

Annual Report Summary 2002

South Pacific Applied Geoscience Commission



SOPAC

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Introduction

WHAT IS SOPAC?

SOPAC is the South Pacific Applied Geoscience Commission. It is an inter-governmental, regional organisation dedicated to providing services to promote sustainable development in the countries it serves. SOPAC's work is carried out through its Secretariat, based in Suva. The work programme is reviewed annually by the Governing Council assisted by: Secretariat representatives (SOPAC), a Technical Advisory Group (TAG), and a Science, Technology and Resources Network (STAR).

WHAT DOES SOPAC DO?

SOPAC's work focuses on providing assistance to its member countries in three key areas: Resource Development Programme, Environmental Science Programme and National Capacity Development Programme. These three key areas are supported by the Corporate Service Programme. The specific field areas include, minerals, water and energy resource identification, promotion, and development; environmental geoscience issues; and human resource development and disaster management. To effectively provide these services SOPAC maintains an information technology unit, provides publication and library services, and offers technical and field services for specific project work.

WHO BENEFITS FROM SOPAC?

Member countries are Australia, Cook Islands, Federated States of Micronesia, Fiji Islands, Guam, Kiribati, Marshall Islands, Nauru, New Zealand, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. American Samoa, French Polynesia and New Caledonia are associate members. Any island member country can request assistance from SOPAC. Benefits accrue to island member countries directly through the provision of basic geological knowledge and indirectly, through improvements in land and ocean use, leading to improved health through water and sanitation provision, wealth generation through the development of mineral resources, hazard and disaster management and sustainable development by taking into account the geo-environmental impacts of development.

WHO PAYS FOR SOPAC?

SOPAC is funded by member-country contributions and supported by the following donors: Australia, Fiji Islands, Canada, France, Japan, Korea, New Caledonia, New Zealand, Office of US Foreign Disaster Assistance, People's Republic of China, Taiwan, the United Kingdom, the USAID/GII, the Commonwealth Secretariat, the European Union, and the UN family. Where donors have provided assistance for specific activities in the work programme, either at the regional or country level, this is acknowledged in the Annual Report Summary.

In 2002, it might be safe to say, the main events of global significance were the activities leading up to the World Summit on Sustainable Development (WSSD) in Johannesburg. As a result the goal of *sustainable development* became the international rallying call and global focus. Though only a personal opinion, maybe the WSSD occasion itself overshadowed the particular challenges and relevance of the subject to the individual States.

We are urged to achieve the most laudable targets of the Millennium Development Goals (MDG) and of course emerging out of Johannesburg came yet another new acronym – WEHAB. The United Nations Secretary General's initiative that global effort towards achieving sustainable development would primarily focus on the areas of Water, Energy, Health, Agriculture and Biodiversity (WEHAB).

Many of our member States, and particularly the larger ones, would have no difficulties with this list. However, just as we must tailor the MDGs to the Pacific context so must we do the same with respect to identifying the priority sector areas. Any attempt at sustainable development is futile without addressing the particular vulnerability of the economies, societies and environments of our Island States.

A number of our members that were subjected to natural disasters during this reporting review period find that more than 12 months later they are still struggling with recovery. Thus sustainable development would be wishful thinking without first building the necessary resilience.

Where might we focus this effort? There is not a one-size-fits-all solution. An appropriate integrated and risk management approach to development not only allows us to home in on the relevant areas but would also provide guidance to an affordable and logical way forward. There is no doubt how such a process might identify the challenges and effort required so that the water, energy and communication sectors would provide the base on which to achieve sustainable development.

Surely, such a process would also identify that the sustainable development of our ocean resources must be the great, if not the only, hope for the future of small islands?

SOPAC, where it has a competitive advantage has a role in assisting its member countries in addressing such issues. I trust that this Annual Report Summary will show just what we're doing and where we might be making a contribution. This is the last such report where our work will be described largely by activity. With our new corporate plan and the development of the new strategic programme areas I trust that in next year's report it will be far easier to not only see but also measure how we're performing.



Alf Simpson
Director



Mineral Resources

Highlights of Mineral Resources Unit activities for 2002 included final reporting of the Japan/SOPAC Co-operative Deep-sea Mineral Resources Study Programme cruise, which drilled hydrothermal deposits at the triple junction of the North Fiji Basin in January 2001 and the successful completion in June/July 2002 of the research cruise and associated preliminary reporting of sampling and surveying of cobalt-rich crusts on selected seamounts located within the Exclusive Economic Zone (EEZ) of the Marshall Islands. That said, we witnessed a relatively quiet year for the Mineral Resources Unit due to resource personnel constraints, with only one full-time professional equivalent provided by the Government of Japan and support from other professionals within the Secretariat.



Metal Mining Agency of Japan and Marshall Islands representatives processing drill cores.

A detailed project proposal was prepared by the Secretariat on behalf of SOPAC member countries for the continuation of the longstanding Japan/SOPAC Co-operative Deep-sea Mineral Resources Research Programme. The Federated States of Micronesia, Fiji, Kiribati and Niue were the countries identified as potential beneficiaries of the proposed second phase of Stage II (from 2003 to 2005) of the now twenty-one years long co-operative programme. As a result there are more detailed assessments of marine mineral occurrences, already identified under previous cruises, and environmental baseline studies proposed for the Federated States of Micronesia, Fiji, Kiribati and a preliminary mapping survey planned for Niue.

Other proposals designed to strengthen the Mineral Resources Unit activities included securing funds to convert the *Regional Deep-sea Minerals Database* (designed and developed by the Metal Mining Agency of Japan) from ArcInfo to MapInfo for ease of back-up, access and maintenance; to convene a national workshop to review the draft *Offshore Mineral Policy for Fiji*; and, to convert all seismic data from current, near redundant magnetic tape formats to current medium.

Editing of the Pacific Exploration and Technology bulletin was completed by Michael Petterson of the British Geological Survey. It comprises selected presentations given at the Pacific Regional Conference on Mineral Exploration and Technology convened in Nadi, Fiji in 1998, and will be published in 2003.



Cross section of crust; drilled core samples.

Mineral Resources



Benthic Multi-coring System sampling in Marshall Island waters.

Ongoing advisory activities continued with reporting on the changes in metal prices and consequent impact on possible manganese nodule development in the Cook Islands EEZ as well as the assessment of gypsum prices and market conditions and their impact on possible gypsum development in Kiribati.

The SOPAC Petroleum DataBank, located at *Geoscience Australia* in Canberra continued to maintain an archive of analogue and electronic geophysical and geological data and information, technical reports, promotional brochures and data catalogues of the Solomon Islands, Tonga, Vanuatu and Fiji. The facility also responds to requests for these data and information from third parties such as petroleum exploration companies and international research organisations.

In 2002 three data requests for seismic tapes, transparencies, reports and maps were processed. Two were from petroleum exploration companies for data pertaining to Fiji and the Solomon Islands, and one from an external consultant completing the

preliminary desktop study for Tonga for Article 76 of the Law of the Sea Convention that addresses the issue of laying potential claim to an extended continental shelf beyond 200 miles. The SOPAC Petroleum DataBank Coordinator attended the *Australian Petroleum Production and Exploration Association* Meeting held in April in Adelaide to promote the petroleum potential of the above mentioned SOPAC member countries.



Benthic Multi-coring System.

The Water Resources and Sanitation programme in 2002 was dominated by the Pacific's preparations for the 3rd World Water Forum to be held in Kyoto, Japan from 16-23 March 2003. The consultation process commenced in January 2002 and culminated in a regional meeting in Sigatoka entitled *Water In Small Island Countries*, attended by over 160 delegates from over 20 countries. The consultation was a massive collaborative effort between SOPAC and the Asian Development Bank.

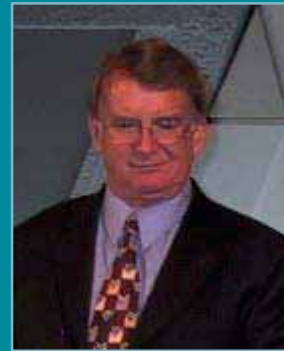
The major outcome of the Pacific regional consultation was the *Pacific Regional Action Plan on Sustainable Water Management* which details regionally-agreed priority actions for the water sector in the region. The plan consists of six thematic areas, each with agreed priority actions required for implementation. The thematic areas are: Water Resources Management; Island Vulnerability; Awareness, Technologies; Institutional Arrangements; and Financing.

This action plan, endorsed by 18 countries, 14 at ministerial level (the first time a ministerial strategic approach to water has been achieved in the Pacific), has been incorporated in the *Pacific Type II Initiative on Sustainable Water Management* (which looks towards partnership building for the implementation of the water strategy) and was submitted by the Pacific Island Countries to the United Nations Commission for Sustainable Development in Johannesburg during the World Summit for Sustainable Development in August 2002.

Mindful of the need to develop a global Small Islands position at Kyoto, in 2003, SOPAC led the Pacific region in a further consultation known as the Dialogue on Water and Climate, focussing on the vulnerability of islands water resources and infrastructure to climate-related events. The outcomes of this were integrated into the larger regional consultation referred to above. A parallel consultation was carried out by our counterpart agency Caribbean Environmental Health Institute and the results of both were later developed into a global Small Island Developing States position for Kyoto.

Aside from this regional strategic focus in our work programme over the year, other core areas of work within the Water Resources and Sanitation programme continued to operate in the following areas: provision of technical advice in water resources assessment, development and management;

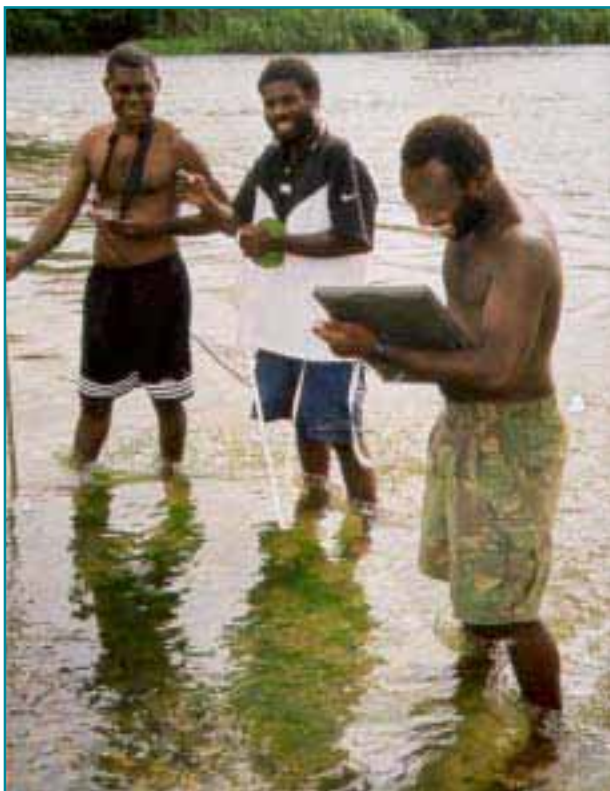
"I would like ... to say a few things about the collaboration between SOPAC and ADB. Faced with the task of organising [the Pacific Regional Consultation on Water in Small Island Countries], ADB turned to SOPAC as an institution representing the Pacific Island countries, with considerable technical expertise in water, particularly in water resource management, and with a broad and long-term mandate for the sustainable development of the sector, accomplished through the provision of technical assistance and donor coordination. ADB has the same interest in sustainable development, but tends to express that interest in short bursts of support for projects that require loan financing. We thought that the cooperation between the two agencies would make the end product stronger, and indeed we believe it is doing that.



The cooperation between ADB and SOPAC has been like a marriage – it is difficult but productive – [and] has required us to synchronise our approach to this consultation."

Remarks by Jeffrey Stubbs, Country Director, Asian Development Bank South Pacific Regional Mission, Port Vila, Vanuatu at the Pacific Regional Consultation On Water In Small Island Countries, Sigatoka, Fiji Islands, 29 July – 3 August 2002

Water Resources



Hydrological river gauging carried out by staff of the Department of Geology, Mines and Water Resources, Vanuatu.

sanitation and hygiene promotion and water policy and legislation. The awareness and media advocacy aspect of the work carried on, as well as the development of technical publications.

Other key programme areas and activities were:

■ SOPAC successfully co-organised with UN-ESCAP, a workshop on *Strategic Planning and Management of Water Resources*. Attended by 20 representatives of 12 Pacific island countries. This workshop represented the first phase of a regional programme on inter-agency and intra-agency institutional strengthening and national-level policy and planning. This ESCAP initiative addressed some of the key issues on water governance explored in Theme 5 of the Pacific Regional Action Plan on Sustainable Water Management (Institutional Arrangements).

■ The development and submission of the *Pacific Type II Initiative on Sustainable Water Management* as part of the efforts for the

World Summit on Sustainable Development in Johannesburg in 2002 eventuated in the following support for the Pacific region:

- NZAID support for a programme on hydrological training and integration of climate information (Theme 1 and 2 of the Pacific Regional Action Plan);
- EU development of a water governance programme, for which SOPAC is in the process of securing funding (Theme 5 of the Pacific Regional Action Plan); and
- ADB continuing to support water utilities (Theme 4 of the Pacific Regional Action Plan)

■ *World Water Day 2002* campaign celebrated the theme “Water and Development”. In addition to the regular campaign activities, SOPAC contracted the Non Governmental Organisation, Live & Learn Environmental Education to develop teacher-training materials and include the materials in the national curriculum in Fiji, Solomon Islands, Vanuatu and Papua New Guinea. The partnership with this educational NGO has provided the means by which the technical SOPAC messages on good hygiene and good water management can reach a larger number of children in a more sustainable media. Hundreds of teachers have been trained in the application of these materials by Live & Learn.

■ *The Pacific Freshwater Education Kit* in A3 format containing colour fact sheets with corresponding activity sheets has been developed and disseminated to selected schools and relevant organisations.

■ *The Directory of Environmentally Sound Technologies for Integrated Management of Solid, Liquid and Hazardous Waste for Small Island Developing States in the Pacific region*, a UNEP-SOPAC initiative was finalised, printed and disseminated to relevant parties.

Water Resources

The directory is part of the UNEP collaboration with SIDS on the implementation of the Waste Management chapter of the Barbados Programme of Action.

- The Tonga Community Development Trust was secured as an implementing partner in Tonga for the UNEP-funded *Rainwater Harvesting Project*. The project is a pilot study to explore sustainable rainwater harvesting, with specific focus on issues of operation and maintenance management, community engagement, water quality and drought resistance. Site surveys were undertaken in urban and rural communities with the construction phase to begin in 2003.



Freshwater in Dakuinuku, Fiji Islands.

- *Lecturing support to the USP 2002 B.Sc. Earth Science programme on Hydrogeology, Hydrology and Groundwater Resources.* Building on last year's success, a second 3-week course was refined and provided on Groundwater. To assist students course material, including a CD ROM on hydrogeology, was produced. Monitoring of graduates, post-USP, demonstrated that they are securing geoscience-related posts in-country as well as at SOPAC. Support was also provided to the *Earth Science and Marine Geology 2002 course* in collaboration with Mineral Resources Department and Public Works Department where SOPAC provided teaching assistance and delivered the Hydrogeology and Groundwater Resources component of the six-week programme that focused on water resources.
- SOPAC Water Resources Unit continued to function as the *Water and Sanitation Sector Co-ordination Centre* through the operation and maintenance of the Small Islands Water Information Network. Newsletters were developed and disseminated and support was provided to the regional International Waters Project (managed by SPREP), Asian Development Bank consultations, ESCAP workshops, Global International Waters Assessment for Global Environmental Facility and students throughout the region. SOPAC is now recognised as a regional coordination centre on water-related issues by ADB, World Bank, European Union, Global Water Partnership, Water Supply and Sanitation Collaborative Council, and most bi-lateral and UN agencies.

National-level support was provided to the Cook Islands, FSM, Fiji, Kiribati, Marshalls, Nauru, Niue, Samoa, Solomons, Tonga and Vanuatu, with New Caledonia, American Samoa and Palau benefiting from regional activities.

2003 is the International Year of Freshwater. We believe the Pacific has never been better prepared to articulate its needs and champion its causes in the water sector.



Advocacy and awareness, Vanuatu; collecting water, Fiji Islands; and communal water distribution point, Marshall Islands.

Energy

During 2002 the Energy Unit continued its trend of increased activity within the region in addressing a diverse and varied range of energy sector issues at the national, regional and international levels. Aside from the core work programme areas of energy policy, energy database, energy efficiency and conservation, technical assistance, preparation of technical publications and counterpart training, the Energy Unit was involved in four other significant areas.

Firstly, the preparation of a regional energy sector profile for submission to the 10th Session of the Commission on Sustainable Development. Secondly, the preparation of the Pacific Islands Energy Policy and Plan that was substantively based on the 9th Commission on Sustainable Development regional energy sector profile. Thirdly, a cooperative programme with ESCAP on the development of guidelines on strategic planning and management of the Energy sector, culminating in regional training and implementation workshop for Pacific Island Country States. Finally, the Joint SOPAC/Secretariat of the Pacific Community Regional Energy Meeting in Rarotonga, Cook Islands.



Nielu (Tuvalu) and Tevita (Tonga) try out a solar car in Tokyo Electric Power Company's Renewable Energy Park in Japan, as part of the Middle Management Programme coordinated by SOPAC and hosted by Japan through the Pacific Islands Forum Secretariat.

Major activities included:

- The progressing of the Wind Energy Education Programme being developed jointly with the School of Pure and Applied Sciences within the University of the South Pacific, that includes the development of a postgraduate course including the installation of a 20kW wind turbine for experimental purposes;
- Further elaboration of the Demand Side Management (DSM) project and identification of a consultant, that focuses on the identification of opportunities for DSM within power utilities in the region and the implementation of demonstration DSM projects and programmes in Pacific Island Country States;
- Commencement of the Regional Biomass Resource Assessment Programme with preparatory fact finding missions to the six participating countries (Fiji, Kiribati, Samoa, Tonga, Tuvalu and Vanuatu), the development of a detailed work programme, preparation of workshop materials and elaboration of a delivery mechanism for the in-country training programmes;
- The signing of a letter of agreement between SOPAC and the US Wave Energy Company Inc who have reevaluated the earlier ocean wave energy data in Fiji, Cook Islands and Tonga, including the identification of alternate preferred sites with the view to carrying out further site specific investigations of wave energy potential;
- The awareness of *World Earth Day* throughout the region with a competition called *Energy Wizards of the 21st Century*. It focused on energy conservation and efficiency as a team exercise in schools. The regional winners of this competition were in Kiribati;

- The production of several technical publications, such as – Energy Auditing Manual for Schools; Commercial and Domestic Sector Energy Conservation and Efficiency booklets (edited and reprinted); and Geothermal Energy in the Pacific Islands;
- The publication and distribution of the quarterly Pacific Energy Newsletter to a readership of over 200;
- The development of a Global Environmental Facility (Operating Programme 11) concept paper in relation to energy use and the removal of barriers to energy use in the transportation sector.



Sili'a (Samoa) and Wilbur (Marshall Islands) during the Middle Management course in Japan presenting their country perspectives in relation to the energy sector and its development.

The overall evaluation of the Energy Unit's programme during the period can be summed up as being very satisfactory, due to the enthusiasm from the SOPAC member country Energy Officers in developing and progressing their national programmes, relevant international alliances, the efforts of the Energy Unit and support staff and the positive linkages through the CROP Energy Working Group. All-in-all a challenging yet rewarding year for the Energy Unit.



(L) 2002 Earth Day prize-giving ceremony at Mahatma Ghandi Memorial High School, Suva, Fiji Islands. The School was the Fiji national winner of the competition. King George Fifth and Elaine Bernacchi School from Kiribati were the overall regional winners. L-R on stage: Intiyaz Khan (Fiji Department of Energy); Chief Guest H.E Mr Adrian Simcock New Zealand High Commissioner to the Fiji Islands; the School Principal and Paul Fairbairn (SOPAC).



(R)Energy Auditing Manual prepared for students in the Pacific Islands as a follow up to the 2002 Earth Day Competition to encourage energy efficiency and conservation through education.

Environmental Science Programme

Mapping of the seafloor and shoreline, together with, monitoring and modelling of the physical and chemical parameters within coastal areas continue to be priorities for SOPAC member countries as they strive toward improved understanding of this highly dynamic system. With most of their populations and a significant proportion of new and existing development occurring within coastal areas it is imperative that planning and management decisions are based on sound data and information for development to be sustainable.

GIS databases, map products and accompanying recommendations, following the collection, processing and interpretation of data provide important baseline information that contributes toward a comprehensive planning and management tool for decision making.

Such products have been developed for Manihiki Lagoon in the Cook Islands and in-country personnel trained to maintain and use the GIS database, which was designed to assist in the planning and management of pearl farming activities. As the pearl industry is significant to both the local and national economies of the Cook Islands, the Government undertook to commit bilateral funds toward the procurement of a long-term real-time water quality monitoring system to enable key stakeholders to base their planning and management decisions on reliable and essential data. To this end the Secretariat provided advice on an appropriate system and will assist in the commissioning of the monitoring buoy and associated equipment in 2003.

Further testament to the value that countries are beginning to place upon such activities and their resultant products is the commitment of the Cook Islands to complete a comprehensive multi-beam survey of Penryhn Lagoon and purchase a long-term real-time water quality monitoring system in 2003.

All data acquired in the field is stored in raw and processed formats in the Interactive Graphical Ocean Database System and Regional Shallow Water Bathymetry Database at the Secretariat. They have been designed to ensure that they are compatible with other regional oceanographic organisations and are regularly maintained as new data are acquired. Data collected during multi-beam surveys in 2002 of Samoa [Apia Harbour, Vaiusu Bay]; Federated States of Micronesia [Chuuk; Yap [Ulithi]]; Marshall Islands [Majuro] and Fiji [Kiuva Lagoon and Reef System, SE Viti Levu; Muaiwalu Port area, Suva] have been included in the database.



Coastal erosion, Fiji Islands.

Coastal

Processing and interpretation of datasets for surveys carried out in the Federated States of Micronesia [commercial seaports of Chuuk and Yap; WWII wreck *Mississinewa* in Ulithi Lagoon (due to major oil spill event)]; Marshall Islands [Majuro] and Fiji [Kiuva Lagoon and Reef System, SE Viti Levu; Muaiwalu Port area, Suva] were completed during the year. Map products, reports and recommendations and, where appropriate, development of potential management and mitigation strategies planned for delivery in 2003 were also completed.

A field assessment of coastal erosion problems in Tongatapu and on Atata Island, Tonga using on-land surveying techniques and *Ikonos* satellite imagery was completed, with reporting and recommendations for the management and mitigation of the problem to be provided in 2003.

Monitoring activities on various scales and for various purposes were carried out during the year and are ongoing activities into 2003. For example, the logging of currents in the Kiuva Lagoon and Reef System commenced in 2002 and will continue until early 2003 to ascertain the circulation patterns of the area. This will greatly assist seaweed farmers to identify optimum sites for cultivation.

The Secretariat also provided surveying and equipment maintenance support in the implementation of the larger and longer-term monitoring initiative known as the *Pacific Sea Level and Climate Monitoring Project – Phase III*. Field visits to complete first-order leveling checks of tide gauge installations in Tonga, Fiji, Papua New Guinea, Nauru, Marshall Islands, Tuvalu and Kiribati were carried out in conjunction with the *National Tidal Facility*, Australia. Field visits were also conducted in Fiji to instal Continuos Global Positioning System equipment in conjunction with *Geoscience Australia*. The Secretariat is the back-up site for all data acquired under the project.

Project concept documents were drafted for the following activities in order to secure funds whether through national, bilateral and multi-lateral means: Coastal mapping and lagoon resource assessment of Hapa'ai and 'Eua Islands, Tonga; Vulnerability assessment for offshore sand recovery off Pohnpei, Federated States of Micronesia; Offshore sand dredging for Nuku'alofa, Tonga and Tarawa Lagoon, Kiribati; Tarawa Lagoon reclamation initiative to benefit future economic development activities; Multi-beam survey of forereef slope near Moneo in New Caledonia; Monitoring the impact of the Queen Salote Wharf Nuku'alofa, Tonga; Multi-beam surveys of six islands in Kiribati; and, Inshore and lagoon mapping investigations offshore of Sissano in Papua New Guinea.

The effective execution of field activities is dependent upon the availability of reliable, state-of-the-art, specialised equipment and the effective mobilisation of these to and from the field survey sites around the SOPAC region. Field survey equipment is regularly checked and maintained, and a replacement schedule maintained to ensure that key equipment and spares are available. Proposals and tender documents were drafted for the procurement of field survey equipment under the SOPAC Work Programme and the proposed SOPAC/EU Project funded under the 8th European Development Fund (EDF8): *Reducing Vulnerability of Pacific ACP States*. The Secretariat continued to maintain and operate the Government of Fiji research vessel *Yautalei*, as covered under a Memorandum of Understanding with the Mineral Resources Department.



Coastal protection, Rarotonga, Cook Islands.

Hazard Assessment

The one-year period prior to October 2002 marked a time of intense activity for the Hazard Assessment Unit. During that period, the detailed Pacific Cities information base painstakingly built during the preceding 5 years in a number of the Pacific capitals reached the stage where higher-level, value-added activities and products could be developed.

The World Bank-AusAID sponsored Catastrophe Insurance Project was established in that time to develop quantitative risk-loss analyses of cyclone and earthquake effects for Port Vila; drawing on the detailed demographic, building and infrastructure database developed earlier. Collaboration with the insurance industry formed a critical element of the work here in establishing the probability and implied costs of the exposure of Vanuatu, and the region in general, to major disasters, and in determining the most-appropriate response by the international community.

The Port Vila Earthquake of 2nd January 2002 provided extra impetus for the work in Port Vila. Following an initial quick-response technical assessment of the effects of the shock, United Kingdom Department for International Development responded by initiating a far-reaching project aimed at managing disaster-risk and providing on-the-ground solutions for the disadvantaged peri-urban dwellers of Port Vila. As in the World Bank work, the project built upon the foundation of the earlier Pacific Cities database and, furthermore, instigated the crucial element of a community-participatory approach and vulnerability assessment to address the problems faced in these areas.

Two days before the earthquake in Vanuatu, on New Year's Eve, Cyclone Waka had swept through Vava'u, Tonga, destroying a third of the houses and public buildings there. Almost concurrently with the Port Vila work, a quick-response activity was initiated to assess the damage, followed by an intensive collaborative project undertaken during April, with the World Bank to reinstate housing and build a comprehensive risk-management capability in Tonga.

During this time, key working relationships were developed with international experts in the fields of cyclone wind, wave and storm surge modelling, tsunami modelling and animation, risk-loss analysis, financial-risk analysis, GIS vulnerability mapping, and community risk assessment and participatory analysis. These contributed greatly in terms of reports, research, field work, presentations, modelling and animation work.



Images from the earthquake study carried out after the event in Port Vila, Vanuatu, in January.

Hazard Assessment

Throughout the period, the Hazard Assessment Unit undertook a concerted campaign to bring the value of the work being carried out to the attention of the Pacific and the wider, international community. This effort began in November, immediately following the 2001 Annual Session in Majuro, when urban development, building standards, risk management and urban search and rescue were brought together in the *Building Safer Urban Communities in the South Pacific Regional Workshop* in Suva, organised jointly by SOPAC and United Nations Office for the Coordination of Humanitarian Affairs. Following close on the heels of this workshop, in the same month, the Head of Unit was invited to present a keynote address espousing the results of the workshop to the Australian Earthquake Engineering Society Conference on *Earthquake Codes in the Real World* in Canberra.

In February, a tour was undertaken of the key geo-scientific, engineering and re-insurance institutions of New Zealand to highlight the work of the Unit and bring its own work up to date with latest developments. During May, interventions on risk management were made at the World Bank *Adaptation to Climate Change Meeting* in Nadi.

In July, the early results of the Catastrophe Insurance project were reported to the Pacific Island Forum Secretariat's 6th *Forum Economic Ministers Meeting* held in Port Vila, as well as to the wider risk management audience in-country. Also in the same month, a presentation of the work being undertaken by the Unit on disaster risk-management in development was made to the Foundation for Development Cooperation's *Development Research Symposium: South Pacific Futures* conference at the University of Queensland, Brisbane.

In September, the work of the Unit, in particular, and SOPAC in general, was presented to the British Foreign and Commonwealth Office-sponsored meeting *Preparing for Natural Disasters – Reducing the Risk*, outside London, as one of the strategic Wilton Park international conferences supported by Department for International Development, International Federation of Red Cross and Red Crescent Societies and the United Kingdom Advisory Committee on Natural Disaster Reduction.

Preparations were also made during the reporting period for presentations of the Port Vila work to the French-sponsored, Pacific Economic Cooperation Council's Sustainable Cities Taskforce *Sustainable Urban Services: Noumea Seminar* in Noumea, in November, and for an invited keynote presentation on broader risk issues at the 7th *Pacific Conference on Earthquake Engineering* to be held at the University of Canterbury, Christchurch in the coming February.

During the reporting period, apart from the several keynote-address conference papers published, a significant number of publications and databases were also published on the results of the Pacific Cities Project, and on the work related to the January 2002 Port Vila Earthquake.



Tropical Cyclone Waka caused extensive damage to the housing stock in Vava'u, Tonga.

Outcomes for Ocean Management activities in 2002 were achieved in the following areas: marine scientific research, maritime boundaries delimitation, extended continental shelf and ocean observation systems.

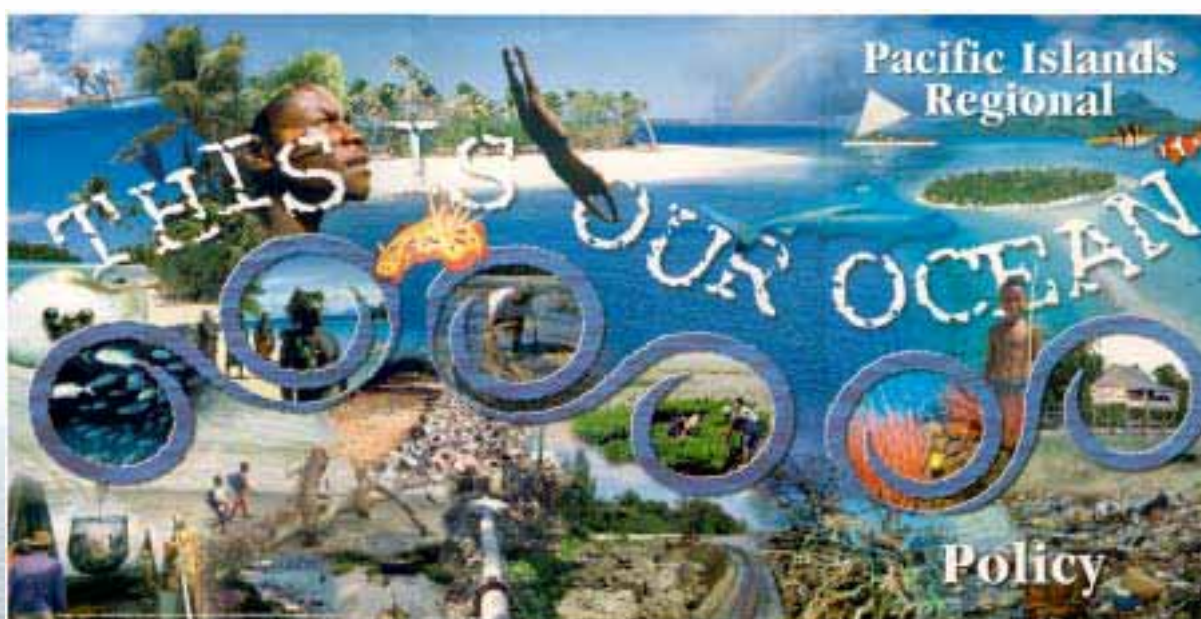
A key achievement for the region in ocean matters was the Forum Leaders' endorsement of the *Pacific Islands Regional Ocean Policy*. SOPAC contributed to the drafting of the Policy through its active involvement in the CROP Marine Sector Working Group. The *Pacific Islands Regional Ocean Policy* presents a vision for a healthy [Pacific] Ocean that sustains the livelihoods and aspirations of Pacific Island communities, with its principal goal being to ensure the future sustainable use of our Ocean and its resources by Pacific Island communities and external partners.

The *Pacific Islands Regional Ocean Policy* promotes stewardship in addition to ownership and articulates the following guiding principles:

- Improving our understanding of the Ocean;
- Maintaining the health of the Ocean;
- Sustainably managing Ocean resource use;
- Promoting the peaceful use of the Ocean; and
- Creating partnerships and promoting co-operation.

The Policy provides a basis for the harmonisation and strengthening of national and regional actions in relation to oceanic and coastal resources in the Pacific, and offers a platform for the development of a considered Pacific Islands Regional Ocean Framework for Strategic Action. The *Pacific Islands Regional Ocean Policy* provided the basis for the Pacific Islands Ocean Initiative, one of the key Pacific Regional Initiatives for the World Summit on Sustainable Development in Johannesburg in September 2002. It is to convene a Pacific Islands Regional Ocean Forum to develop the Pacific Islands Regional Ocean Framework for Strategic Action in late 2003 or early 2004.

The twelve-month Inception Phase of the AusAID-funded *Regional Maritime Boundaries Delimitation Project*, commenced in January 2002. Activities included the successful transfer of existing data and information from the FFA Solomon Islands-based Maritime Boundaries Project to the SOPAC Secretariat and the subsequent exercise of cataloguing and carrying out preliminary data validation assessments of these. Status reports for each of the beneficiary States were produced to ascertain the progress made under the FFA-led project.



Oceans

In addition, a regional consultation was convened in Nadi, Fiji, in April 2002 to gauge the commitment of Pacific Island States to maritime boundaries delimitation and to review, amend and determine priorities within the project design document. The need for a Pacific Islands Regional Maritime Boundaries Information System was recommended as an important first step to ensure accuracy of the data already collected for delimitation purposes, a centralised repository that will eventually be publicly accessible. It will also provide a means of determining an effective survey strategy to complete the delimitation exercise.

The Secretariat also facilitated the process of accessing funds through the Trust Fund administered by the *United Nations Division on Oceans and Law of the Sea*. This was to enable the attendance of geoscientists from Fiji, Solomon Islands, Papua New Guinea and Tonga at a course to build capacity of developing States to prepare potential claims to an extended continental shelf encapsulated under Article 76 of the Convention on the Law of the Sea and the Technical Guidelines on the Commission on the Limits of the Continental Shelf agreed by the State Parties to the Law of the Sea Commission in 1999. Project concept documents to secure funds to assist in the completion of desktop studies were also drafted.

At the international level the Secretariat prepared documentation for the region outlining the *Ocean Priorities and Issues for 2002 for the Pacific Islands Region* as a contribution to the United Nations Secretary General's Report to the General Assembly and provided support to the Permanent Missions based in New York, for the third meeting of the *United Nations Information Consultative Process on Oceans and the Law of the Sea* held in May 2002.

The Director continued to participate in deliberations of the Legal and Technical Committee of the *International Seabed Authority*, which is currently working toward drafting regulations for prospecting and exploration for polymetallic massive sulphides and cobalt-rich crusts in the area. Papers were presented on *Pacific Priorities for Ocean Data Archiving and Rescue*, at the WestPac Global Ocean Data Archive Rescue Meeting in Japan (February 2002) and, *Marine Scientific Research in the Pacific Islands region* at the Workshop on Prospects for International Collaboration in Marine Environmental Research to Enhance Understanding of the Deep-sea Environment in Jamaica (August 2002). SOPAC facilitated the attendance of Fiji and Kiribati to the 32nd Underwater Mining Institute Meeting in Wellington (November 2002).

With respect to activities involving the compilation of the *Regional Guidelines for Conducting Marine Scientific Research in the Pacific Region*, the following were circulated to member countries



Regional consultation convened in Nadi, Fiji, to gauge the commitment of Pacific Island States to maritime boundaries delimitation.

for review and comment: Annex I – Application for Consent to Conduct Marine Scientific Research in Areas Under National Jurisdiction; Annex II – Recommended Format for Data Submission; and Annex III – MSR Procedures for Individual Coastal States.

The re-design and development of a Regional Marine Scientific Research Cruise Database was significantly progressed, and the continued assistance in the coordination of MSR activities in the SOPAC region was attended to. Research organisations from Korea, USA, Australia, Japan, Germany and Japan conducted MSR cruises in Fiji, Kiribati, Solomon Islands, Papua New Guinea, Federated States of Micronesia, Tonga, and the Marshall Islands.

A major activity under the Global Ocean Observing Systems initiative was the regional workshop *Potential Applications of Ocean Observations for the Pacific Islands Region*, which was held in Nadi, Fiji in October 2002. Partnerships with Bureau of Meteorology-Australia, National Oceanographic and Atmospheric Administration-USA, Taiwan, IRD-France, and UNESCO-IOC enabled the participation of at least two delegates from each SOPAC member country and the development of a detailed strategy for the establishment of a Pacific Islands Regional Ocean Information System.

The Secretariat continued to co-operate with and facilitate global alliances with the Tao-Triton and the International Argo Programmes. The Secretariat also represented the Pacific Islands at the International Global Ocean Observation Systems Forum and Regional Global Ocean Observation Systems Forum held in Athens, Greece in December 2002.

Participants from Nauru, Samoa and Tuvalu attended a six-week training workshop on *Establishing an Oceanographic Observation Network in the Asian and Western Equatorial Pacific Regions* in Japan during October-November 2002. This is the third time that such a workshop has been convened in Japan. However, in future course convenors from the Japan Marine Science and Technology Center will deliver the course for Pacific Island nationals at an appropriate venue in the region.

“JICA (Japanese International Cooperation Agency) has supported numerous significant programmes in SOPAC countries in the form of a JICA Expert, deep sea mineral surveys and more recently deep-sea environmental surveys and equipment grants. At the same time JICA appreciates SOPAC’s strategic vision to be supporting its members countries in their national and regional actions in three key programs areas, and to be become a center of excellence for Pacific Island communities in these programme areas, namely, Ocean and Island management, Community Risk management, and Developing Community Lifelines. As an example of our support towards this noble vision, JICA participated this year in the recent formulation of SOPAC’s Sustainable Development Strategy in June 2002 in Sigatoka.



At the request of SOPAC, JICA and the Metal Mining Agency of Japan (MMAJ) have been carrying out exploration activities in deep-sea areas in the exclusive economic zones of SOPAC member countries since 1985. In 1999, Stage 1 of the programme was successfully concluded. Several promising areas for manganese nodules. Cobalt rich crusts and hydrothermal deposits were identified during Stage 1, and the result provided the impetus to seek a continuation of the cooperation programme, which was requested by SOPAC in 2000.

JICA and MMAJ would like to advise of their intention to continue this important initiative and cooperative relationship with SOPAC. Further, JICA and MMAJ are making concerted efforts to secure the budget to conduct the second phase of the project.”

Hideki Tomobe, Resident Representative of Japan International Cooperation Agency (JICA) in Fiji - Japanese Statement to the SOPAC Council at its 31st Session, September 2002.

National Capacity Development Programme

Information Technology

The Information Technology Unit (ITU) continued to focus on the development areas of Information and Communication Technologies (ICT), GIS and Remote Sensing. This development was delivered in two target areas, namely, support to member countries and support to the Secretariat.

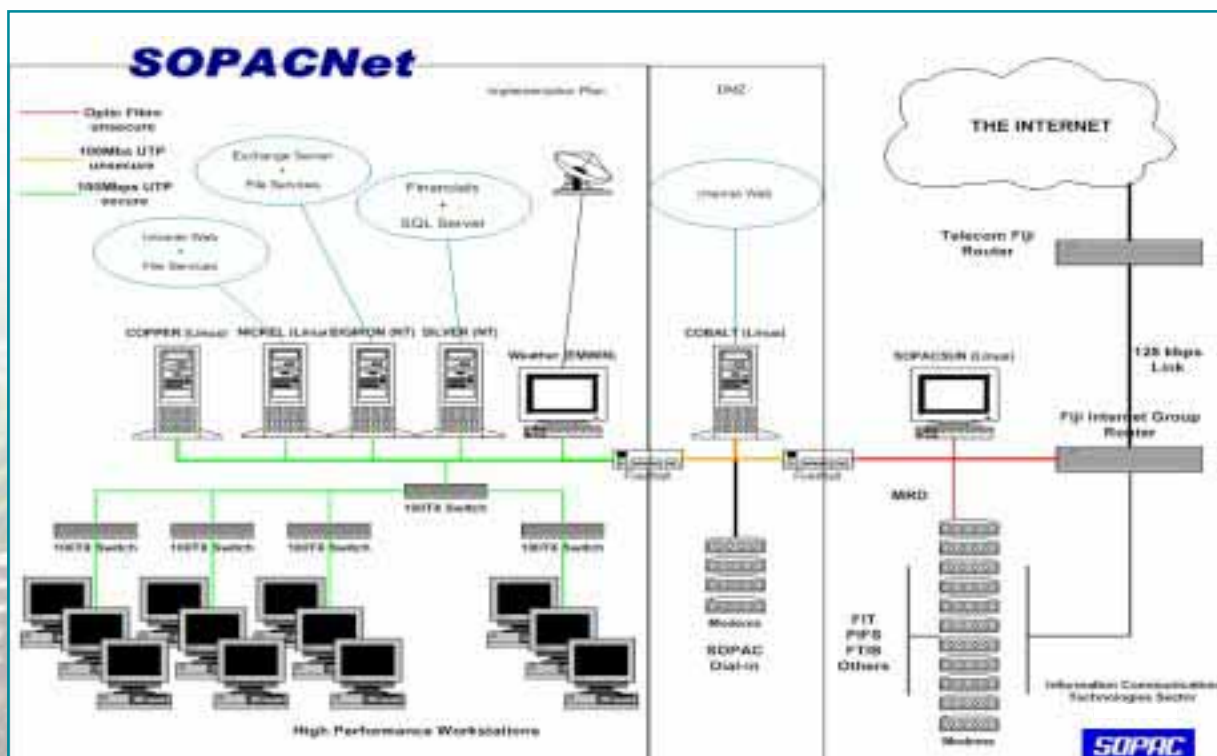
Information and Communication Technologies

A key event during the year was the endorsement of the Regional ICT Policy and Strategic Plan at the Forum Communication Ministers Meeting in April, 2002 where the draft plan had been developed at the Pacific Regional ICT Strategy meeting organised jointly with the Secretariat of the Pacific Community and the Pacific Islands Forum Secretariat in Nouméa, August 2001. ITU also participated in international events such as the Internet Society Annual Meeting INET2001 and Internet Corporation for Assigned Names and Numbers (ICANN) meetings. The participation of the ITU presents ICT issues faced by Pacific Islands, and allows these advisory boards to steer ICT development with Pacific Islands' issues in mind.

Ongoing activities included assistance to member countries and small island states to establish connectivity between government sectors at a national level and access to regional and international information through Internet gateways. The latter has required assisting the national telecommunication authorities in establishing and developing ISP facilities using cost-effective tools such as OpenSource software and wireless solutions with the goal of providing reliable and affordable Internet access for all sectors of the community. Capacity building, a fundamental component of technology transfer, continued through attachments, workshops and in-country visits.

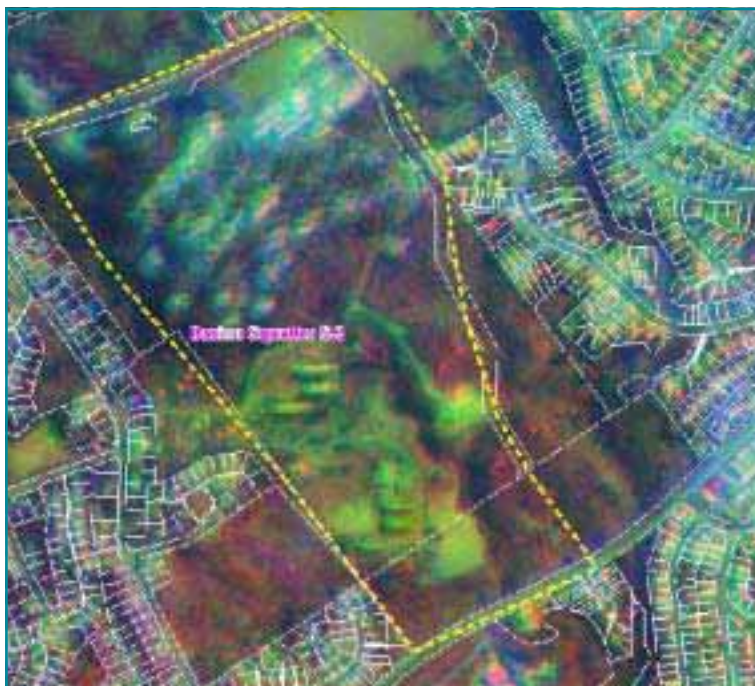
SOPAC continued to support the Fiji Internet Group with affordable internet access to development partners in Fiji. This is an important aspect of the regional role of SOPAC in being able to communicate and report effectively with its member countries as well as provide technology transfer to all stakeholders.

There was further development within the Secretariat in deploying cost-effective and sustainable solutions for data management, publishing and communications using tools such as OpenSource



SOPAC Network Diagram.

Information Technology



Training area from a Native Land Trust Board project showing settlement increase from 1975 to 1998, Fiji.



Native Land Trust Board survey team marking a lease boundary, Fiji.

software and refining procedures such as virtual libraries. In addition, a number of mailing lists were updated and maintained that serve as fora for information exchange and technology transfer.

Finally SOPAC has increased the development of its international image by enhancing its web site (www.sopac.org), putting more databases, reports and maps online as well as creating a forum for broad stakeholder participation in the activities of SOPAC. Core datasets were provided to all member countries and stakeholders via CDs that are released at every Annual Session.

Geographic Information System & Remote Sensing

GIS and Remote Sensing are fundamental to the operations of a geoscience organisation and this task development area is often the final layer of the knowledge management system that is built upon the foundations of Information Systems with data warehouses and communications infrastructure.

ITU continued promoting GIS and Remote Sensing technologies throughout the region by conducting workshops in Cook Islands, Fiji and Vanuatu, publishing the GIS/RS Newsletter in collaboration with the University of the South Pacific and with the acquisition and processing of high-resolution satellite images with 4-m to 1-m ground resolution.

The first workshop in Cook Islands focused on organising and interpreting data from satellite imagery, bathymetric mapping and environmental measurements using a GIS while the second provided enhanced asset management and planning for the water utility and other stakeholders through establishing and developing a GIS. In Fiji, a GIS with Global Positioning System (GPS) functionality was established for the power utility while a major project was commenced to assist the Native Land Trust Board (NLTB) using GPS/GIS technologies to rapidly map land boundaries. In Vanuatu, a Remote Sensing workshop provided stakeholders with the capacity to undertake land cover change detection and integration with GIS.

Finally significant input was provided for establishing the forthcoming EU-funded project *Reducing Vulnerability of Pacific Island States* where ICT, GIS and Remote Sensing are fundamental tools.

Disaster Management

The Disaster Management Unit successfully completed many of the original objectives of the SOPAC Disaster Management Project, established in 2000, and also commenced the transition to a broader programmatic approach in the introduction of Disaster Reduction and Risk Management concepts and practices in the region.

Broadening the focus of Disaster Reduction and Risk Management



High-Level Advocacy Team led by Dr Langi Kavaliku with the Prime Minister and Minister of Regional Development of Fiji.

A more integrated approach to the reduction of community vulnerability, whilst at the same time strengthening national resilience to effectively deal with the impact of uncontrolled disasters, is seen as the most appropriate strategy in terms of achieving long-term sustainability in Small Island Developing States of the Pacific. This new and broader approach also allows a closer alignment to international disaster reduction priorities as articulated in the International Strategy for Disaster Reduction.

From a global perspective the continuing increases in levels of community vulnerability is forcing national governments and the donor community to seek new and more innovative solutions to strengthening resilience in order to successfully achieve sustainable development goals and targets.

In the Pacific region the challenges are compounded by the fact that national resources are severely limited, therefore solutions have to be both cost-effective and sustainable. The SOPAC Disaster Management Unit Project is meeting these challenges by utilising the expertise and support of a broad range of development partners. One of the Project's key challenges was to assist the regional disaster managers to make the transition to a new and broader approach to the development of national disaster management programmes that reduced the impact of hazards and risks on vulnerable communities in the region. At the same time the Disaster Management Unit High-Level Advocacy Team has been encouraging national governments to adopt risk management practices and an integrated national approach to risk reduction through the application of a Comprehensive Hazard and Risk Management or CHARM tool that addresses community vulnerability to all identified hazards.

During the past twelve months the project has, through consultation with stakeholder countries, supported the following capacity building initiatives:

Regional Capacity Building Initiatives

- Two sub-regional Public Safety and Risk Management Workshops;
- Development of a new Public Safety and Risk Management Programme;
- Development of a range of strategic partnerships with regional and international organisations;
- Representation of the interests of Pacific Island Countries on the International Strategy for Disaster Reduction Taskforce;
- Development of the Comprehensive Hazard and Risk Management (CHARM) guidelines and information video;
- Development of a regional resource database; and
- Development and implementation of a high-level advocacy strategy.

Disaster Management

National Capacity Building Initiatives

A range of capacity-building activities ranging from institutional strengthening of individual National Disaster Management Offices, the supply of critical communication resources through to workshops and training programmes have been conducted in the following Pacific Island Countries: Cook Islands, Fiji, Kiribati, Marshall Islands, Niue, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.

These included:

- Reviewing the Institutional strengthening needs of a number of National Disaster Management Offices;
- Supply of radio communications equipment;
- Reviewing the capacity of emergency services;
- Conducting disaster planning exercises;
- Developing training courses to address identified needs;
- Assisting with the formation of national training committees;
- Conducting CHARM awareness-raising workshops;
- Conducting post-disaster assessments; and
- Conducting hazard assessments.

High-Level Advocacy

The High-Level Advocacy Team led by Dr Langi Kavaliku held meetings with individual Ministers in Fiji as a lead up to a full briefing of the Prime Minister and members of Cabinet during one of their scheduled Cabinet meetings in August 2002.

The team was given the opportunity to make a presentation to the Fiji Cabinet on the development and implementation of the Comprehensive Hazard and Risk Management (CHARM) approach that is being advocated by SOPAC as a tool for the mainstreaming of risk management in member countries. Although Fiji is the first country to officially endorse this approach it at national government level, a number of other countries including, Palau, Tonga, Samoa and Vanuatu, have also indicated their support of the CHARM process as a tool for building safer and more-resilient communities.



Participants of the Regional Workshop on Public Safety and Risk Management held in Palau.

Contribution of Development Partners

A number of development partners have provided a great deal of support to the capacity building efforts in the Pacific over the past 12 months. These have included:

- A national Disaster Awareness Workshop conducted in the Marshall Islands by Emergency Management Australia;
- The development of an NDMO-mentoring programme by the Queensland Department of Emergency Services;
- A review of the Palau Fire and Rescue Service by the New Zealand Fire Service;
- A review of the Vanuatu Fire Service by the Melbourne Metropolitan Fire and Emergency Service;
- A Public Safety and Risk Management Workshop in Samoa by the New Zealand Ministry of Civil Defence and Emergency Management;
- The joint development of an Emergency Operations Center training course with The Asia Foundation/Office of Foreign Disaster Assistance;
- The development of Public Awareness information in Tuvalu by Emergency Management Australia; and
- The development of a new Managing Community Risk Training Course with the Queensland Department of Emergency Services .

The significant contribution made by these activities has supported the overall capacity building in the region in a very cost-effective way.

"SOPAC has given us a good channel of exposure to advance technology programmes, leading to a better vision for our development.



Here I would like to share with you something that had greatly impressed me earlier this year in April. I had received a copy of SOPAC's 2001 Annual Meeting Report and the cover had a satellite photo of an aerial view of Majuro, in the Marshall Islands taken from 400 kms above the ground. Before coming to Fiji towards the end of last year, I was previously stationed in Majuro, and in the centre of that cover photo, clearly recognisable, I was very shocked to see my official car parked outside my office in Majuro. I was totally amazed at what SOPAC could do and had mentioned this to Director Alfred Simpson. I was further astonished when Director Simpson then presented me with an even clearer, enlarged, colour photo of the same aerial view that was the original photo used on the cover of SOPAC's Annual Report. I will always treasure this photo, not only as a memento but also with the knowledge that SOPAC's efforts in promoting scientific technology in the region are being successfully accomplished."

"My Government has fully supported many productive programmes hosted by SOPAC in past years, and would like to acknowledge the excellent results for the betterment of the region. I can assure you, that the support of the Government of Taiwan/ROC will continue in the months and years ahead."

Fu-Tien Liu, Representative, Trade Mission of the Republic of China to Fiji (Taiwan/ROC) at the SOPAC 31st Session, September 2002.

Human Resources Development



The *Certificate in Earth Science and Marine Geology* provides technology transfer and continuing professional development of practical skills and knowledge for those who are part of Geoscience survey teams or are laboratory geological technicians in Earth-System sciences and ancillary fields in the Pacific Islands region. The programme is open to candidates nominated by governments and administrations of the Pacific Islands region, and private sector and corporate entities.



The year 2002 saw the completion by students of the final-year of the *Certificate in Earth Science and Marine Geology Course* that was deferred from 2000. Fifteen students from SOPAC member countries graduated with a *Certificate in Earth Science and Marine Geology* from the University of the South Pacific in late 2002, after passing courses which included: Earth Resources and Mapping, Earth Science and Development Projects, Hazards, and, Hydrology and Hydrogeology.



The confirmation of funding from the Commonwealth Secretariat enabled the offer of a new cycle of the *Certificate in Earth Science and Marine Geology Course*. The first of three, twelve-week periods of intense tuition offered in the latter part of 2002 were successfully completed. Tuition comprising formal lectures and tutorials, laboratory sessions and practical field excursions were provided in the areas of basic earth science and marine geology. Formal examinations and regular assignments provided the assessment mechanism to determine progress and monitor performance.



Students at work.

Seventeen students from eleven SOPAC member countries (Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Nauru, Niue, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu) enrolled in the course and successfully progressed to enrol in the second year of the course.

In addition, the Secretariat accommodated numerous fellowship-training attachments as an integral part of specific activities delivered across most areas of its technical work programme. In-country activities, whenever appropriate, have endeavoured to include a training component to build national capacity and raise awareness. One such example being the onboard participation and post-cruise training, at the Metal Mining Agency

of Japan, of a Marshall Islands national under the Japan/SOPAC Deep-sea Mineral Resources Research Programme initiative conducted in June/July 2002.

The Secretariat responded to the request of the University of the South Pacific to provide support to the delivery of a number of their Bachelor of Science and Postgraduate degree courses in Marine and Earth Science. The assistance provided included the preparation and presentation of lectures, preparation and leading of field excursions and the co-supervision of postgraduate students. The Secretariat also contributed to design and development of training activities of the long-standing AusAID funded Pacific Sea Level and Climate Monitoring Project-Phase III to ensure appropriateness and sustainability.

Publications and Library

Being a support Unit, the Publications and Library was involved in supporting the work of other units within SOPAC along with other development partners from outside SOPAC (including NGOs) concerned with gender equity, the environment, science, technology and other areas that fall within the ambit of the SOPAC mandate. Where the Unit has been able to assist within its area of expertise, the assistance was not withheld, sometimes to the detriment of routine services.



Akosita Seru, Fiji Fisheries Department Assistant Librarian and Ulusapeti Tiitii, Samoa Fisheries Information Officer with SOPAC librarian, Sunita Prasad (left).

In 2002, a considerable amount of staff time was spent on assisting the Water Unit with the Pacific Regional Consultation on Water in Small Island countries, the preparatory conference to the Third World Water Forum in Kyoto.

This advice and assistance in the area of publishing support was also provided to the Republic of Marshall Islands Embassy in Fiji, the Kiribati Ministry of Natural Resource Development, and the Fiji Women's Rights Movement among others. Publications and Library services will continue to provide this service as and when it can be accommodated within its programmed corporate responsibilities.

Dissemination of information on SOPAC Work Programme activities was enhanced with the introduction of an e-mail news update supplement to the printed SOPAC newsletter. Judging from the response to these more regular news bulletins the initiative has been a success, with the frequency of the bulletins expected to rise in the new year.

Corporate publications to accompany the restructuring of the organisation that were published during 2002 included the *Corporate Plan for 2002-2004*, the *Sustainable Development Strategy Paper* and a *Work Programmes & Strategies Paper*. These were in addition to the annual complement of corporate publications that included the Annual Report Summary, Annual Meeting Proceedings volume and newsletters. A full list of reports and publications produced by the SOPAC Secretariat in the reporting period is in Appendix 2.

The year 2002 also saw excellent progress in the completion of a couple of large publishing projects with both expecting to be sent to press in the first half of 2003. These are the *Geology and Stratigraphy of Central and Southwest Guam: An Eocene/Oligocene Volcanic Arc* compiled by Dr Frank Kilmer (SOPAC Technical Report 353); and *Pacific Minerals in the New Millennium: Science, Exploration, Mining, and Community – The Jackson Lum Volume* edited by Dr Mike Petterson (SOPAC Technical Bulletin 11).

The absence of a resident technical editor from the staff complement at the SOPAC Secretariat, means that technical editorial work needed for the large projects above was carried out across boundaries and long distances. A range of peer reviewers and editors are available to SOPAC through its Science, Technology and Resources Network and its Technical Advisory Group. While this support is in-kind and cost-saving to SOPAC, the down side is the time involved in completing

Publications and Library

"KIGAM has been implementing our [Korean] supporting programme for the past few years in the Pacific region. As far as SOPAC is concerned, KIGAM will continue to provide support to the on-going programme and will look forward to widening the supporting areas for mutual benefit. In this regard, KIGAM will conclude a renewal of [the] Memorandum of Understanding with SOPAC that may facilitate and strengthen such cooperation."



Sung Rock Lee of the Korea Institute of Geoscience and Mineral Resources (KIGAM) in the Korean Statement to the SOPAC 31st Session, September 2002.

the editorial and publication processes. The power of the Internet is exploited to the maximum in facilitating this work.

The public education and awareness responsibilities of the unit were carried out with the compiling and production of corporate newsletters and in assisting other units within the Secretariat with printing and disseminating sector-based newsletters. Assistance with preparing campaign materials for World Water Day and Earth Day observations in the region coordinated by the Water and Energy Units, respectively, was also rendered.

Excellent progress was achieved on the ongoing task of the electronic conversion of historical printed reports to make

them available in a virtual library. The project commenced in mid 2001 with a special grant for equipment and staff time from the Government of New Zealand.

The following series have been 'captured': SOPAC Projects, SOPAC News, SOPAC Trip Reports, PEN (Pacific Energy News) and the GIS and Remote Sensing newsletter. The current practice is to acquire all issues of all series of reports electronically from compilers and authors upon finalisation and these become available immediately on the SOPAC Virtual Library which is accessible on the SOPAC website (www.sopac.org).

The conversion of pre-electronic issues of other series not mentioned above as completed, have yet to be started. The Technical Reports are currently being scanned and converted; and due to the sheer volume of text and images being scanned and the line-by-line review of scanned text, the processing of the remaining series will run into years. We estimate the work on historical reports alone will take 5 years to complete. A second phase is already apparent, given the size of the map collection maintained at the SOPAC Secretariat.

Library services is an ongoing service to the Secretariat, researchers, and students. A number of SOPAC member-country nationals are studying abroad and making extensive use of the Internet for research. More than half of the requests processed for researchers have come through this media. The library also maintains an active exchange scheme with several libraries in the region and worldwide which helps the librarian source material for researchers from within and outside SOPAC. Close ties are maintained with other CROP information centres and especially with the University of the South Pacific, as a member of the Pacific Islands Marine Resources Information System network.

Corporate Services Programme

Finance and Administration

The work of the Finance and Administration Unit throughout the year focused on ensuring the following services were provided:

- Professional financial services;
- Advice to management on financial matters;
- Timely management, donor, financial and audit reports;
- Assistance in the preparation of Work Programme and Budget;
- Professional personnel services which included ongoing job sizing;
- Implementation of Performance Management System at the Secretariat;
- Administration, office and property support services which include relocation and refurbishing of work spaces;
- Design, implementation and maintenance of operational systems;
- Development and maintenance of project databases; and
- Maintenance of finance package funded by Australia (Sun Business Account).

Timely preparation and reporting to donors and support agencies included the following:

Australia : Prepared financial reports on Australia's annual and special funding to SOPAC for the annual SOPAC/Australia high-level consultation.

New Zealand : Prepared financial reports on New Zealand's annual and special funding to SOPAC for the annual SOPAC/New Zealand high-level consultation.

European Union : Prepared initial financial reports, narratives and budget for the EDF8 project.

Other Funding : Ad-hoc reports and financial statements for new and ad-hoc donor funding provided during the year.

"[The] European Union [is] happy to support the work of SOPAC by means of addressing the important objective of vulnerability reduction in the 8 Pacific ACP States covered by the LOME Convention through the development of an integrated planning and management system (Island Systems Management) in the sectors impacting on hazard mitigation and risk assessment, aggregates for construction and water and sanitation. This programme will be implemented over an estimated 4 years and the European contribution will be 7M Euros. It is our clear intention to broaden the programme and include also the 6 new Pacific ACP States under the Cotonou Agreement: Cook Islands, FSM, Marshall Islands, Nauru, Niue and Palau in the near future.



Substantial work still needs to be done in focusing the programme on reducing the vulnerability of Island States and determine the concrete activities and results to be expected. The present meeting and subsequent regional and /or bilateral discussions will surely assist in this process of prioritising project activities and deliver tangible responses on what will be the practical results for the end-beneficiaries."

Statement of the Delegation of the European Union for the Pacific presented by HE Frans Baan Head of Delegation of the European Commission for the Pacific, at the 31st SOPAC Session, September 2002.

Work Programme Management

Work Programme Management is ongoing and specific reports are tabled in this volume under the various Units.

The major management preoccupations in 2002 were:

- (1) getting the new four-year, seven-million Euro, EU-SOPAC Project on *Reducing Vulnerability of Pacific ACP States* off the ground; and
- (2) preparing the Secretariat to enter 2003 under the new corporate structure approved in 2002. (See New Corporate Structure section)

Both undertakings brought about an order of change with a magnitude similar to the establishment of the organisation itself more than thirty years ago. The large EU-SOPAC Project, birthed an entity that is somewhat like the UN project that evolved into SOPAC itself, but taking the characteristics of SOPAC as a legitimate parent and partner with the European Union in addressing community vulnerability issues in the Pacific.

The EU Project when fully staffed will add ten more people to the small staff complement of around sixty at the SOPAC Secretariat and from 2003, when fully operational, will inflate the annual budget by approximately 25%.

During the early months of operation of the Project extending into 2003, national stakeholder consultations have been held in each country participating in the Project (Fiji, Kiribati, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu). Geographic areas to be included in the spatial information database development were agreed to by each national stakeholder meeting. At the same time this agreement has determined the communities that will be targeted in so far as achieving the Project goal of reducing vulnerability is concerned.

The areas agreed are as follows:

- *Fiji*: The southern coast of the main island, Viti Levu.
- *Kiribati*: The main atoll of Tarawa together with Butaritari, Abemama, Onotoa and Kiritimati.
- *Papua New Guinea*: The north coast of the main island west of Astrolabe Bay.
- *Samoa*: Both the main islands of Upolu and Savai'i.
- *Solomon Islands*: The central and eastern part of the north coast of the main island Guadalcanal, part of the west coast of Malaita, and Morovo Lagoon, New Georgia.
- *Tonga*: The main island of Tongatapu.
- *Tuvalu*: All nine atolls especially Funafuti the main atoll.
- *Vanuatu*: The main island of Efate

Furthermore, the consultations enabled the Project Logframe to be revised, and the first draft of national logframes to be developed. These national logframes will be revised, and monitored by the country stakeholder groups as the project implementation progresses.

Work Programme Management

Following from the stakeholder meetings, these key implementation activities took place in late 2002 and will extend into early 2003:

Fiji: Mapping of offshore area of entire coast of southern Viti Levu completed;

Fiji: Three GIS training courses held;

Fiji: Ikonos satellite imagery ordered for Navua and Sigatoka River catchments;

Papua New Guinea: Project staff participated in national sustainable development workshop;

Solomon Islands: Project in collaboration with SOPAC provided new email connection to Ministry of Mines and Energy. Previously they had no such connection;

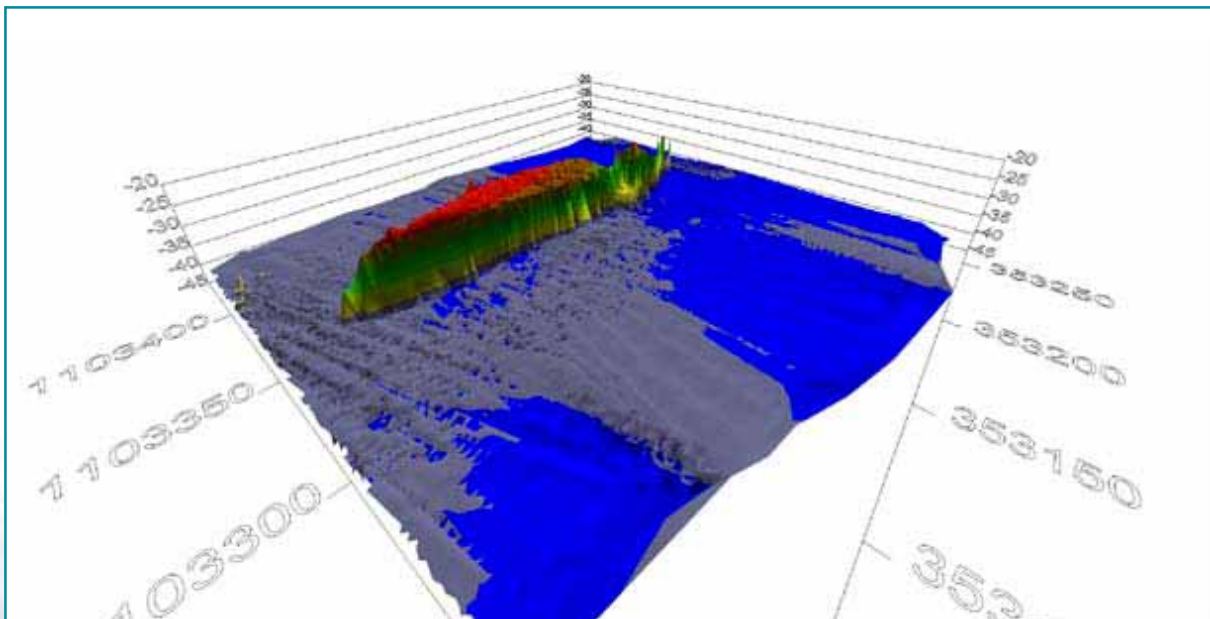
Samoa: Ikonos satellite imagery ordered for Savai'i and Upolu;

Tuvalu: Ikonos satellite imagery ordered of all nine atolls;

Vanuatu: First GIS Training Workshop held;

Vanuatu: GPS road network survey completed;

Vanuatu: Ikonos satellite image of Efate ordered.



Seabed map showing WWII wreck, the USS Mississinewa, on the floor of Ulithi Lagoon in the Federated States of Micronesia. 3D rendering of seafloor survey results clearly shows the wreck. Equipment, software and expertise brought into the region by the EU-SOPAC Project will enhance the SOPAC Secretariat's capability for providing accurate information and management tools in a format to be easily grasped by a non-technical audience. Community resilience of the SOPAC beneficiaries can only be enhanced with the provision of these management tools.

Environmental Vulnerability Index

The Environmental Vulnerability Index (EVI) developed by SOPAC and its partners (including Pacific and other Small Island Developing States) together with New Zealand, Ireland, Italy, Norway, the United Nations Environment Programme (UNEP) and several other organisations was prepared in response to the call made in the 1994 Barbados Programme of Action. In paragraphs 113 and 114 of the Programme of Action specific calls were made for the development of a composite vulnerability index that included both economic and ecological vulnerability.

Significant progress was made towards meeting the goal of constructing a globally-robust EVI tool. Achievements over the past year include:

- Establishment of partnerships with collaborators from countries beyond SIDS to ensure the provision of critically-important data on environmental vulnerability and support towards EVI development. Collaboration and environmental vulnerability data was collected from several targeted countries including: Australia, Bangladesh, Barbados, Botswana, Cook Islands, Costa Rica, Federated States of Micronesia, Fiji, Greece, Jamaica, Kenya, Kiribati, Kyrgyzstan, New Zealand, Nauru, Nepal, Niue, Malta, Maldives, Marshall Islands, Mauritius, Palau, Papua New Guinea, Philippines, Samoa, Singapore, St Lucia, Thailand, Tonga, Trinidad & Tobago, Tuvalu and Vanuatu.
- Greater international recognition and awareness of the EVI and its potential role in domestic and international processes through exposure at international and regional meetings, presentations, circulation of reports and through the Internet.
- Several information documents and reports were produced to record the EVI development process and to ensure that the EVI work was reviewed and discussed as widely as possible. These efforts are an important part of increasing awareness and knowledge of the issue of environmental vulnerability.
- Strengthening of the country-focused and indicator-focused EVI databases through input of further data and development of an interactive web interface to simplify data submission by collaborators.
- These databases have provided the basis for the testing and refinement process and most recently the release of a *Demonstration EVI* (SOPAC Technical Report 356).

The *Demonstration EVI* marks the presentation of a model, which is fully-functional in all respects except that it is missing data for some of the EVI's indicators. It also presents the first functional results for the EVI for 235 countries.

Results of the *Demonstration EVI* are based on publicly-available datasets and data collected from 32 collaborating countries. The list is accompanied by detailed analyses of 41 indicators for which sufficient data were available, and country profile sheets with vulnerability issues identified. All results presented are provisional and are used only for demonstrating the capabilities of the EVI. Although the values given were as accurate as possible, results are likely to change when all indicators can be included and data gaps are filled.

To finalise the EVI, it will be necessary to distribute the results of this *Demonstration EVI*, revise, update and complete the data collected from collaborators; collect data for all outstanding indicators (13); set up permanent data collection mechanisms with all national and international stakeholders; host a second Think Tank to review all technical aspects of the index; retest the EVI using finalised data; and channel the final EVI through regional and international processes such as the Commission on Sustainable Development and the Barbados Programme of Action (ten year review in 2004).

New Corporate Structure

In addition to delivering the SOPAC Work Programme during 2002, the introduction of the SOPAC Corporate Plan 2002 to 2004, and the accompanying Business Plan 2002, made this year one of transition and change within the Secretariat.

The Corporate Plan targets improved strategic management for the Commission. The focus is on the Secretariat's work for its principal stakeholder group, the island communities of the Pacific, by identifying emerging priorities for work, improving work programme activities, and ensuring effective delivery. To effectively address the Commission's mandate, the Corporate Plan identified improvement of natural resource management, enhancement of access to basic necessities and reduction of community vulnerability as fundamental development priorities that the Commission addresses and intends to address in the medium term.

"SOPAC has made enormous progress in becoming more strategic with the adoption of a new corporate plan, a policy paper on its approach to poverty alleviation, the development of a Sustainable Development Strategy and a stronger focus on gender.

Of course other management and structural changes are needed and desirable, but we should like to encourage SOPAC not to lose sight of the need for intensive implementation of its work programme, which would contribute to the implementation plan of the World Summit on Sustainable Development. SOPAC also has a key role to play in supporting, along with other regional partners, a more strategic approach to poverty elimination at the national level, in order to achieving long-term sustainable outcomes."



James Medhurst, First Secretary, British High Commission, presenting the UK statement to the SOPAC Council at its 31st Session, September 2002.

Within the framework of the Corporate Plan, SOPAC commenced restructuring, both physically and conceptually in 2002. The transition has resulted in the previous ten technical units being distilled into a more cohesive and coordinated structure of three broad technical programmes, plus a corporate services programme to support the Secretariat activities. All senior professional staff have been involved in facilitating this process, which has led to the design and development of a logical framework and thematic documentation necessary to support and present the new corporate structure and strategic direction.

This process has been accompanied by the publication of the *SOPAC Programmes and Strategies Paper*, which sets out the rationale and content of the SOPAC Programmes, articulated in the Corporate Plan as key result areas. This paper represents the conceptual work carried out during 2002, and provides the framework on which SOPAC will build its work programme in 2003 and beyond. Furthermore, this document outlines the Council-endorsed new programme-based strategic management approach and as such represents "work in progress" as Council will need to continually monitor progress and effectiveness throughout its implementation. This new structure is being implemented from 1 January 2003.

A supporting important paper is the *SOPAC Sustainable Development Strategy (SDS)*, which synthesises sustainable development into a regional context and sets out SOPAC's role and response to this. As such the SDS lays down the philosophy and rationale behind the Secretariat's mandate, and its core focus on sustainable development. In the year of the World Summit on Sustainable Development (WSSD) in Johannesburg, this paper represented the contribution made by SOPAC through the various CROP working groups in preparing the Pacific submission and actively supporting Pacific countries throughout the WSSD preparatory process.

New Corporate Structure

Following the Corporate Plan and Programmes and Strategies paper, from January 2003, SOPAC will coordinate and execute operational projects under the following technical programmes:

Ocean and Islands

Corporate Plan description: An integrated programme focused on research, development and management of non-living resources in ocean and island systems addressing issues relating to seabed resources, energy, maritime boundary delimitation and monitoring of ocean processes.

Strategic goal: To improve scientific knowledge of ocean and island ecosystems for the sustainable management of natural resources.

Community Lifelines

Corporate Plan description: A diversified programme that strengthens national capacities in energy, water and sanitation, information and communications.

Strategic goal: To improve communities' access to energy, water and sanitation, and information and communication technologies for sustainable livelihoods.

Community Risk

Corporate Plan description: A comprehensive programme aimed at reduction of community vulnerability through improved hazard assessment and risk management.

Strategic goal: To improve hazard assessment and risk management practices to build safer communities.

Corporate Services

Each programme is supported by the Corporate Services Programme, which encompasses corporate management, administration, personnel, finance and technical support (including information communication and technology (ICT), library and publications).

Copies of the Corporate Plan 2002 - 2004, and SOPAC Programmes and Strategies Paper are available from the Secretariat.



Appendices

APPENDIX 1: SUMMARY OF 2002 DONOR FUNDING (BY PROGRAMME)

ANTICIPATED SOURCE OF FUNDS	GRAND TOTAL	RESOURCE DEVELOPMENT PROGRAMME	ENVIRONMENTAL SCIENCE PROGRAMME	NATIONAL CAPACITY DEVELOPMENT PROGRAMME	CORPORATE SERVICES PROGRAMME	WORK PROGRAMME MANAGEMENT
ADB	181, 521	181,521				
AUSTRALIA: Annual Grant Special Grant	409, 509 1,498, 441	110, 009	299, 500 516,441	982, 000		
CFTC	315, 234		65, 234	250, 000		
Denmark/UNEP	300, 000	300, 000				
EMA	23, 500			23, 500		
Fiji	77, 300		77, 300			
France	68, 328			68, 328		
ISDWC	124, 766	124, 766				
Japan	160, 000	160, 000				
NEW ZEALAND: Annual Grant NZ Special Grant	373, 094 573, 500	316, 094		522, 500	51, 000	57, 000
OFDA	52, 000			52, 000		
PEREZ GURERRO T F	172, 593	172, 593				
TAIWAN / ROC /	343, 299	82, 000	261, 299			
UNEP	118, 000	118, 000				
UNESCO IOC	108, 696		108, 696			
United Kingdom (ODI)	120, 400	120, 400				
United Kingdom/DFID	1, 091, 600	261, 600	830 , 000			
United Nations (UN)	62, 500	62, 500				
VARIOUS	136, 906	49, 906	87, 000			
World Bank	110, 000		110, 000			
Total Budget	6, 421, 187	2, 059, 389	2, 355, 470	1, 898, 328	51, 000	57, 000

Appendix 2

APPENDIX 2: LIST OF REPORTS & PUBLICATIONS (AS AT 8 AUGUST 2002)

SOPAC PROCEEDINGS

1. SOPAC Secretariat. 2001. Proceedings of the Thirtieth Session (hosted by the Government of the Republic of the Marshall Islands in Majuro, Marshall Islands, 17-24 October 2001).

SOPAC TECHNICAL REPORTS

2. South Pacific Disaster Reduction Programme (SPDRP) 2002. Gender, households, community and disaster management: case studies from the Pacific Islands. SOPAC Technical Report 282: 95 pages.
3. He, C. 2001. Coastal erosion monitoring and advice on response strategies, Nauru. SOPAC Technical Report 323: 22 pages; 21 figs.
4. Smith, R. 2001. Sedimentation in Draunibota Bay, Suva Harbour, Fiji Islands. SOPAC Technical Report 336. 40 pages. Restricted.
5. Yeo, S. 2001. A review of flooding in Apia, Samoa, April 2001. SOPAC Technical Report 338: 39 pages.
6. He, C. 2001. Coastal erosion assessment Malem Village, Kosrae State, Federated States of Micronesia. SOPAC Technical Report 341: 26 pages; 17 figs.; 2 tables
7. Overmars, M. 2001. Water resources assessment, Laura, Majuro, Marshall Islands. SOPAC Technical Report 342. 20 pages.
8. Cronin, S.J., Taylor, P.W., Malele, F. [2001]. Final report: Savai'i, Volcanic hazards project, Samoa, October 2000. SOPAC Technical Report 343: 34 pages.
9. Kaloumaira, A. 2001. Reducing the impacts of environmental emergencies through early warning and preparedness. The case of El Niño Southern Oscillation (ENSO), The Fiji Case Study. SOPAC Technical Report 344. 59 pages. [SPDRP report]
10. Kaly, U.L., Pratt, C.R., Khaka, E., Dahl, A.L., Briguglio, L., Sale-Mario, E. 2001. Globalising the Environmental Vulnerability Index (EVI): Proceedings of the International EVI Meeting, 27-29 August 2001, Geneva, Switzerland. SOPAC Technical Report 345.
11. Lal, A. 2002. Survey Report SOPAC DGPS Reference Station, Tamavua, Fiji Islands, 5 October 2001. SOPAC Technical Report 346. [in press]
12. Dawe, P. 2002. Water Demand Management: Leakage assessment and detection in Majuro, Marshall Islands. SOPAC Technical Report 347. [in press]
13. Lal, A. 2002. Survey of Ravodrau Bay Beach Profiles, Deuba, Fiji Islands. SOPAC Technical Report 348.
14. Griffin, J. 2001. Professional development needs analysis. SOPAC Technical Report 349: 54 pages; 4 tables, 1 fig.

15. Barr, J. 2001. Emergency Operations Centres: A training manual for Pacific Island Countries. SOPAC Technical Report 350: 75 pages. [SPDRP report]
16. Whyte, J. (eds.) South Pacific Disaster Reduction Programme (SPDRP) 2001. Vulnerability reduction: a community training guide for Pacific Island Countries. SOPAC Technical Report 351: 123 pages; 2 app.
17. Dunlop-Stewart 2002, Quantitative assessment of risk to infrastructure due to large natural catastrophes in the Port Vila-Mele area, Vanuatu. SOPAC Technical Report 352. Restricted.

SOPAC CRUISE REPORTS

18. Binns, R.A. (et.al) 2002. Summary Cruise Report, RV Franklin, FR-02/2002 Bismarck-2002." Variability related to subduction style of submarine hydrothermal and volcanic activity in the Western Bismarck Island Arc, Papua New Guinea. SOPAC Cruise Report 151. RESTRICTED
19. Okamoto, N. 2002. Preliminary Cruise Report on the Japan/SOPAC Deepsea Cooperative Mineral Resources Study Program, R/V Hakurei-Marui No.2, Marshall Islands. SOPAC Cruise Report 152. CONFIDENTIAL

SOPAC PRELIMINARY REPORTS

20. He, C. 2001. Establishment of beach profiles for Nauru. SOPAC Preliminary Report 132: 24 p.
21. Shorten, G.G. 2002. Earthquake and tsunami damage assessment in Port Vila. SOPAC Preliminary Report 135: 10 p.

SOPAC MISCELLANEOUS REPORTS

22. South Pacific Applied Geoscience Commission (SOPAC) 2001. Poverty alleviation: SOPAC's philosophy and approach. SOPAC Miscellaneous Report 370: 12 p.
23. He, C. 2001. Overtopping and flooding: future threats to low-lying atoll island countries: a case study in South Tarawa, Republic of Kiribati. SOPAC Miscellaneous Report 438: 9 p.; attachments Note: includes abstracts. Conference: Detecting Environmental Change Science and Society (2001 : London, UK)
24. South Pacific Applied Geoscience Commission (SOPAC). Energy Unit 2001. Energy audit results of the South Pacific Applied Geoscience Commission headquarters in Suva, Fiji Islands. SOPAC Miscellaneous Report 439: 11 p.
25. Fairbairn, P. 2001. Pacific Islands Forum (PIF) Invitational Programme for Middle Management, 2-6 July 2001, Tokyo, Japan, Programme Report. SOPAC Miscellaneous Report 440.

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26. South Pacific Applied Geoscience Commission (SOPAC). Energy Unit 2001. Earth Day in the Pacific Islands: A collection of essays and posters on the theme: Energy, Transport and the Atmosphere. SOPAC Miscellaneous Report 441: 38 p.
27. Dawe, P. 2001. Summary of SOPAC Water Demand Management and Conservation Activities in the Pacific Region. SOPAC Miscellaneous Report 442. In press.
28. Allinson, L. 2001. Tuvalu ISP Re-establishment and Upgrade Status Report. SOPAC Miscellaneous Report 443. Restricted.
29. Carpenter, C. 2001. Water, sanitation and hygiene strategies for SOPAC 2001-2004. SOPAC Miscellaneous Report 444: 16 p.
30. Collen, J., Rodda, P. (eds) 2001. Abstracts of papers presented at the STAR session 2001. SOPAC Miscellaneous Report 445: 55 p.
31. Pratt, C. 2001. A strategy for PacificGOOS – Pacific Islands Regional Alliance for Global Ocean Observing System. SOPAC Miscellaneous 446. In press.
32. Kaly, U.L., Pratt, C.R. 2002. The environmental vulnerability index and profiles: outcome-focussed environmental management at the scale of countries. SOPAC Miscellaneous Report 447: 16 p.
33. Shorten, G. 2001. Seismic risk in Pacific Cities: Implications for planning, building code legislation, and urban search and rescue services. Presented at the Australian Earthquake Engineering Society Conference, 'Earthquake Codes in the Real World,' Canberra, 21-23 November 2001. SOPAC Miscellaneous Report 448.
34. South Pacific Applied Geoscience Commission (SOPAC) 2001. Corporate Plan 2002-2004. SOPAC Miscellaneous Report 449.
35. South Pacific Applied Geoscience Commission (SOPAC) 2001. Business Plan 2002. SOPAC Miscellaneous Report 450. Note: Attachment to SOPAC Corporate Plan 2002-2004.
36. Bower, R., Carpenter, C., Overmars, M. 2002. Regional meeting of stakeholders in wastewater management, 10-15 October 2001, Majuro, Marshall Islands. SOPAC Miscellaneous Report 451: 1 v.; 1 CD-ROM
37. Kaly, U., Pratt, C., Sale-Mario, E., White, O., Seddon, J. 2002. Progress Report: Environmental Vulnerability Index (EVI) Project: Initial testing of the Global EVI. SOPAC Miscellaneous Report 453. 52 pages.
38. Allinson, L. 2002. Review of ICT Capacity of Regional Rights Resource Team. [Prepared for Department of International Development, UK (DFID) and the United Nations Development Programme]. SOPAC Miscellaneous Report 454. Restricted.
39. White, O. 2002. CROP Trade and Private Sector Working Group Meeting, Tanoa International Hotel, Nadi, 24-25 January 2002, Summary workshop outcomes. SOPAC Miscellaneous Report 455.

40. Channan, L. 2002. Workshops on water quality Surveillance and Safety, Fiji, September and November 2001. SOPAC Miscellaneous Report 456. In press.
41. Channan, L. 2002. Vanuatu Water Quality Database User Manual. SOPAC Miscellaneous Report 457. In press.
42. SOPAC Unit Profiles, Strategic Plan Period 1999-2001. SOPAC Miscellaneous Report 460. 13 pages.
43. Kaly, U.L., Pratt, C.R., Howorth, R. 2002. Towards Managing Environmental Vulnerability in Small Islands Developing States (SIDS). SOPAC Miscellaneous Report 461, 16 pages, 1 appendix, 3 tables.
44. Pratt, C. 2002. Regional Maritime Boundaries Project Consultation – Summary Record, 24-26 April 2002, Nadi, Fiji Islands. SOPAC Miscellaneous Report 462.
45. South Pacific Applied Geoscience Commission (SOPAC) 2002. Pacific Island regional geothermal assessment and development initiative: a funding proposal. SOPAC Miscellaneous Report 463: 34 pages.
46. The CSA Group, 2001, Consultancy to review the SOPAC project proposal: “Integrated planning and management in the sectors impacting on Hazards, Aggregates and Water Resources in Pacific ACP States, and prepare a Financing Proposal for consideration by the European Commission. SOPAC Miscellaneous Report 464.
47. South Pacific Applied Geoscience Commission (SOPAC). Community Lifelines Programme 2002. Energy audit of the United Nations Food and Agriculture Organisation Sub-Regional Office in Apia, Samoa. SOPAC Miscellaneous Report 466: 18 p.
48. South Pacific Applied Geoscience Commission (SOPAC). Community Lifelines Programme 2002. Energy audit of the United Nations Development Programme Office, Apia, Samoa. SOPAC Miscellaneous Report 467: 18 p.
49. South Pacific Applied Geoscience Commission (SOPAC). Community Lifelines Programme 2002. Energy audit of the United Nations Educational, Scientific and Cultural Organisation Office for the Pacific States, Apia, Samoa. SOPAC Miscellaneous Report 468: 18 p.
50. South Pacific Applied Geoscience Commission (SOPAC). Community Lifelines Programme 2002. Energy audit of the United Nations World Health Organisation Office in Apia, Samoa. SOPAC Miscellaneous Report 469: 18 p.; 3 annexes
51. White, O. (Comp.) 2002, SOPAC 2003 Strategic Management Planning Workshop, Summary Report, Centra Hotel, Pacific Harbour, 12-14 June 2002. SOPAC Miscellaneous Report 470.

Appendix 2

SOPAC JOINT CONTRIBUTIONS

52. OCHA/SOPAC. 2001. Report: Building safer urban communities in the South Pacific Regional Workshop, Holiday Inn, Suva, Fiji. 7-9 November, 2001. (SOPAC Joint Contribution 138). 1 vol.; 1 CD-ROM.
53. South Pacific Disaster Reduction Programme (SPDRP). 2002. Suva Earthquake Risk Management Scenario Pilot Project (SERMP). (SOPAC Joint Contribution 139).
54. Note: Part I: Summary Report; Part II: Recommendations: Priorities, Rationale & Strategies for Achievement; Part III: Methodology
55. Japan International Cooperation Agency (JICA), Metal Mining Agency of Japan (MMAJ). 2002. Report on the cooperative study project on the deepsea mineral resources in selected offshore areas of the SOPAC region (volume 2) sea area of the Republic of Fiji Islands. (SOPAC Joint Contribution 140).
56. CROP ICT Working Group. 2002. Pacific Islands Information and Communication Technologies Policy and Strategic Plan (PIIPP). Information and Communication Technologies for every Pacific Islander. (SOPAC Joint Contribution 141).
57. Garaebiti, E., Shorten, G., Regnier, M., Naidu, P. et al. 2002. Assessment of the Port Vila Earthquake, Vanuatu, 2nd January 2002. (SOPAC Joint Contribution 142).
58. United Nations Environment Programme (UNEP), South Pacific Applied Geoscience Commission (SOPAC). 1999. A directory of environmentally sound technologies for the integrated management of solid, liquid and hazardous waste for small island developing states (SIDS) in the Pacific region. (SOPAC Joint Contribution 143). 128 p. Note: Compiled by OPUS International.

REGIONAL MARITIME BOUNDARIES STATUS REPORTS (CONFIDENTIAL)

1. Status Report for the Cook Islands
SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 472 [April 2002] ; Pages 20
2. Status Report for Fiji SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 473 [April 2002] ; Pages 10
3. Status Report for Federated States of Micronesia SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 474. [April 2002]; Pages 15
4. Status Report for Kiribati SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 475. [April 2002] ; Pages 17

5. Status Report for Marshall Islands SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 476. [April 2002]; Pages 21
6. Status Report for Nauru SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 477. [April 2002]; Pages 8
7. Status Report for Niue SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 478. [April 2002]; Pages 9
8. Status Report for Palau SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 479. [April 2002]; Pages 16
9. Status Report for Papua New Guinea SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 480. [April 2002]; Pages 11
10. Status Report for Samoa SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 481. [April 2002]; Pages 8
11. Status Report for Solomon Islands SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 482. [April 2002]; Pages 11
12. Status Report for Tonga SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 483. [April 2002]; Pages 10
13. Status Report for Tuvalu SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 484. [April 2002]; Pages 11
14. Status Report for Vanuatu SOPAC holdings of maritime boundaries delimitation data and information, following transfer of existing data and information from FFA, February 2002. SOPAC Miscellaneous Report 485. [April 2002]; Pages 10

OTHER REPORTS & PUBLICATIONS

Prepared, published or in press at the time of writing:

- 6 Training reports
- 5 Trip Reports

Appendix 2

ROUTINE PUBLISHING PROJECTS

Completed were:

- 1 Annual Report Summary (for year 2001)
- 3 issues of the newsletter *SOPAC News*
- 9 issues of the e-mail newsletter *SOPAC NewsUpdate*

The following routine newsletters are also produced within the Secretariat to report on miscellaneous activities as they occur within Projects or Units:

Newsletter Title	Responsible Unit(s)	Circulation (Minimum)
Water & Sanitation	Water Resources	135
Risky Business	Disaster Management	400
Snapshot (e-mail only)	Disaster Management	45
Pacific Energy News (PEN)	Energy	210 (150 by e-mail; 60 by post)
Pacific GIS & Remote Sensing News	ITU and Publications & Library	301
SDS Newsletter	SOPAC SDS Project Team	50
EVI Monthly update (informal)	EVI Project Team	12 (participating countries only)

NON-ROUTINE PUBLISHING PROJECTS

Completed were:

- 1 issue of the ECOWOMAN Regional Network newsletter
- 3 issues of the Once & Future Action (OFAN) Global Network Newsletter
- 1 Manual on the Employment Rights of Women prepared for the Fiji Women's Rights Movement

APPENDIX 3: SECRETARIAT STAFF LIST (AS AT AUGUST 2002)

Part A: Established Staff

For SOPAC employees the date they joined SOPAC together with the start and finish dates of the current contract is given.

For SOPAC staff provided “inkind” by donors and support organisations/agencies the date they joined SOPAC is given (shown in *italics*).

SECTIONS	NAME	COUNTRY OF ORIGIN	DATE JOINED SOPAC	CONTRACT START	CONTRACT END
RESOURCE DEVELOPMENT PROGRAMME					
1 Programme Assistant	Laisa Baravilala-Baoa	Fiji	Jul 1987	Jan 2001	Dec 2003
Mineral Resources Unit					
2 Marine Geologist	Vacant				
3 Offshore Geologist	Nobuyuki Okamoto	Japan	Sep 2001	Sep 2001	Sep 2003
4 Resource Economist	Owen White	UK	Oct 2001	Oct 2001	Oct 2003
5 Senior Geology Technician	Sekove Motuiwaca	Fiji	April 1980	Jan 2001	Dec 2003
Water Resources Unit					
6 Water & Sanitation Specialist	Clive Carpenter	UK	April 2001	April 2001	April 2004
7 Economist Civil Engineer	Vacant				
8 Hydrogeologist	Marc Overmars	Netherlands	April 2000	April 2000	March 2003
9 Hydraulic Engineer	vacant				
10 Workshop Assistant	Setareki Ratu	Fiji	Oct 1986	Jan 2001	Dec 2003
Energy Unit					
11 Energy Coordinator	Paul Fairbairn	New Zealand	Jan 1998	Jan 1998	Jan 2004
12 Energy Advisor	Anare Matakaviti	Fiji	Feb 2000	Feb 2000	Feb 2003
ENVIRONMENTAL SCIENCE PROGRAMME					
13 Programme Assistant	Sisilia Gravelle	Fiji	Sep 1998	Jan 2001	Dec 2003
Coastal Unit					
14 Marine Geophysicist	Robert Smith	Australia	May 1998	Jul 2001	Jul 2004
15 Coastal Geologist	Vacant				
16 Coastal Geologist	Vacant				
17 Senior Electronics Technician	Simon Young	Fiji	Jan 1993	Jan 1996	Jan 2003
18 Electronics Technician	Peni Musunamasi	Fiji	Jun 1989	Jun 2001	Dec 2003
19 Assistant Surveyor	Andrick Lal	Fiji	Aug 2001	Aug 2001	Aug 2004
Hazard Assessment Unit					
20 Coastal Engineering Geologist	Vacant				
21 Technical Support Assistant	Graeme Frost	Fiji	Mar 1992	Jan 2001	Dec 2003
Ocean Unit					
22 Manager Ocean Affairs	Cristelle Pratt	New Zealand	May 2000	May 2000	May 2004
23 Programme Assistant	Vacant				
NATIONAL CAPACITY DEVELOPMENT PROGRAMME					
Human Resource Development Unit					
24 Training Coordinator	Russell Maharaj	Trinidad & Tobago	Nov 2001	Nov 2001	Nov 2004
Disaster Management Unit					
25 Disaster Management Coord.	Alan Mearns	Australia	June 2000	Jun 2000	Jun 2003
26 Disaster Management Adviser	Atu Kaloumaira	Fiji	Dec 2000	Jan 2001	Dec 2003
27 Professional Development Officer	Dawn Tuiloma	Samoa	Feb 2001	Feb 2001	Feb 2004
28 Disaster Management Trainer Support Officer	Lesu Waqaniburotu	Fiji	Dec 2001	Dec 2001	Dec 2003
29 Training Materials Development Specialist	Litea Biukoto	Fiji	March 1998	Sept 2001	Dec 2003
30 Programme Assistant	Vive Vuruya	Fiji	Sept 1998	Jan 2001	Dec 2003

Appendix 3

SECTIONS	NAME	COUNTRY OF ORIGIN	DATE JOINED SOPAC	CONTRACT START	CONTRACT END
NATIONAL CAPACITY DEVELOPMENT PROGRAMME					
Information Technology Unit					
51 Information Technology Manager	Les Allinson	Australia	Nov 1992	Nov 1998	Nov 2005
52 Database Development Officer	Frank Martin	France	Sep 1995	April 2000	April 2005
53 Computer Geologist	vacant				
54 Information Technology Officer	Timoci (Jim) Tora	Fiji	May 2001	May 2001	May 2004
Publications and Library Unit					
55 Publications Coordinator	Mereseini Bukarau	Fiji	Nov 1985	Oct 2000	Sept 2005
56 Library / Programme Assistant	Sunita Prasad	Fiji	May 1989	Jan 2001	Dec 2003
57 Publishing/Graphic Arts Assistant	Reuben Vulawalu	Fiji	April 2001	Mar 2001	Mar 2004
CORPORATE SERVICES PROGRAMME					
58 Programme Assistant	Vacant				
59 Executive Assistant	Litia Waradi	Fiji	Apr 1989	Jan 2001	Dec 2003
Management Unit					
40 Director	Alfred Simpson	Fiji	Feb 1995	Feb 2001	Feb 2004
41 Deputy Director	Russell Howorth	New Zealand	Mar 1998	Mar 2002	Mar 2005
42 Finance & Administration Contoller	Mohinish Kumar	Fiji	Mar 1998	Mar 2001	Mar 2004
43 Executive Planning Officer	Rafael Olaya	US	Feb 2002	Feb 2002	Feb 2003
Finance Unit					
45 Accountant	Makereta Kaurasi	Fiji	Apr 1998	Apr 2001	Apr 2004
44 Assistant Accountant	James Ram	Fiji	May 2000	Jan 2001	Dec 2004
Administration Unit					
45 Administrative Officer	Karen Datta	Australia	July 2001	Jul 2001	July 2004
46 Receptionist / Clerk	Unaisi Bainiloga	Fiji	Feb 1987	Jan 2001	Dec 2003
47 Driver / Clerk	Enele Gaunavou	Fiji	July 1988	Jan 2001	Dec 2004
48 Office Assistant Cleaner	Niu Daurewa	Fiji	Sep 1987	Jan 2001	Dec 2004

Part B: SOPAC non-established staff on short-term consultancies/contracts related to specific projects

SECTIONS	NAME	COUNTRY OF ORIGIN	DATE JOINED SOPAC	CONTRACT START	CONTRACT END
Mineral Resources Unit					
EVI Project Coordinator	Craig Pratt	United Kingdom	Aug 1998	Feb 2002	Feb 2005
EVI Project Assistant	Emma Sale Mario	Fiji	Feb 2001	Feb 2002	Feb 2005
Water Resources Unit					
Sanitation Project Officer	Rhonda Bower	Fiji	Nov 1998	Feb 2002	Feb 2005
CUSO Volunteer	Vacant				
Water Quality Officer	Ilana Burnese	Fiji	Jun 2002	Jun 2002	Jun 2003
Energy Unit					
Energy Project Officer	Rupeni Mario	Fiji	Oct 1998	Mar 2002	Mar 2005
Short Term Assistant	Yogita Chandra	Fiji	Jan 2002	Jan 2002	Jan 2005
Coastal Unit					
Consultant	Quan Chung	Fiji	Aug 1999	Jan 2002	Jan 2005
Hazard Assessment Unit					
Consultant	Purnima Naidu	Fiji	Aug 2000	Jan 2002	Jan 2005
Oceans Unit					
Consultant	Famiza Yunus	Fiji	Jan 1999	Jan 2002	Jan 2005
Information Technology Unit					
Remote Sensing Specialist	Wolf Forstreuter	German	Jan 1999	Jul 2002	Jul 2005
ICT Technician	Anthony Browne	Fiji	Feb 1998	Jan 2002	Jan 2005
ICT Technician	Avinash Prasad	Fiji	Jun 1999	Jan 2002	Jan 2005
ICT Technician	Elizabeth Lomani	Fiji	Oct 2000	Jan 2002	Jan 2005
Publications and Library Unit					
Consultant	Abigail Duiabe	Fiji	Jul 1999	June 2002	Jan 2005
Finance Unit					
Temporary General Accounts Clerk	Abdul Dean	Fiji	Feb 1997	June 2001	June 2002
Human Resource Development Unit					
Consultant	Arti Vandna Naidu	Fiji	May 2002	May 2002	May 2005
Project Assistant	Frances Dobui	Fiji	Nov 2001	Nov 2001	April 2004

APPENDIX 4: 2002 REVISED BUDGET & 2003 APPROVED BUDGET

Summary of Anticipated Income (including in-kind support contribution) and Expenditure by Programmes

	2002¹ Revised Budget F\$
PROGRAMME HEADS 2002	
Resource Development Programme	2,114,289
Environmental Science Programme	2,447,470
National Capacity Development Programme	2,575,828
Corporate Services Programme	1,362,500
Work Program Management Programme	126,752
TOTAL	8,656,839

	2003² Approved Budget F\$
PROGRAMME HEADS 2003	
Ocean and Islands Programme	4,355,305
Community Lifelines Programme	3,928,403
Community Risk Programme	1,722,338
Corporate Services Programme	1,667,263
Directorate Programme	672,326
TOTAL	12,345,635

¹ Under old Corporate structure

² Under new Corporate structure

Appendix 5

APPENDIX 5: LIST OF ACRONYMS

ACP	Asia Caribbean and Pacific
ADB	Asian Development Bank
AusAID	Australian Agency for International Development
BGS-UK	British Geological Survey (UK)
CHARM	Comprehensive Hazard and Risk Management
CROP	Council of Regional Organisations in the Pacific
EEZ	Exclusive Economic Zone
EDF8	8 th European Development Fund
EVI	Environmental Vulnerability Index
FFA	Forum Fisheries Agency
GIS	Geographic Information Systems
GPS	Global Positioning System
ICT	Information and Communication Technologies
IOC	International Oceanographic Commission (of UNESCO)
IRD-France	Institute de Recherche pour le Developpement
ISP	Internet Service Provider
ITU	Information Technology Unit (SOPAC Secretariat)
JICA	Japan International Cooperation Agency
KIGAM	Korea Institute of Geoscience and Mineral Resources
MRD	Minerals Resources Department
MSR	Marine Scientific Research
NGO	Non Governmental Organisation
ROC	Republic of China
SIDS	Small Islands Developing States
SPC	Secretariat of the Pacific Community
SPREP	South Pacific Regional Environment Programme
STAR	Science, Technology and Resources Network
TAG	Technical Advisory Group
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational Scientific and Cultural Organisation
USP	University of the South Pacific

The image features a dark background with a series of concentric, glowing rings in shades of teal and blue, creating a tunnel-like effect. In the center of this pattern is a solid blue circle. Inside this circle, the word "SOPAC" is written in a bold, white, italicized sans-serif font.

SOPAC