



Sustaining Pacific resources and development

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South Pacific Regional Environment Programme

Annual Report

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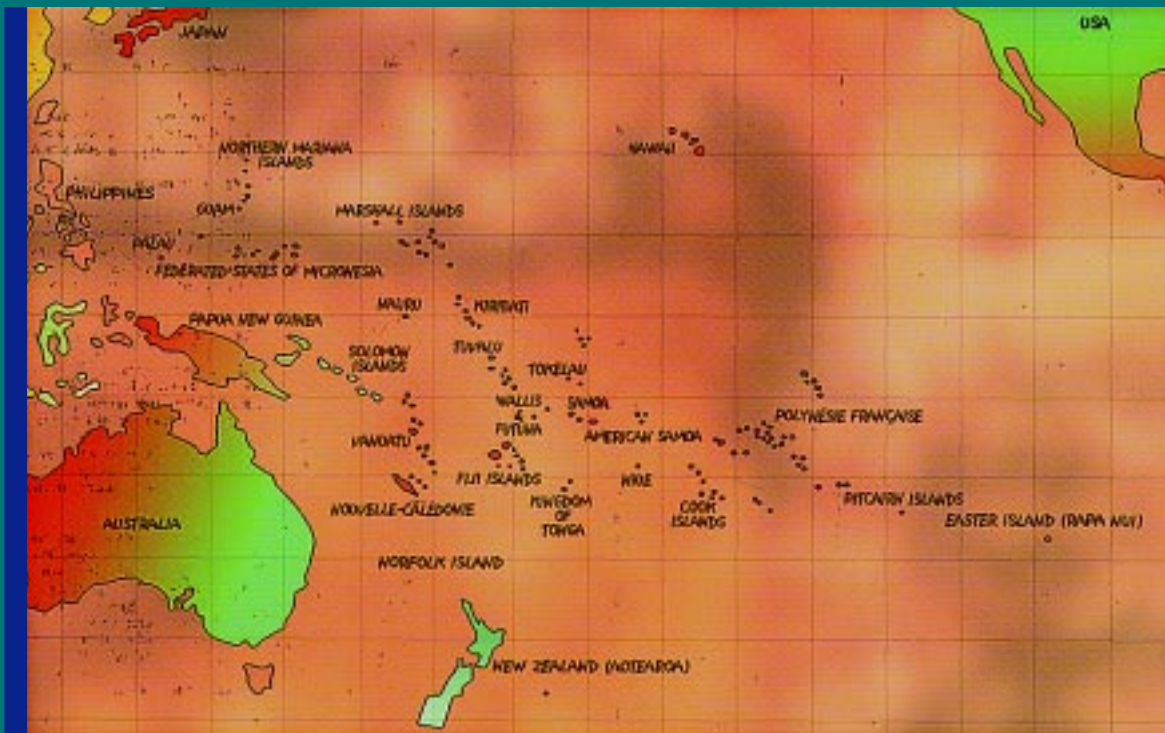
2002

SPREP Member countries 2002

The **South Pacific Regional Environment Programme (SPREP)** is an intergovernmental organisation charged with promoting cooperation and supporting protection and improvement of the Pacific islands environment, and ensuring its sustainable development

SPREP's members consist of all 22 Pacific island countries and territories, and four countries (*) with direct interests in the region:

American Samoa	French Polynesia	Niue	Samoa	Vanuatu
Australia*	Guam	Northern Mariana Islands	Solomon Islands	Wallis and Futuna
Cook Islands	Kiribati	Palau	Tokelau	
Federated States of Micronesia	Marshall Islands	Papua New Guinea	Tonga	
Fiji	Nauru	Pitcairn (withdrew in June 2002)	Tuvalu	
France*	New Caledonia		United States of America*	
	New Zealand*			



The Pacific region

(Illustration courtesy SPC, New Caledonia)

Sustaining Pacific resources and development



South Pacific Regional Environment Programme

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APREP

A message from the Director



Annual reports are necessarily a year behind. Hence I am writing these opening words for the SPREP 2002 Annual Report in June, 2003. I took up the position of Director for SPREP in January 2003. I am pleased to have the

opportunity to highlight some of SPREP's main achievements in 2002 but I do not take credit for them. All of the achievements reported here came from work done under the direction of my predecessor Tamari'i Tutangata, who was Director between January 1997 and January 2003. He has left a legacy to be proud of and I would like to acknowledge here the enormous amount of work he did in building up SPREP to its present position.

Reviewing the contents of this annual report, I see that SPREP in 2002 has accomplished a great deal. Breaking with tradition, the stories in the following pages highlight some of our work that has had the greatest impact over the year. That is not to forget the essential work that goes into working with member countries on a day-to-day basis.

SPREP's achievements bear testament to the dedication and professionalism of its current staff, and their predecessors. I am honoured to be leading SPREP for the next 3 years. We face many challenges in the future, including the future of our marine ecosystems, climate change and sea level rise. Adapting to the effects of these last two will demand a massive economic and social effort. Added to this are the challenges of maintaining economic development while conserving our environment, at the same time dealing with associated problems of pollution, water supply and environmental degradation. All these can be rolled into one phrase, 'sustainable development,' but somehow this does not capture the work that confronts us.

I will be proposing a path based on assimilating scientific knowledge and applying it in a way that is practical and can be used by our people in their daily lives. To do so we must seek out what is best and build on it, by communicating, by being creative and compassionate, and by being patient. I commend this report to you and I hope that it will give you some understanding of the way SPREP works and the effects that its work is having.

Asterio Takesy, Director, SPREP, June 2003

Working for the people in our region

The year 2002 was a year of consolidation and progress at both the regional and international level. 2002 began with the opening of a Training and Education Centre on our 3-ha complex, made possible by the generous assistance of the Japanese and Samoan Governments.

Later in the year the Information Resource Centre opened. Funded by the European Union, this Centre was custom-designed to provide proper storage and archiving of SPREP's large collection of environmental information and material. From the Information Centre, SPREP staff run the Pacific Environment Information Network system, which is a national environment library network providing on-line access to up to 20 000 volumes in 11 member countries.

From the international perspective, the year's key global environmental meeting was the World Summit on Sustainable Development, where the Pacific delegations were able to make a significant impact. The key to this was thorough preparation, inputs by national governments as well as all other stakeholders, and excellent teamwork amongst the Council of Regional Organisations of the Pacific. The commitment of various government ministers and officials made this possible, as well as the Australian and New Zealand Governments, which assisted in organising the pre-Summit regional meetings

that were crucial in the lead-up to the Summit itself. A regional submission was accepted by the Summit and small island developing states were again given special case status. In practical terms, the Summit agreed to provide a range of technical and financial assistance, the details of which will be clarified at the Barbados Plan of Action follow-up review meeting in Mauritius in 2004.

In line with the broader holistic approach of the World Summit, 2002 saw a closer collaboration develop between SPREP and the finance and economic ministries of its island members. Too often development projects and resources are exploited with minimal environmental safeguards. This was highlighted during the SPREP Environment Ministers Forum at the 13th SPREP Meeting in the Marshall Islands, which was attended by the chair of the Finance and Economic Ministers Meeting (FEMM). In his inaugural address the FEMM chairman spoke of the importance for economic and finance officials to clearly define the potential environmental impact of their strategies at national and regional levels, and to weigh these carefully in their fiscal planning. Optimistically this would be the basis of a strategy to deal with, for instance, the sustainable management of our tuna fish stocks, the logging of our forests and the exploitation of mineral resources.

Regionally the Cook Islands successfully hosted the Seventh Annual Pacific Islands Conference on Nature Conservation and Protected Areas. It is no secret that the Pacific's biodiversity is amongst the most critically threatened in the world. Habitat loss through deforestation, pollution, mining and agriculture, and species loss from invasive species and unsustainable harvesting are some of the factors responsible for this decline. Using 'Mainstreaming Nature Conservation' as the conference theme, delegates produced a 2003-2007 action strategy to address the growing concerns for the

SPREP's headquarters complex in Apia, Samoa. The new Training and Education Centre can be seen on the lower left, and the Information Resource Centre at the top left/centre



environment. The conference highlighted the fact that while there is no lack of rhetoric with regard to conservation, the reality is that our region's natural resources are inching closer to total and irreversible depletion. While there has been evidence of vision and foresight amongst the current generation of Pacific islanders, the rate of improvement is barely keeping pace with the rate of decline.

During the year, 10 Pacific countries signed the Stockholm Convention, aimed at banning the importation of a dozen persistent organic pollutants identified by the United Nations Environment Programme and making assistance available to all 151 countries who have agreed to participate. This coincides with the ratification by SPREP members of the Waigani Convention, which works to prevent both the transportation and dumping of hazardous wastes in Pacific waters. SPREP's members established this Convention as an effective legal framework for the protection of land and sea where none had previously existed. A conference between the parties involved led to the adoption of a work programme and rules of procedure.

The region's initiative in ratifying both these conventions sends a clear global message to those concerned, that the Pacific is committed to tackling the problem of hazardous chemicals and waste. This was also reflected in the negotiations that led to the signing of the Kyoto Protocol, where SPREP provided technical advice for Pacific delegations who attended.

The Global Environment Facility-funded International Waters Programme continued to progress, with the appointment of a national coordinator in each of the fourteen participating countries, the establishment of a regional infrastructure and the identification of a number of pilot projects. Interestingly it appears that the majority of the requests from countries for the coastal component of activities are waste orientated. This may reflect the rapid growth of industry, a growing dependency on imported goods, increasing population growth and a lack of proper infrastructure planning to handle the demand.

It was also encouraging that following the failure to secure the required 75 percent majority needed to pass a resolution for a South Pacific whale sanctuary at the annual general meeting of the International Whaling Commission, nine island states announced they would do so independently, while several others seem likely to do the same.

One of the most encouraging developments over 2002 was the increasing number of officials in island states who are gaining confidence in the abilities of their respective nationals to implement more and more environmental activities, a sure sign that capacities are increasing. Another positive development has been the increasing number of large environment projects funded by international government, intergovernmental and non-government agencies especially in the area of conservation. This also means that greater effort needs to be made by the SPREP Secretariat to work together with these agencies in ensuring that priorities of member states are addressed. This means strengthening the roundtable consultative process that has been successfully implemented in the biodiversity conservation arena and is being introduced in the climate area.

SPREP staff continued to give of their best for SPREP members at the national, regional and the ever-widening global level. I thank them most sincerely for their efforts and for the strong support of their families.

I should also like to extend my sincere appreciation to my successor, Asterio Takesy, for the opportunity he accorded me to contribute in this way to the 2002 Annual Report. I have every confidence that he will be able to take the SPREP Secretariat and its members to greater achievements in addressing the environment issues of our region and contribute to the global solutions as well.

*Tamari'i Tutangata, Director, SPREP,
January 1997 to January 2003*

Summary of main achievements in 2002

The year 2002 was highly productive, with activities taking place in countries throughout the region. This Report features some of the activities with interesting impacts, but the list here gives a more complete summary of SPREP's main achievements in the different result focus areas.

Key Result Area 1: Natural Resources Management Conservation areas

- ▶ The 7th Pacific Islands Conference on Nature Conservation and Protected Areas (PI-CNCPA) was successfully convened in the Cook Islands in July, attracting 320 conservation practitioners. The 1999-2002 Action Strategy for Nature Conservation was reviewed by the meeting and updated by conference participants to produce the 2003-2007 Action Strategy for Nature Conservation, which will guide the activities of this KRA in the future.

Ecosystems management

- ▶ The International Coral Reef Action Network Pacific Programme was strengthened as it works to establish a global network of active Integrated Coastal Management and Marine Protected Areas.

Species protection

- ▶ The capacity of Pacific island countries to implement the Convention on Trade in Endangered Species (CITES) and Convention on Wetlands of International Importance (RAMSAR) was increased by running workshops and training in the region, particularly through national training workshops on CITES and Corals in Trade held in Fiji, Tonga, Vanuatu and the Solomon Islands.
- ▶ Support was provided to countries at Convention of Parties meetings for CITES, RAMSAR, Convention on Biological Diversity and Intergovernmental Committee for the Cartagena Protocol on Biosafety.
- ▶ A report entitled 'A Review of Turtle By-catch in the Western and Central Pacific Ocean Tuna Fisheries' and an information brochure on turtle by-catch were completed, published and distributed to assist fishing people to reduce and document turtle by-

catch in fisheries operations.

- ▶ Following up on previous SPREP efforts, Papua New Guinea, Samoa and French Polynesia joined the Cook Islands, Tonga, Australia and New Zealand in declaring their waters as whale sanctuaries. Vanuatu and Fiji initiated discussions to establish sanctuaries within their waters.
- ▶ Work advanced on developing a UNDP-Global Environment Facility (GEF) project on Pacific invasive species management that aims to implement key elements of the regional strategies for invasive species and bird conservation, endorsed by SPREP member countries in 2000 and 2001.

Regional and international biodiversity-related conventions and coordinating mechanisms

- ▶ The International Waters Programme (IWP) was established in all 14 GEF-eligible countries of the region, together with the regional infrastructure. Work advanced in establishing pilot communities in the Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

Key Result Area 2: Pollution Prevention Marine pollution

- ▶ A review of ships' waste-reception facilities was completed that recommended direct action to improve the handling of ships' waste.
- ▶ The first draft of the Environmental Management Guidelines for Pacific Island Ports was completed and distributed for comment and action.

Hazardous waste pollution

- ▶ Project documentation and funding arrangements were completed for the clean-up and disposal of polychlorinated biphenyls and intractable pesticides, under the project for Persistent Organic Pollutants in Pacific Island Countries project (POPs in PICs), phase II.
- ▶ Pacific island country government officers were trained in managing hazardous materials in workshops held in 11 Pacific island countries.

- ▶ Activities were started in the Pacific for the project 'Regionally Based Assessment of Persistent Toxic Substances.'

Solid waste, sewage and other land-based sources of pollution

- ▶ The Regional Marine Spill Contingency Plan (NATPLAN) was updated and distributed to countries throughout the Pacific.
- ▶ A regional workshop on solid waste management was held in Apia, Samoa.

Key Result Area 3: Climate Change and Variability

Strengthened meteorological services

- ▶ Work continued on implementing the Strategic Action Plan for the Development of Meteorology in the Pacific Region.
- ▶ Five-year contracts were signed with Nauru and Papua New Guinea as part of the continuing work on the Atmospheric Radiation and Measurement Project.
- ▶ The implementation plan for the Pacific Island Global Observing System was finalized and funding for an Officer secured.
- ▶ Work with the World Meteorological Organisation continued to secure resources for the 9th Regional Meteorological Services Directors Meeting.

Understanding climate change and variability and sea-level rise

- ▶ A resource book for policy makers and the general public on climate change was finalized and posted on the SPREP website.

Impacts and vulnerability

- ▶ Work continued on developing methodology for integrated vulnerability adaptation assessments in four Pacific island countries.

Adaptation and mitigation

- ▶ An implementation plan to assist local communities with adaptation to climate change continued, with national consultation meetings, the development of a communications strategy and the identification of pilot projects.
- ▶ Adaptation was promoted as a Type II initiative at the World Summit on Sustainable Development, with positive results.
- ▶ Work commenced to identify donors to work with SPREP to assist countries with national adaptation activities.
- ▶ Workshops on technical and refrigeration training were carried out in Fiji and Samoa.

Policy development with climate change

- ▶ A briefing paper and technical and legal assistance was provided to support Pacific island countries at the 8th Conference of the Parties in New Delhi.
- ▶ The Regional Framework for Action on Climate Change Variability and Sea Level Rise was updated and presented at the First High Level Adaptation Meeting held in May 2002.
- ▶ Countries continued to finalise their Memoranda of Understanding with SPREP to allow access to and the commencement of the effective phase out of ozone-depleting substances (ODS) under the Montreal Protocol to the Ozone Convention. ODS legislation for Tonga was completed and will be used to guide the development of national legislation.

Key Result Area 4: Economic Development

Integrating environment and development

- ▶ To address the critical needs of mainstreaming environment and development, SPREP coordinated work at the highest policy level, engaging the preparatory processes of the World Summit on Sustainable Development and the Barbados Programme of Action +10; the Forum Economic Ministers Meeting and the SPREP Meeting, as well as at the sub-national decision-making level on environment impact assessments, integrated assessment and advice on the state of the environment.
- ▶ Work continued to build capacity in environmental planning, strengthening environmental monitoring and assessment at national and regional levels and the integration of environment and development linkages at all levels of governance.

Trade, investment and environment

- ▶ Tools were developed to assist in the identification of key environmental indicators to further enhance systems for state of environment reporting that meet national needs and satisfy regional and global reporting requirements.

Key Result Area: Processes

Legal, institutional capacity building and legal services

- ▶ The First Conference of the Parties for the Waigani Convention was organized, and the work programme and rules of procedures adopted for future meetings.
- ▶ The establishment of a joint Pacific Regional

Centre was accepted by the Waigani and Basel Secretariats.

Human resources development

- ▶ A human resources development strategy was developed and approved in the Republic of Marshall Islands Environment Protection Agency.
- ▶ Work continued in a number of Pacific countries to develop human resources within the environment area.

Environmental information services

- ▶ National environmental libraries and networks as part of the Pacific Environmental Information Network were developed and strengthened in Fiji, Tonga, Tuvalu, Samoa and Vanuatu.
- ▶ Pacific radio journalists were trained in environmental reporting in a regional workshop that resulted in extensive regional coverage of several environment issues.
- ▶ Preparations, displays and information products were developed as part of the communications strategy for Pacific island countries for the World Summit on Sustainable Development.

Secretariat Functions and Corporate Services

Policy, planning and institutional strengthening of Members

- ▶ A country visit was made to the Republic of Marshall Islands during the preparations for the 13th SPREP Meeting to enable country staff to more effectively implement and undertake environmental management and protection activities at the national level.

Mainstreaming the Secretariat's work with SPREP members' efforts at the national level

- ▶ SPREP held an Open Day at its headquarters in Samoa that raised its profile in the host country and informed the public of its work.
- ▶ The institution was restructured, streamlined and consolidated, including recruitment and appointment of a Deputy Director, Programme

Delivery Manager, Business Support Manager, Project Accountant and Finance Manager, with other staff.

- ▶ The hosting of the 13th SPREP Meeting by the Republic of Marshall Islands was planned, and the Meeting successfully held.
- ▶ The Training and Education Centre and facilities were completed and officially handed over in February 2002.
- ▶ SPREP's Information Resource Centre was completed and opened in March 2002.

Project proposal development and liaison with donors institutions

- ▶ Management participated in approximately 20 international and regional meetings requiring profiling, advocacy and technical advisory services. Management attended the Pacific Islands Forum; Forum Economic Ministers Meeting; Heads of CROP Annual Meeting; Governing Council meetings of other CROP agencies; World Summit on Sustainable Development; GEF Assembly and Council Meetings; Meeting of Pacific ACP-National and Regional Authorising Officers on the Cotonou Agreement; Ministerial meeting on Adaptation Measures and a number of CROP Working Group Meetings.

Visitors at SPREP's Open Day inspecting a display about waste



Fighting to save local wildlife from uninvited invaders

The Merremia vine is rapidly smothering Pacific forests with its thick blanket of impenetrable growth. The black rat has already eradicated many unique species of birds and lizards. The giant African snail is spreading across the Pacific and threatening agriculture and native plants with its voracious feeding habits.

“Introduced species have far more devastating impacts on islands than on continents because island ecosystems are smaller and simpler and their species are relatively defenceless,” said Liz Dovey, SPREP’s bird conservation and invasive species officer. “Their arrival often leads to the extinction of native species.”

Birds are particularly vulnerable. Almost all of the birds that have become extinct since the 1800s have been island species, and many of these were in the Pacific. The Pacific currently harbours 24% of the world’s threatened birds, yet its land area is only 0.4% of the globe. Other species are also vulnerable. In the 1950s the brown tree snake colonized Guam. With no natural predators, the snake has eradicated most of the native forest birds, lizards and bats and interrupted tree dispersal, killed domestic pets and children, caused thousands of power failures with its ability to climb bare poles, and now numbers more than 18 million.

Introduced species pose the most serious threat to the survival of native land species in the Pacific as well as posing a huge economic and lifestyle threat to the countries. The cost to Hawaii has been estimated at more than \$100 million if the brown tree snake establishes itself there, and millions are being spent to keep it out. In the Solomons the little fire ant already makes traditional life in the gardens a misery, but its much worse relative the red imported fire ant, already established in several key trading partner countries, poses a worse threat to the region.

SPREP has launched a project to protect threatened indigenous wildlife in the Pacific from invasive species*. “Our ultimate aim is to arm Pacific islanders with ways to prevent, eliminate or control invasive species that are threatening

globally significant ecosystems and species,” says Ms Dovey.

The region recognised the threat some years ago when the Invasive Species Programme and the Bird Conservation

Programme began at SPREP. In a bid to organise the region’s efforts, member countries work together to develop strategies on regional invasive species and bird conservation. They aim to develop Pacific capacity to recognise and prevent the introduction of new invasive species; to reduce the impact of existing invasive species on threatened species and ecosystems; to make people more aware of the problem and involved in tackling it; and to build up the staff and money needed to manage the threats posed by these species.

“We need to collect, manage and share information and experiences more efficiently,” said Dovey. Networking is one answer. “Through networking Pacific island countries and territories will be able to access and share the technical help, resources and information they need to best manage invasive species problems or bird conservation needs.” These networks also need to be available to countries so information and experience can be shared. The information shared can be many things: how to develop an in-country invasives programme, management efforts and lessons, solutions discovered to invasive species problems, public awareness and education campaigns, new legislation or regulatory guidelines, meetings going on that may be of interest. SPREP is launching an Invasives Network and website in 2003 to help meet this need and to link countries to other sources of assistance.

Training is another answer - SPREP staff are travelling to the countries of the region delivering a course on prevention of invasive species, as well as sponsoring potential leaders



The millions of brown tree snakes now in Guam have eradicated most of the native forest birds and animals, killed domestic pets and injured children

*With support from the Invasive Species Specialist Group of the International Union for the Conservation of Nature, the United Nations Development Fund and the Global Environment Facility

on in-depth technical courses in New Zealand and bringing in technical experts from partner countries to work in-country on specific problems and challenges.

Suggested starting points for action in the

countries are the National Biodiversity Strategy and Action Plans, and other relevant national plans and committees. "If the plans and committees are not yet in place, we are keen to help develop them," Ms Dovey said. "From

these strategies we can work with Pacific island countries and territories to identify priorities for action. Our focus needs to be how to move quickly to get results on the ground with the full agreement and participation of all those affected."

"It is encouraging to see that the countries are now working closely together and with key partners to take action at a country and regional level," says Ms Dovey, "It is urgent to do the work now so that we can conserve the islands' irreplaceable resources for the future."



Magnificent birds like these albatross are at risk of extinction through predation by invasive species

Ambassadors of youth

Since 2001 SPREP has been teaming up with Australian Youth Ambassadors (AYAs), many of them recent university graduates, who contribute their talent and skills to developing countries around the world. In 2002 SPREP had several AYAs posted in its headquarters, as well as a volunteer from the Japan International Cooperation Agency. As an AYA with SPREP *Suzy Randall* tells us a bit about her experiences so far...



So, Suzy, what are AYAs all about anyway?

The Australian Youth Ambassadors for Development Programme is part of AusAID, and was designed to place skilled young Australians, aged 18-30, on assignments up to 12 months, in developing countries throughout the Asia-Pacific region. Youth Ambassadors use their skills and expertise to actively contribute to international development. They gain an increased understanding of the development needs of Australia's neighbouring countries and broaden their experience by living and working in a cross-cultural environment

And how are you helping the SPREP cause?

I am working with Liz Dovey on the Bird Conservation and Invasive Species Programmes as a Technical Officer. These two programmes are linked as invasive species such as rats and vines are the second biggest cause after habitat destruction of the loss of native birds. My role is to assist countries with technical information and resources and to assist on various projects like the management of invasive species.

Why did you take up what you do as a career?

I grew up in a left wing environmentally minded family. My sisters were always going to protests and volunteering for various environmental organisations. My dad was a politician and he was very environmentally conscious. My mum grew some of our food and had chickens and ducks, very unusual for suburban Brisbane. We would go on family vacations to the beautiful National Parks that surround Brisbane. My love of the natural environment stemmed from there and when I was old enough to understand that it was being destroyed I wanted to find out more and see what I could do to protect it.

Local communities take responsibility for conservation areas

Communities across the Pacific are taking responsibility for maintaining conservation areas originally created by a long-term biodiversity project. Achievements in the Marshall Islands and the Federated States of Micronesia are good examples of the continuing influence of the original project and the hard work and commitment of the local people.

During 10 years' operation the South Pacific Biodiversity Conservation Project (SPBCP), which was managed by SPREP, worked with local communities and helped to create 17 community based conservation areas throughout the Pacific. When the project ended in 2001, many of the in-country managers moved on to new work. But some have remained active within their conservation areas. With national support, the managers are working with local communities to continue the work started by the project.

Ecotourism in the Marshall Islands

The Jaluit Atoll Marine Protected Area in the Marshall Islands was an SPBCP Conservation Area. John Bungitak, the general manager of the Environmental Protection Authority, was the Conservation Area Support Officer for Jaluit. "Since the end of the SPBCP, the greatest achievement of Jaluit has been the completion and successful operation of the eco-tourism component of the project," he said.

Local landowners have built eight ecotourism guesthouses in traditional style. These are attracting a continuous flow of visitors, particularly from Australia, the United States and Japan. Staff are also producing a brochure to promote the island and its activities, which include nature walks through a mangrove forest, snorkeling and diving, a World War II relics tour, canoe sailing, night reef walks and a cultural tour.

With a population of 1700, Jaluit has very limited resources of only 37 km² of land area and a lagoon with a surface area of 690 km². So the ability to create and run an ecotourism operation is having tremendous impact on local livelihoods.

But local traditions are not being neglected. "The Conservation Area is steered by a

coordinating committee that has the atoll mayor as chairman and senior traditional leaders in the island council as members," said Miram Ankeid, the Conservation Area Support Officer at Jaluit.

Jaluit, with support from SPREP and the International Coral Reef Action Network (ICRAN - see box opposite page), developed a resource-management plan and ecotourism strategy for the atoll after consulting the local community over a period of 2 years. "Our management plan incorporates both traditional and modern conservation methods because these were strongly supported by the community during consultations," said Ankeid. The plan designates the whole atoll as a conservation area with established restricted areas. Traditional methods are still used for reserved areas established under local custom, with only island chiefs able to allow access to them for special occasions.

The work in Jaluit is having a wider impact, as other atoll communities in the Marshall Islands are learning from this project. The lessons learned there will also be applied to similar reserves proposed in Tokelau's atolls of Atafu, Nukunonu and Fakaofu. The key lesson is to take a 'whole-of-atoll' management approach, rather than focusing on just one or two sites. The Taupulega (Leader's Council) on each atoll has enthusiastically endorsed the project and there is a strong desire at both national and community levels for this activity to proceed. "This is encouraging support for ICRAN's aims to use the experience of the demonstration sites to adapt successful approaches to additional target areas and communities," said Mary Power, who works on coastal conservation for SPREP.



Managing the watershed in FSM

Willy Kostka is running a new 3-year project to conserve the Pohnpei watershed in FSM. Over 5000 ha in area, the watershed is particularly important because it provides 95% of all the water sources for Pohnpei's 35 000 people. It is also home to 269 native plants, 13 endemic bird species, native lizards, gobies, fowl, deer and snails.

"A 'grow-low' campaign that promotes farming out of the watershed area has worked with 490 farmers cultivating 58 244 seedlings," said Kostka. "And monitoring has more than halved the number of illegal areas being cleared inside the reserve."

Traditional leaders are putting conservation at the top of their leadership priorities. They have already used the results of the monitoring to sanction those who are still farming inside the protected areas.

Formerly the Pohnpei Watershed Conservation Area, the watershed project is now coordinated by the Conservation Society of Pohnpei, the Pohnpei State Government and the Toyota Foundation of Japan. Aiming to increase environmental awareness in young people, the project started a 'youth-to-youth' programme that is now working with 12 partner schools. A mobile all-inclusive environmental programme, or green road show, was launched and has entertained students at 28 primary schools.

Because of the clear impact this work is having, the government for the first time has approved a grant of US\$120 000 to complete a survey of the boundary of the watershed forest reserve.

"This project has created a successful model project that could be replicated within the state of Pohnpei as well as the entire Asia-Pacific region," said Kostka. "This all-inclusive partnership allows all sectors, private, public and community, to contribute as well as benefit. Even in its first year the project has begun to show great progress and we strongly believe that after its second and third years we will see even more significant accomplishments."

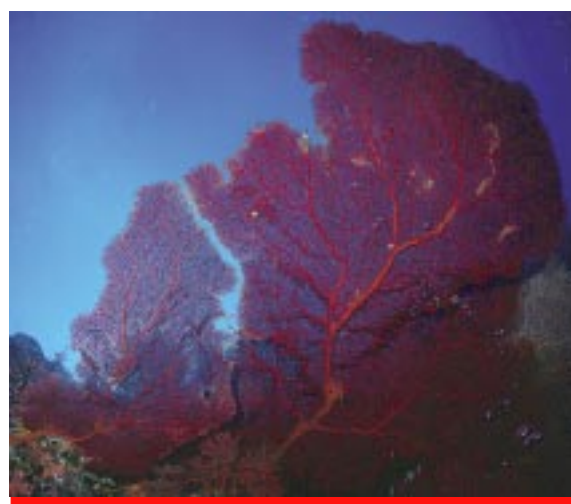
The main point is that local groups can decide themselves the best course of action to maintain their environment and control development of their resources. This means the impact of the original work will continue into the future.

ICRAN - a global partnership for coral reefs

The International Coral Reef Action Network (ICRAN) is a collaborative project that aims to stop coral reef degradation worldwide. Collaborators include SPREP, the United Nations Environment Programme, Australian Institute of Marine Science, Global Coral Reef Monitoring Network, the Coral Reef Alliance, International Coral Reef Information Network, the World Fish Center and the World Resources Institute.

"The ICRAN project will establish a global network of actively functioning demonstration sites for Integrated Coastal Management and Marine Protected Areas," said Mary Power, SPREP's Coastal Management Advisor, who is running the ICRAN project. "The areas will promote good management practices with full involvement of local communities."

ICRAN's approach of applying previous experience to new activities is being used in other work, with expertise and methodology transferred from Fiji to the Solomon Islands for the Coral Gardens Solomon Islands initiative. The project is providing support and expertise to help local communities conserve, manage and restore their coral reef resources by introducing active coral-planting methods to improve the habitat and restore damaged reefs. The work also provides a reliable income from coral aquaculture and seaweed farming, improving livelihoods and supporting the establishment of other marine protected areas.



On solid ground with International Waters

The inland village of Buada is a proud Nauru community. They have a sign posted at the entrance that tells you so, but they do have much to be proud about. Their village has a small inviting lake that is ringed by lush greenery, a contrast to other parts of Nauru that have been scarred by the phosphate mining. The homes in

Buada are evenly and tidily spread along the single road that circles the lake. From a distance, Buada is a picture postcard slice of paradise.

But on closer inspection, the green of the lake is most likely the beer cans that litter the bottom; visibility is several centimetres. There is no orderly system for collecting rubbish, so the

rubbish just collects itself, in the front yards, the roadway, beside houses, in the bush, in the lake. The Buadans are still proud, but prouder still that they are now a pilot community under the International Waters Programme (IWP - see box).

Across the Pacific, it has started raining on the small Samoan island of Apolima. The girls in the village frantically organize a row of buckets underneath the thatched rooves of the traditional houses, called fales, in an attempt to capture the precious drops. Another girl takes the opportunity to wash her clothes. There is only one narrow stream on the island that villagers use for drinking, cooking, washing and bathing. When it rains, the stream gets dirty and unusable so the villagers switch to using rainwater. This cycle is part of a daily routine that has been going on since the island was settled hundreds of years ago.

Apolima is another IWP pilot community. Its only village is nestled in the valley of an ancient volcano. The families there, mostly living in

fales, have limited access to facilities like education, health services, electricity and water.

Apolima residents Leotele Pita and her 19-year-old daughter Malo talk about the issues they are faced with when it comes to collecting water.

They say that their main headache is access to clean water on a consistent basis. "When it rains, the stream gets dirty and polluted and we can't use the water for drinking or cooking," says Leotele. Malo, who collects the family's water each day by carrying heavy buckets from the reservoir, laughs in the background and says that the rain is a good thing, because then she doesn't have to carry the buckets.

This problem of polluted water is partly due to the natural turbidity caused by rain, but also a consequence of the areas upstream, which have been cleared for agriculture. Loose soil has resulted in increased surface run-off and erosion, and then there is the added difficulty of washing detergents entering the stream. This could have serious implications for health in the village.

Access to safe freshwater is a major issue in Samoa, as is the case in many Pacific island countries. This is often due to the small size of the islands, with limited catchment areas for rainfall and surface storage. This, combined with the pressures of land clearing and agriculture, means that many water catchments in the Pacific are fragile ecosystems in need of attention.

For Apolima, the main issue is about protecting and rehabilitating the water catchment that sustains the village's daily requirements. After



Rubbish builds up in Buada village, Nauru, because the collection system is not effective



Left: do-it-yourself public awareness in Buada village, Nauru. Top right: collecting rainwater in Apolima, Samoa. Bottom right: two Apolima girls washing their hair in the local stream

villagers participate in assessing the condition of the local catchment, project actions will respond to the effects of farming and agriculture. A nursery and replanting project is restablising the soil and minimising soil erosion and surface run-off.

In Buada, the community has already taken some action over their rubbish. Assessment information will help local people determine the true extent of the problem, analyse the options and then identify some solutions for managing their waste and improving the local ecosystem in which they live.

For both communities, not all the solutions will be within their control. There may be issues that need to be resolved at a national level before the situation in Apolima and Buada can improve. This is a challenge that local governments and agencies will have to take up. But by shining a spotlight on a

number of communities around the Pacific and applying rigorous social, economic and scientific analyses, other communities will benefit from what the people of Buada and Apolima learn about the sustainable management of their environment and its natural resources.



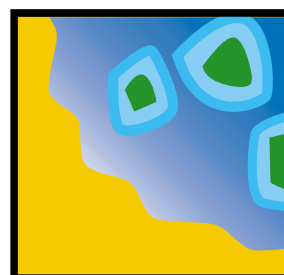
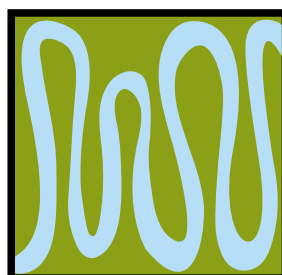
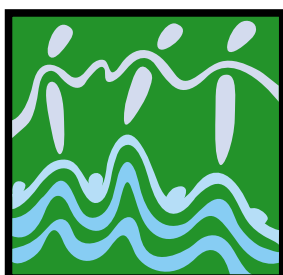
A nursery in Apolima where the community is growing plants to revegetate the hillsides and so stabilise the soil to minimise erosion and surface run-off

This story was written by **Jacqueline Elliot**, who is working as a volunteer for IWP with the United Nations Development Programme, Samoa, under the Australian Youth Ambassadors for Development scheme. She works with the Environment and Energy team to implement UNDP-funded programmes. **Samson Samasoni**, IWP's Community Communications Specialist, also contributed.

The Strategic Action Programme for the International Waters of the Pacific Small Island Developing States

IWP is a 7-year project with the overall objective to conserve and sustainably manage coastal and ocean water resources in the Pacific region. There are two components. The Oceanic initiative, administered by the Secretariat of the Pacific Community and the Forum Fisheries Agency, focuses on the management and conservation of tuna stocks in the western central Pacific. The Coastal component, coordinated by SPREP, focuses on managing the coastal watershed through 14 pilot projects taking place in the Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

The Global Environment Facility provides \$12 million; US\$3.5 million for the Oceanic component and US\$8.5 million for the Coastal component. A total of US\$20 million has been provided to support IWP-related activities through additional funds from SPREP, the Secretariat of the Pacific Community and the Forum Fisheries Agency.



Cleaning up the Pacific Islands

Puddles of toxic pesticides, bottles of explosive acid and clouds of noxious gases. These are some of the routine hazards that SPREP's John O'Grady had to face in his work on hazardous chemicals in the Pacific. "The most dramatic case I discovered was in Chuuk, in the Federated States of Micronesia," said O'Grady. "I found a shipping container full of very toxic pesticides in the middle of a residential area. The door of the container was open and 15 houses had been soaked in contaminated floodwaters. The large families in the houses said they continually suffered from severe headaches and skin rashes."

O'Grady worked for several days with staff from the local Environmental Protection Agency to repackage the pesticides. "We could only work in the container for five minutes, even with respirators," he said. With help from the US Environmental Protection Agency there are now two properly packaged shipping containers sitting on the Weno Wharf, awaiting collection.

Several years ago the mismanagement of hazardous chemicals in Pacific island countries was identified as a serious environmental concern. They represent an ever-present risk to the health and well-being of Pacific islanders, so SPREP developed a project entitled Persistent Organic Pollutants in Pacific Island Countries (POPs in PICs) as an AusAID-funded initiative.

POPs are a group of twelve particularly hazardous chemicals that have been singled out by the recent Stockholm Convention for urgent action to eliminate them from the world. They include polychlorinated biphenyls (PCBs), mainly found in electricity transformers, and several pesticides that are very persistent and toxic to the environment. PCBs are suspected of causing cancer and have already spread all over the world. Even Brazilian pygmies deep in the Amazon have minute traces in their body fat and high concentrations are disrupting the breeding patterns of seals in the Antarctic.

The first part of the project involved assessing stockpiles of waste and obsolete chemicals, identifying contaminated sites in 13 Pacific Island countries and making detailed inventories. Project staff had expected to find 130 tonnes of PCBs, but only found 12.5 tonnes. "This allowed us to include other wastes in the project, so we decided to

collect and dispose of all the pesticides, as well as all the transformers that contained PCB-contaminated oils. That means over 50 tonnes of pesticides will be dealt with, including 1825 kg of POPs pesticides and 6542 kg of unknown material."

The first phase has already had considerable impact. "Generally the stockpiles of hazardous wastes are stored in insecure areas that are often leaking as well," said O'Grady. In one location, about 3 tonnes of mixed pesticides are stored in a small shed in the middle of the botanical gardens, close to shops, hotels, houses and a large recreational centre. If the shed catches fire, there will be a major emergency from the toxic fumes.

In extreme cases O'Grady was able to make the material safe and remove the worst threat to the health and safety of the local people, who generally do not know how to deal with the chemicals. In Korokadi in the island of Vanua Levu in Fiji, over 2000 litres of lethal pesticide had spilled onto the floor of the storage shed. The smell was overpowering and the farm manager and his family, living in a house only 80 meters away, were badly affected. "Again we decided to clean the mess up, which took 3 days using local materials," said O'Grady. "Then we moved it all to the Dreketi Research Station to be picked up."

Phase I activities also included education and awareness programmes in each country and a review of the relevant legislation, so that the project will have a long-term impact. The full inventory of all the pesticides and PCB-contaminated oils that was prepared for the first phase will be used in the second phase. In 2003 all the inventoried material will be collected. This will involve ships travelling around the Pacific, packaging and collecting these noxious chemicals and transporting them back to Australia for safe disposal through incineration.

This will immediately improve the quality of life for thousands of islanders. "But," as O'Grady says, "there is still a lot of work to do. A lot of hazardous wastes and other chemicals have been left behind, and many sites are seriously contaminated."



Dumps like this, full of rusting containers leaking toxic chemicals, are dotted all over the Pacific

Talking loads of rubbish



A new approach to handling rubbish dumps in Samoa is set to have a major impact across the Pacific. Rubbish is becoming a major problem in many Pacific island countries. In the past, with many local families living a subsistence lifestyle, there was so little rubbish that Samoans, for example, did not even have a proper term for it in their language. Islanders used what little waste they generated as livestock feed or left it to decompose naturally.

Today Pacific islanders rely so heavily on imported, processed goods that *per capita* consumption on some islands may soon rival that of developed countries. All these goods and foods are packaged, which is leading to mountains of non-degradable plastics and solid wastes, and the arrival of a serious regional problem.

The easy answer is to dig a hole and throw the rubbish in it, or even worse, just throw it in the sea. But it is not that simple. The quantities are too large, much of the material will only decay slowly, while plastics are a serious threat to marine mammals. Many countries just do not have the land area to spare and piles of rotting rubbish can quickly pollute groundwater as well as degrade the immediate environment.

Responding to this urgent need, SPREP worked with the Samoa Department of Lands, Surveys and Environment on a project funded by the Japan

International Cooperation Agency (JICA) to develop environmentally sound waste disposal methods that can be applied across the Pacific.

Together, the partners chose to start work at the main dumpsite in Samoa, Tafaigata, to the south-west of the island Upolu. The JICA waste expert Mr Shiro Amano, who is based at SPREP, said, "The site at Tafaigata was a typical open dump, with rubbish being discarded haphaz-

ardly." Since opening in 1992, Tafaigata had posed growing environmental and health risks to families living nearby, threatened by water contamination, air pollution and vermin. "The methods used were inefficient and unsafe," said Amano.

The new method of disposing and recycling rubbish involved a US\$170 000 makeover at the Tafaigata tip. "The change, from an open-style dump to a sanitary one will alleviate many of the risks for the people. We are confident this is much more environmentally friendly and the answer to safer waste management," he said.

The method now used is simple and highly effective. Earth-moving machines reconfigure the old site into a series of large embankments. Rubbish is dumped into each one in turn and gradually covered, or backfilled. Once the makeover is complete, the area includes an access road, enclosing embankments, pipes to collect and extract polluted water, a gas-venting system, a leachate-retention pond and a reservoir for surface water.

For tip users, the new system eliminates much of the smell and the huge fly populations found at such sites, while encouraging a more rapid decomposition process of organic material. The method has the added benefit of rapidly creating areas of land that can be reclaimed for parks or agriculture. The slow backfilling also creates an opportunity for waste collectors to earn money by retrieving recyclable items from the small area of newly dumped rubbish that is exposed. The approach that Amano suggests is to employ adults as waste collectors, who are issued licenses, and given a small wage to retrieve items that are recyclable.

With a background in civil engineering, Amano says this is the first time this semi-aerobic landfill system has been set up in the region. "This Fukuoka Method had previously been used mostly in Asia," says Amano, "But it can be used across the region, as long as there are landfill sites located inland."

Below. Before (top) and after (bottom) pictures of the main dumpsite in Samoa. Instead of dumping rubbish randomly, earth banks are created to hold the rubbish, which is compressed and covered with earth as it builds up, leaving a clean area that can eventually be re-used



Strengthening meteorological services also improves regional air safety

Flying is safer in the South Pacific after a landmark collaboration established a new communications link between American Samoa and Samoa. "The idea came from discussions among SPREP, the US National Oceanic Atmospheric Administration (NOAA) and the US Federal Aviation Administration (FAA)," said SPREP's Kim Nitschke. "Samoa Air Traffic Control was not getting the information it needed, so

telemetry transceivers, multiplexing equipment and computer terminals were installed in Faleolo international airport in Samoa. "And we use the assistance offered by SamoaTel staff to maintain the equipment," said Nitschke.

Having access to this information has wide-reaching safety benefits, particularly in the aviation sector. Two global networks, the



Air traffic controller Junior Saagain in the control tower at Faleolo Airport in Samoa. The system display is on the right. Establishing the communications link, as part of the activities of the Atmospheric Radiation and Measurement project, has increased air safety in the South Pacific

SPREP took on the role of facilitator in establishing a link with FAA data through American Samoa."

Communicating important aviation and meteorological data is paramount to the safety of air travellers. Samoa's location in the middle of the Pacific means it plays an important role in providing information for air traffic to Samoa, and for aircraft transiting Pacific routes. The result was a project designed to upgrade communication links between Samoa and American Samoa so that aviation data, plus regional and international weather information, could be sourced and distributed.

SPREP coordinated the installation and commissioning of the communication system. Telecommunications equipment, including microwave

Aeronautical Fixed Telecommunications Network and the World Meteorological Organisation's Global Telecommunications System, are used. These networks, shortened to AFTN/MET, distribute information on weather like current forecasts, cyclone and severe weather watches and warnings. Aviation information like flight plans, reports from aircraft in flight, cancellations and arrival and departure data is also shared. The data on these networks flow two ways, with the countries and the airlines contributing as well as receiving the information, which has a worldwide range.

The equipment for the project was provided by the European Union and the US National Weather Service - Pacific Region. To make the communications link possible, there is continued collaboration among NOAA, the FAA, the Territorial

Emergency Management Coordination Office in American Samoa, the Samoan Airport Authority, Samoa Meteorological Service, American Samoa National Weather Service, Fiji Meteorological Service, SamoaTel, ASTCA (American Samoa Telecommunications Authority) and SPREP.

“A unique feature of the project was the number of partners involved from government and the private sectors,” said Nitschke. “It really

demonstrates what can be achieved in overcoming a lot of institutional and technical uncertainties.”

Mr Smith Lutu, FAA Resident Director for the Pacific concluded, “With the new airspace reassignment to New Zealand now from Fiji, this global network is really a vital tool in expediting the delivery of needed aviation traffic, weather and safety information to the flying public.”

Strengthening meteorological and climatological services

A microwave receiver that is part of the Emergency Managers Weather Information System (EMWIN), that collects and processes climatological data on Pacific weather systems



Responding to climate change means understanding the changes that are taking place in the climate, which in turn requires a clear understanding of the meteorology of the Pacific region. SPREP is coordinating various activities throughout the Pacific to strengthen the services and products needed for daily weather forecasting, seasonal predictions and monitoring of climate change.

The Atmospheric Radiation Measurement (ARM) Program is a multi-laboratory, interagency programme that was created in 1989 with funding from the US Department of Energy. The ARM Program is part of DOE’s effort to resolve scientific uncertainties about global climate change, with a specific focus on improving the performance of general circulation models (GCMs) used for climate research and prediction. These improved models help scientists better understand the influences of human activities on the

earth’s climate.

In pursuit of its goal, the ARM Program operates field research sites, called Cloud and Radiation Testbeds (CARTs), in several climatically significant locations. Scientists collect and analyze data obtained over extended periods of time from large arrays of instruments.

Three primary locations, Southern Great Plains, Tropical Western Pacific, and North Slope of Alaska, were identified as representing the range of climate conditions that should be studied. Each CART site has been heavily instrumented to gather massive amounts of climate data. Using these data, scientists hope to better understand the effects and interactions of sunlight, radiant energy, and clouds on temperatures, weather and climate. From its headquarters in Samoa, SPREP manages the project activities dealing with the Tropical Western Pacific CART, which has data-gathering facilities at Darwin, Australia, on Manus Island, Papua New Guinea and on Nauru Island.

Addressing another aspect of climate change, SPREP is managing a project to establish a Global Climate Observation System (GCOS). There is a recognized decline in climate observing networks within the region, for various reasons. SPREP through the Pacific Islands-GCOS Action and Implementation Plan is facilitating the coordination of development projects for the priority climate-observing system.

Danger from below

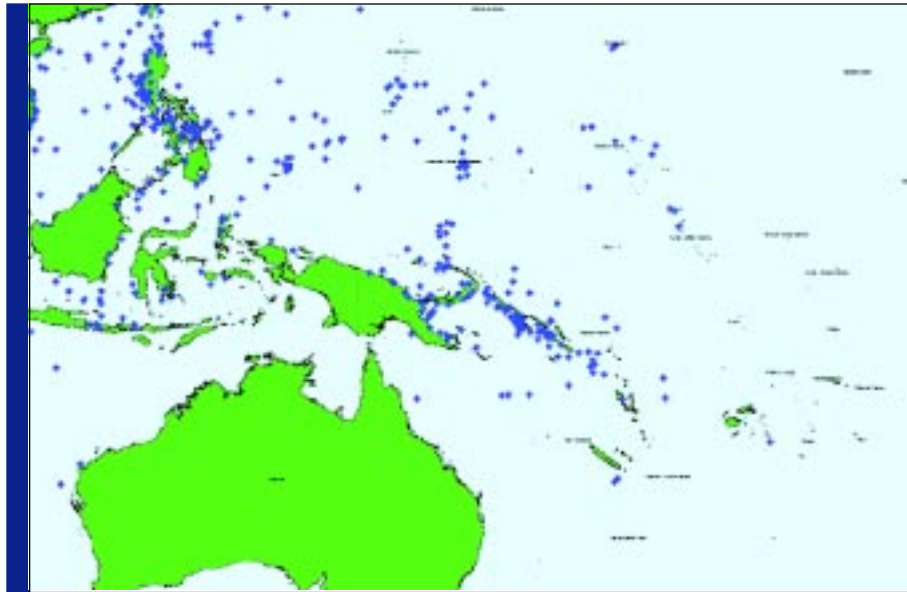
The threat of oil from sunken warships polluting some of the most pristine islands in the Pacific is becoming stronger every day. The Pacific was the scene of some of the largest naval battles of World War II. During the ferocious battles of the early 1940s, over 1800 ships were sunk in the Asia-Pacific area. These include 23 large aircraft carriers, 213 destroyers, 22 battle ships, hundreds of Japanese planes and submarines. But the biggest environmental threat comes from the 50 oil tankers that lie on the bottom.

By 1944, tiny Ulithi Lagoon, one of the outer islands of the Federated States of Micronesia, had become the world's largest naval base, home to more than 600 United States warships. And while Chuuk Lagoon, the Battle of Midway and the Battle of the Coral Sea are events that live on in naval folklore, their legacy left scores of US and Japanese naval ships on the sea bed in places like Iron-bottom Sound in the Solomon Islands, named because of the number of vessels now resting on its seafloor.

"But the story now emerging is the hidden danger from World War II wrecks more than 50 years on," said SPREP's Marine Pollution Adviser Sefanaia Nawadra. The rusting hulks are starting to discharge their potentially deadly cargo. One ship alone holds 19 million litres of fuel oil. Some ships are lying in open water, but others are inside the fringing reef so that any leak is trapped within the island's lagoon.

Reflecting the concern of the Pacific countries, SPREP had already set up a regional database that holds details on more than 1500 wrecks across the Pacific region. Next steps will be to identify a generic risk-assessment model to classify the sites, agree on the interventions for each risk category, assess each site then start active interventions. Through its Pacific Ocean Pollution Prevention Programme, SPREP is assisting the Federated States of Micronesia and other interested countries to develop their own strategies of dealing with the threat.

The danger to the environment posed by these wrecks was highlighted last year at Ulithi Atoll, when a sunken American oil tanker, the *USS*



Mississinewa, began to leak oil into an area considered one of the largest turtle hatcheries in the region. It had been struck by a manned Japanese torpedo amidships and sank with an estimated 9.6 million litres of oil still on board. The US Navy had been very proactive and sealed the holes, but the hull has started leaking again.

"The potential danger these vessels will continue to pose for the marine environment is clear and ever present," says Nawadra. "That is why some colleagues and I have invested quite a bit of time highlighting this issue at a number of major international conferences and with the international media."

The *Mississinewa* will be the first opportunity to measure how SPREP's approach operates in a practical situation. The US Navy made detailed site assessments late in 2002 of the tanker, which is sitting 40 metres below the surface. The aim is to begin pumping out the oil in February 2003 to salvage it. Local villagers in Micronesia who depend on the sea for their livelihood are watching with keen interest, because their lagoons have already been closed once to fishing because of leaks.

Output from the SPREP global information system database of WWII shipwrecks in the Pacific. Wrecks are marked by the blue points. The database contains the exact geographic location, with other details of the site

Sanctuary for our friends from the deep



This illustration was painted by Lesley Keen of the Cook Islands as an entry in the art competition on sustainability organised for the World Summit on Sustainable Development

By the end of 2002, whaling was prohibited in more than 40 000 square kilometres of the South Pacific. Over the years a number of attempts to establish a South Pacific Whale Sanctuary have been unsuccessful. In the past four years SPREP has

been working hard to stimulate research, increase awareness and exchange information to catalyse the creation of whale sanctuaries. This patient process is finally showing concrete results.

“This ocean contains critical great whale-breeding grounds and migratory routes,” said Job Opu, SPREP’s Marine Species Officer. “The great whale populations here in the South Pacific are seriously depleted, so sanctuaries will protect the whales and allow them to recover. There are a dozen whale species that inhabit this part of the Pacific, but their populations have been reduced to a very small fraction, mainly as a result of over harvesting.”

1998 marked the first effort to introduce a Pacific Whale Sanctuary, at the annual meeting of the International Whaling Commission. Led by Australia and New Zealand and supported by like-minded nations, the aim was to extend conservation rights for all whales, from their feeding grounds and migratory routes in southern ocean sanctuaries, to breeding and calving grounds in the South Pacific. Despite considerable support at a further Commission gathering two years later, problems in securing the 75 percent majority vote needed to bring about the change saw the *status quo* remain.

In 2001 a regional SPREP meeting on marine conservation formalised a document called the Apia Statement. Along with other recommendations the Statement called on members to

consider alternative measures to resolve the impasse at the Commission. SPREP and Pacific Forum leaders also encouraged Pacific nations to take the initiative and declare their Exclusive Economic Zones (EEZ) sanctuaries. Soon after, the Cook Islands gave its 10 000 sq kilometer EEZ sanctuary status. Over the past 15 months Fiji, French Polynesia, Niue, Papua New Guinea and Samoa have all made similar declarations. With Tonga having earlier banned whaling by royal decree, and US Federal laws protecting sea mammals in nearby American Samoa, the total ocean area by the end of 2002 exceeded 40 000 square kilometers.

“We have come a long way in marine mammal conservation with the increase in research being undertaken, and national workshops being held, but we still have some way to go yet before we can rest,” said Opu.

For many whale species, the impact of commercial exploitation during the nineteenth and twentieth centuries reduced the breeding populations in this region to very low levels, with some even threatened with extinction. This was made worse by some of the Pacific island practices. For example, it was only in 1978 that Tonga stopped the subsistence hunting for humpback whales that had been going on for much of the twentieth century.

“Basically I think these countries really wanted to see these magnificent giants back in their waters as part of their cultural inheritance and identity,” said Opu. “Sure there are economic benefits, such as whale watching in Tonga or the Cook Islands, but all Pacific Islands have a shared and joint responsibility to ensure the maintenance of viable populations of our friends from the deep.”

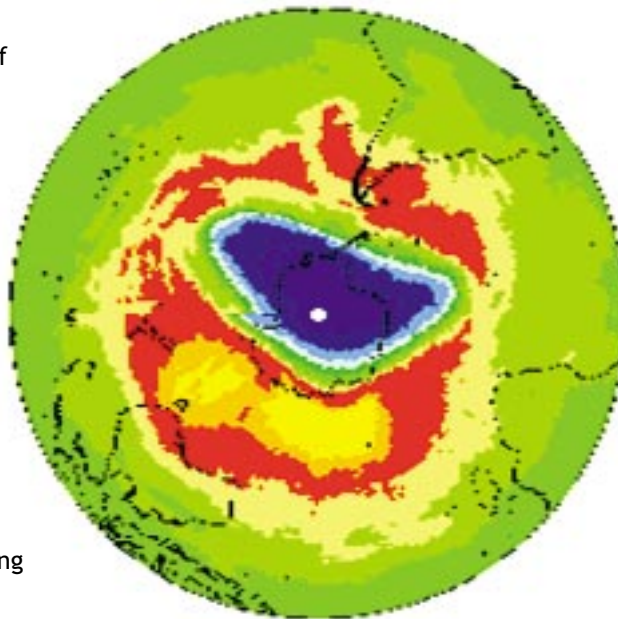
Pacific collaboration increases impact of work on ozone depletion

Close collaboration among Pacific island countries is contributing to reducing the emission of ozone-depleting substances (ODS) into the atmosphere. These chemicals, such as chlorofluorocarbons (CFCs), carbon tetrachloride, halons and methyl chloroform, are used in many applications, including, refrigeration, air conditioning, foam blowing, cleaning electronic components, solvents and fire extinguishers.

The ozone layer is found in the stratosphere 10 to 50 km above the Earth and plays a vital role in absorbing harmful ultraviolet (UV-B) radiation from the sun. Increased exposure to ultraviolet radiation raises the risk of developing certain types of skin cancers. Ultraviolet radiation also affects terrestrial and aquatic ecosystems, altering growth, food chains and biochemical cycles. In particular, the radiation damages the aquatic life living just below the surface of salt and fresh water. These organisms are the basis of the Earth's food chain.

Concentrations of ozone in the atmosphere vary naturally according to temperature, weather, latitude and altitude. In 1985, scientists identified a thinning of the ozone layer over the Antarctic during the spring months which became known as the 'ozone hole'. Ozone destruction is greatest at the South Pole where very low temperatures in the stratosphere in winter create polar clouds that concentrate the damaging chemicals. Ozone levels over Scandinavia, Greenland and Siberia reached an unprecedented 45% depletion in 1996. In 1997 the Antarctic ozone hole covered 24 million km² in October, with an average of 40% ozone depletion.

The United Nations began to discuss the situation, and after a series of rigorous meetings and negotiations, the Montreal Protocol on Substances that Deplete the Ozone Layer was finally agreed upon on 16 September 1987 in Montreal. This proved to be far tougher than anyone expected. The Protocol was a landmark international agreement designed to protect the stratospheric ozone layer, stipulating that the production and consumption of most compounds

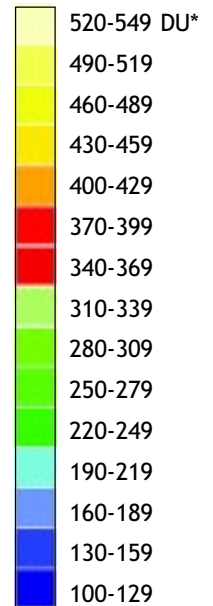


The ozone hole over the South Pole

that deplete ozone in the stratosphere were to be phased out by 2000. Developing countries had another 10 years to comply.

The Protocol came into force in 1989, when 29 countries and the European Community, representing about 82 percent of world consumption, had ratified it. By 2002, 184 countries had ratified the Protocol. In the Pacific region, the political commitment of the governments of the Pacific island countries to the protection of the ozone layer impressed the Montreal Protocol's Multilateral Fund. The Fund agreed to finance the regional strategy to comply with the Montreal Protocol in the eight core Pacific Island countries (the Federated States of Micronesia, Kiribati, the Marshall Islands, Palau, Solomon Islands, Tonga, Tuvalu and Vanuatu).

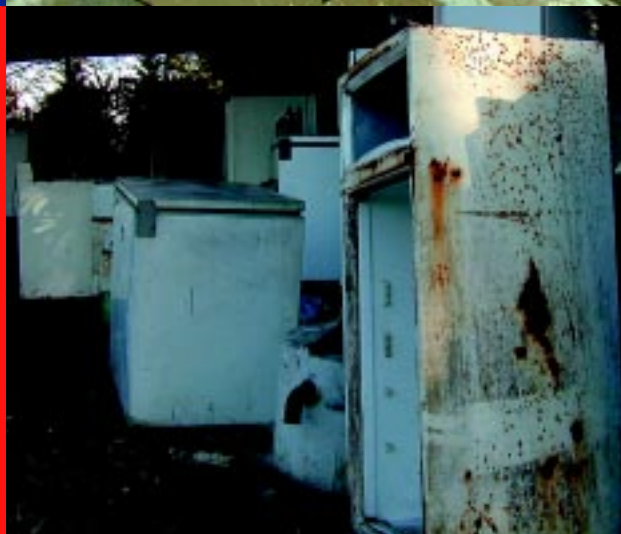
"These governments had committed themselves to total CFC phase-out by 2005, well in advance of their obligations under the Montreal Protocol," said Iain McGlinchy, the SPREP project consultant. The Pacific island countries depend for these chemicals on Australia, New Zealand, and to a lesser extent Japan and the United States. These countries have already phased out their own consumption of ODS so supply would have become increasingly scarce, other than from illegal supplies. Thus the urgent need to



*Ozone is measured in Dobson units (DU). If all the ozone above a certain area of the Earth is compressed into a slab at 0°C and 1 atmosphere pressure, then a slab 3-mm thick equals 300 DU

reduce ODS consumption and develop the capacity to use alternatives.

The Regional Strategy was developed by SPREP, working closely with the eight core countries and with the limited involvement of PNG. "This



Scrapped and leaking air conditioners and refrigerators are found all over the Pacific. They are significant sources of ozone-depleting substances

was the first time an entire region had agreed to an early phase-out," said McGlinchy.

The preliminary part of the project, ending during 2002, was clearly successful in raising awareness of the Montreal Protocol at a national and regional level in the Pacific. It achieved this through a combination of country visits, regional thematic workshops for national contact points, regular communications from SPREP to national governments and through presentations to other regional forums. Country visits were the most effective in raising initial levels of awareness as they provided a focus for activities and an opportunity to hold meetings and discussions with key figures. "The visits also stimulated some countries to carry out their own awareness-raising activities for their own communities," said McGlinchy.

One measure of the raised awareness has been the increased level of participation by PICs at meetings of the Montreal Protocol and their interest in being part of the decision-making process. There has also been a steady process of ratification of the Montreal Protocol and the various amendments to the Protocol by countries in the region. "We are working closely with the United Nations Environment Programme's Division of Technology, Industry and Economics and UNEP's Regional Office for Asia and the Pacific," said SPREP's Emma Sale-Mario, who is responsible for the project. "We're currently into the second stage, which is to assist countries to put their National Compliance Action Plans into practice."

With full compliance (see table), the international agreements will eventually eliminate most of the emissions of the major ozone-depleting gases. The ozone layer is expected to return to normal during the middle of the next century. The committed action of the Pacific islands countries will have contributed to this achievement.

Pacific Islands National Compliance Action Plans

- ▶ Establishment of national ozone unit office and committee
- ▶ Public awareness and education
- ▶ Establishment of licensing and monitoring systems
- ▶ Training of trainers, and subsequent training of refrigeration technicians, on good practices of refrigeration
- ▶ Training of customs officials on monitoring and control of ODS imports
- ▶ Consideration of tax incentives to promote use of substitutes and alternative technologies
- ▶ Ban on new installations and equipment using controlled ODS
- ▶ Ban on imports of CFCs and other ODS (except hydrochlorofluorocarbons) with exemptions for 'essential uses'
- ▶ Total ban on imports of CFCs and all other ODS (except hydrochlorofluorocarbons)

Collaboration brings successful outcomes from World Summit

Extensive preparations in the Pacific for the United Nations World Summit on Sustainable Development (WSSD) in Johannesburg in South Africa, 2002 paid off in terms of new initiatives, partnerships and funding for the region. The Summit was a key opportunity for the Pacific region to voice its concerns and aspirations about sustainable development, regionally and internationally. One hundred world leaders addressed the Summit and more than 22 000 people participated.

In part the Summit was to review what progress had been made to implement Agenda 21, the 10-year-old blueprint for sustainable development produced in Rio de Janeiro a decade earlier. From there the delegates were to chart a path for the next decade and into the new millennium.

The Pacific countries worked together to put their views across on the common issues troubling the region. The Prime Minister of Tuvalu, Saufatu Sopoaga told the meeting, "In the face of mounting evidence over rising sea levels and climate change, still not enough is being done by the international community to ameliorate the situation." Tuvalu's firm position throughout the preparatory process and the Summit had focused on renewable energy targets, urging all countries to ratify the Kyoto Protocol.

A number of Pacific voices supported him and spoke of the need for more rapid progress. The Marshall Islands President, Honourable Kessai Note, made the point that in spite of the commitments made during the Rio Summit, poverty is continuing to increase, as is the gap between rich and poor. He described the effect of climate change as a matter of "life and death", and the ocean as a traditional livelihood "that was now turning against us as a result of forces beyond our power to combat."

Vanuatu's Deputy Prime Minister expressed his deep concern over shipping radioactive waste through the Pacific and the lack of enforceable liability in the event of accident.

Through these exchange, small island developing states (SIDS) were able to secure global recognition of issues relating to their environmental, social and economic priorities. The sustainable development of SIDS was the first chapter agreed to in the Summit Joint Plan of Implementation and has a real bearing on how the world views the Pacific situation. The provisions include special reference to:

- ▶ target dates and support for regional fisheries management
- ▶ support for conservation and freshwater programmes
- ▶ appropriate transfer of technology and capacity building
- ▶ consideration by the World Trade Organization of the special case for SIDS
- ▶ development of sustainable tourism initiatives
- ▶ assistance with comprehensive hazard and risk management
- ▶ disaster prevention, mitigation and preparedness
- ▶ economic, social and environmental vulnerability indices
- ▶ mobilizing resources to address the adverse effects of climate change
- ▶ sea level rise
- ▶ affordable and environmentally sound energy services
- ▶ health-care services
- ▶ support to reduce and manage waste
- ▶ pollution.

The Plan also contains implementation and institutional development targets that relate to the needs of Pacific countries, like sustainable development, the state of the environment, global information systems, environmental economics and mainstreaming.

Fiji's UN Ambassador Amraiya Naidu said afterward that the "support shown for the section on islands is very positive news for the Pacific. It provides a solid international platform for a range of new initiatives on sustainable development at home."



The WSSD logo

Niue's Minister for Environment and Finance Honourable Toke Talagi told the Summit of the important role of the Pacific's regional organizations. "They need adequate resourcing for them to continue to be effective and efficient in building capacity and promoting sustainable development at the national and community levels," he said.

For Pacific island countries and territories, much has been achieved. The continued international recognition of our uniqueness and special case as one of the world's most vulnerable regions, led to specific actions required to assist islands, and an agreement to further review sustainable development in islands by 2004. Heads of governments from the region successfully launched a package of initiatives that provides a valuable platform to assist countries to implement sustainable development. Donors and partners, including Australia, New Zealand, Japan, Denmark and the European Union, are supporting this platform.

"This achievement was the result of significant work within the Pacific, and the efforts of our negotiators during the series of preparatory meetings," said Gerald Miles, a WSSD adviser for the Pacific region. "Pacific Ministers at the meeting sent a clear signal that they are important partners in this global process and that the outcome for islands was politically significant."

Leading into the Summit, a Pacific regional submission to the WSSD was produced during a multi-stakeholders consultation in 2002. SPREP was able to assist by providing support and advice, to member countries and CROP agencies on policy and technical matters. The team approach brought environment, social and economic expertise and advice together, to assist countries to better influence sustainable development policy at regional and international levels.

Overall the Summit did well to encourage commitment from individual countries by mobilizing resources for a range of activities. Political support was gained for existing agreements and programmes that are essential to the sustainable development of this region's people, their environment and natural resources. In addition, countries of the region used the forum to release a series of Umbrella Initiatives that formed new partnerships to securing resources to build capacity for sustainable development in the region (see table).

The Initiatives create an important platform to enable partners working in similar areas to come together and discuss how they could better coordinate their efforts to effectively implement sustainable development in the region. "The outcomes from the Summit may have posed as many questions as answers," said Tamari'i Tutangata, SPREP's Director at the time of the meeting. "But there were positive results in terms of commitment from developed countries to increasing technical and financial assistance for the Pacific region, and the recognition of the very real environmental threats that we are now confronting."

Pacific Umbrella Initiatives - Type II Partnerships

- ▶ Pacific Islands Ocean Initiative
- ▶ Capacity Building through Education, Research and Training
- ▶ Pacific Island Adaptation Initiative
- ▶ Pacific Islands Energy for Sustainable Development
- ▶ Pacific Islands Health for Sustainable Development
- ▶ Information and Communication Technology for Sustainable Development
- ▶ Mainstreaming Conservation of Biodiversity and Associated Traditional Knowledge
- ▶ Sustainable Tourism Development for the Pacific
- ▶ Sustainable Land Resources Development
- ▶ Pacific Islands Governance
- ▶ Vulnerability and Disaster Management
- ▶ Planning for Sustainable Community Lifestyles
- ▶ Waste Management Initiative

Increasing the positive impact of tourism in the Pacific



(logo by Cathy Appleton)
Monitoring sustainable tourism development in Samoa

The Pacific has always been an exotic tourist destination. Tourism can bring much-needed foreign exchange and employment to small Pacific islands. But tourist development also brings the risk of uncontrolled construction, pollution, the loss of irreplaceable resources such as fisheries and coral reefs and a disruption in the cultural environment.

“The Global Conference on Small Island Developing States in Barbados in 1994 highlighted the need for special attention to the relationship between environmental quality and the sustainability of tourism development,” said Tamari’i Tutangata, SPREP’s former Director. Nevertheless, actually achieving sustainable tourism has been slow and *ad hoc*. National tourism organisations of small islands often lack the capacity and resources to develop an integrated strategy and there are few tools available to assist them.

Since 1998, SPREP has been associated with a project to do just that, run by the Samoa Tourism Authority and supported by New Zealand international development assistance. Working with a large team of collaborators, Louise Twining-Ward, a UK tourism researcher, developed objectives and established a set of practical and user-friendly indicators for monitoring sustainable tourism development in the Samoa (see Table). “We then used data from the first year of monitoring to design an action plan for sustainable tourism that targets ten specific areas of tourism in Samoa,” said Twining-Ward.

The result is a user-friendly and place-specific method that allows Samoa to monitor its progress towards sustainable tourism. The work has been turned into a handbook* that uses the

case of Samoa to provide a framework for national tourism organisations to develop their own objectives for sustainable tourism and identify realistic and practical indicators to measure their progress.

“The handbook has turned sustainable tourism from a hazy concept into something tangible,

Samoa’s Sustainable Tourism Development Indicators

Critical

Tourist landscapes under threat from development
New hotels undertaking environmental assessment
Evaluation of quality of key tourist attraction sites
Tourism operators using sustainable tourism practices
Hotel staff going on training courses

Environmental

Hotels using secondary or tertiary sewage treatment
Tourist participation in nature tourism
Tourism village participation in land conservation
Tourism village participation in marine protection
Tourism sites passing Samoa Water Authority water quality tests
Tourist participation in marine tourism
Hotels composting their biodegradable waste
Water usage per guest night in hotels

Economic

Contribution of direct tourism businesses to gross domestic product
Proportion of new businesses focused on tourism
Proportion of hotel jobs in rural areas

Social and cultural

Villages included in tourism awareness programmes
Proportion of traditional events in tourism festivals
Proportion of handicraft stalls in the markets
Tourism operators informing visitors of village protocol



* Twining-Ward, Louise. 2003. Indicator Handbook: A Guide to the Development and Use of Samoa’s Sustainable Tourism Indicators. SPREP, Samoa.



concrete and achievable in the context of Samoa,” said Tuala Sale Tagaloa, Samoa’s Minister of Tourism. “This handbook ... includes step-by-step guidelines for indicator development that may also be of interest to other small island countries wanting to design their own indicators of sustainable tourism development.”

“One important area where the project has already begun to make an impact is in raising the awareness of a wide range of stakeholders of the issues connected with sustainable tourism,” said Mac Price, former New Zealand High Commissioner to Samoa, “It is clear that many of the observations and findings of the project, will find broader use in tourism planning, policy-making, education and awareness.”

Integrating Environment and Development

‘Sustainable Tourism’ is a focus of the Sustainable Economic Development programme of SPREP. Under the theme of ‘Integrating Environment and Development’ two programme components have targeted industry involvement in planning for sustainable development. SPREP’s support for the Samoa Sustainable Tourism Indicator Handbook is one of those. The other is the support of the Samoa Exporter of the Year Award, which over the last 2 years has succeeded in gradually increasing the weighting given to environmental criteria in the awards determination. Both the Indicator Project and the Exporter of the Year are consistent with the ‘soft approach’ to planning for sustainable development instead of the usual prescriptive and regulatory approach of land use planning, environmental impact assessments, industry and pollution control. The programme activities have been designed so that they can be replicated in other Pacific island countries and territories. These approaches are also consistent with calls for industry and community involvement in sustainable development at the Global Conference on Small Island Developing States in Barbados in 1994 and most recently at the World Summit for Sustainable Development in Johannesburg in 2002.



Networking Pacific environmental libraries

Pacific island people need information on environmental issues to improve their quality of life and take part in debates on the environment. Politicians need good information to make the right environmental decisions. A growing network of national environmental information centres is speeding up the free flow of environmental information throughout the Pacific and having a dual impact. It is helping governments to develop sound environmental policies and assisting in the education of public user groups about the environment.

SPREP is part of the Pacific Environmental Information Network (PEIN), which is funded by the European Union and designed to provide environmental information to all sectors of the community. "Since it started there has been a significant rise in the use of environmental information by countries that are members of this network," said Satui Bentin, SPREP's information resource centre manager.

Ms Bentin is working in 11 Pacific island member countries of SPREP to create a network of national environmental information centres that deal directly with existing national systems like environment-related departments, non-governmental organizations, national women or youth groups, schools, radio broadcasters, etc. The centres are based in existing environment departments so they can easily supply information to inform the work of the staff. The project is improving access to environmental information within member countries by acting as a conduit to send out a variety of print and electronic material produced by SPREP projects and other international environmental organisations and networks.

"First we work with a country to identify possible sites for an information centre," said Ms Bentin. "Then we install equipment, train staff and once the centre is operating as part of the network we start recruiting other agencies in the country into the network. In Tonga in August 2002 we set up computers and did the training. I went back in December after the centre had been operating for a while for an awareness-type meeting where several other sites agreed to join

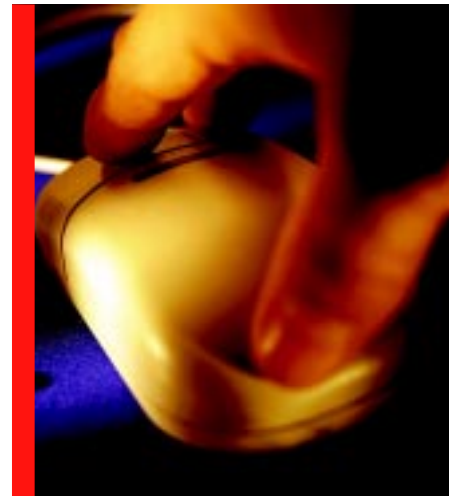
the new network."

PEIN also links other environmental information centres to established national networks. "This has widespread impact because the collections of all the centres on the network become accessible to the nodes over the Internet via SPREP's website," said Herve Dropsy, SPREP's information technology manager.

"On a regional level, established information centres will be able to communicate with other regional and international information networks through the SPREP Information Resource Centre," said Ms Bentin. "This significantly strengthens the environmental information flow to and within member countries."

One aspect of the information disseminated relates to traditional Pacific island practices of managing natural resources, recognising the importance of preserving Pacific island cultures. But there has been growing concern about access to this type of information, because there is a fear of outsiders gaining sensitive or commercially useful information to use for their own gain. In Fiji, for example, a participant at the awareness meeting brought up traditional knowledge about medicinal plants and the dangers of an information network releasing valuable data that would otherwise have been blocked under individual country's laws on intellectual property rights. "The mechanisms exist through PEIN to counter such problems and we leave the choice up to individual departments of sharing or not sharing such sensitive information," said Ms Bentin.

The impact of the work is clear, as more and more organisations realise the usefulness of the networks and agree to become members, making environmental information available to those people who really need it.



The work is helping governments to develop sound environmental policies and assisting in the education of public user groups about the environment

Environmental radio

Communication is difficult in the Pacific, given the distances between islands and the lack of resources of many countries. However, most people have a radio, and radio programmes are relatively cheap to produce. So when it comes to delivering an environmental message with immediacy and clarity to the widest possible audience, there is no substitute for good, old-fashioned radio.

In May 2002, 13 of the Pacific's most talented radio journalists came together for a week to look at ways of promoting environmental news in their home countries and in the region. The Media and Environment Workshop was the final in a series that began in 1999, sponsored by SPREP, United Nations Education, Scientific and Communication Organization and the European Union.

Journalists from the Cook Islands, Fiji, Kiribati, Nauru, Niue, Marshall Islands, Papua New Guinea, Samoa, Tonga, Tuvalu and Vanuatu worked together to understand environmental issues and learn how to make stories relating to the environment more attractive to listeners. Using the facilities at SPREP's Training and Education Centre, they produced stories on local issues with regional applications that were sent throughout the Pacifics. The stories, about

composting and recycling, were then broadcast to a potential audience of four million listeners.

Yaminiasi Gaunavou, from the Secretariat of the Pacific Community Regional Media Centre said "I think we made some progress in reinforcing the important role that radio and other journalists have in showing how, from an environmental standpoint, so much is changing."

Mr Johnson Honimae, the Director of the Solomon Islands Broadcasting Corporation and President of the Pacific Islands Journalists' Association, echoed those comments and felt that environmental issues need to be given more frequent access on all regional media. "We need to get as much environmental information as possible, so that as Pacific islanders we can lead the way forward and decide what is the best approach to our future," he said.

Participant and industry responses have been largely positive, with repeated requests from governments and the private sector and civil groups for more training and information. Another outcome was an increase in the capacity of the people involved, because the final two workshops in Port Moresby and Apia used consultants and trainers based exclusively in the Pacific islands.



One of the Pacific island journalists working during the workshop on a radio programme about composting

Human resources for environmental development

Pacific island countries face mounting challenges as they pursue the goals of environmental management and sustainable development. Capacity building is an over-used term, but building the ability of the Pacific people to meet the challenges of the future is essential to reaching national and regional goals. A project that SPREP is running is answering this direct need that a number of Pacific countries felt. "This work will have a very specific and lasting effect within the countries," said Frank Wickham, SPREP's Human Resources Development Officer, who is supervising the project.

In 2001 SPREP completed an assessment of environmental training needs in the Cook Islands, Fiji, Guam, Papua New Guinea, Tonga and Vanuatu. "Countries identified some key constraints in the management of their training," he said. Many national environment departments lacked the basic tools of human resources development such as position descriptions, training plans, policy and procedure documents and/or the capacity to implement them. Training and development programmes were not always effective or efficient. The project developed out of these, and other concerns.

With backing from AusAid, SPREP is working with Australian Volunteers International to assist environment departments in the selected countries to develop their institutional and individual capacities. The project had its first concrete output in 2002. JoAnne Braithwaite from Australian Volunteers International worked closely with staff in the Environmental Protection Agency of the Marshall Islands over 3 months to write a comprehensive strategy to develop the human resources of the Agency.

"I interviewed all the staff and came up with a set of 14 recommendations," said Braithwaite. "Once the staff and John Bungitak, the General Manager, had reviewed them they formed the basic action plan for the remainder of my time there. Then I reviewed all the position descriptions, responsibilities, policy and planning documents, legislation, conventions and agreements. Based on these two sets of data, I

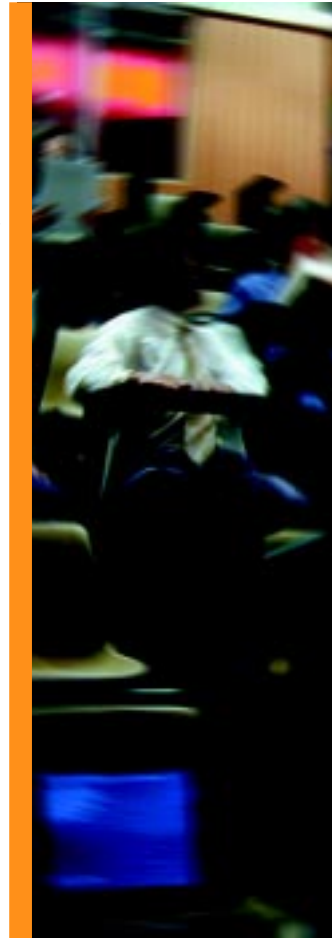
outlined a core set of skills needed for the Agency to operate effectively in the Republic. These were raw competencies and will need consistent refining but they were useful for evaluating training needs.

"Then I analysed the training needs for each staff member, spent several weeks actually observing the staff at work. We had a conference with over 40 participants working in environmentally related organisations that was aimed at identifying their training requirements. We got nine recommendations out of that."

The final strategy puts forward a shared vision for the organization and a strategic plan. Priorities for training focused on establishing good management practices to support on-the-job and organisational learning, identifying the additional staff required to support the strategy and developing systems, policies and procedures.

By the end of 2002 a number of these had been put into operation. Position descriptions had been developed and monthly staff meetings were being held. Staff had written a personnel policy, put up a communal notice board to promote better communication and performance management was being improved. JoAnne Braithwaite was moving on to Kiribati to repeat the exercise. Another volunteer was being selected to spend a year in the Marshalls to assist the Environmental Protection Agency review and develop policies relating to environmental management and sustainable development.

"The strategy is already having a significant impact within the Agency," said Braithwaite, "Key aspects of the plan have been implemented, and support has been harnessed from the senior levels. And I will be able to use the lessons I learn in each country to improve the approach in the next one." In fact, the Cook Islands, Niue, the Solomon Islands and Vanuatu all want to participate.



Educating children about the environment

One approach in the battle to better manage our environment is by bolstering environmental education for the several hundred thousand youngsters at primary schools throughout the Pacific islands. This is not an easy approach, as many developing countries already have to contend with an education system running on abysmal budgets, minimal resources and sub-standard facilities.

For Pacific children this means fewer opportunities to learn about what makes their natural resources so important, or how they can contribute to ensure that adequate food, clean water and a place to grow crops is possible. "Many of us grew up helping our families to grow food in the back garden, or fishing out on the reef," says Seema Deo, SPREP's Environmental Awareness and Education Officer. "Some of that is starting to change now, whether it be in the frequency or volumes of what is being harvested, but we need to explain to the younger members of our community why this is happening."

So SPREP joined forces with the British Government's Department for International Development, to publish a series of illustrated books that children can learn from and enjoy. Having been involved in environmental education for over ten years, Deo, who hails from Fiji, says the themes for the storybooks came after consulting widely with educators around the region. It followed on from earlier efforts to integrate environmental education as part of curriculum development at national level.

"Using local talent for the graphics and text, we developed three books that talk about waste management, mangroves and forest conservation," she said.

With large, colourful pages, each booklet tells a simple story. The one on waste management leads the reader through collecting waste and the best ways to get rid of the different kinds of rubbish. The booklet on mangroves shows how useful they are to village people and the disadvantages of removing them. The story on forest conservation explains how valuable forest cover is to island life. Each booklet ends with a short list of extension activities the teachers can do with the children to increase their knowledge of the subject and also to encourage the children to think critically about those situations that require people to change the way they have usually done things.

Almost 20 000 copies were printed for distribution in Samoa and the Solomon Islands. The books are not intended specifically as classroom textbooks. Rather they supplement the existing curriculum. The stand-alone material slots into the current practice where teachers use environment issues as part of their core curriculum lessons. "Teachers have been given techniques and methods to mould environmental values into all aspects of the learning curve, regardless of whether or not it is part of the prescribed curriculum," said Deo.

Environmental educators agree that nurturing a holistic outlook on nature in children from an early age will yield a more positive attitude toward the world around them when they are adults. This series of simple books will have an impact out of all proportion to the investment required to produce them. Deo says in the past 20 years, environmental educators have developed 'Pacific relevant' resource material, "but this is a more immediate, accessible way to put information into children's hands. I'd say we are onto a winner."

A page from 'Jo and Ju save the mangroves,' one of the series of children's educational booklets published by SPREP in 2002



Finance and budget - 2002

Donor project contributions

Donor	Balance at 1-Jan-02	Income	Expenses	Transfers	Balance as at 31-Dec-02
Australian Aid	299 038	391 960	(553 164)	-	137 835
Canadian Aid	77 079	195 433	(201 672)	-	70 841
China Aid	30 911	(13 574)	(13 791)	-	3 546
Danida Aid	177 439	-	(97 702)	-	79 737
EU Aid	309	24 291	(23 230)	-	1 370
French Aid	29 932	81 710	(57 020)	-	54 622
New Zealand Aid	583 823	349 181	(541 922)	-	391 082
Japanese Aid	(10 932)	134 724	(88 507)	-	35 284
US Aid	210 570	234 176	(281 092)	-	163 655
British Aid	58 953	52 590	(41 103)	-	70 440
COMSEC Aid	12 017	-	-	-	12 017
UNDP Aid	634 416	1 925 599	(2 276 468)	-	283 546
UNEP Aid	161 305	920 751	(576 106)	-	505 950
ADB Aid	(3 579)	29 990	(7 832)	-	18 579
Other Aid Funds	400 196	2 625 495	(2 728 890)	130 687	427 488
Total	2 661 476	6 952 326	(7 488 499)	130 687	2 255 990

Member contributions

American Samoa	8 315
Australia	151 121
Cook Islands	8 315
Federated States of Micronesia	8 315
Fiji	16 622
France	109 563
French Polynesia	16 622
Guam	16 622
Kiribati	8 315
Marshall Islands	8 315
Nauru	8 315
New Caledonia	16 622
New Zealand	55 297
Niue	8 315
Northern Marianas	8 315
Palau	8 315
Samoa	16 622
Papua New Guinea	16 622
Solomon Island	16 622
Tokelau	8 315
Tonga	8 315
Tuvalu	8 315
United States of America	152 493
Vanuatu	16 622
Wallis & Futuna Islands	8 315
Total	713 703

Income and expenditure for 2002

	Actual 2002
INCOME	
Members Contributions	706 374
Donor Funds	5 834 112
Project Administration Fees	228 773
Interest	79 910
Other Income	103 157
Total income	6 952 326
EXPENDITURE	
Natural Resource Management	2 745 025
Pollution Prevention	660 615
Climate Change and Variability	761 332
Economic Development	960 456
Implementation - General	910 832
Secretariat Functions and Services	1 362 131
Contingency/Transfers	
Total expenditure	7 400 391

Staff list - 2002

Name	Designation	Nationality
SENIOR MANAGEMENT		
TUTANGATA, Tamari'i	Director	Cook Islander
LUI, Vitolio, 22 April ***	Deputy Director	Samoa
RETI, Iosefatu, 30 June **	Special Adviser to the Director	Samoa
WENDT, Neva, 8 April **	Special Adviser to the Director	Australian
TUAKEU-LINDSAY, I'o, 22 Jun ***	Programme Delivery Manager	Cook Islander
LEILUA-LEI SAM, Pisaina, 30 April **	Executive Officer, Management	Samoa
1 May ***	Business Support Manager	
MANAGEMENT SUPPORT		
TUPUA-COUPER, Ruta, 25 Feb ***	Personal Assistant to Director	Samoa
ETI, Apiseta	Personal Assistant Deputy Director	Samoa
ONESEMO, Nifo, 1 May ***	Secretary to Business Support Manager	Samoa
NG LAM, Helen, 11 Oct. **	Secretary to Programme Delivery Manager	Samoa
KEY RESULT AREA 1. NATURE CONSERVATION		
SESEGA, Samuelu	Acting Coordinator/Action Strategy Coordinator	Samoa
POWER, Mary	Coastal Management Adviser	Irish/Australian
OPU, Job	Marine Species Officer	Papua New Guinean
DOVEY, Elizabeth (Liz)	Avifauna Conservation and Invasive Species Officer	Australian
PHILIP, Miriam, 29 Apr ***	Assistant Wetlands Management Officer	Papua N/Guinean
BROWN, Kate	Conference Coordinator, Nature Conservation	Australian
TUAILEMAFUA, Siuli, 15 Oct ***	Biodiversity Support Officer	Samoa
PATTERSON, Elizabeth	Programme Support Officer - Coastal Management	Australian
RANDALL, Suzy	Programme Support Officer - Pacific Bird and Invasive Species	Australian
MISI-ALAI, Me, 9 Apr ***	Programme Assistant	Samoa
WRIGHT, Drew	Project Manager - IWP*	Australian
STACEY, Natasha	Community Assessment/Part. Specialist - IWP*	Australian
SAMASONI, Samson	Community Communications Specialist - IWP*	Tokelaean/NZ
HOLLAND, Paula, 11 Mar ***	Natural Resource Economist - IWP*	Australian
VA'A, Rama, 9 Apr ***	Project Accountant - IWP*	Samoa
GALUVAO, Rosanna	Programme Assistant - IWP*	Samoa
KEY RESULT AREA 2. POLLUTION PREVENTION		
GRAHAM, Bruce, 30 Nov **	Coordinator, Pollution Prevention	New Zealander
NAWADRA, Sefanaia	Marine Pollution Adviser	Fijian
AMANO, Shiro	Solid Waste and Landfill Management Officer	Japanese
O'GRADY, John	Project Coordinator, POPs Disposal	New Zealander
PATON, Wendy	Programme Support Officer - Pollution Prevention	Australian
TO'A, Sina	Programme Assistant	Samoa
KEY RESULT AREA 3. CLIMATE CHANGE AND VARIABILITY		
NITSCHKE, Kim	Project Coordinator - ARM Programme****	Australian
NAKALEVU, Taito	Climate Change Adaptation Officer	Fijian
TAITUAVE, Sakaria, 11 Jul **	Assistant Ozone Depleting Substances Officer	Samoa
SALE-MARIO, Emma, 29 Oct ***	Assistant Ozone Depleting Substances Officer	Fijian
SIEBERT, Elizabeth, 26 Mar **	Programme Support Officer - Climate Change/Variability	Australian
VALASI, Fono	Programme Assistant	Samoa

*International Waters Programme; **Date left SPREP; *** Date arrived at SPREP; ****Atmospheric Radiation Measurement

Name	Designation	Nationality
KEY RESULT AREA 4. ECONOMIC DEVELOPMENT		
McINTYRE, Matthew	Environmental Assessment/Reporting Adviser	Australian
Miles, Gerald	Senior Policy Adviser, COMSEC	Australian
PASISI, Coral, 26 Feb ***	Assistant Sustainable Development Officer	Niuean
AUSTIN, Ellie, 7 Mar **	Programme Support Officer - Economic Development	Australian
LEAUPEPE-NICKEL, Alisa, 30 Apr ***	Programme Assistant	Samoan
KEY RESULT AREA 5. PROCESSES		
DROPSY, Herve	Acting Processes Coordinator/IT Manager	French
DEO, Seema	Environmental Education and Awareness Officer	Fijian
WICKHAM, Frank	Human Resource Development/Training Officer	Solomon Islander
BRAITHWAITE, Jo, 18 Jun ***	AVI - HRD Strategy Officer	Australian
VOLENTAS, Andrea	Environmental Legal Officer	Samoan
MOUGEOT, Jacques	Environmental Law Officer	French
BENTIN, Satui	Information Resource Centre Manager	Samoan
TAUAFIAFI, Fatu, 10 Sept **	Information and Publications Officer	Samoan
STAPLETON, Paul, 27 Oct ***	Editor and Publications Officer	Australian
PETERU, Chris	Assistant Media & Publications Officer	Samoan
TAPUSOA, Matilda	Information Technology Officer	Samoan
UESELE-PETAIA, Aliitasi	IT Network Officer	Samoan
HORI, Takahiro, 9 May **	JOCV/IT Volunteer	Japanese
WILLIAMS, Miraneta	Assistant Librarian	Samoan
SALESA, Serapina, 31 May **	Environmental Education Assistant	Samoan
McGINN, Patricia, 29 Apr ***	Programme Assistant	Samoan
BUSINESS SUPPORT		
<i>FINANCE</i>		
TU'UAU, Alofa, 24 Jul ***	Finance Manager	Samoan
DEVOE, Daniel, 16 July **	Accountant	New Zealander
BRUNT, Alexander, 16 Feb ***	Project Accountant	Australian
LEFAU, Luapene, 15 Feb **	Assistant Accountant	Samoan
LOSIVALE MAIAVA, Oketi	Assistant Accountant	Samoan
CHONG WONG, Puni	Finance Officer	Samoan
LUI, Tania	Finance Officer	Samoan
FONOTAGA, Togisala	Finance Officer	Samoan
<i>ADMINISTRATION</i>		
MASINA-HADLEY Malama	Administration Officer	Samoan
PUREA, Theresia	Administration Assistant	Samoan
MATA'U, Saunoa	Conference and Travel Officer	Samoan
SILULU, Lupe	Registry Supervisor	Samoan
TUILAGI-AH KUOI, Helen	Registry Assistant	Samoan
SIOMIA, Shirley, 4 Nov. **	Registry Assistant	Samoan
TUPAI, Monica	Receptionist	Samoan
FONOTI, Faamanu	Customs Clerk	Samoan
MONTINI, Smith, 6 Dec **	Driver/Clerk	Samoan
SITITI, Faamanatu, 6 Dec ***	Driver/Clerk	Samoan
LEAULA, Tologauvale	Cleaner/Teaperson/Clerical Assistant	Samoan
TOOTOO, Amosa	Cleaner/Teaperson	Samoan
FOAGA, Gafatasi (Tino)	Maintenance Tradesman	Samoan
HUNT, Elia	Night Watchman	Samoan
GAFA, Silupe	Gardener/Groundskeeper	Samoan

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SPREP, PO Box 240, Apia, Samoa
phone +685 21929 fax +685 20231 email
sprep@sprep.org.ws www.sprep.org.ws

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Sustaining Pacific resources and development



The SPREP 2002 Annual Report contains stories that highlight some of the work of the Programme that has had the greatest impact over the year, such as:

- ▶ Fighting to save local wildlife from uninvited invaders
- ▶ Local communities take responsibility for conservation areas
- ▶ Cleaning up the Pacific islands
- ▶ Pacific collaboration increases impact of work on ozone depletion
- ▶ Collaboration brings successful outcomes from World Summit
- ▶ Increasing the positive impact of tourism in the Pacific
- ▶ Networking Pacific environmental libraries
- ▶ Educating children about the environment

Annual Report

Annual Report
2002