles which were unheard of here as recent as 20 years ago."

Special Problems: The Atolls

Among major concerns are population densities in the small coastal areas that comprise most Pacific towns and cities, particularly in atoll nations.

In RMI, for example, 6 percent of the country's population now lives in the urban centres of Majuro and Ebeye. The density of Ebeye is reputed to be one of the highest in the world at almost 154,000 people per square kilometre.

Dr Bryant said: "The pressures of life in such densities, even where the actual populations are small by world standards, have been well-documented and included problems of communicable disease, high infant mortality, increasing marginalisation of women, nutritional problems and severe unemployment."

Poor Water Supplies

Poor water supply is another problem. In FSM, 87 percent of drinking water is piped from streams considered unsafe. In Kosrae, 70 percent of houses have poor drainage.

In Pohnpei, nine percent of houses have no toilets but share with others. In Tuvalu, septic tank designs are inappropriate for local conditions.

"With rising sea levels, coral atolls and limestone islands will face a rise in the water table and thus surface flooding which will make certain methods of waste disposal inappropriate and unhealthy," said Dr Bryant.

(Cont'd on page 8)



Short environmental news stories
from around the Pacific

International Launch for Region's "Tourism '95"

The Tourism Council of the South Pacific (TCSP) recently launched the "Visit South Pacific Year '95" at the World Travel Market in London, UK. The launch was aimed at media, airlines, tour operators and major travel agencies who will promote the Year to the travelling public in Europe, North America and Australasia.

The Theme of the Year is: "Come see the cultural and natural environment" ...

(From TCSP news release)

Clams on the Move

The Royal Australian Navy recently moved thousands of giant clams (*Tridacna gigas*) from Orpheus Island near Townsville, Australia, to a secret location in the South Pacific. These will eventually be used "re-seed" Pacific island reefs. Secrecy is needed to prevent future threats from poachers of this economically and environmentally important species.

(From *Traffic Bulletin* 14:1, 1993, p9.)

The Ha'apais for World Heritage Listing?

The final draft report for Tonga's 1993 National Tourism Plan has recommended that the whole of the Ha'apai Group be listed as a World Heritage Area. This would recognise the Ha'apais as one of the few remaining areas of undisturbed coral and other rare and important marine environment features in the world.

(From *Tonga Tourism Update*,
3rd quart. 1993)

(Cont'd on page 8)



ENSO Climate Warnings

As of October 1993, the latest El Niño Southern Oscillation (ENSO) event was still affecting weather patterns across the Pacific, and worldwide. A drought warning has been issued for countries around the Coral Sea and across the southern parts of the region, including New Caledonia. This will be particularly important for agricultural production.

More cyclones than normal are expected this season in the eastern part of the region, from Samoa to Cook Islands and French Polynesia.

(From *South Pacific Climate Monitor*, 15/10/93 and 15/11/93, p2)

New Solomons Gov't Clamps Down on Foreign Loggers

Solomons Forests Ministers, Ezekiel Alebua, wants to replace mass logging with individual tree felling and introduced strict controls over logging licenses. The government is also expected to cut the number Asian logging operating in the country.

(From *Washington Pacific Report*, 11:24)

Health Risk from Nickel Smelter in Noumea

The environmental NGO *Friends of the Earth* has challenged New Caledonian authorities to conduct a full environmental survey of air and water around Noumea, New Caledonia, after the discovery of high nickel levels in dust and water in residential and tourist areas. The giant Doniambo nickel refinery is less than 2 km from the city centre. The analysis of random samples was carried out by W. Grayson Laboratories in NZ.

Nickel is so dangerous that WHO has ruled that there are no safe levels in the air.

(From FOE press release, 29/11/93)



The Dangers of an Urban Pacific Future

(Cont'd from page 7)

All Pacific urban areas face similar problems. In Suva, for example, septic tank effluents cannot "percolate" properly because much of the ground has a layer of marl or soapstone.

"As urbanisation increases in the Pacific, it is likely that the pollution of ground water will also increase," said Dr Bryant.

"Groundwater pollution and the contamination of shellfish by micro-organisms from excrement cause a range of health problems, including skin and eye disorders, as well as gastro-intestinal illnesses, hepatitis and cholera."

In fact, according to a World Bank report, only a minority of Pacific islanders have access to consistently safe water and sanitation.

But while the World Bank seeks an investment of up to K20 (US\$ 21) million or more in some countries - and as much as K30 (US\$32) million in Fiji - to provide reticulated sewerage, it is clear that national budgets will be severely stretched by such spending.

"If a community cannot afford to construct a sewerage plant, then it is unlikely that it can afford to operate and maintain one," said Dr Bryant. "This must surely call into question the wisdom of aid money being spent purely on the provision of such plants."

Waste Disposal

Atoll countries are vulnerable to the problems of waste disposal. Toxic and hazardous wastes are a big headache for many developing countries.

In the Pacific increasing quantities of dangerous and illegal pollutants are being discharged into streams and oceans. Solid waste is also a problem in urban areas.

In spite of the devastating overcrowding in RMI, the annual birth rate is 49.2 children per thousand - only nine African countries exceed this rate. Thirty percent of the

urban population aged over 15 suffer from diabetes.

"If cities cannot provide the basic needs for a growing proportion of the population and are also facing deteriorating environments, then they are clearly not 'sustainable'," said Dr Bryant.

"There is no doubt that the use of resources and the contamination of water supplies cannot continue unabated. Urban areas, and therefore entire countries and the Pacific region, are about to face some extremely serious ... situations."

Local Communities the Key

Rather than relying on legislation and central government control to provide solutions, Dr Bryant believes communities and the local populations themselves hold the key to their future.

She sees the region as being well-placed with resourceful bodies such as the South Pacific Forum, SPREP and USP able to channel expertise and funding.

But in the end, she said, only the community groups - including action and education groups, church and women's organisations, and business-associated service groups - will find the solutions.

Pacific governments are increasingly looking towards privatisation to solve many of their economic problems. However, Dr Bryant said: "The bottom line of the private sector is that it is difficult for it to cater adequately for the poor as there are few economic returns."

How can the Pacific avoid the environmental chaos faced by other parts of the world? To have any chance, concludes Dr Bryant, PNG and other regional governments need to make urban growth and its implications a top priority.

(from PACNEWS, 3 September 1993)

Ed.: The opinions expressed in this article are not necessarily those of SPREP, the Director or the Editor.



A Project for Environment and Population



Environment and population issues cross many sectors and have long-term consequences. Often, however, the government structures fragment these issues into the responsibilities of particular departments. Integration must be explicitly promoted.

SPREP has started a project to integrate population concerns in environmental management. It will help Pacific island governments and communities use information about population composition, growth, and distribution in decisions they make about their environment. It will also ensure that population is well considered in SPREP's other programmes.

Co-ordinating environmental and population concerns within SPREP shows the essential partnership of these concerns and a strong basis for integration at all levels.

Dr Margaret Chung is SPREP's Environment and Population Officer. She can assist governments to:

- co-ordinate national policies on population/environment; and,
- help environment and other government departments with technical assistance on environment and population issues.

There includes many possible areas of activity: environmental health; urban planning and other land-use issues; demographic impact analysis of development projects and solid waste management; and other areas of concern to governments, NGOs, or community groups.



Dr Margaret Chung, a Fijian citizen, has worked in the region for the last 20 years. She is a specialist in Population and Geography, with general training in the environment.

She obtained her PhD in the Division of Society and Environment in the Research

The project will also run short workshops in population planning skills; assist people from the region to attend short-term training or to work on research internships; support research on population-environment interactions; contribute to better data collection and analysis; and improve public information and education on the connections between population and environment issues.

Information on workshops and other training will be advertised soon. Project work for improving data collection includes work with geographic information systems (GIS) to develop dynamic interactions between population, changes in socio-economic structures, and environmental conditions in Pacific island countries.

Planned research includes providing technical assistance to SPREP projects and other organizations with survey techniques, assisting small-scale, research projects on policy issues, and developing a bibliography on population-environment research in the South Pacific. SPREP welcomes proposals for research into population-environment interactions in the South Pacific, particularly with Pacific islanders as research principals or field researchers.

Project activities in public information and education include:

- contributing topical reports and newsletter articles to media;
- ensuring population and environment included in non-formal and formal education; and,
- producing curriculum materials

on environment and population issues.

A *Community Development Officer* will soon join the project. This officer will:

- establish an information network between local and international NGOs working at the community level to improve environment management;
- complement other community projects in areas under environmental stress from population pressures;
- conduct community workshops, training sessions and seminars on community development strategies;
- help prepare educational material for community groups; and,
- assist community groups to find long-term solutions to local environment and development problems through small loans or grants from other funding.

The project is funded by UNFPA. This is a sign of UNFPA's commitment to address the complex links between population, resources and the environment, and to support actions which alleviate adverse population impacts.

SPREP and UNFPA recognize that it is unrealistic to address concerns about the environment and sustainable development without fully engaging population issues.

For more information or requests, contact the Director, SPREP.

School of Pacific Studies at Australian National University, Canberra, Australia, and an MA in Population Geography and a Grad. Cert. of Population Studies from UH.

Welcome to SPREP, Margaret.

Met. Services Vital to the Climate Secrets of the Pacific

Vanuatu's Health Minister, Edward Tabisari, told visiting heads of regional meteorological services that the world's weather scientists were watching the Pacific as closely as ever before as they attempt to unlock the secrets of the world's climate. He was speaking at the opening of a three-day meeting of South Pacific Directors of Meteorological Services in Port Vila, Vanuatu, on 19-21 October.

Dr. Tabisari spoke of recent weather extremes - Cyclone Prema that struck Vanuatu, and Cyclone Kina for Fiji - and the importance of timely advice from the respective meteorological services about these events.

This meeting discussed the current status and progress of meteo-

rological services in the region and methods of regional co-operation, particularly in climate monitoring, data sharing and analysis.

Participants recommended closer co-ordination of all meteorological services in the region. Areas for future development include:

- ♦ developing skills;
- ♦ exchanging staff, data and information between national, regional and international organisations;
- ♦ seeking assistance for the Nadi (Fiji) Tropical Cyclone Warning Centre for better data handling and exchange, cyclone tracking and warning, and meteorological communications;
- ♦ developing a co-ordinated scientific policy on these issues; and,

- ♦ for SPREP and WMO to co-ordinate and convene future annual Director's meetings.

The next meeting for these Directors is due in 1994. For more information, contact the Director, SPREP.

Climate Convention Ratifiers

South Pacific SPREP member countries who have ratified the Framework Convention on Climate Change (FCCC) as of 10/8/93 are:

RMI	8/10/92
Australia	30/12/92
Fiji	25/2/93
PNG	16/3/93
Vanuatu	25/3/93
Cook Islands	20/4/93

Disaster Decade Meeting

Natural disasters such as cyclones and earthquakes are a fact of life in most areas of the Pacific. They are an intimate part of the natural environment. But these disasters can also stress for the human and natural environment to breaking point.

This was seen recently by the state of the reefs, rainforests and agriculture of the Samoas after two major cyclones in less than two years, and after the recent earthquakes in PNG.

The International Decade for Natural Disaster Reduction (IDNDR) recognises the importance of this stress, ecologically and economically. This UN initiative, running over 1990-2000, is co-

ordinating efforts to improve responses to these disasters.

Delegates at the recent SPREP Meeting held in Suva approached SPREP to co-ordinate the preparation and attendance of member countries at the forthcoming World Conference on Natural Disaster Reduction. This will be held in Yokohama, Japan, on 23-27 May 1994.

This conference is part of IDNDR. It aims to review IDNDR activities to date, and to chart an action plan to 2000 and beyond.

SPREP, through its Meteorology/Climatology Officer, is collaborating with the IDNDR office in Canberra, Australia, and the UN's Department of Humanitarian Affairs - South Pacific Programme

Office (DHA-SPPO), based in Suva, Fiji. They will prepare an activity report for the Forum island countries and assist countries to attend.

Natural disasters are part of the way of life in the Pacific, and their effects are felt by all at some time. Developing plans to mitigate their impact, giving adequate warning of events, and implementing appropriate responses are the aims of IDNDR.

We are all aware of the devastating effect of natural disasters - the loss of life, damage to infrastructure, loss to the economy and set-backs to national development. Through IDNDR, we are working toward a safer world for the 21st century.

Future Directions in Coastal Management

Nearly two-thirds of today's world population live within 100 km of coastlines. Most of these people live in developing countries.

And the current rapid rate of development, especially along coasts, will accelerate to meet the aspirations of these peoples, said Mr Peter Schroeder of UNEP at the the World Coast '93 Conference held in the Hague, the Netherlands. He added: "there are coastal areas, where population pressure, with the attendant urbanisation and other impacts of development, have brought the resource base beyond the point of no return."

Mr Schroeder also pointed out that this paints a bleak picture when the possible implications of climate change, including sea-level rise, are also included. This will be a monumental challenge for those charged with coastal management.

In the Opening Address, Professor G.O.P. Obasi, Secretary-General of WMO, also pointed out that "small island states and coastal areas are very vulnerable and sensitive to climate and atmospheric changes which result in global warming and sea level change."

Representatives from over 90 countries, 20 international organisations and 23 NGOs, as well as scientists and technical people, gathered at World Coast '93 to:

- give directions in undertaking integrated coastal zone management (ICZM) as coastal states move towards 2000; and,
- contribute to international fora, including the second Assessment Report from Working Group II of the IPCC, due in 1995.

ICZM was identified as the most appropriate way to address current and long-term coastal management

issues. These issues include habitat loss, declining water quality, changes in water cycles, declining coastal resources, and adaptations to sea level rise. The conference discussed the urgency, benefits, elements, obstacles, and required capabilities for implementing ICZM.

The very full programme, which ran on 1-5 November, also discussed vulnerability assessment for coastlines, problems and tensions on coastal zone management, and new ideas for IPCC Assessment Report.

Dr Andrew Smith presented SPREP's ICZM project document now being developed for the South Pacific region, while Dr Chalapan Kaluwin presented the vulnerability assessments now being carried out in the region.

A *Conference Report for World Coast '93* should be published before March 1994. ☉☉☉

Acronyms

ADB Asian Development Bank
AIDAB Australian International Development Assistance Bureau
AOSIS Alliance of Small Island States
CITES Convention on International Trade in Endangered Species of Wild Fauna and Flora
CNMI Commonwealth of Northern Mariana Islands
EIA Environmental Impact Assessment
EU European Union
ESCAP Economic and Social Commission for Asia and the Pacific
EWC East West Center
FAO Food and Agriculture Organisation (UN)
FFA Forum Fisheries Agency
FSM Federated States of Micronesia
GEF Global Environment Facility
GCSDSIDS Global Conference on Sustainable Development in Small Island Developing States

IMO International Maritime Organisation
IPCC Intergovernmental Panel for Climate Change
IUCN World Conservation Union
NEMS National Environmental Management Strategies
NGO Non-government Organisation
NZ New Zealand
PIDP Pacific Islands Development Programme (EWC)
PNG Papua New Guinea
RMI Republic of the Marshall Islands
SOPACS South Pacific Applied Geoscience Commission
SPC South Pacific Commission
SPREP South Pacific Regional Environment Programme
UH University of Hawaii
UN United Nations
UNDP United Nations Development Programme (UN)

UNEP United Nations Environment Programme (UN)
UNFPA United Nations Population Fund (UN)
Unesco United Nations Educational, Scientific and Cultural Organisation (UN)
UNITECH University of Technology (PNG)
UoG University of Guam
UPNG University of Papua New Guinea
USA United States of America
USAID US Agency for International Development
USP University of the South Pacific
WMO World Meteorological Organisation
WRI World Resources Institute
WWF World Wide Fund for Nature

☉☉☉

Media Can Help Prevent Environment Problems, Says Fiji Minister

Environmentalists and journalists have an important role in preventing the environmental problems now facing the developed countries, said Fiji's Minister of State for Housing and Urban Development and the Environment, Hon. Joeli Kalou, at the opening of the "One World" Workshop held recently at SPC Regional Media Centre, Suva, Fiji.

This meeting aimed to improve the use of the media for raising public awareness on important environment issues. "The relationship between media and ... information is like the relationship between our brains and our mouth. One may have tons of information in the brain, but unless it is spoken through the mouth, even the person ... next to you will not know what you are thinking about", said Kalou.

The Minister pointed to the roles of various personnel in reaching the public: the government and NGO environmentalists to identify the problems, and the journalists to make the public aware of the problems and the most effective ways to address them.

Hon. Kalou also reminded the participants that the "environment cuts across every aspect of our social, economic and physical development", community health and pollution being an obvious example.

The eleven participants from around the region were drawn from government environmental agencies, NGOs and the media. The participants will become part of a network to distribute environmental information in the Pacific region.

The theme of this very practical workshop, funded by AIDAB, was "Environment Issues and the Media - Getting the Message Across". Trainers included the well-known Radio Australia journalist, Jemima Garrett, Tony Douglas from the Public Radio News (PRN) Service in Australia, SPREP, and experts from SPC's Regional Media Centre, Fiji's newspapers and radio stations, and the environment sector.

The workshop ran from 11-22 October. Participants produced three magazine-style radio programmes for use in their own



Participants and trainers at the "One World" Workshop in Suva: front l-r - Sione Tukia, Tauraki Raea, Tererei Abete, Jemima Garrett, Tia Tau, Panifilo Etuate; rear l-r - Margaret Munjin, Alison Ofatalau, Isoa Krovulavula, Gyan Prasad, Tony Douglas, Charles Vatu and Abel Anien.

This group will be the basis of the "One World" Network.

Photo: SPREP

countries and for the "One World" program. These focussed on major environmental issues now being addressed in the region: logging, global warming and waste and pollution.

Panifilo Etuate, from Office for Tokelau Affairs, Western Samoa, and Isoa Korovulavula, from SPACHEE, Fiji, also produced a new, original theme song for the "One World" program. The tune will soon lead the program when it goes to air.

The three-year "One World" project is managed by Radio Australia in close co-operation with SPREP and PRN. It is based on the weekly half-hour "One World" radio program that is produced in English by PRN, and in French and Tok Pisin by Radio Australia.

The program is distributed on tape with transcripts by Radio Australia to radio stations throughout the Pacific, and is also transmitted to the region on the Radio Australia short-wave service. For more information on the program and the network, contact the Director, SPREP.



Practical work, communications systems and local trainers were all vital parts of the workshop: Peter Walton (SPC Suva) explains the PEACESAT communications system to Allison Ofatalau (Solomon Islands - left) and Margaret Munjin (PNG), both journalists.

Photo: SPREP

Eco-Tourism: Getting the Basics Right

Catherine Enright,
Le Vaomatua, American Samoa.

Ed.: This is the first part of a series of articles which will continue into 1994, on the possibilities of tourism in sustainable development, and its impacts on the environment in the Pacific. SPREP would like to hear of more examples from around the Pacific, especially as we approach "1995 - Visit the South Pacific" Year now being promoted by TCSP and others.

Eco-tourism is not new. Fifteen years ago, before the term *eco-tourism* was coined, GoodTravel Tours, based at Oakland, California, USA, took travellers to stay in Pacific villages.

Picking the market - the "right" traveller

These travellers went to Fiji, Tonga, Samoa and Cook Islands to sleep on mats on the floor, eat locally-grown and gathered foods with their hands, get in the way of people, trying to carry out their daily activities, feast or worship until all hours, and enjoy overwhelmingly hospitable, indescribable, and often life-changing experiences.

The friends of these tourists read brochures and listened to their stories. Most of them said, "You paid how much? to do that?!" A few thought this type of trip sounded like "great fun", and they planned to do it at sometime. Others were the types of travellers who planned their own trips and didn't go on group tours. These arrived in the office with travel books looking for exactly what was listed for the cheapest price.

GoodTravel is now out of business, of course, because a "group tour" is the best way for villagers and tourists to enjoy each other's company. It is the only way for a small business selling travel to island nations to make enough money to stay in business.

What type of tourism?

The world population is approaching six billion. Small island nations looking for tourists can now be very "choosey" about what sort of tourists they want. Specifically, they must choose how to gather funds - taxes, foreign loans or grants - and whether to spend these funds on tourist infrastructure - deluxe hotels, golf courses or casinos - or on hospitals, water and sewage systems, schools or communications?

Governments and tourist enterprises must decide if they want tourists who expect deluxe resort amenities, and complain if they're not available, or do they want tourists who are invited to spend a few days or weeks in their country, sharing a way of life because it is so different from their own?

Providing the basics

Sustainable tourism development in small island nations, in my opinion, lies in maintaining the self-sufficiency of the villages. In the village, tourists need the same things villagers do: clean water for drinking and washing, adequate, healthy sewage disposal, nourishing and uncontaminated food, and reasonable shelter.

Villagers are also entitled to twentieth century industrial basics: lighting, radio, tape player or video, cooking and refrigeration, chainsaws, weed-eaters, and jeeps, trucks and pickups. And young people also think they need electric guitars and amplifiers!

To entertain tourists in villages, I believe these amenities are needed:

1. A flush toilet.

If this item is not available, it is the first thing mentioned by a returning "high-latitude" tourist. Although the Peace Corps-style fill-and-dump flusher is aesthetically acceptable and an inexpensive temporary measure for a village that wants visitors, some tourists will want to know "where it goes", and whether villagers use it.

Since the honest answer is likely to be "it contaminates the ground water", one suggestion is to use a composting toilet that is easy to maintain in the tropical South Pacific.

2. Adequate potable fresh water.

GoodTravel Tours asked the village Women's Committees to ensure that the water for the tourists was boiled for 20 minutes. Since these villages had a hundred years of experience with British-influenced tea brewing, our request made sense and was followed. We never had any trouble with water-borne diseases.

"Welcome to Our Country" brochures should remind tourists to "spend water like money". Some people think that plentiful rainfall means "unlimited water". They must be reminded that in your country, as in their own, potable water is a precious, limited resource and should not be wasted.



Ed.: The opinions in this article are not necessarily those of SPREP, the Director or the Editor.

(Part 2 of this article will be continued next year in Issue no. 36)

Meetings '94

<i>Date</i>	<i>Meeting</i>	<i>Venue</i>	<i>Officer</i>
January			
10 - 14	Church Leaders National Planning Meeting	Tarawa	G. Salesa
18 - 26	19th Session of IUCN General Assembly	Buenos Aires	IUCN
24 - 28	National Environmental Media Training Workshop	Rarotonga	G. Salesa
-	<i>Expert Meeting to Assess Proposed Regional Pollution Prevention Programme</i>	Apia	L. Tulega
February			
7 - 10	Economic Growth with Clean Production	Melbourne, Australia	
7 - 11	Resumed PreComm for GCSIDS	New York	G. Miles
7 - 11	NGO/Education National Planning Meeting	Tarawa	G. Salesa
7 - 14	Intergovernmental Negotiating Committee IX- Framework Convention for Climate Change	Geneva	
14 - 15	SPOCC Meeting	Apia	SPREP
-	<i>Ministerial Meeting on Regional Pollution Prevention Programme</i>	Apia	L. Tulega
-	<i>National Pollution Awareness Workshop</i>	Western Samoa	L. Tulega
March			
7 - 18	National Environmental Media Training Workshop	Tarawa	G. Salesa
14 - 15	Meeting on the Regional Convention to Prevent and Control Transboundary Movement of Hazardous Waste	Suva	SPREP
14 - 18	25th Regional Technical Meeting on Fisheries	Noumea	SPC
21 - 23	First Coastal Protection Meeting	Apia	A. Smith
21 - 25	Globe '94: Developing the Business of the Environment	Vancouver	
-	<i>National Pollution Awareness Workshop</i>	Palau	L. Tulega
April			
11 - 15	Tourism Ecodollars	Mackay, Australia	
4 - 22	PrepComm III for International Conference on Population and Development	New York	M. Chung
29-5 May	GCSIDS Conference	Barbados	G. Miles
-	<i>National NEMS seminar</i>	Tokelau	N. Wendt
-	<i>National Pollution Awareness Workshop</i>	Tokelau	L. Tulega
-	<i>National Environment Seminar</i>	Palau	N. Wendt
-	<i>Sea Level Rise Project Training Meeting</i>	Apia	C. Kaluwin
-	<i>Sea Level Rise Project Training Meeting</i>	Honiara	C. Kaluwin
-	<i>Sea Level Rise Project Training Meeting</i>	Nadi, Fiji	C. Kaluwin
May			
18 - 28	WMO Meeting for Regional Association V	Noumea	N. Koop
23 - 27	World Conference on Natural Disaster Reduction	Yokohama, Japan	N. Koop
-	<i>Environment Teachers' Training Workshop</i>	Tarawa	G. Salesa
-	<i>Second Coastal Protection Meeting</i>	?	A. Smith
-	<i>Forum Fisheries Committee Meeting</i>	Port Moresby	FFA
June			
-	<i>Regional Marine Turtle Conservation Programme Steering Committee Meeting</i>	Apia	SPBCP
July			
4 - 8	Sixth Pacific Conference on Marine Science and Technology	Townsville, Australia	
-	<i>Environment Teachers' Training Workshop</i>	Honiara	G. Salesa
-	<i>South Pacific Forum Meeting</i>	Brisbane	Forum Sec.

Meetings '94

Date	Meeting	Venue	Officer
August			
-	<i>2nd SPREP Regional Meeting of Meteorological Service Directors</i>	?	<i>N. Koop</i>
September			
5 - 15	International Conference on Population and Development	Cairo, Egypt	M. Chung
-	<i>7th SPREP Meeting</i>	<i>Tarawa</i>	<i>SPREP</i>
-	<i>SOPAC Annual Session</i>	<i>Majuro</i>	<i>SOPAC</i>
-	<i>National Environmental Media Training Workshop</i>	<i>Honiara</i>	<i>G. Salesa</i>
October			
-	<i>WMO Tropical Cyclone Programme Meeting</i>	<i>Nadi, Fiji</i>	<i>N. Koop</i>
-	<i>CITES Conference</i>	<i>USA</i>	<i>SPBCP</i>
-	<i>South Pacific Conference</i>	?	<i>SPC</i>
November			
-	<i>Forum Officials Meeting</i>	<i>Suva</i>	<i>Forum Sec.</i>

Please note these Meetings are subject to changes without notice. Tentative meetings are in *italics*.

Confirm dates and venues with the Director, SPREP.

☺☺☺

environment book review ... environment book review ... environment book review ...

Koe Malau

Occasionally, an educational book on conservation is produced in the region that really stands out, an example for others working in environmental education.

Dieter Rinke, Lata Soakai and Alison Usback have produced an excellent booklet on the life and future of the *malau*, the Tongan megapode (*Megapodius pritchardii*), one of the world's rarest birds.

Written in Tongan and English, this short publication has simple explanations and excellent colour photos and illustrations which show the lifecycle, and the plight, of the *malau*.

For more information and copies of the booklet, contact:

Brehm Fund South Seas Expedition
Private Bag 52
NUKU'ALOFA
Tonga



Latest SPREP Publications

The last meeting of the Regional Marine Turtle Conservation Programme in Apia recommended that a report by Michael Guinea on *The Sea Turtles of Fiji* (SRS no. 65) be printed. This is now finished, complete with maps and b/w photos. It also includes a discussion of traditional lore surrounding turtles in Fiji, and how this influenced traditional management practices.

Completing an EIA is becoming a common requirement for development projects in the Pacific. With its recent experience in running EIA workshops in the region, SPREP has published *A Guide to Environmental Impact Assessment in the South Pacific*. This simple manual includes many photos and local examples to show the concept and practical aspects of carrying out EIAs. A must for decision makers as well as technical officers carrying out EIAs.

Two publications on pollution are also available. *The Land-Based Pollutants Inventory for the South Pacific*, by Nancy Convard (SRS no. 68), is a relatively comprehensive survey of land-based pollution

sources in the region. However, it does recognise that there are gaps, and that further information and work is needed.

The Report on the National Environmental Pollution Awareness Workshop - Tuvalu, held in Funafuti on 11-13 May 1993, is more than a meeting report. It also contains the very useful teaching notes used during the course. These notes will be used in future training courses to be carried out by SPREP, and are available to other trainers.

SPREP is also reprinting the very popular handbook, *Coral Reefs in the South Pacific*, by Michael King. This is particularly useful for science and environment teachers and school students. It is also being translated and printed in Tokelauan for use in schools.

For copies of these and other SPREP publications, contact the Director of SPREP. Please note that it is SPREP policy to charge for publications requested from outside the SPREP island member countries, unless there is an exchange agreement with an institution.

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The Last Word ...

from the Editor

This *Environment Newsletter* ends a busy year for SPREP.

The organisation arranged a number of meetings in the last quarter, including the *Fifth South Pacific Conference on Nature Conservation and Protected Areas* in Tonga, and the first *Regional Meeting of Directors of Meteorological Services* in Port Vila. Reports from these meetings are inside.

Population pressures are the basis for many environmental problems in the region. Pollution, declining lagoon resources and increasing erosion in vital watersheds are all signs of environmental degradation around the growing urban areas. This issue is also the subject of a regional SPREP project funded by UNFPA on *Environment and Population*. Read more about it on page 9.

As promised in the last issue, I enclose a summary of the results of the recent reader survey for this *Newsletter*. It showed that, overall, the readers who responded to the survey approved of the content of the *Newsletter*, and its appearance.

However, there is room for improvement, especially in:

- obtaining more examples of environmental issues and work from member countries; and,
- improving the quality of some artwork.

As managing editor, I will produce a newsletter that best addresses these and other concerns for SPREP and the region. Please continue to send comments and survey forms (see issue no. 33), as they are most important feedback for improving this publication.

Reader Survey Summary

Question	Agree (%)
Services readers	88
Gives useful information	86
Encourages readers to write	33
Discusses important international issues	88
Helps you do your job	61
Gives timely information	67
Interesting articles	87
Like EnviroNews (highest)	86
Like Acronyms (lowest)	63
Like <i>Newsletter</i> appearance	73
Want more photos	47
Want more pictures	47
Find it easy to read	95
Most survey responses	administrators
Least survey responses	teachers
(70% of responses from in SPREP region)	

Lastly, all the best for the festive season, and it may see us a step closer to making the Pacific a better environment to live and grow up in. And remember - use biodegradable plates for your Christmas parties!

Lukim yu,

Wes Ward, Editor.

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