



# Working with Pacific communities for our environment

The 2004 Annual Report of the  
South Pacific Regional Environment Programme

South Pacific Regional Environment Programme

2004 Annual Report



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# 2004

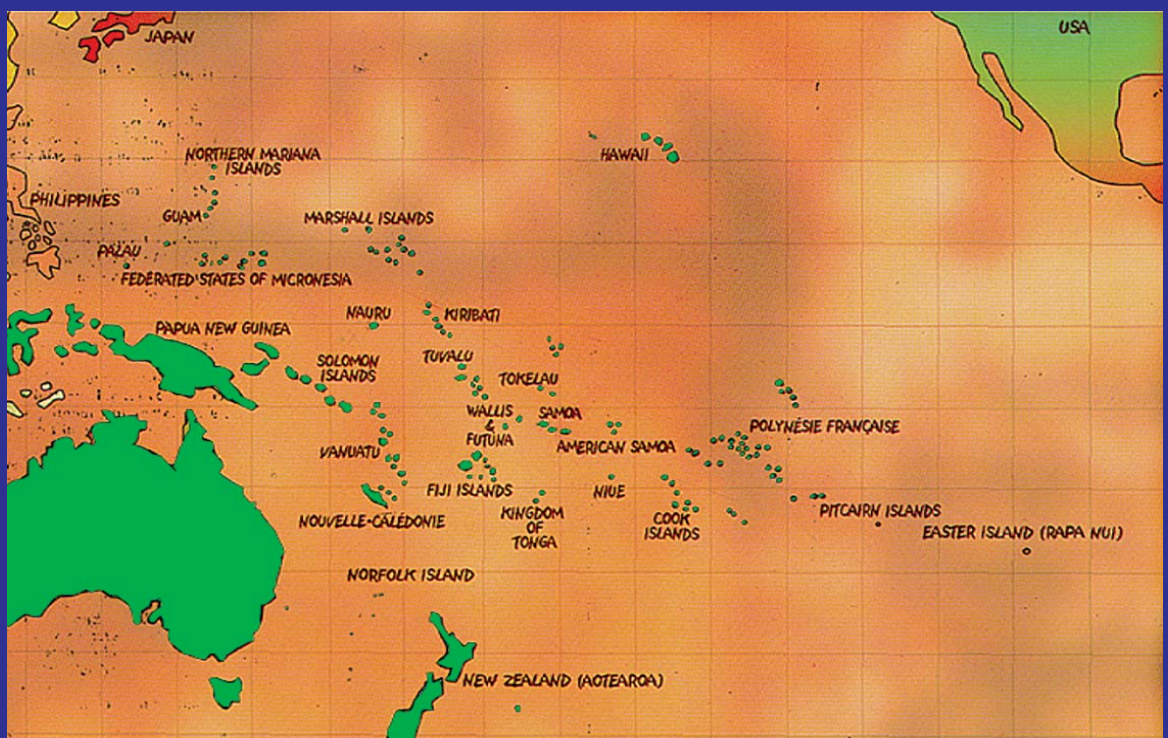
## SPREP member countries 2004

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 21 Pacific island countries and territories, and four countries (\*) with direct interests in the region:

|                                |                  |                          |                           |
|--------------------------------|------------------|--------------------------|---------------------------|
| American Samoa                 | Guam             | Northern Mariana Islands | Tuvalu                    |
| Australia*                     | Kiribati         | Palau                    | United States of America* |
| Cook Islands                   | Marshall Islands | Papua New Guinea         | Vanuatu                   |
| Federated States of Micronesia | Nauru            | Samoa                    | Wallis and Futuna.        |
| Fiji                           | New Caledonia    | Solomon Islands          |                           |
| France*                        | New Zealand*     | Tokelau                  |                           |
| French Polynesia               | Niue             | Tonga                    |                           |

The Pacific region





# Working with Pacific communities for our environment

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## A message from the Director



This year SPREP has undergone some important changes, aimed primarily at further improving the overall quality of our programmes in a manner that contributes to the needs of the region, and allows SPREP to utilize its capabilities and resources to the fullest.

From the time SPREP officially came into being in 1992, there has been ongoing discussions over the various roles and responsibilities being asked of us as the region's environment organization. When SPREP first relocated to Samoa, it was run along the lines of four divisions, each reflecting a major

environmental aspect of the secretariat's work. Then in 2002, this was modified into the current system of key result areas (or KRAs). They incorporated some positive changes, but were also found to be wanting when addressing the needs and priorities of the various stakeholders.

These then were the prototypes leading into the 15<sup>th</sup> SPREP Meeting in Tahiti, where a new strategic approach was endorsed for the secretariat by our member countries. What the strategy does is establish two new programmes: Island Ecosystems, and Pacific Futures. They are characterized by a long-term approach within a ten-year framework.

This new approach to regional delivery is more innovative and strategic than our project-based efforts of earlier days. Straight off the bat it will supply clear, measurable indicators of the progress and the impact of our work. This is an important element in SPREP's efforts to encourage long-term collaboration with existing and new partners. Complementing these changes is the 2004-2013 Strategic Programme that builds on the five-year Action Plan that comes into effect next year.

Some observers have felt that during the last four years of our existence, there has been perhaps a little too much organizational restructuring and rearranging. However, as the youngest CROP agency, much of this has been both necessary, and I would suggest, fully



### What is SPREP?

SPREP is the regional intergovernmental forum for environmental affairs in the Pacific islands. It serves 21 Pacific island countries and four metropolitan countries. SPREP works by promoting cooperation in the Pacific islands region to protect and improve the environment and to ensure sustainable development. The organisation runs two programmes. **Island Ecosystems** works to assist Pacific island countries and territories to manage island resources and ocean ecosystems so they can support life and livelihoods. **Pacific Futures** works to assist Pacific island countries and territories to plan and respond to threats and pressures on island and ocean systems.

Staff are drawn from within the Pacific basin and operate in fields such as:

- Terrestrial island ecosystems
- Coastal and marine ecosystems
- Species of special interest
- People and institutions
- Multilateral agreements and regional mechanisms
- Environment monitoring and reporting
- Climate change and atmosphere
- Knowledge management.



“After several attempts to come up with the proper balance ...the feeling now is that we have arrived at a winning formula.”

warranted, given the expanded work programmes, increased staff numbers, and the heightened expectations at national and regional levels of the kind of results the Secretariat can deliver to its members.

After several attempts to come up with the proper balance between being relevant to the needs of both our member governments and our stakeholders, the feeling now is that we have arrived at a winning formula.

This complements a mood within the secretariat for the need for SPREP to place a greater emphasis on community involvement with environmental issues. This year’s report will highlight some of those efforts. As I have said earlier, I am endeavouring to take the region on a path based on assimilating scientific knowledge that is practical and can be used by our people in their daily lives.

As the price of fossil fuels continues to increase both regionally and internationally, and in turn raises the cost of living for all of us, the Pacific Islands Renewable Energy Programme (PIREP) is making steady progress

in its attempts to secure some long-term solutions involving alternative energy sources. National assessment reports are now coming in that will give some indication as to what those resources are, how they can be utilized, and the best path for us to take. I have every confidence there will be a positive response from international donors for the next phase of this important programme.

It would be fair to say that most of the Pacific is to varying degrees, witnessing the unsustainable destruction of our biodiversity. Some of this is due to urban development, that externally is a sign of developing nations evolving further. Internally though it appears that more often than not, a lack of planning is posing a major burden on our marine and terrestrial ecosystems. Tragically this has brought one of the icons of the Pacific, the giant leatherback turtle, to the point of extinction. Our attempts to turn this situation around has been greatly enhanced by the support of the United States Western Pacific Regional Management Fisheries Council, whose work with local communities is reflected in these pages. Incredibly, common types of

fauna such as those found in mangrove wetlands are also facing a similar predicament. In response, the International Ramsar Convention on Wetlands has placed an Oceania Wetlands Officer with SPREP to drive a regional initiative that will target conserving mangrove wetlands. This unique habitat has important significance to our fragile coastal ecosystems as well the livelihoods of many communities who, over several generations, have acquired an encyclopedic knowledge of the economic, medicinal and cultural value of this habitat.

Understanding cultural sensitivities and being flexible in its approach has been a major part of the International Waters Project. Jointly managed by the United Nations Development Programme and SPREP, the project concludes at the end of 2006, but is already beginning to bear fruit. The Cook Islands, Tuvalu and Vanuatu offers glimpses of the differing needs and how IWP is responding proactively to those calls.

With respect to Climate Change, SPREP has responded by coming up with an innovative guide whereby communities can prioritize their issues and focus on how the most important of these can be properly resolved. Using a “top down and bottom up” approach in sourcing support from various sectors of the community has led to some ground-breaking progress. The results have been so encouraging the delegates from other island regions are keen to make the Community Vulnerability and Assessment (CV&A guidelines) an international model in climate change community problem solving.

On a regional scale, the methods used to sustain our biodiversity reaches all the way to international forums. It is pleasing then to note that the Convention on Biological Diversity will for the next two years, have a distinct Pacific flavour. Following this year’s meeting in Malaysia four Pacific island nations were nominated to different posts within the CBD machinery. The fillip though, is that when the

Newly elected President Oscar Temaru for French Polynesia made a courtesy call to the Secretariat. This year’s 15th SPREP Meeting was held in Tahiti, as collaboration with francophone members and France continues to develop and prosper.



100-plus countries meet again in 2006, Pacific biodiversity will be on the agenda, meaning important leverage to top table negotiations. These developments we welcome wholeheartedly.

The year 2004 has been one full of promising new developments in the way we provide assistance to as many stakeholders as possible. However I sense there is now an almost tangible feeling of apprehension, within both the region and the international community over the unsustainable manner in

which humankind is treating the world we all share.

With so much at risk, the margin for error in SPREP's strategic planning and implementation is becoming increasingly negligible. As the region's environment organization, we accept this challenge unconditionally. My staff and I are dedicated and determined to do as much as humanly possible to ensure Pacific island communities are given the opportunity to have contentment, dignity and peace in their lives.

Asterio Takesy  
Director

## SPREP 15 decides on a new direction



### SPREP 15 Meeting decides a new direction

French Polynesia was the location for the 15<sup>th</sup> SPREP Annual Meeting that coincided with the Fifth Meeting of Regional Environment Ministers. Tahiti proved the catalyst for a productive forum, where some crucial decisions on the future direction and function of the organization were agreed upon by SPREP members.

### Programmes

As a result the SPREP Meeting endorsed a new strategic approach for the organization. The strategy involves the establishment of two new programmes.

The Island Ecosystems programme will help members manage their resources and ocean ecosystems sustainably. As the name implies, the focus is on managing and conserving the terrestrial, coastal and marine ecosystems of the Pacific, while striving to conserve priority threatened species, and reduce the impact of alien invasive species and living modified organisms.

A further programme, Pacific Futures, has the goal of member countries and territories being able to plan, and execute responses to threats and pressures on island and ocean systems. The programme will provide all SPREP members with sustainable development policies for improved environmental governance, and in doing so, increase their capacity to respond to climate change, marine pollution, hazardous waste, solid waste, sewage and other land-based sources of pollution. Continued development, support and implementation of integrated regional strategies for environmental management and sustainable development will feature in improving regional coordination.

### 2005-2009 Action Plan

Naturally these initiatives are tied to SPREP's mandate of collective strength through cooperation with its members, and by providing assistance to protect the environment.

It was gratifying that member countries and territories also gave strong endorsement to the new Action Plan for regional environmental management. Commencing next year, the Plan is a five-year blueprint of SPREP's work. It highlights natural resource management, pollution prevention and climate change as crucial issues on the environment agenda.

Future action within natural resource management will include conserving terrestrial, marine and coastal resources, and extensive efforts to inhibit the current rate of biodiversity loss by 2010.

Pollution, neglect and degradation have all contributed to the declining volume of many marine resources. Efforts to conserve what remains are approaching a crisis point. Fish for subsistence living for example, are not only smaller, but are a now much harder to locate. For tiny isolated islands with small populations like Tokelau, this poses difficult questions about their lifestyle and future existence.

Developing comprehensive systems for waste disposal, such as recycling and reduced waste generation, will endeavour to limit pollution from waste and other land-based human activities. This work will be enhanced by increasing the capabilities of Pacific islands to respond to terrestrial, atmospheric and marine pollution, hazardous and solid wastes, sewage and other land-based sources of pollution.

Increasingly the region is suffering from the effects of climate change. Future efforts will focus on ways to adapt to these impacts





Photo Joanna Axford

Assistance to Pacific communities will be more focused under the new programme

especially from extreme weather events and sea level rise. Meteorological and climatological capacity will be improved, and the accuracy of information and modeling increased.

SPREP members also reaffirmed their support for several international conventions dealing with conservation of natural resources and environment of the Pacific, and controlling waste dumping and pollution in the region.

### Change of Title

Members agreed to rename the organization the Secretariat of the Pacific Regional Environment Programme, although the SPREP acronym remains. The title better reflects the regional mandate and geographical spread of Pacific states and territories over both the south and the north of an ocean that defines and bonds us all.

### Thanks

SPREP thanked president Oscar Temaru, the government and people of French Polynesia, for the overwhelming support and hospitality they provided the delegates and secretariat throughout the meeting.

## Renewable energy in the pipeline

Efforts to turn Pacific communities onto “more green powered” energy with commercial prospects will reduce the reliance on expensive oil imports and bring environmental, and socio-economic benefits.

As small markets far from suppliers, the region faces spiraling import prices for petroleum fuels and high-energy costs. With prices rising all over the world and potentially serious shortages in the offing, every Pacific island nation is coming under increasing pressure to maximize its relative share of the available energy supply.

The Pacific Islands Renewable Energy Project (PIREP) is looking for cost-effective, cleaner alternatives to meet these demands. Established at SPREP with support from the United Nations Development Programme and Global Environment Facility, PIREP wants viable renewable energy technologies to be available for all, and with less dependence on imported fossil fuels. In the long term the aim is to make renewable energies commercially viable, and in so doing reduce harmful greenhouse gas emissions.

PIREP coordinator Mr Solomone Fifita expects to have a definitive picture of the potential for renewable energy after National Assessment

Reports from the fifteen participating countries are completed this year.

“All economies need energy. Renewable energy is needed to produce food and manufacture goods, power machines and appliances, transport raw materials and finished products, and provide heat and light. The more energy available to our communities, the better the prospects for sustained growth,” he said.

“Some trends are already becoming clear. Pacific island



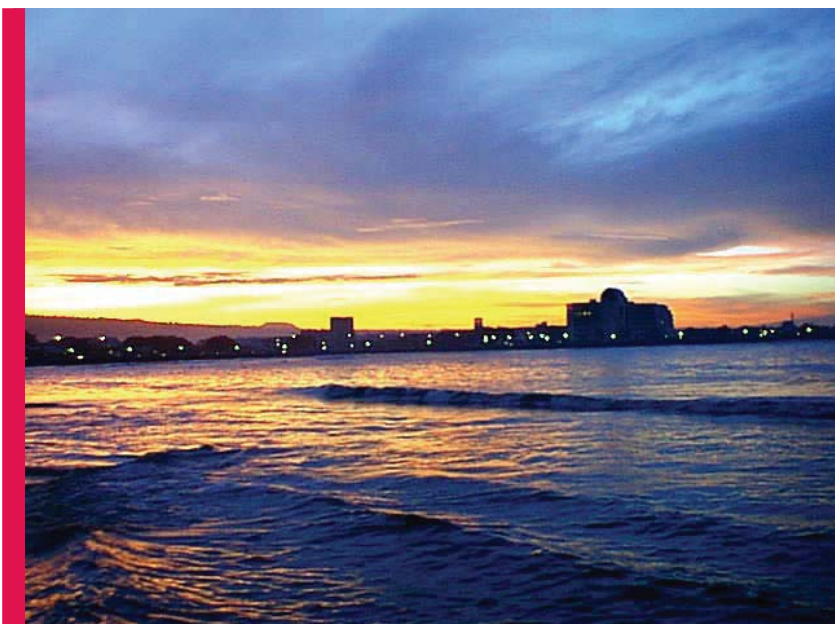
countries fall into three categories when considering alternative energy developments.”

The first consists of Fiji, Papua New Guinea, the Solomon Islands and Vanuatu. Within all the participating countries, Melanesian nations represent 98 percent of the total land area and 85.8% of the population. What characterizes them is diverse renewable energy resources, coupled to large populations in rural areas with no access to electricity, and often little involvement with capital economies.

A bloc that includes the Federated States of Micronesia, Kiribati, and the Marshall Islands have smaller populations, and large numbers of islands that are hard to access and have few renewable energy resources. Most of the populations live rurally, have no access to electricity, and participate in subsistence type economies driven by the organised production and sale of copra, fish and agricultural products.

The final category comprises the Cook Islands, Nauru, Niue, Palau, Samoa, Tokelau, Tonga and Tuvalu. This is the domain for high rates of electrification (close to 100 percent for Nauru, Niue, and Tokelau) and over 85 percent service for the rest. These islands stand to benefit relatively little from additional off-grid electrification programmes. The majority of the populations are engaged in fiscal economics, and

**Samoa’s capital Apia continues to expand and consume increasing amounts of energy.**



**Solar thermal power is already being used widely across the region**



although subsistence agriculture and fishing are present, their importance is declining.

“While only PNG has oil wells, the region has considerable potential for alternative energy. The most common is solar power that has been installed with varying levels of success since the 1970s, most commonly as hot water units,” he said.

A tropical climate offers excellent solar potential throughout most of the region. Advances in technology in recent years have made wind power a viable option in certain locations. On mountainous islands, hydropower generation is an influential source of electricity. Biomass from agriculture can substitute for fossil fuel. The proximity of other small islands to the Pacific Rim of Fire gives the basic resource to produce geothermal power. Of course the Pacific Ocean could, if utilized, offer unlimited opportunities for wave, tidal and other ocean-based energy sources. Waste-to-energy or biogas systems would not only contribute to increased energy independence but also help to address pollution and public health concerns, as well as providing a source of organic fertilizer. Geothermal resources remain untapped, as do the vast energy resource of the tropical ocean that defines us.

The rewards will be better telecommunications, water supply, health and education facilities, regional economic growth, and practical sustainable development in the future.

Superior technology is now making wind power a viable option for commercial energy services. Hydropower resources for electricity production exists in a number of countries. Geothermal and wave energy have yet to be fully tested, but their

potential in several countries has attracted some interest from overseas investors.

Today there are a number of on-going effective renewable energy projects in the region that cover most of the systems described here. Some have failed. In those cases, a lack of sufficient capacity within a country to plan, install, or maintain the projects have been cited. Many well-meaning donor programmes have provided equipment, engineering and some training — only to fall apart after the handover to local operators who struggle to maintain the standard, without the necessary back-up or on-going support. Other technologies have just wilted under the Pacific’s tropical conditions.

In 2005, Mr Fifita says, the PIREP project will seek support from the Global Environment Facility of the UNDP to start implementing the recommendations from the national assessments.

## Lifeline for Leatherbacks

Community monitoring efforts continue to provide valuable data



Marine turtles have been a part of ocean life on earth for over 100 million years.

But marine environmentalists believe community intervention will be a major factor as to whether the Pacific giant leatherback turtles (*Dermochelys coriacea*) can survive.

Delegates from coastal communities in Papua New Guinea, the Solomon Islands and Vanuatu have been looking at ways in which locals can become involved in programmes to try and halt the steady decline in leather back numbers.

“Both the environmentalists and the communities want to improve conservation practices, boost monitoring levels and work out better ways to deal with this threat to a marine icon that has been with us for generations,” says Turtle Database Officer Anne Trevor.

While the waterways in and around these three Melanesian island nations have traditionally been home to the world’s largest leatherback populations, studies show the reptiles are now disappearing in droves. Surveys carried out acknowledge that the leatherback, could become extinct to the region in as little as two decades.

Scientists say numbers in the region having fallen an incredible 97 percent in 22 years. Those figures show a decline in breeding females from 115,000 in 1982 to fewer than 3,000. The turtles were once plentiful throughout the Pacific Rim, nesting on beaches in Mexico, Costa Rica, Malaysia and Thailand. Genetically distinct from their Atlantic cousins, only a handful of females now return to their nesting grounds — so researchers now believe.

The leatherback is famous for its hatchlings racing to sea to escape being eaten by predatory sea birds, and for how it unerringly nests in the same spot each year. Human harvesting of both the eggs and the turtle meat has brought it to a dangerous cross roads.

“ Many Pacific islanders who have grown up on the coasts of these islands will have memories of the leatherback turtle that is part of many of our island myths and folklore,” says Job Opu, a Papua New Guinea marine conservationist.

Community leaders agree that, unless action is taken quickly, this worst-case scenario will occur. Some tribes and villages have already galvanized themselves into action. Eight communities in Papua New Guinea with significant nesting beaches have formed a network to address the almost 100 percent egg harvest. In parts of Vanuatu monitoring and tagging have become a community effort to stem the tide of decline. Several Pacific nations have now outlawed harvesting turtles altogether, while others have imposed moratoriums.

Environmentalist Liz Wilson from the World Wide Fund for Nature says “There is a definite need for communities to continue their monitoring programme. They are basically the back-bone for leatherback conservation in the Western Pacific. Without them being there and

providing the data and being on site, it's hard to be able to come up with management issues because the experts come in and out. But experts can provide the more sophisticated tagging data. So a combination of both the science and the community-based knowledge will probably be the way forward for leatherback conservation in the Pacific."

Although some Melanesian communities are taking positive steps to protect and monitor leatherbacks, Dr Ken Mackay of C-SPOD (who have been key players in funding the programme) says the constant over-harvesting of turtle meat and eggs to is a key concern that needs to be addressed.

"Local fisherman know that from October through to February are the main nesting times. It is so disappointing that those who raid the nesting sites choose not to take just some eggs and leave some for another day," he said.

As pelagic feeders, scores of leatherbacks have been strangled or drowned in set-nets of fishing boats. Others have choked on

plastic bags they mistake for jellyfish – their primary food source. Styrofoam, tar balls and balloons have also taken a toll as ingesting the debris obstructs the absorption of toxins and reduces the intake of nutrients from their natural food sources. Of the seven turtle species in the world, six are commonly found across much of the Pacific.

"Pacific communities are more aware and determined to conserve the leatherback," says Anne Trevor. "It won't be easy but if we can build on this momentum, then there is a chance that this Pacific icon will be with us for some time to come."

#### Facts:

- ❑ Largest of sea turtles, it travels the furthest, dives the deepest and ventures into the coldest water
- ❑ Named for its smooth rubbery shell
- ❑ Feeds on jellyfish
- ❑ Adults can weigh from 300 to 700 kg and can measure over 2 m in length
- ❑ Many die from ingesting plastic debris mistaken for jelly fish
- ❑ Hatchlings: 5 cm long



A huge decline in breeding females puts the leatherback on the road to extinction.

## SPREP wins international award



IRC manager Satui Bentin receives one of the Stockholm Challenge Awards for 2004 in Sweden.

Increasing the region's understanding of the environment brought international recognition for the Pacific Environment Information Network (PEIN) project coordinated by SPREP's Information Resource Centre.

As a result of their efforts SPREP came away the Stockholm Challenge Award winners in the environment category for information technology.

PEIN coordinator and IRC manager, Satui Bentin, was on hand to accept the artwork trophy from event organizers during an awards dinner at the Stockholm City Hall in Sweden. From an initial pool of 900 contestants, the judging panel whittled the field down to 64 finalists in health, business, education, government and environment categories.

"We all need information irrespective of a particular environmental issue to improve the quality of our communities' lives, whether they be local villagers or government policy makers," she said.

"With more extreme weather events, the difficulties in safely disposing of solid and hazardous waste, and the whole ambit of environmental problems facing our small island nations, it's imperative that information gleaned through research and other means be accessible to people whose everyday lives are being affected."

To achieve that end, PEIN has been one of the initiatives the IRC team took on in partnership with the European Union (EU). The EU has played a major role in financing the establishment of the electronic database to keep abreast of the latest knowledge on environmental research and development.

As a science-based organization, SPREP produces a plethora of technical reports and documents generated by programme officers working with national governments, other experts, and donors. During its short life as an organization the Secretariat has placed a premium on using as many modes of communication as possible to raise awareness, as well as to garner support for the goals of its member countries and territories.

With national environment offices doubling as local focal points there are some 28,000 volumes of online environmental reports, data and relative information available from eight of the fourteen Pacific countries involved in the project.

Through generous EU funding, PEIN provides equipment and necessary software, in-country training on creating databases, as well as information and knowledge management skills.

National counterparts have been working with the Secretariat to set up information centers database housing, and to assist environment departments, civil groups, schools and the media gather the information they need.

Vast distances between islands and various operating systems, have meant some logistical challenges in standardizing procedures and skill sets.

Although the long-term impact of having more quality information available is still being quantified, the response and ongoing interest regionally on environment issues suggests community organizations appreciate the real and potential benefits the PEIN programme offers.

As the basic infrastructure is now in place, the IRC is working with the partner countries on how to further refine networks that can complement national information policies.

"Taking the database to people who do not own, nor have access to computer equipment is a challenge that PEIN hopes to address before its closure in 2007," says the coordinator.

There is also the need to prioritize the archiving of traditional knowledge of environmental practices from what are frequently oral histories, as well as to highlight the importance of the human factor in information management and dissemination.

**Countries involved in PEIN:**  
Cook Islands; Federated States of Micronesia; Fiji; Kiribati; Marshall Islands; Nauru; Niue; Palau; Papua New Guinea; Samoa; Solomon Islands; Tonga; Tuvalu and Vanuatu.

# The International Waters Project: Strengthening Environmental Management

Operating at the community level is a distinguishing feature of IWP's approach. One of its objectives has been to magnify the impact of its work by increasing the capacity and skills of local staff so that they

can then pass that knowledge on to others. This way of working has had clear impact in many of the countries in which IWP is operating. Here we single out four examples: from Tuvalu, Cook Islands and Vanuatu.

## Improving sewage disposal in Tuvalu

The Tuvalu IWP project is working with communities in Alapi and Senala to find ways to promote the adoption of safer, more practical, and cost-effective sewage systems for Funafuti (population 4000), the capital.

Jointly managed by the Tuvalu Environment Department, and SPREP, the IWP coordinator Kelesoma Saloa, says there is an urgent need to boost sewage management, particularly in Funafuti.

"For decades flush toilets and septic tank systems have been promoted in Funafuti as the most safe and hygienic way to dispose of human waste. IWP surveys have recently found that most of these systems are now leaking straight into the groundwater supply. During high tides and heavy rains it appears that contaminated effluent from soakage pits is overflowing into low-lying residential areas, putting our people at risk from illnesses such as hepatitis, typhoid, gastroenteritis and diarrhoea."

Diarrhoea is a leading cause of death in many Pacific communities, particularly with children under five years of age. Septic systems are inappropriate for an atoll environment where pollutants move easily between the groundwater system and lagoon.

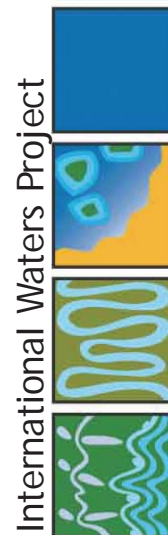
"Our surveys found many septic tanks were not constructed properly to begin with. Even when the systems are well built, our high groundwater levels, and porous soils make this technology a potential health hazard. In the densely populated areas of Alapi and Senala many of these septic tanks are discharging directly into the ground

water. The tanks are located too close to each other, to the wells, and to our homes," he concludes.

Agal scum is now forming along the lagoon shoreline adjacent to pilot communities. This is a likely result of the nutrients discharged from the many pigpens, septic tanks and pour flush latrines leaching from the village.

In Tuvalu rainwater is the only cheap and reliable source of potable water. Most groundwater is contaminated because of the extensive use of water sealed latrines, leakage from septic tanks, and from pigpens. Some wells have relatively fresh water, which is used for washing clothes, flushing toilets, bathing, and other daily uses. Kelesoma asserts the community must first fully understand the risks to their health and the environment, then make informed decisions about the options to improve their sanitation systems.

Contaminated water overflows onto roads is becoming a problem





International Waters Project

"We've worked very closely with our communities to try and develop a good understanding of what sanitation systems might be the most appropriate for Tuvalu in terms of our environment, economics, and the culture. Many Funafuti inhabitants live on daily incomes of less than AU\$4 a day. For this reason we believe the construction, operation and maintenance of a centralized, fully-reticulated wastewater treatment system is not a viable option."

Although some urban areas of Pacific countries have sewage systems, 90 percent of the region's population relies on using on-site systems such as pit latrines, pour flush latrines or flush septic tanks. Dr Leonie Crennan has worked on sanitation issues in the region for more than 10 years. She says that while these systems are acceptable when properly located away from sensitive waterways and coastlines, they are not advisable for atoll countries with vulnerable groundwater systems.

One of the reasons sanitation is such a low priority across the region, Dr Crennan argues, is because people literally can't see the problem.

"While many are concerned about the taste and colour of water, germs and pathogens are not visible to the naked eye, so people are not aware of what they are being exposed to. On Kiritimati Island, people didn't believe there was a connection between their flush toilets and the polluted groundwater. After a red vegetable dye was poured into one of the toilets, people were really quite shocked when they saw a pink colour appearing in one of their wells."

Both Dr Crennan and Kelesoma agree that a possible option for Tuvalu could involve the introduction of dry sanitation systems, such as composting toilets, that don't use water and

don't discharge contaminants into the ground. Once installed there is usually no cost to operate these toilets but material, such as dry leaves or coconut fibre, must be added after every use to ensure the composting process occurs. The compost also needs to be emptied from the collection chamber every nine months to two years depending on the size of the chamber and usage.

This task is less onerous than moving a pit toilet around a house compound, and a lot less difficult than pumping out a septic tank. However, she says getting people to change toilet habits requires a great deal of sensitivity, and the community needs to be fully involved in the design and construction of any new system.

Ironically, while many people in developing countries view flush toilets as a symbol of western affluence, composting toilets are fast becoming the toilet of choice for luxury eco-lodges in sensitive areas of Australia and New Zealand.

Kelesoma says one of the main barriers is the low awareness levels and the impact poor sanitation is having on groundwater, human health, and the surrounding environment. He says there is also limited financial and technical support available to assist households (and the government) to install and maintain environmentally sound wastewater treatment systems.

"We are now taking a staged approach to raise awareness of the problem, develop appropriate solutions, and then to try and get people to use these new systems. Our immediate priority is to provide cabinet with clear recommendations detailing the costs and benefits of all the solutions currently available to address this urgent problem."

Those recommendations need to include clear guidelines about the sort of financial, human and institutional resources required to support the ongoing management of safer toilet systems.

"For IWP one of our main objectives must now be to ensure the government has a clear mandate and the resources required to improve the management of sanitation beyond the completion of the project in December 2006."



Children's health is being put at risk



# Strengthening freshwater protection in the Cook Islands

by Denya Marsh

The Cook Islands IWP is seeking practical alternatives to make sure that freshwater resources are kept safe and clean for everyone in Rarotonga.

In many areas in Rarotonga water is sourced from a catchment area in the hills before it is filtered through gravel, fed to a holding tank, then distributed to consumers. Currently there is no chemical treatment for the water but activity within the catchment areas is contributing to unacceptable levels of contamination to the supply.

Water tests now consistently show positive results for faecal coliforms from warm-blooded animals. This poses a threat to public health with locals, while tourists are now being advised to boil their drinking water.

The IWP is jointly managed by the Cook Islands National Environment Service and SPREP. The project is managed in close collaboration with the pilot community of Takuvaine, which covers the main Rarotonga township of Avarua.

The main objective of the Cook Islands IWP is to find cost-effective ways to ensure access to clean and safe drinking water in Takuvaine, and eventually the rest of island. The project has been working with the Takuvaine community to try and understand the underlying root causes of the problem, then to identify the most appropriate, cost-effective, and sustainable solutions for the island.

Mama Terii Simpson is a member of the IWP Local Project Committee (LPC) and a project "champion" who is interested in helping to improve access to safe drinking water for all. She passionately believes that everyone needs to think about what they can do to keep the environment safe and healthy for our families.

As Mama Terii says: "A clean and safe environment has to start with me."

After many meetings and community consultations the main root cause of the problem was identified as the unrestricted access of both humans and their animals to the water catchment area. Activities carried out above the

water intake include agricultural activities, such as the cultivation of swamp taro and the collection of the king bananas and traditional medicinal plants. The area is also home to the popular Te Kou Trek, which is used by tourists and locals everyday. However it now appears that the increasing presence of humans and animals is contributing to the high levels of faecal coliforms which are contaminating the town's water supply.

"Many of our people don't think it's a big problem for us because we boast tough stomachs," says Tauraki Raea, the National Coordinator for the IWP.

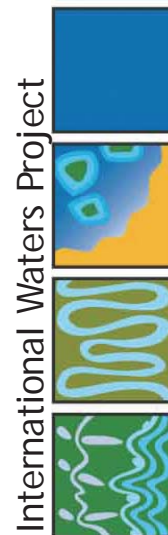
"But those at risk include the elderly, the children, the sick and our visitors to the island (tourists and locals) who expect a good, safe water supply. Contaminated water can lead to bugs that can cause diarrhoea or even just a general feeling of tiredness and lethargy," he says.

"When it rains heavy the water in the tap is murky and so we boil it because not everyone can afford bottled water!" says Tianoa Joseph, 59, another project "champion" living in the IWP pilot community.

Tianoa admits to drinking the water straight from the tap. "Our stomachs have become used to it but, since becoming involved in the project, I now boil the water for my grandchildren to drink," he says.

He says he has helped pass this message on to the school his grandchildren attend as well as to his peers, other parents and grandparents. Tianoa says that, even with a filter attached to your tap, bacteria can still be present in the water.

"Since being involved in this project I understand now that even though our water may look and taste clean, it can still be unhealthy with the bacteria that have not been filtered out. Boiling



International Waters Project



Boiling water is now a daily occurrence



## International Waters Project

the water is the only way to kill those bacteria," he says.

Tianoa collects the tap and rainwater in a pot and boils it, lets it sit so the leftover dirt can sink to the bottom and then, using a clear hose, he sucks it out and into bottles. This is a practice used by several people in the community. "It's a cheaper way of having safer drinking water for me and my family," he says.

Tauraki Raea says the initial community workshops and meetings made it clear that many people were simply unaware of the fragility of their water catchment areas.

"People are unaware of the activities that are contributing to the contamination of the water supply and what can be done to minimise the risks of this contamination from occurring," he says.

Director of the Environment Service, Vaitoti Tupa, says the numbers of people that swim and bathe above or in the water intake has started to decrease.

"Cows have been moved away or relocated below the water intake and dumping of rubbish has decreased. At the same time traditional leaders, especially the Koutu Nui, have been concerned about this issue, and they are fully supportive of the intentions of the project," he says.

Mama Terii says the community has discussed a range of management options including the possibility of introducing a modern water treatment system.

"Everyone wants a treatment system but this will cost millions to purchase, install and maintain. Even if we did have treatment system people would simply keep avoiding the need to address the root causes of pollution that are contaminating our wider environment such as the lagoon," she says.

The IWP Local Project Committee has identified that a Water Catchment Management Plan may well be the cost-effective and sustainable solution. This management plan is now being put together by a local consultant incorporating ideas from the community, landowners, and other interested stakeholders. Because the plan will be implemented and enforced by the

community it will require greater community cooperation.

Mama Terii says greater cooperation and commitment will be needed for the management plan to be successful.

"The management plan is good because it's something that everyone can appreciate and follow, like our traditional Raui. The land is owned by several landowners so you can't ban them from their own land."

"If the IWP is about changing attitudes and finding 'low-cost no-cost' solutions then the management plan is the way to go. Purchasing water filters, treatment systems, all cost money," she says.

Mama Terii says that trying to change people's attitude and behaviour is difficult because people have been carrying out the same activities for years.

"It is like building a house. We need to plan carefully and collect the materials and have a proper foundation before we build a house that will be strong and sustainable. We need to have meetings and get everyone's input and cooperation otherwise we will only build a house that won't last," she says.

"We need to spread the message that protecting our water is everybody's responsibility — in the church, in the plantation, in the community! We need to keep raising awareness about our fragile water catchment to our neighbours outside the community and to our friends who visit our islands.

"We have to start doing our part first then government will do their part," she says.

Mama Terii says the community has already agreed on the construction of a single public toilet above the intake as one immediate solution.

"If people's 'business' is a problem then we simply need to provide people with a toilet. That's one solution we've identified that everyone is happy with."

**Deyna Marsh is the Assistant National Coordinator for the Cook Islands International Waters Project.**

## Vaitoti Tupa: Director of the Cook Islands Environment Service

In 2001, Vaitoti took over as Director of the National Environment Service (CINES), a natural progression following 30 years of CINES service. He is now pushing for greater emphasis on environmental monitoring, institutional strengthening, and the development of human resources.

### What are the main issues facing the protection of freshwater quality in the Cook Islands?

"It varies from island to island, but the main issue is uncontrolled development especially in tourism and the increasing demand for accommodation.

"The National Environment Service has evolved through a long period of trial and error. Some islands took issue with parts of the original Cook Islands Conservation Act and eventually pulled out, leaving Rarotonga on its own. Conversely some of the outer islands are slowly starting to understand and accept the intentions of the Act.

"The underground water supply for Aitutaki is now heavily contaminated with salt water, which could be the result of a number of activities including the breaking of the baserock on the shores to open deeper swimming holes for tourists. A lot of activities took place during the few years after the Act was removed. During the absence of the legislation a lot of uncontrolled development took place.

"On Rarotonga, the main issue is: who should be responsible for the management of freshwater quality. At the moment the responsibility is scattered amongst a number of ministries. For example the Department of Waterworks is mandated to provide water to the general public, yet the Department of Public Health has been delegated to ensure we have safe clean water for public consumption. The responsibility of the Environment Service is to protect the environment and to see that our people have access to good-quality clean water.

"There needs to be some sort of mechanism put in place to improve the way we manage this important resource. At the moment Waterworks and Health keep their information to themselves,

although it's obvious that it is in the public interest to find a more effective way to improve the management of our limited water resources."

### How does the IWP fit into this proposed collaboration?

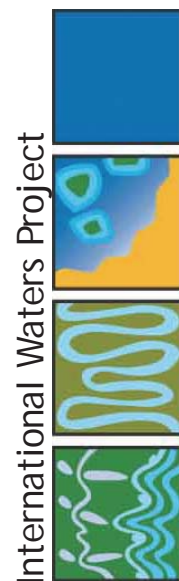
"Well the IWP has actually brought the lack of coordination or management fact to the fore. While everybody is saying that, "All is well, we're doing our job and they theirs", it's not. I am happy to say that the IWP here is trying to bring the agencies together to agree on a standard water testing protocol and to compare parameters being tested for.

"A meeting between the agencies was facilitated by IWPCOOKS in April. We believe that by having some level of standardization in the testing protocols, results could be compared to one another. Everybody needs to get together and start singing the same song so the whole nation can benefit from harmonious results instead of unrelated noises.

"Although the IWP is a community-based programme it is also asking government some serious questions about how different agencies need to sort themselves to support these practical initiatives at the community level. Once the collaboration issue is out of the way then we can start to take more effective and targeted approach to addressing these serious water pollution and contamination issues."

### How do you propose to resolve any problems arising from the different agency responsibilities for managing freshwater quality?

"IWP has commissioned a consultant to review all the freshwater-related legislation and this work is scheduled to be completed by the end of the year. This will attempt to identify any gap



International Waters Project

Vaitoti Tupa (left) leading better water management for the Cook Islands





and overlaps. Depending on the review findings, new legislation maybe drafted and new legislation could mean the establishment of a new agency solely dedicated to freshwater management.

“All this will be clearer to us once the review is completed. But at this stage a Catchment Management Plan can still be enforced under the 2003 National Environment Act 2003.”

**How would a Catchment Management Plan help to reduce the level of contamination, especially the level of fecal coliforms, in the water?**

“At the moment anyone can have access to the Rarotonga’s catchments – the growers, tourists and even locals. And who knows what else they do up there besides sightseeing and growing taro.

“We are hoping that the Management Plan would control the access of both tourists and locals to the sensitive areas above the intake. At the moment we have a communication plan in place which we hope will improve the community’s awareness and appreciation of our efforts to protect the area from contamination.”

**What are your views on installing a treatment plant and the introduction of a user-pays system to sustain its operation?**

“This has been under discussion for years. In 1991 the government looked at a user-pays system where water meters were installed but, at the time, Waterworks couldn’t guarantee the continuous delivery of good-quality freshwater. The economic reform that followed in 1994 contributed to the collapse of the whole project.

“What we are doing now with IWP is good because it’s about the whole country taking a good, hard, look at what we can do to improve the quality of freshwater at the source, before we start looking at options such as treatment and user-pays.”

**There is only over a year left before the completion of the IWP. How far is the Cooks from achieving what it set out to achieve for the project?**

“Our aim is that by the end of 2005 the Takuvaine Catchment will have a management plan in place that is fully supported by the Takuvaine community and those landowners living in the neighbouring districts.

“We are hoping that the success of the Takuvaine management plan will help to create support and demand for a similar plan for the rest of Rarotonga. At the moment we have the support of the traditional leaders (Koutu Nui) or the sub-chiefs of the Cook Islands. They are watching and supporting us and if all goes well by the end of 2006 we hope to have the Rarotonga catchments reserved.”

**To date what have been the main lessons provided by IWPCOOKS?**

“IWP has constantly emphasized the importance of identifying the root causes of environment and resource management problems. For years, we have spent a lot of resources to address symptoms and then wondered why the problem still remains.

“For example with littering we focused on picking up the rubbish rather than things like controlling what was coming in and asking questions about why people litter in the first place. I think we can all benefit by stepping back a bit to try to look at the real, root cause of our environmental problems.

“To date, it is apparent that people’s lack of participation is due to their lack of confidence in any government initiatives. We have to build public confidence that we are working hard to ensure any national-level initiatives are based on true participation and engagement with our communities.

With the IWP it was difficult for the community to get used to the idea that they would have to create the management plan themselves instead of waiting for government to do everything and simply give it back to the community to implement. I think that, in the end, the long-term results of this approach will justify all the hard work that both the community and the IWP team have put into trying to improve the quality of freshwater for all Cook Islands communities.”

## Strengthening precious coastal resources in Vanuatu

Manoa Kaun is chief of Louni Village, one of several villages that make up the community of Crab Bay, on Vanuatu's Malekula Island. A small community, Louni is at the heart of an International Waters Project (IWP) to take care of a resource that defines the bay area.

Managed by the Vanuatu Environment Unit in partnership with the SPREP, the Vanuatu IWP is an innovative attempt to try and find practical ways to help coastal communities manage their coastal resources more sustainably.

Chief Manoa grew up on Uripiv, a small neighbouring island, where he spent much of his time with his friends out on the reef, fishing and harvesting seafood. When the family resettled in Crab Bay in the early 1980s, he says, there was a thriving abundance of marine life.

"Land crabs were so plentiful they would literally crawl over you while you slept. We would catch big fish and pick only those crabs with the biggest claws for a crab barbeque with other boys of my age near the village. We didn't need our canoes because the crabs were right there on the shoreline," he says.

However much has changed in the last 20 years.

"Well we no longer have barbeques, and we no longer look for crabs with big claws. We just go after any size crabs we find," he says.

The crab is an important source of protein and cash for the villagers. As a staple food it is made into a soup, eaten with bananas, taro, cassava, or yams, and often cooked in coconut cream to make enough to feed a large family. The crustacean is also an important income earner. Three years ago bundles of 50 crabs would fetch US\$1 on market day. Today 10 crabs will earn is worth US\$2. However women are having to go out for almost the entire day to feed the family.

The growing population and demand for cash has led to unsustainable harvesting practices and put even greater pressure on sensitive mangrove habitats. The crab collectors are mainly women who use coconut as bait and set up traps, or wait until evening to harvest.

Checking the decline in overall numbers has been hampered by a lack of basic data on the crab biology and the lack of clear regulation to govern the management of this vital resource. Vanuatu's policies also focus on commercial fisheries rather than the subsistence or "artisanal" fisheries that are so important to the 70 percent of people living in the country's coastal communities.

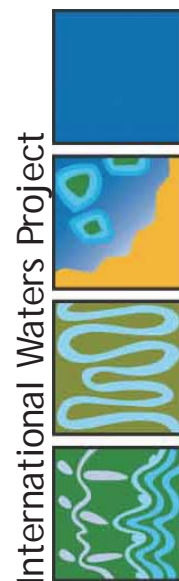
Crab Bay was originally chosen as the IWP Vanuatu pilot site because local chiefs had already enforced a "no entry, no take" tabu area, in an effort to halt the decline of the resource.

Russell Nari, the Deputy Director of Vanuatu's Environment Unit, says the IWP has been important in terms of raising awareness of the need to look at the management of subsistence coastal resources at the community, provincial, and national levels.

"The 2002 Environmental Management and Conservation Act provides for communities or landowners to formulate and determine their own resource management plans, enforcement and penalties. Using the IWP's participatory process has really helped try and develop a better understanding of the perceptions, desires and commitment that our communities have to manage their own resources."

Chief Manoa is one of 30 local facilitators trained to work together with the rest of the community to develop a better understanding of the root causes of their resource problems and how they could be managed better.

"Being trained by the IWP as a local facilitator for my village I now have more confidence to facilitate local meetings with elders, youths, and women, to discuss resource management issues. Now the decisions we make are agreed together rather than just being the Chiefs' decisions as used to happen in the past."



International Waters Project

The crab resource is declining rapidly





International Waters Project

National Coordinator, Leah Nimoho says it soon became clear women crab collectors would have to be closely involved in decision-making within the community to promote any changes to improve the long-term management of these in-shore resources.

“Managing the coastal resources is not just for chiefs or men of the community. All those being affected by the situation become involved. We need women to become more involved in marine resource management and conservation so they can help sustain their family needs.”

The community now have an arrangement so women can harvest up to five bundles of crabs twice a week to sell at the market. Nimoho says the project has made the community appreciate more the value of fusing traditional knowledge and science to improve coastal resource management.

When the project carried out an ecological baseline survey of Crab Bay, dedicated field workers tallied the crabs by counting crab holes and adding up the number of crabs along access roads and at special bait sites. Names of all the

species were documented in Bislama as well as the vernacular languages of the different villages of Hatbol, Lingarak and Uripiv.

The biggest challenge is finding cost-effective ways to encourage the development of similar community-based management programmes throughout Vanuatu’s many coastal communities.

“We hope that the Crab Bay project serves as a role model and that other communities can use these approaches and lessons to help manage their own resources. Nearby villages are already starting to take note about what the project is trying to do. They want to be involved and to be part of it,” says Leah Nimoho.

For now, chief Manoa realises the vital importance of continuing what the project has started for the community.

“My people are the most dependent on the resources around Crab Bay area but, if we are not responsible, the resources disappear. There is nowhere else we can resettle. Crab Bay is one of the most productive areas on Malekula and it deserves our appreciation.”

Land crabs remain a prime source of nutrition for the Bay Area communities



## Rolling with Ramsar

The international Ramsar Convention on Wetlands is helping communities protect their dwindling mangrove wetlands and coral reefs from unsustainable human activity, urban development, and industrial expansion.

Based at SPREP, Ramsar Oceania Regional Officer Mr Vainuupo Jungblut has been contracted by convention administrators to start building a new regional initiative. Signed in 1971, Ramsar wants to check the decline of wetlands, by conserving and managing those that remain with a “wise use principle” that does not threaten their ecological character.

Regionally wetlands make up 343,735 hectares or 2.42 percent of the global surface area. Larger tracts are located in Fiji, New Caledonia, Papua New Guinea, and the Solomon Islands. Urban expansion, unplanned coastal development, aquaculture projects, or the conversion of swampland for agricultural development are contributing to the destabilization of an ecosystem that many communities still rely on for their livelihoods.

Frequently commercially driven development has lacked proper planning and disrupted the ecological functions of mangroves and other wetlands. Oil spills and hazardous wastes have affected mangroves in Guam and Palau. Excessive sedimentation from upstream disturbances has been cited in New Caledonia and the Federated States of Micronesia, while rubbish dumping at mangrove areas in Samoa and Tonga have been reported. In Tuvalu degradation had reached a point where mangroves are officially listed as a threatened ecosystem.

“Often wetlands are given a low priority alongside other environmental issues. Land developers regard them as little more than wasteland, which is one reason why they are increasingly being destroyed to make way for commercial and urban development,” says Mr Jungblut.

To avoid implosion, degraded mangrove areas need to be rehabilitated, replanted and cleaned up. Areas with heavy clearance eventually lose sediment that will affect corals and sea-grass systems offshore.

“There is a need to improve attitudes about mangroves and wetlands in general. Some perceptions are leading to the destruction of these ecosystems on a daily basis.”

This may take the form of traditional medicines, fuel wood and various types of food. Coastal communities, particularly in the western Pacific, have accumulated a wealth of traditional, and empirical knowledge as well as a certain level of economic dependence to this habitat.

Mr Jungblut’s brief is to assist non-member countries in the process of joining the Ramsar Convention, and provide support for those who have to meet their convention obligations. Currently Palau, Papua New Guinea, the Marshall Islands and Samoa are signatories, with several Pacific islands close to signing. The Governments of Australia, and the United States of America, plus the World Wildlife Fund International have all been generous funders.



Mangrove Wetlands are an integral part of Pacific ecosystems



This has allowed a range of activities to improve awareness and to build relations with communities and stakeholders.

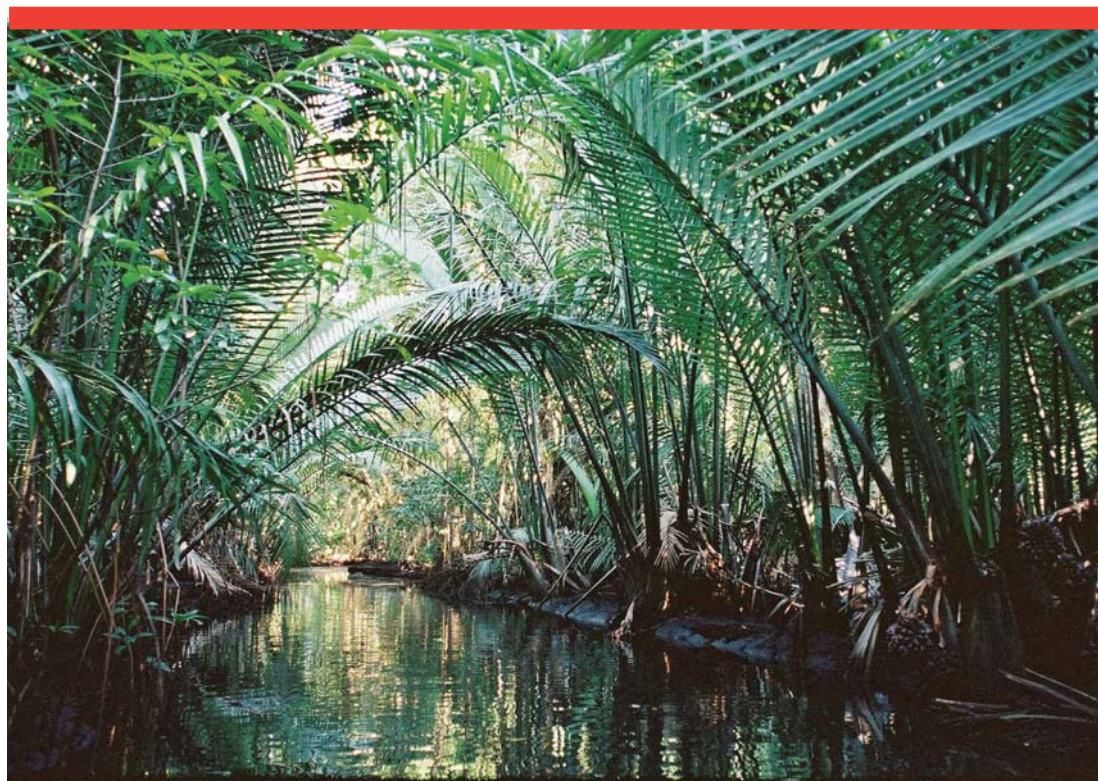
“We now have all our regions covered by an advisory structure, which will help new parties to join us, and will help all parties to implement the Convention to the fullest,” said Peter Bridgewater, Secretary-General of the Ramsar Convention.

Land tenure remains an important factor for mangrove protection. Most land is held in customary ownership, meaning consultation between owners, the government and other stakeholders is needed for land use planning.

In some countries waters are held in customary tenure, but are state owned in others.

Coastal Management Adviser, Mary Power says: “In recent years more Pacific Island governments have begun to recognize the potential benefits of joining Ramsar, for biodiversity protection, to draw the attention of the international tourist market to areas of particular natural splendor in their countries.”

“In small island environments mangroves are closely associated with adjacent ecosystems of coral reefs and sea-grasses. So it makes good sense to have a common conservation effort,” says Mr Jungblut.





## JICA expert Takeo Tashiro



While not a SPREP member, Japan has given significant support to the work of SPREP. Waste expert Takeo Tashiro is the latest JICA volunteer to bring his skills to the secretariat.

### What is JICA all about?

JICA is an overseas development assistance implementing agency. As a bridge between the people of Japan and developing countries, JICA will advance international cooperation through sharing of knowledge and experience to build a more peaceful and prosperous world.

### How did you get involved with JICA?

As an engineer of Fukuoka City Hall which co-developed the semi-aerobic landfill structure (Fukuoka Method) with Fukuoka University, I am continuing to improve the Tafaigata landfill in Samoa using this method. Through the training course on solid waste management for third world countries and following up with trainees, I am providing technical assistance and developing human resources. I think it is about people talking to people and it's very much a challenging job.

### How is the JICA waste programme helping the region?

In line with Okinawa Initiative May 2003, JICA has been providing technical assistance in the waste management sector for Pacific Islands Forum members through dispatching experts and volunteers. What I do though:

1. promote waste minimization (Avoid, Reduce, Reuse, Recycle, Compost);
2. promote appropriate waste collection systems;

3. improve landfill facilities to a sanitary level; and

4. awareness raising, and promoting policy instruments for changes in the consciousness of waste issues and global environment.

### What gave you an interest in the solid waste programme?

Waste issues have been inevitable for society from time immemorial in most countries. Improvements have been made through development of collection systems, legislation and technology, but successful solutions could not be achieved without individual understanding and cooperation. In a sense waste is a miniature version of the relationship between the individual and the global environment.

### What do you find most enjoyable about living in the Pacific?

I have been fascinated by the expansive variety of marine life, land-based ecosystems and nature, especially the diversity in ocean ecosystems. I look forward to doing lots of snorkeling during any holidays. The food here is equally amazing.

The Fukuoka method has set the standard for regional solid waste management.



## Helping communities adapt to global warming

Every day climate change is affecting the lives of more Pacific islanders and their physical environment. Adaptation is being used to deal with some of the impacts of this phenomenon. In earlier times this meant changing food crops, altering harvest practices or migration. Now more science-based approaches are leading the way.

The Capacity Building for the Development of Adaptation Measures in Pacific Island Countries (CBDAMPIC) project is a Canadian-funded initiative managed by SPREP. It began in 2002 with pilot projects in the Cook Islands, Fiji, Samoa, and Vanuatu. What CDAMPIC has done is encourage involvement and commitment from broad sections of the community, to empower Pacific islanders to adapt to climate change and its effects on their communities and livelihoods.

Using a specially modelled Community Vulnerability and Adaptation Assessment and Action (CV&A) guide, a series of village-based workshops were held. Led by locally trained facilitators, villagers were asked to identify their general problems, prioritise them, and then consider some possible solutions. The three most significant problems were further analysed to find the cause and effect, and adaptation plans were drawn up. Using the qualitative data the community selects a single priority as the project foundation.

Climate Change Adaptation Officer Taito Nakalevu, who came up with the guide, says it is proving to be a good method for communities to assess their vulnerabilities to climate change and how they can adapt.

All the assessments were undertaken on location where the effects were being felt first hand. To achieve this the project focused on

improving local expertise, identifying and evaluating adaptation options, and coming up with the best responses.

“Our combination of geographical, biological, and socio-economic factors makes the Pacific particularly vulnerable to climate change, increased climate variability and weather extremes,” Taito said.

“This is all about community empowerment, and encouraging them to lead the way. To do this we have built national teams of personnel to ensure that the knowledge stays in-country, and that we are all pursuing the same goal.

“To make this happen we have also carried out guideline training in four project countries and formed core teams, who go out to the communities to gather data.”

Frank Wickham, SPREP’s Human Resource Development Officer says the training was important so those involved in the core training could appreciate how the CV&A guide worked and appreciate the long-term sustainability of the activity.

“For anything significant to happen the key is community participation, then training and related activities,” he said.

“CDAMPIC has also built good relations between agencies and stakeholders, and helped these communities manage the impact climate change has had on them.”

In Vanuatu teams of project staff, government and non-government groups visited three pilot locations at Lateu, Luli and Panita.

Part of the Torres Island group, coastal flooding in Lateu created unhealthy living conditions and caused damage to homes. The teams concluded that the entire settlement would have to be relocated, and the number of

Gathering information from communities was an ongoing task.



rainwater tanks and catchment facilities increased. Coastal erosion and flooding in Panita is threatening both the settlements infrastructure and human life. Again, the best alternative has been to relocate the settlement and its rainwater storage facilities to higher ground. The Presbyterian Church of Vanuatu was contacted and agreed to fund the construction of a new church building on the approved relocation site.

At Luli, a shortage of a reliable water supply was the main vulnerability. Being on the windward side of the island, the small settlement suffers frequent shortages, relying on a single underground well. Rainwater is the only other water source, but the settlement is exposed to salt spray and volcano-induced acid rain that makes even the rainwater acidic, and the iron roofing impractical for collecting water. The greatest priority for Luli now is to establish an efficient community water supply.

Further east on Aitutaki in the Cook Islands, the adaptation option was to improve the quality of drinking water that was salt-laden and unreliable.

The responses were:

- rainwater harvesting: distribution of 200-2000 litre water household tanks so maintenance of community tanks and catchment surfaces could be carried out, along with the promotion of traditional conservation practices;
- management of infiltration galleries and water mains by locating a GIS map water infrastructure, installing monitoring meters through a Ministry of Water subcontract, analysis with SOPAC, and then carrying out training and repairs;
- improvement of water quality by water testing and monitoring with various agencies; and
- management improvement through more awareness, better conservation plans and policies working with island councils and the private sector.

With the project ending in 2005, the Cooks National Environment Service is achieving a model approach for adaptation action for the local community and nationally. Aitutaki is now far better equipped to handle shifting rainfall patterns and sea-level rise in the future.

“In all the locations these Core Teams are continuing dialogue with provincial authorities, government departments, churches and NGOs for assistance in implementing their pilot projects,” says Mr Nakalevu.

“The feedback we have received from the four countries taking part in CBDAMPIC has been quite positive. We now feel this needs to be extended to other countries across the region.”

Climate change specialists in the Caribbean have also shown an interest in adapting the CV&A guide as a model for their region.

Locally trained facilitators assisted communities in assessing priorities



## Regional biodiversity on the international radar

Support to counter the continuing rapid loss of Pacific biodiversity generated strong global interest during the 7<sup>th</sup> Conference of the Parties (COP 7) for the Convention on Biological Diversity (CBD) in Malaysia.

Over 2000 delegates representing 130 of the 188 member countries including SPREP members attended.

The convention wants to promote the conservation of biological diversity, its sustainable use, and fair shares of any benefits arising from utilizing genetic resources. This is in the face of changes within ecosystems that in the future may bring about the collapse of previously reliable sources of food, increase our vulnerability to invasive species, extreme weather events and the loss of income-generating flora and fauna.

In a boost for the Pacific voice on the issues, several SPREP members won appointments to posts within the convention's machinery.

The most significant has been the nomination of Kiribati to the 12-person CBD Bureau as one of the two representatives for the Asia-Pacific region, the first time in the CBD's ten-year history that a Pacific island nation has been elected to such a post. Samoa was also voted on to the Bureau for the Cartagena Protocol on Biosafety; Tonga was nominated to a place on the Protocol's Compliance Committee to develop a global approach to genetically modified organisms.

Palau is expected to be given a bureau position on the technical body that advises the CBD, the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA). Their main aim is to develop a Programme of Work on Island Biodiversity before the next COP meeting in 2006.

"Of course with such commitments is the onus to prove our ability, and fulfil our obligations when working within these types of international negotiations. I am confident that all of our Pacific representatives will acquit themselves and the region well," says Mary Power, SPREP's Coastal Management Adviser.

Whenever biodiversity is discussed in the international arena, every effort is made by the various regions, delegations and interest groups for their needs to be addressed or prioritized on the agenda.

The future may bring the collapse of previously reliable food sources.



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In this light, it was significant that Small Island Developing States (SIDS) i.e. Pacific, Caribbean and Indian Ocean islands, led by the Pacific, successfully lobbied for Island Biodiversity to be included as one of the agenda themes for the next COP gathering in 2006. Given the dwindling resources of many island nations, the scheduling offers a valuable opportunity to share their concerns and seek remedies through an international forum.

“We are now witnessing a situation where the loss of biodiversity of island ecosystems is happening at a rate way ahead of mainland countries. And while all SIDS share some common ground, regional economies are subsistence based, with a strong

reliance on marine resources and root crops. Current circumstances indicate less than 30 percent of the forest cover will remain in a natural state, and that up to four percent is being lost each year,” says Mary Power.

Yet those resources that provide food, clothing, tools and revenue, give all Pacific island communities a feeling of security and hope for the future.

“The reality is this: Even a partial breakdown of such fragile systems leaves many of those communities that are reliant on these resources to subsist and develop, on the brink of impoverishment and helplessness.”

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## Mainstreaming Nature Conservation



The Pacific Ocean covers 32 million square kilometres of blue water. Within that vast parameter is a tiny two percent of landmass that plays home to a wide variety of endemic flora and fauna, many now facing a bleak future.

Much of the decline with the region's biodiversity is the result of human pressure on finite resources, poor planning and over harvesting. Local communities, business and industry all rely on ecosystems such as forests, grasslands, mangroves, rivers and lakes for a variety of services including water and air purification, storage of greenhouse gases, nursery grounds for fish, pollination of crops, raw materials and new crops.

SPREP's 2003-2007 Action Strategy for Nature Conservation spells out the need for business, private sector governments, civil groups and communities to move toward a closer level of cooperation and understanding of environmental care. This "mainstreaming" of the environment is crucial for the Pacific to have any chance of conserving its unique ecosystems and lifestyles for future generations.

"By that we mean the need for strong and effective partnerships between

governments, conservation groups, private sector and civil society, everyone needs to get involved," says Action Strategy Adviser, Kate Brown.

"Our Action Strategy provides a reasonable framework for the region to use as the common ground for the conservation of what we have, and traditional Pacific livelihoods."

Driving the strategy is the Roundtable for Nature Conservation: a group of donors, NGOs, regional organizations and governments. The Roundtable includes 30 member organizations and ten working groups that focus on key strategic areas.

Their achievements for the year include:

- Created the first inventory of conservation activities in the region. This inventory is online at: [www.dev-zone.net/pimc](http://www.dev-zone.net/pimc)
- Created working groups to address gaps in conservation activities and monitor progress. Members volunteer for tasks to address key actions from the Action Strategy that have been identified as gaps in Pacific conservation measures.
- The 2004 Roundtable meeting marked the inclusion of National Biodiversity Strategy and Action Plan (NBSAP) coordinators within the Roundtable and marked a concerted effort to address development and implementation issues at the national level.
- New website: [www.sidsnetpacific.org/roundtable.htm](http://www.sidsnetpacific.org/roundtable.htm)
- New working groups formed to focus on communities and traditional knowledge
- New partners committed to Action Strategy implementation — including a commitment by the World Council of Churches to integrate environmental education into teacher training programmes.

Human pressure on natural resources is now beginning to tell on fragile ecosystems



## Sustainable development

Pacific Small Island Developing States (Pacific SIDS) have been building on the momentum of the 2002 World Summit on Sustainable Development (WSSD), to ensure an effective process for the 10-year review of the 'Programme of Action of the Sustainable Development of Small Island Developing States' also known as the 'Barbados Programme of Action'. The BPoA+10 meeting had been set down for September 2004, but has now been rescheduled for Mauritius in January 2005.

Although a significant amount of global focus is now on the needs of the African continent, Pacific SIDS maintain a special geographical status in the WSSD outcomes. The BPoA+10 review is being seen in some quarters as a final opportunity to highlight the 'special case' and extreme vulnerability of small island states throughout the world. Given that, the Pacific is embarking on a mission to ensure their issues be given prominence in the BPoA+10 outcomes. To achieve this aim, SPREP in partnership with other regional organizations has been supporting preparations for the Mauritius meeting.

SPREP made a significant contribution in drafting and coordinating input for the regional assessment and the Pacific position for the BPoA+10 negotiations. Some of those elements included calls to improve the national enabling environment, so integrated decision-making through national sustainable development strategies can happen. Other factors were the need for more harmonized data collection and integrated planning systems.

With support from the Council of Regional Organizations of the Pacific (CROP), SPREP was successful in ensuring key requirements were incorporated into the Mauritius Strategy – a major achievement for the region.

SPREP and other CROP advisors attended all the preparatory meetings to provide technical assistance and promote Pacific partnerships for sustainable development (previously referred to as Type II Partnerships). This was maintained throughout the preparatory process and assisted most of the Pacific issues that emerged from the drafting of the BPoA+10 process.



National sustainable development strategies are vital for the survival of Pacific families and communities

It was important for the Pacific to highlight partnerships for dealing with sustainable development, while also negotiating the priority issues into the strategy. Regional credibility requires that the Pacific can effectively demonstrate to the international community that calling for recognition, and special treatment to overcome vulnerabilities, is being backed up with implementing proactive partnerships in the variety of areas that could benefit from targeted international support and assistance.

In formalizing a concept they have been considering for some time, this year government leaders and the Forum Secretariat began the development of the Pacific Plan. The plan is based on collaboration to address common regional issues, sharing scarce resources, and the expertise of one another's experiences.

One of the four main goals of this Pacific Plan is sustainable development. Fortuitously this meant preparations for the BPoA+10 were well placed to feed into the Pacific Plan development, that is due to be finalized in October 2005, at the Forum Leaders Meeting. SPREP along with other CROP agencies have been actively assisting

the Pacific Plan team in pulling the concept together. They are determined to see regional efforts in sustainable development and environment accurately reflected. The plan also provides the potential for a functional framework in which to execute the outcomes of the Mauritius BPoA+10 meeting and the strategy, within a Pacific context. The Plan's implementation and review process could also provide a continuous mechanism to measure the progress and implementation of the Mauritius Strategy, a method SPREP is keen to pursue.

With the larger vision in mind, the organization has continued to support regional sustainable development through the BPoA+10 process and long-term support, by endeavoring to institutionalize sustainable development for small Pacific island states.

This can be seen internationally through the Commission on Sustainable Development and the Mauritius Strategy and regionally through the Pacific Plan; but most importantly by promoting the implementation of national strategies for sustainable development.

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**AUDITORS' REPORT  
TO THE MEMBERS OF THE  
SECRETARIAT OF THE PACIFIC REGIONAL ENVIRONMENT PROGRAMME (SPREP)**

We have audited the financial statements of SPREP as set out on pages 3 to 12 for the year ended 31 December 2004. The financial statements provide information on the financial performance of the organisation, and its financial position as at 31 December 2004.

**Management Responsibilities**

The Management is responsible for the preparation and presentation of the financial statements that comply with generally accepted accounting practice, and that gives a true and fair view of the financial position of SPREP as at 31 December 2004, and its financial performance and cash flows for the year ended on that date.

**Auditors Responsibilities**

It is our responsibility to express an independent opinion of the financial statements presented by Management, and to report our opinion to you.

**Basis of Opinion**

An audit includes examining on a test basis, evidence relevant to the amounts, and disclosures in the financial statements. It also includes assessing:

- The significant estimates and judgments made by management in the preparation of the financial statements; and
- Whether the accounting policies are appropriate to the circumstances of the organisation, consistently applied and adequately disclosed.

We conducted our audit in accordance with International Standards of Auditing. We planned and performed our audit so as to obtain all the information and explanations, which we considered necessary to provide us with sufficient evidence, to give reasonable assurance that the financial statements are free from material misstatements, whether caused by fraud or error. In forming our opinion, we also evaluated the overall adequacy of the presentation of information in the financial statements.

**Specific Reporting Requirements**

In accordance with the specific audit reporting requirements of SPREP's Financial Regulation 32 (a) to (f), we report as follows:

- (a) Extent and character of examination is as explained in the section above under the heading "Basis of Opinion".
- (b) Matters affecting the completeness and accuracy of the accounts refer to our report to management that is attached, titled "Management Report". There are no matters which may have significant effect on the completeness and accuracy of the accounts.

(c) The accuracy or otherwise of the supplies and equipment records as determined by stocktaking and examination of the records. The fixed asset register has being up dated for the year ended 31 December 2004, following the last physical count of all SPREP's assets carried out in July 2003. However, there was no physical count conducted for the year ended 31 December 2004. The Draft Financial Rules and Procedures Manual (DFRPM) clearly states that all SPREP's assets must be physically counted every year prior to the audit.

(d) The adequacy of financial procedures of SPREP including internal control matters and adherence to Financial Regulations. The Draft Financial Rules and Procedures Manual (DFRPM) will be finalized with the revised Financial Regulation approved by the SPREP Meeting.

(e) The matters raised in our report to Management have been satisfactorily addressed by Management .

**Opinion**

In our opinion, the financial statements give a true and fair view of the financial position of the Secretariat of the Pacific Regional Environment Programme (SPREP) as of 31 December 2004, and of the results of its operations for the year then ended in accordance with generally accepted accounting principles and in accordance with the SPREP Revised Financial Regulations as approved.

Our audit was completed on 5<sup>th</sup> May 2005 and our opinion is expressed as at that date,

Apia, Samoa

  
Certified Public Accountants

# Finance – 2004

Revised 14 September 2005

## Donor Funds & Member Contributions (US\$)

| Donor Funds & Others   | Balance at 1-Jan-04 | Income           | Expenses           | Other Credit Adj's | Balance 31-Dec-04 |
|--|---------------------|------------------|--------------------|--------------------|-------------------|
| Asian Development Bank   | (2,707)             | 0                | (10,446)           | 0                  | (13,153)          |
| AusAID XB  | 249,719             | 822,894          | (825,078)          | 7,674              | 255,209           |
| AusAID XXB   | 197,617             | 64,018           | (231,990)          | (282)              | 29,362            |
| BioNet   | 18,665              | 0                | (8,649)            | 0                  | 10,016            |
| Canada South Pacific Ocean Development Program                   | 55,413              | 303,498          | (362,000)          | 3,089              | 0                 |
| Canadian International Development Agency                        | 368,241             | 714,224          | (613,442)          | 9,732              | 478,755           |
| Commonwealth Secretariat   | 11,951              | 0                | 0                  | (3,019)            | 8,932             |
| Department of International Development                          | (92,065)            | 105,596          | 0                  | (3,365)            | 10,166            |
| European Union   | (51,474)            | 54,169           | (2,695)            | 0                  | 0                 |
| GEO Schutzt Den Regenwald e.V                                    | 63,977              | 0                | (63,977)           | 0                  | 0                 |
| Government of Denmark  | 78,590              | 0                | (76,363)           | 0                  | 2,227             |
| Government of France   | 46,290              | 273,638          | (72,530)           | 225                | 247,623           |
| Government of Japan  | 24,468              | 102,351          | (128,623)          | 4,259              | 2,455             |
| Government of the United Kingdom                                 | 27,599              | 0                | (16,536)           | (2,258)            | 8,806             |
| Institute for Global Environment Strategies                      | 0                   | 72,920           | (74,158)           | 1,238              | 0                 |
| International Maritime Organisation                              | (7,263)             | 271,112          | (92,564)           | (84,271)           | 87,015            |
| John D & Catherine T MacArthur Foundation                        | 0                   | 60,000           | (39,613)           | 0                  | 20,387            |
| Multiple Donors *  | 166,852             | 311,739          | (221,669)          | 172,030            | 428,952           |
| Netherlands Red Cross Society                                    | 7,746               | 0                | 0                  | 0                  | 7,746             |
| NZ Aid Pie   | 132,107             | 228,738          | (223,465)          | (31,803)           | 105,577           |
| NZ Aid XB  | 41,908              | 507,808          | (503,415)          | 2,906              | 49,206            |
| NZ Aid XXB   | 0                   | 133,860          | (124,711)          | 1,903              | 11,053            |
| Pacific Development & Conservation Trust                         | (201)               | 10,300           | (2,394)            | 0                  | 7,704             |
| People's Republic of China                                       | (12,860)            | 0                | 0                  | 12,860             | 0                 |
| Primary Function   | 40,381              | 1,547,472        | (1,165,660)        | 10,424             | 432,617           |
| RAMSAR Secretariat   | 0                   | 33,148           | (21,930)           | 286                | 11,503            |
| United Nations Convention to Combat Desertification              | 1,592               | 0                | 0                  | 0                  | 1,592             |
| United Nations Development Program                               | 28,139              | 2,309,849        | (2,212,953)        | 6,653              | 131,689           |
| United Nations Environment Program                               | 176,323             | 217,526          | (322,262)          | 1,987              | 73,574            |
| United Nations Tech Co-Op Activities (part of UNDESA)            | 45,369              | 1,712            | (53,964)           | 343                | (6,540)           |
| UN Economic & Social Commission for Asia & the Pacific (UNESCAP) | 3,211               | 0                | (65)               | 0                  | 3,146             |
| UN Educational Scientific & Cultural Organisation (UNESCO)       | 115                 | 0                | (9)                | (106)              | 0                 |
| US Additional Member Contributions                               | 49,117              | 9,486            | (55,213)           | 92                 | 3,482             |
| US Department of Energy/Los Alamos University                    | 29,784              | 0                | (25,464)           | 481                | 4,801             |
| US Fish & Wildlife Service                                       | 121,819             | 0                | (107,247)          | 371                | 14,943            |
| US National Oceanic Atmospheric Administration                   | 75,663              | 119,626          | (131,624)          | 789                | 64,455            |
| US Western Pacific Regional Fishery Management Council           | (1450)              | 57,522           | (45,726)           | 292                | 10,637            |
| <b>Total</b>   | <b>1,894,636</b>    | <b>8,333,206</b> | <b>(7,836,435)</b> | <b>112,530</b>     | <b>2,503,937</b>  |

\* Includes contributions received from parties to 3 conventions (Apia, Noumea and Waigani)

### Member contributions (US\$)

|                                |                  |
|--------------------------------|------------------|
| American Samoa                 | 7,285            |
| Australia                      | 185,106          |
| Cook Islands                   | 10,184           |
| Federated States of Micronesia | 11,062           |
| Fiji                           | 23,211           |
| France                         | 268,070          |
| French Polynesia               | 25,742           |
| Guam                           | 20,422           |
| Kiribati                       | 10,184           |
| Marshall Islands               | 10,184           |
| Nauru                          | 0                |
| New Caledonia                  | 45,036           |
| New Zealand                    | 134,202          |
| Niue                           | 0                |
| Northern Marianas              | 0                |
| Palau                          | 0                |
| Papua New Guinea               | 0                |
| Samoa                          | 20,360           |
| Solomon Islands                | 0                |
| Tokelau                        | 10,184           |
| Tonga                          | 10,184           |
| Tuvalu                         | 9,534            |
| United States of America       | 194,000          |
| Vanuatu                        | 39,690           |
| Wallis and Futuna              | 1,562            |
| <b>Total</b>                   | <b>1,036,202</b> |

### Parties' contributions (US\$)

|  |               |
|--|---------------|
| <b>Parties to the Apia Convention</b>    |               |
| Australia                                | 10,298        |
| <b>Total</b>                             | <b>10,298</b> |
| <b>Parties to the Noumea Convention</b>  |               |
| Australia                                | 5,947         |
| Federated States of Micronesia           | 743           |
| United States of America                 | 6,000         |
| <b>Total</b>                             | <b>12,690</b> |
| <b>Parties to the Waigani Convention</b> |               |
| Tuvalu                                   | 1,075         |
| <b>Total</b>                             | <b>1,075</b>  |

Note The income received shown above can be located in the Donor Funds and Member Contributions schedule in the row titled 'Multiple Donors'.

### Income and expenditure (US\$)

|                          | Actual 2004      |
|--------------------------|------------------|
| <b>Income</b>            |                  |
| Members funds            | 1,036,202        |
| Administration fees      | 282,062          |
| Exchange gains           | 16,761           |
| Interest                 | 267,761          |
| Other Income             | 125,593          |
| Donor Funds              | 6,717,357        |
| <b>Total Income</b>      | <b>8,445,736</b> |
| <b>Expenditure</b>       |                  |
| Project Management       | 329,695          |
| Primary Function         | 1,419,055        |
| Project Implementation   | 6,087,685        |
| <b>Total Expenditure</b> | <b>7,836,435</b> |

## Staff list - 2004

| Name  | Designation   | Nationality                    |
|---|---|--------------------------------|
| TAKESY, ASTERIO                               | Director  | Federated States of Micronesia |
| LUI, F. VITOLIO                               | Deputy Director   | Samoan                         |
| TUAKEU-LINDSAY, I'O*                          | Programme Delivery Manager                                      | Cook Islander                  |
| LEILUA-LEI- AM, PISAINA*                      | Business Support Manager  | Samoan                         |
| TUPUA-COUPER, RUTA                            | Personal Assistant to Director                                  | Samoan                         |
| ETI, APISETA                                  | Personal Assistant to Deputy Director                           | Samoan                         |
| ONESEMO-SIMAIIKA, NIFO*                       | Secretary to Business Support Manager                           | Samoan                         |
| <b>KRA 1-NATURE CONSERVATION</b>              |   |                                |
| DOVEY, ELIZABETH (LIZ)                        | Bird Conservation and Invasive Species Officer                  | Australian                     |
| POWER, MARY *                                 | Coastal Management Adviser                                      | Australian                     |
| OPU, JOB *                                    | Marine Species Officer  | Papua New Guinean              |
| TUAILEMAFUA, SIULI*                           | Biodiversity Support Officer                                    | Samoan                         |
| PHILIP, MIRIAM                                | Wetlands Management Officer                                     | Papua New Guinean              |
| BROWN, KATE                                   | Action Strategy Adviser   | Australian/New Zealander       |
| TREVOR, ANNE PATRICIA**                       | Turtle Data Officer   | Samoan                         |
| JUNGBLUT, VAINUJPO**                          | Assistant Ramsar Officer  | Samoan                         |
| RANDALL, SUZY*                                | Support Officer-Bird Conservation and Invasive Species          | Australian                     |
| ONESEMO-SIMAKA, NIFO**                        | Programme Assistant   | Samoan                         |
| WRIGHT, ANDREW                                | Project Manager, International Waters Project (IWP)             | Australian                     |
| STACEY, NATASHA                               | Community Assessment and Participation Specialist (IWP)         | Australian                     |
| HOLLAND, PAULA                                | Natural Resource Economist (IWP)                                | Australian                     |
| SAMASONI, SAMSON*                             | Community Communications Specialist (IWP)                       | New Zealander                  |
| MENZIES, STEVE**                              | Community Communications Specialist (IWP)                       | New Zealander                  |
| VA'A, RAMA                                    | Project Accountant, International Waters (IWP)                  | Samoan                         |
| GALUVAO, ROSANNA                              | Programme Assistant, International Waters (IWP)                 | Samoan                         |
| <b>KRA 2 POLLUTION PREVENTION</b>             |   |                                |
| GRIFFIN, FRANK                                | Coordinator, Pollution Prevention                               | Papua New Guinean              |
| NAWADRA, SEFANAIA                             | Marine Pollution Adviser  | Fijian                         |
| AMANO, SHIRO*                                 | Solid Waste/Landfill Management Officer                         | Japanese                       |
| TASHIRO, TAKEO **                             | Solid Waste Expert (JICA)                                       | Japanese                       |
| MATAU, SAUNOA**                               | Programme Assistant   | Samoan                         |
| <b>KRA 3 CLIMATE CHANGE AND VARIABILITY</b>   |   |                                |
| VOLENTAS, ANDREA                              | Climate Change Coordinator                                      | Samoan                         |
| SALE-MARIO, EMMA                              | Assistant Ozone Depleting Officer                               | Fijian                         |
| FIFITA, SOLOMONE                              | Chief Technical Adviser-PIREP                                   | Tongan                         |
| NITSCHKE, KIM*                                | Project Coordinator, Atmospheric Radiation Measurement Two      | Australian                     |
| MORRISSEY, MARK **                            | Pacific Island Global Observing System Adviser                  | American                       |
| IOANE-SU'A, FITILAGI                          | Programme Assistant   | Samoan                         |
| <b>KRA 4 SUSTAINABLE ECONOMIC DEVELOPMENT</b> |   |                                |
| MCINTYRE, MATTHEW                             | Acting Coordinator/Environment Assessment and Reporting Adviser | Australian                     |
| YAUVOLI, AMENA **                             | Sustainable Development Policy Adviser                          | Fijian                         |
| PASISI, CORAL                                 | Sustainable Development Officer                                 | Niuean                         |
| LEAUPEPE-NICKEL, ALISA*                       | Programme Assistant   | Samoan                         |

\* left during 2004

\*\* arrived during 2004

| Name                       | Designation   | Nationality      |
|----------------------------|---|------------------|
| <b>KRA 5 PROCESSES</b>     |   |                  |
| DROPSY, HERVE              | Acting Process Coordinator and Information Technology Manager | French           |
| FRUEAN, THERESA            | Programme Assistant   | Samoan           |
| DEO, SEEMA*                | Environmental Education and Awareness Officer                 | Fijian           |
| WICKHAM, FRANK             | Human Resource Development /Training Officer                  | Solomon Islander |
| KONDO, MASAMI*             | Information Technology Officer (JICA)                         | Japanese         |
| LOGAN, TAMARA**            | Education and Social Communications Officer                   | Australian       |
| PETERU, CLARK              | Environment Legal Adviser                                     | Samoan           |
| AH POE, ANONA**            | SIDSNet Pacific Information Officer                           | Samoan           |
| MOUGEOT, JACQUES           | Environment Legal Officer                                     | French           |
| STAPLETON, PAUL*           | Editorial Publications Officer                                | Australian       |
| UESELE-PETAIA, ALIITASI    | Information Technology Network Officer                        | Samoan           |
| QOROYA, KEMUELI**          | Information Technology Officer                                | Fijian           |
| PETERU, CHRIS              | Assistant Media and Publications Officer                      | Samoan           |
| BENTIN, SATUI              | Information Resource Centre Manager                           | Samoan           |
| WILLIAMS, MIRANETA         | Assistant Librarian   | Samoan           |
| <b>BUSINESS SUPPORT</b>    |   |                  |
| <b>FINANCE</b>             |   |                  |
| TU'UAU, ALOFA              | Finance Manager   | Samoan           |
| BRUNT, ALEXANDER           | Project Accountant  | Australian       |
| CHONG WONG, PUNI *         | Finance Officer   | Samoan           |
| LUI, TANIA                 | Assistant Accountant  | Samoan           |
| MATHES, JOANNE **          | Finance Officer   | Samoan           |
| AMERIKA, SELEISA**         | Finance Officer   | Samoan           |
| AIALUPOTEA-ENOSA, ANGELA** | Finance Officer   | Samoan           |
| <b>ADMINISTRATION</b>      |   |                  |
| MASINA-HADLEY, MALAMA      | Administration Officer  | Samoan           |
| ATIGA-PATU, MAKERITA       | Administrative Assistant                                      | Samoan           |
| FRUEAN, PAULINE**          | Travel Conference Officer                                     | Samoan           |
| SILULU, LUPE               | Registry Supervisor   | Samoan           |
| TUILAGI-AH KUOI, HELEN     | Records Management Assistant                                  | Samoan           |
| TUPAI, MONICA              | Receptionist  | Samoan           |
| FONOTI, FA'AMANU           | Customs Clerk   | Samoan           |
| SITITI, FA'AMANATU         | Driver/Clerk  | Samoan           |
| TULUA, FILIFILIA**         | Records Clerk   | Samoan           |
| LEAULA, TOLOGAUVALE        | Cleaner/Teaperson/Clerical Assistant                          | Samoan           |
| TOOTO'O, AMOSA(Mace)       | Cleaner/Teaperson   | Samoan           |
| FOAGA, GAFATASI (Tino)*    | Maintenance Tradesman   | Samoan           |
| LEVU, SIONE**              | Cleaner   | Samoan           |
| GAFA, SILUPE               | Groundsman/Gardener   | Samoan           |
| LAUANO, MULIVAI**          | Maintenance Tradesman   | Samoan           |
| HUNT, ELIA*                | Night Watchman  | Samoan           |

\* left during 2004

\*\* arrived during 2004

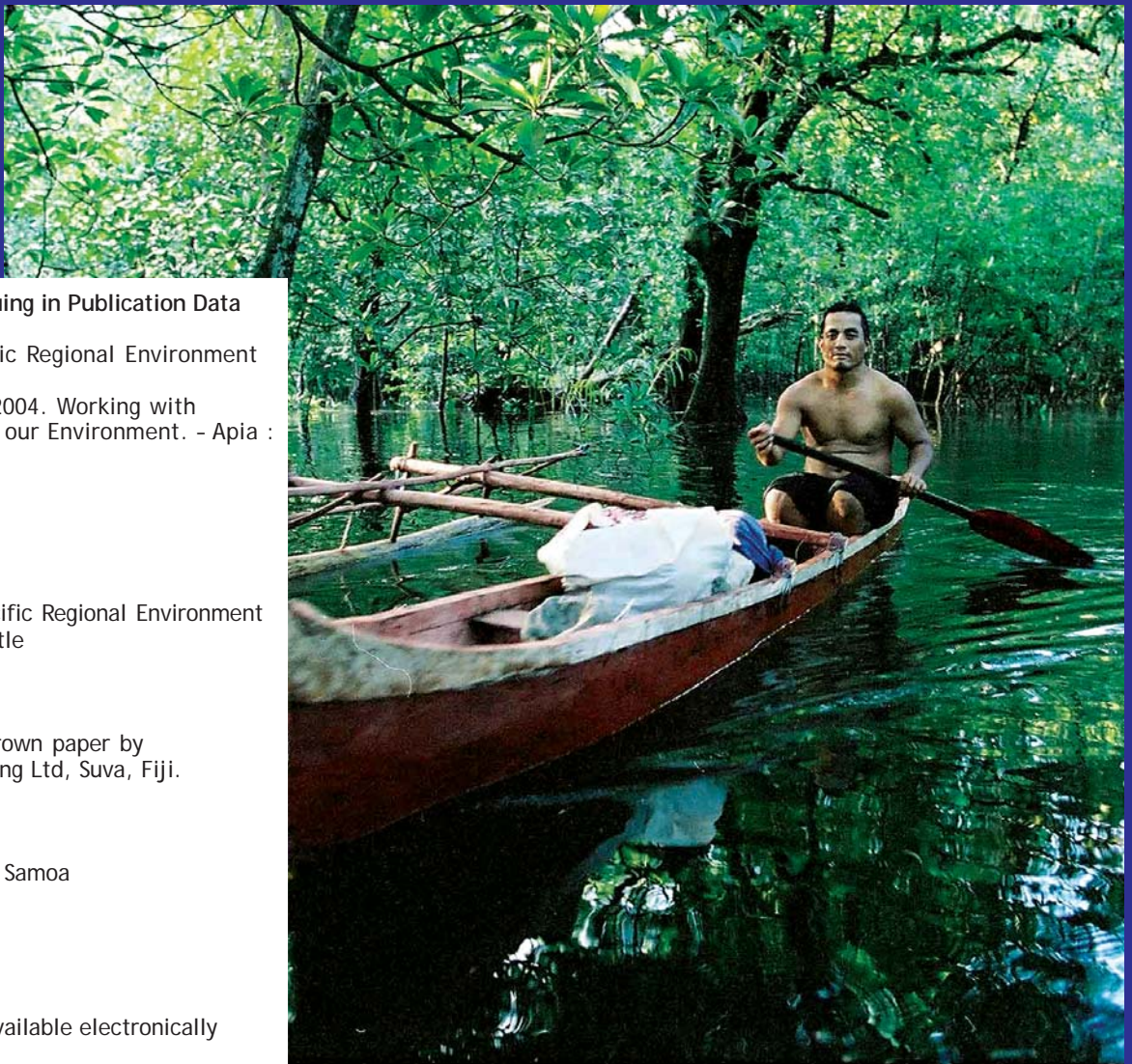


# Working with Pacific communities for our environment

## The 2004 Annual Report of the South Pacific Regional Environment Programme

SPREP's 2004 Annual Report contains stories that highlight some of the work involving communities over the year such as:

- > Rolling with Ramsar
- > Helping communities adapt to global warning
- > Regional biodiversity on the international radar
- > Mainstreaming nature conservation
- > Renewable energy in the pipeline
- > Lifeline for leatherbacks



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