



ANNUAL REPORT 2001 SUMMARY



SOUTH PACIFIC APPLIED GEOSCIENCE COMMISSION

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CONTENTS

INTRODUCTION	4
What is SOPAC?	
What does SOPAC do?	
Who benefits from SOPAC?	
Who pays for SOPAC?	
FOREWORD BY THE DIRECTOR	5
WORK PROGRAMME REPORTS	7
RESOURCE DEVELOPMENT PROGRAMME	
Mineral Resources	7
Water Resources	9
Energy	12
ENVIRONMENTAL SCIENCE PROGRAMME	
Coastal	15
Hazard Assessment	17
Ocean	18
NATIONAL CAPACITY DEVELOPMENT PROGRAMME	
Information Technology	22
Disaster Management	24
Human Resources Development	28
Publications and Library	29
CORPORATE SERVICES PROGRAMME	
Finance and Administration	31
Work Programme Management	32
Environmental Vulnerability Index (EVI) Project	32
APPENDICES	
Appendix 1: Summary of 2001 Donor funding by programmes	34
Appendix 2: List of Reports & Publications	35
Appendix 3: Secretarial Staff List	43
Appendix 4: 2001 Revised Budget and 2002 Approved Budget	46
Appendix 5: List of Acronyms	47

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: minerals, water and energy resource identification, promotion, and development; environmental geoscience issues; and human resource development in the geoscience field 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, Kingdom of Tonga, Tuvalu, and Vanuatu. 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 more sustainable development by taking into account the geo-environmental impacts of developments.

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 this Annual Report Summary.

FOREWORD BY THE DIRECTOR

The records of recent SOPAC Governing Council meetings will show that SOPAC has not, nor should it have, escaped the call to become more strategic. As a result, during the 2001 annual reporting period, the Commission embarked on a journey to do just that – “be more strategic in its business.”

The Secretariat mapped out the journey, and it was clear that the exercise was going to take time and span at least two years, and more than one Council meeting. The first milestone, at the 2001 Council meeting was the approval of its new Corporate Plan 2002-2004. It clearly states what is SOPAC’s business with a vision to reduce the vulnerability of the people of the Pacific and assist them in sustainably developing their natural resources, especially their non-living resources.

Work is ongoing on this journey to be more strategic, and more milestones will emerge during the next annual reporting period.

I have during my time as Director, continued to articulate the need to make a difference and be able to demonstrate it. Certainly, Council’s approval of its new Corporate Plan sends a clear message of collective ownership of the Commission, as opposed to one where Council acts as auditors of the Secretariat who for some mysterious reason are seen as the “proxy owners.”

Last year I pressed you, as owners of this organisation, to express your views and opinions on our performance and we’re pleased to present a number of “unedited” responses to that encouragement as our box stories for the year 2001.

In the introduction of my report to the 2001 Council Meeting to demonstrate how we attempt to make a difference to the lives of many people I highlighted three work programme activities. I would not like these to be lost and therefore repeat them here:

- Our immediate response to the Cook Islands to assist in determining the cause of and providing a manageable solution to the disease outbreak in pearl oysters in Manihiki Lagoon.
- Our immediate response to Tuvalu to repair the Internet service provider (ISP) and restore connection with the outside world.
- Our support to the Pacific Island Missions in New York to champion the case in the UNCLOS States Parties meeting to extend the 10-year rule for submission of claims to the Continental Shelf Commission. This is of direct, and immediate, benefit to the Federated States of Micronesia, Fiji, Papua New Guinea, Solomon Islands and Tonga.

Also during the year, I am pleased to highlight that SOPAC published a policy paper on its philosophy and approach to poverty alleviation.

The level of activity in the Work Programme in the 2001 reporting period remained steady, with staff and budget being similar to 2000. In closing, I would to register a deep personal loss and indeed the loss of a most senior geologist in the Pacific region. Jackson Lum passed away mid-year finally losing the battle with cancer.

Finally, may I put on public record my appreciation to all stakeholders and in particular our development partners who continue to support the Commission and through us our member countries.



Alf Simpson
Director

July 2002



Jane Mulryan, policy analyst and Pacific Regional Coordinator in the Development Cooperation Division of the New Zealand Ministry of Foreign Affairs and Trade in 2001, began her short, but fruitful, association with SOPAC in 1999.



"My role was to coordinate New Zealand's relationship with Pacific regional agencies by developing a greater understanding of their activities and an overview of their place in the region (including making the linkages with the policies considered and approved by the Forum Leaders, both at the Leaders' Meeting and other key meetings, such as the Finance and Economic Ministers Meeting). Attendance at annual meetings such as the SOPAC Council were important components of this position.

"SOPAC is a very important agent in delivering technical programmes that make a difference to people's lives at the grassroots level in the Pacific. To me, it puts the 'human' face on science; which by its technical nature can often be a complete mystery to non-scientists such as myself.

"SOPAC is unique in terms of the relationship it has with the wider scientific community, and this interaction is one of its great strengths. Another strength is the vision showed by current management in terms of articulating the relationship between SOPAC's work programme and poverty alleviation, the latter being key focus for donors in considering how best to allocate their funding. I hope other agencies will emulate this approach. Other groundbreaking activities that SOPAC has developed include the environmental vulnerability index and the Pacific cities project, and New Zealand considers these to be valuable contributions to the international work on poverty and vulnerability.

"In the three years I have been dealing with SOPAC, I have noted a marked improvement in its planning processes and reporting to Council. There is still room to improve its processes of project design and proposal preparation, and monitoring and evaluation, but I know the Director is aware of this and looking at how it can be achieved.

"I have no doubt that SOPAC has matured into a professional organisation that is addressing the needs of its members. It has the technical expertise to deliver its objectives. My hope for the future is that it will continue to attract appropriate levels of funding and build on these, expanding the donor base."

Work Programme Reports

MINERAL RESOURCES

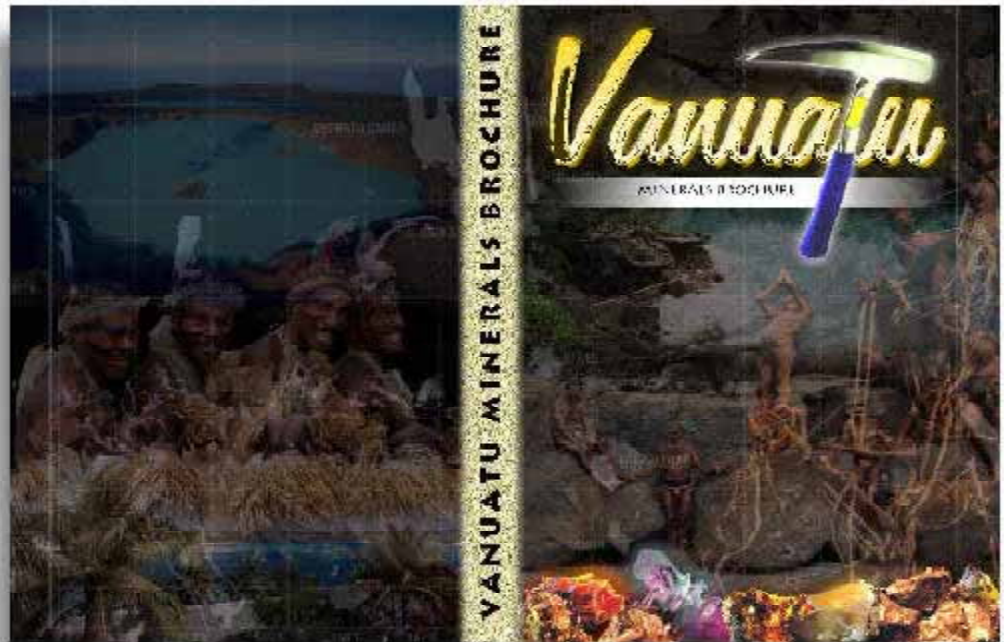
The greatest event in the Secretariat's calendar for the year 2001, was the tragedy of losing Jackson Lum, Marine Geologist and Head of the Mineral Resources Unit, who died on May 31, after a long battle with cancer. Aside from the disappearance of his professional expertise his reporting and administrative duties as Unit Head were sorely missed. The bulk of his Unit-Head responsibilities were undertaken jointly by Craig Pratt (EVI Project Leader) and Robin Koshy (outgoing Resource Economist), which included the annual report tabled here.

Investment for the development and exploitation of mineral resources can be extremely expensive and usually carries a high financial risk for the investor. With several member countries at various phases of mineral development; activities undertaken by the Mineral Resources Unit in 2001, were for advice and specialist training primarily in mineral policy development and mineral potential assessment and promotion. The need to strengthen national capacity and governance, as well as the promotion of marine mineral scientific research to determine the potential of the vast offshore areas of member countries was identified as priority areas.

Development of a regional capacity to manage deep-sea mineral information in island member countries was boosted with the installation of a regional deep-sea mineral database under the supervision of the JICA expert resident at the SOPAC Secretariat. Funding is currently being sort from Japan for converting the database into a more user-friendly and standard format like MapInfo, to allow the incorporation of other existing data sets. The promotion of the mineral potential of member countries is expected to also be enhanced with the provision of readily-accessible data. The JICA expert also drafted a master plan for an environmental impact study into deep-sea hydrothermal deposits mining. This was in response to the rising interest in deep-sea mining and emerging associated concern on its impact on the marine environment.



Secretariat staff at Jackson Lum's gravesite located at his hometown, Ba, on the northwestern coast of Viti Levu, Fiji.



A minerals promotional brochure was developed and designed for the Vanuatu Government. It's publication is subject to Cabinet approval.

The Secretariat continued its ongoing advisory role in mineral policy development work to requesting member countries in 2001. An in-country workshop envisaged to review the Draft Fiji Offshore Mineral Policy could not be carried out in 2001 for lack of funding support. A similar task for the Solomon Islands was deferred to 2002 because of continuing political instability there. Other policy development assistance carried out included the completion of all activities associated with a fair and comprehensive policy for assessing compensation due to landowners from mineral development activities in Fiji. A draft paper was completed and submitted for parliamentary consideration.

Mineral potential assessment and development work carried out in 2001 included the ongoing market study of the supply and demand for gypsum, a task undertaken on behalf of the Republic of Kiribati; and the study of international trends in the supply and demand for manganese, undertaken for the Cook Islands. Field activities and data analysis were completed on the island of Banaba for the remaining phosphate on the island. The advisory assistance to the Gold Ridge in the Solomon Islands was suspended due to the closure of the mine, but is expected to be resumed if and when the mine reopens. A drilling survey was also undertaken in conjunction with the Fiji Mineral Resources Department at the Nasivi detrital gold potential in the vicinity of the Emperor Gold Mine in Vatukoula. Final analysis is pending to assess the viability of developing this gold potential in Fiji.

The new three-year SOPAC-Japan Deep-Sea Cooperative Minerals Programme for the Cook Islands, Fiji and the Marshall Islands completed its first cruise in Cook Islands waters. Planning and pre-cruise training for the Fiji cruise was also completed.

Annual activities of the SOPAC Petroleum Data Bank based at the Australian Geological Survey Organisation in Canberra included the completion of the production of CD Roms of available information on Solomon Islands, Vanuatu, Fiji and Tonga. Updating, digitising, maintenance and promotion of the data sets continued. Seven data requests were handled during 2001, three on the Solomon Islands and two each for Tonga and Vanuatu.

Notable promotional activities of the Unit included the development of a brochure in conjunction with the Vanuatu Department of Geology, Mines and Rural Water Supply for the Vanuatu mineral industry and the completion of the compilation by external editors of the Pacific Exploration and Technology (PET) 1998 Conference papers. All the elements for a super-gloss Vanuatu publication were submitted to Vanuatu and its publication is pending and subject to Cabinet approval. The Pacific Exploration and Technology (1998) technical bulletin to promote the mineral potential of SOPAC member countries is expected to be published in the latter part of 2002.

WATER RESOURCES

Three-Year DFID Project comes on line

The signing of the DFID(UK)-funded "Water and Sanitation Specialist Project" in March 2001, was a key event in the year for the Water Resources Unit. The project provides secure funding for the Unit Head for the next three years. The new Unit Head, Clive Carpenter, took up his position in April 2001.

The main objective of the DFID project is to assist Pacific island countries to improve the sustainable management of their water supplies, sanitation and hygiene in the region, with emphasis on targeting poverty alleviation and improving gender equality. The project has set aside funds for regional and national consultation on strategic development, technical guideline preparation, technical assistance and public awareness campaigns, in-country training, regional networking and research. The total funding available for project activities from April 2001 to April 2004 is GBP 138,000 (F\$ 450,000).

The project enables the development of regional strategies in water, sanitation and hygiene, allowing SOPAC to prioritise its interventions in the region based upon international guiding principles, and maximise the benefit of its activities to the region as a whole. Specific to this, the Water Resources Unit undertook a review of all needs assessments completed in the region since 1994 and having identified the priority issues for the region, developed a strategic approach for the SOPAC Water Resources Unit for the next three years, based upon the actions required to address the needs and the capacity of the Unit to deliver these activities. The "Water, Sanitation and Hygiene Strategies for SOPAC 2001-2004" were approved by Governing Council in the 30th Annual Session and are available from the SOPAC library (SOPAC Miscellaneous Report 444). The document contains an eight-point policy statement and details the seven strategic programmes of work for the unit. These provide the framework in which all future work by the Unit will be undertaken.

First Pacific region Wastewater Policy and Strategy completed

The other major achievement for the year was the design and facilitation of a year-long regional consultation to develop a regional policy and strategic action plan on wastewater. As much as 80% of all marine pollution comes from land-based activities, the majority of which are due to untreated sewage. Two preparatory consultations in Auckland and Apia early in the year set the stage for working groups to develop the input for a regional workshop for all stakeholders in wastewater management that was held immediately before the SOPAC Governing Council 30th Annual Session in Majuro, Republic of Marshall Islands.



Girl playing between the rubbish on the small island of Ebeye, Republic of the Marshall Islands.

The Workshop was co-hosted with UNEP (Global Plan for Action), Pacific Water Association and the South Pacific Regional Environment Programme and organised specifically to develop a regional Framework for Action to address the major concern of wastewater pollution of river and marine ecosystems, and its increasing impact on human health. The meeting was attended by fifteen Pacific island countries, representatives from CROP, WHO, UNESCO, UNEP/Global Plan for Action and additional resources persons from Australia, New Zealand and the United States. The meeting was highly successful with the first ever regionally endorsed Pacific Wastewater Policy Statement and Pacific Wastewater Framework for Action. Other outcomes included the recommendations for a Pacific Wastewater Focal Group, which is now being developed by SOPAC. Both documents were subsequently approved by the SOPAC Governing Council.

The policy and strategy not only represent an agreement to the regional activities required to achieve sustainable wastewater management, and thereby form the future work programme for SOPAC in wastewater and sanitation, but also provide a catalyst to action for individual national countries and map out the areas to be addressed and possible solutions required to successfully manage the increasing problem of wastewater in the island environment.

World Water Day 2001 'Water and Health' hailed another success

Yet again SOPAC took the lead role in organising the regional preparations for the annual World Water Day celebrations in the Pacific. Celebrated each year on 22 March, this year saw the Water Resources Unit in Samoa to coincide with the Pacific Water Association annual general meeting. Generously supported by the staff of the Samoa Water Authority, the activities in Samoa included public awareness raising events at local schools and the launching of the region-wide school poster competition.

A prize giving ceremony for the regional competition was held later in the year at SOPAC, and was attended by His Excellency Michael Price, the British High Commissioner to Fiji. Over five hundred entries had been received by national co-ordinators before selecting the top hundred to be considered by the SOPAC staff. The overall winner came from Samoa. The public awareness generated by the prize giving ceremony itself has already successfully secured funds for a more ambitious World Water Day campaign next year.

Further highlights from the strategic work programme areas are presented below:

WATER DEMAND MANAGEMENT

Hydraulic Modelling

Preliminary work commenced in the Cook Islands, Fiji and Vanuatu, to provide assistance on the review and development of modelling approaches of water supply distribution systems. This method uses advanced computer techniques to assess the efficiency of systems and can be used to assist with leakage reduction and general asset management.

Training has been provided to counterpart staff in the Public Works Department, Fiji and the Rural Water Supply section of Department of Geology, Mines and Water Resources, Vanuatu.



Wastewater system on Banaba, Kiribati.

Leakage Detection and Assessment

The successful three-year capacity building programme in setting up national Water Demand Management Units in national utilities continued. Notably Majuro Water and Sewage Corporation were assisted in the development of in-house expertise.

Rainwater Harvesting

A water-supply GIS was created for Funifuti to enable the Tuvalu Public Works Department to more effectively manage their input to maintaining and redesigning roof catchments to overcome drought periods. This work has already resulted in a follow-up two projects with UNEP, located in Tonga, which will look at water quality and community participation aspects of rainwater harvesting.

WATER RESOURCES MANAGEMENT

Water Resources Assessments

Groundwater resources assessments were completed on Banaba Island, Kiribati, on Majuro Atoll, Marshall Islands, to assess the viability of abstracting groundwater compared to rainwater harvesting and to improve the management of the freshwater lens through the drought periods, respectively. Technical support was also provided to international researchers working with the Fiji government in northern Viti levu.

The Water Resources Unit also designed and ran the Hydrogeology Modules of the BSc Applied Geology at the University of the South Pacific. Twelve students from five countries attended the course.

Water Quality Data Management

SOPAC staff have been developing a water quality database, for use of regulators, environmental protectors and water suppliers alike, to enable better management of resources and operation and maintenance of supply systems. The database was successfully installed in both the Environment Protection Agency and Majuro Water and Sewage Corporation in Majuro, Marshall islands, and the Department of Geology, Mines and Water Resources in Vanuatu.

SANITATION AND HYGIENE PROMOTION

School Awareness Materials

In addition to the Pacific Wastewater Consultation and World Water Day events, a Water Education and Awareness Kit for Schools has been developed in conjunction with SPREP. The first draft of the kit was completed and approved for circulation on a limited basis to test their applicability and relevance. The kit is currently being piloted in a selection of schools in the region, and other relevant organisations.

Sanitation Assistance

Technical and logistical assistance was provided to the Environment Protection Agency staff on Ebeye, Kwajalein Atoll, Marshall Islands, in the review of wastewater management on the island and the need for improved hygiene awareness and promotion campaigns.



Boy fetching water at the “Oasis”, a communal distribution point for desalinated water on Ebeye, Republic of the Marshall Islands.

ENERGY

One of the highlights of 2001 would have to be the involvement in preparing a regional position paper on energy for submission to the Commission of Sustainable Development 9th Session (CSD9) process in New York in April 2001 and its adoption as a background paper.

The SOPAC Energy Unit along with the Pacific island countries provided technical support to the Pacific island missions in New York during the CSD9 negotiations. The CSD 9 paper has become a “blueprint” for the energy sector and has helped the region towards the primary goal of contributing to the global agenda of sustainable development. This sound basis provides a platform for the SOPAC Regional Energy Programme.

Regional Energy Policy – At CROP’s thirteenth meeting in Apia, Samoa from 22-23 May 2001, it was directed that the Energy Working Group develop a Regional Energy Policy. SOPAC through the CROP Energy Working Group is assisting with the preparation of a Regional Energy Policy.

It is proposed that the draft policy will be made available to Meetings of the CROP organisations and at the Regional Energy Meeting scheduled for mid 2002. The policy will also be used as a basis for discussions and preparations for the World Summit on Sustainable Development on from 26 August to 4 September at Johannesburg, South Africa.

Energy Resource Assessment – Monitoring and assessing the indigenous energy resource potential of the region and determining the feasibility of development and utilisation is a prime area of interest as this will assist in leading towards more extensive use of renewable energy sources and sustainable development. There have been many technological developments in the utilisation of ocean-based energy resources, wind, biomass and land-based energy resources such as geothermal for power generation. The development of these potential new initiatives is constrained by the unavailability of monitored and assessed data.

In light of this, SOPAC continues to support wind resource monitoring, has commenced a regional biomass resource assessment programme and developed with the US Geothermal Industries a terms of reference seeking funding for an exploratory deep drilling programme to confirm the resource.

Energy Conservation and Efficiency – Energy conservation and efficiency programmes are an essential component of the Unit’s programme. They have a significant impact on economic and social development within a country and have the ultimate goal of reducing energy bills and detrimental environment impacts. SOPAC through its small energy projects programme has provided funding assistance to member countries in support of their national energy conservation and efficiency activities. With the increased awareness on the impact of climate change and climate variability at a regional and global scale, SOPAC is developing a concept paper on energy conservation and efficiency for submission to GEF for funding.



I-Kiribati children collect firewood and coconut residue for domestic use. Biomass still plays a vital role in meeting the energy needs of the domestic sector in the Pacific islands.

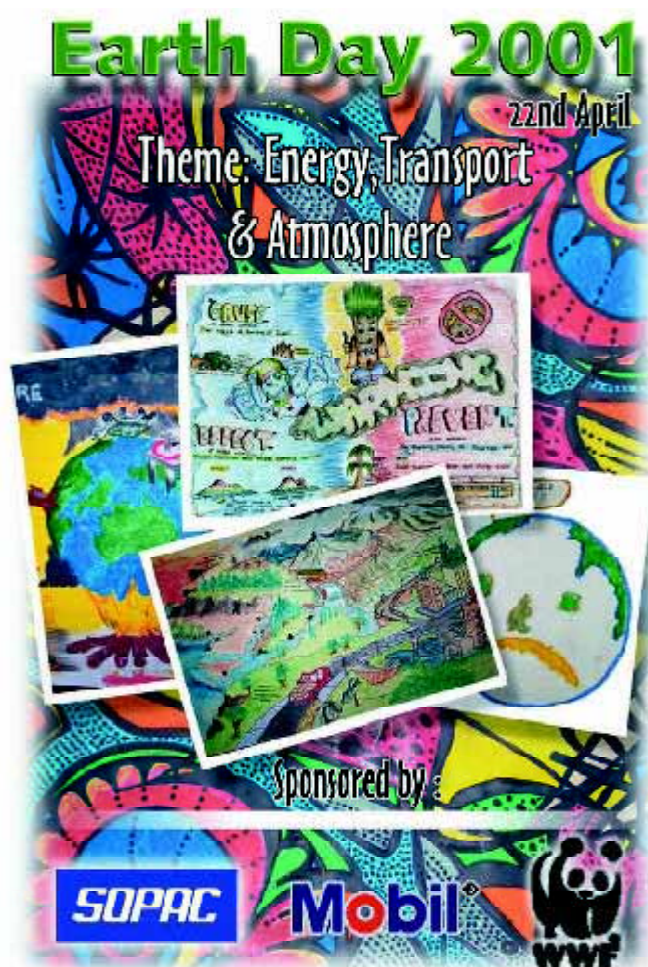
In addition, a Demand Side Management (DSM) programme has been developed to review previous DSM studies and design, and implement at least two DSM demonstration projects. This will build on previous work carried out under an earlier UNDP programme where the DSM potential was identified in ten Pacific island countries. Based on these studies and the current need to address the reduction of greenhouse gas emissions it is considered relevant to revisit this potential area of energy savings. A consultant has been identified and it is anticipated that the project will commence in mid 2002.

Pacific Danish Environmental Education Programme – As a result of a feasibility study carried out in the region in 1997, the Danish government through the UNEP Collaborative Centre on Energy and Environment indicated interest to fund this programme. The programme will involve the installation of a grid-connected demonstration wind turbine, a regional workshop and the set up of a post-graduate course in wind energy at the University of the South Pacific. Arrangements for the wind turbine site have been finalised with the Fiji Islands government. Course modules are currently being developed with the University of the South Pacific. It is anticipated that the commissioning of the wind turbine will be carried out in July 2002.

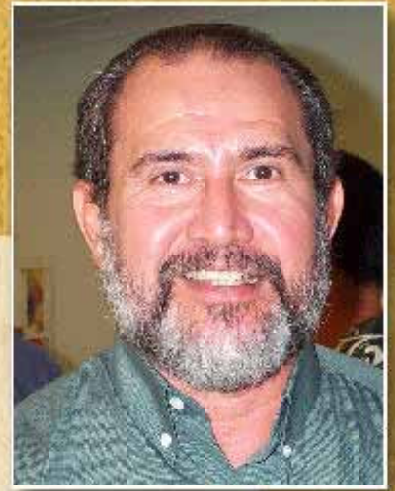
The project will assist member countries with the development of their wind power programmes through training and capacity building.

In addition to the above key activities, there are ongoing projects that the regional energy programme continues to provide assistance to member countries. These are:

- Energy Information Awareness and Dissemination
- Technical Assistance on Energy Supply and Demand Database
- Energy Technology and Information Database
- National Energy Policy Guidelines and Statement, and Rural Electrification Policy
- Training and Technical Assistance
- Regional Earth Day Programme – Schools Energy Education
- Pacific Regional Energy Assessment 2000
- Regional Energy Meeting 2002 and
- Small Energy Projects Programme



Earth Day 2001 Essay & Poster competition for schools in the Pacific Islands drew an overwhelming response from students in the region.



Vitolio Lui, Deputy Secretary for Foreign Affairs for the Government of Samoa (at the time of writing), began his long association with SOPAC way back in 1980 when he was one in the group of regional aid coordinators that participated in UN processes that allocated UNDP regional aid that financed the activities of UN projects, one of which was converted to SOPAC. He became more intimately involved with SOPAC affairs from 1991, when his regular attendance at SOPAC annual meetings began.

"When I first attended a SOPAC Session, the documentation was not well organised and often difficult to follow. Governance policies and guidelines were basic or not documented and financial and staff regulations were inadequate. As a result, meeting procedure and organisation was not always orderly or helpful. The Council meeting record was fragmented and so brief it was sometimes shorter than the list of participants. The work programme was clustered around disparate national requests without apparent framework or theme. Suggestions for change were not often welcome.

"It has been my pleasure and satisfaction to witness over these years, particularly in recent years, the SOPAC Council and Secretariat transform from the above, to an organisation whose work programme has grown in resources and sophistication to one of the largest and versatile in the region and whose documentation is among the best presented, transparent and readable. Governance procedures are now well documented, transparent and modernised. The Council's record of proceedings is now one of the most comprehensive and educational references among CROP agencies.

"The Secretariat, once timid to entertain change is now initiating change. SOPAC's work, ranging from coastal mapping and protection to electronic communication and the use of satellite images, is valued both regionally and internationally. SOPAC has truly come of age.

"The Secretariat is now pretty much established in terms of process, capability and resources to move ahead with confidence. The Secretariat, nevertheless would have to remain vigilant in maintaining its professional and achievement orientation. Management should constantly review its ethics to ensure that in carrying out the organisation's work, it adheres and respects the organisation's policies and regulations.

"Staff should never lose sight of the fact that they are in SOPAC to serve the needs and priorities of generally very poor island countries and not their own."

COASTAL

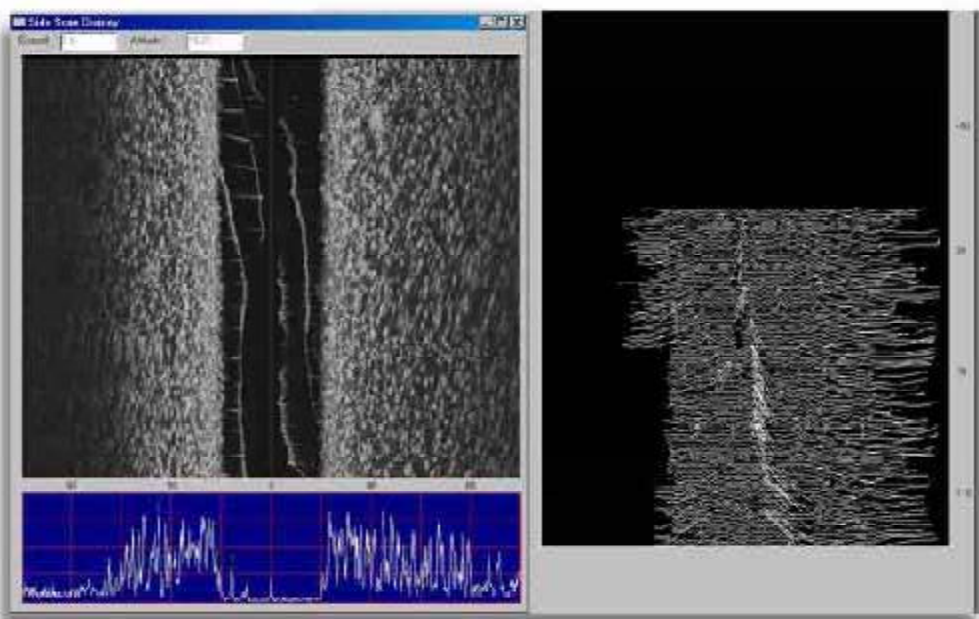
Understanding the physical and environmental processes that influence the sustainability, management and protection of coastal resources is fundamental to development.

The management of coastal areas is of considerable concern for the region. For many islands land is an extremely valuable and scarce commodity. However, the development of coastal structures, and modification of the coastal environment without proper knowledge of how these alterations will affect the area, has resulted in coastal erosion and degradation. Underpinning this degrading of the natural environment, it appears that many island administrations and populations do not have a scientific understanding of the dynamic processes that build and sustain their islands. In other words the nature of coastal zones, the diversity of users and the range of activities the coastal programme supports, presents a complex and varied management problem. Much, if not most, of the coastal development undertaken today requires higher resolution bathymetry to better characterise the littoral oceanographic processes and hazards to navigation. The integration of high-resolution imagery to build a seamless geographical information system that encompasses whole island systems provides a fundamental tool for planning and development in a sustainable manner.

During the year ties were forged with the AusAID-funded regional tide monitoring project currently administered by Australian Marine Science & Technology Limited. The Coastal Unit's technical resource personnel who undertook unit activities in 2001, were provided by Australia, the People's Republic of China, the Commonwealth Secretariat and the Korea Institute of Geology, Mining and Minerals.

SOPAC's marine geophysical capability is dedicated to the region to carry out detailed, continuous bathymetric and seismic reflection profiling, as well as sediment sampling, current measurements and temperature-density-salinity spot profiles; and high-resolution swath mapping, using state-of-the-art multi-beam echo sounders. Capacity is now available and able to delineate a complete underwater landscape with greater accuracy and in a fraction of the time required to use the single-beam echo sounder.

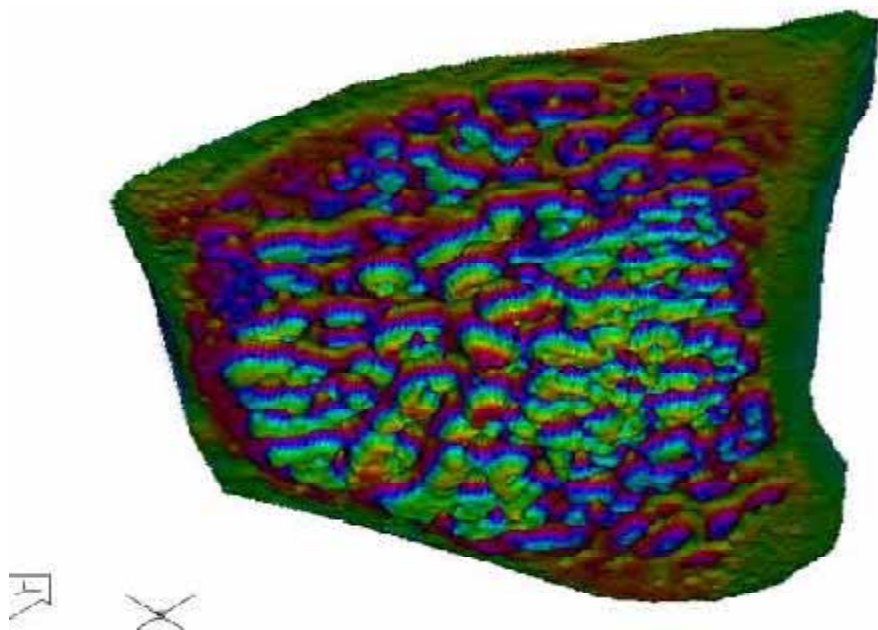
During the reporting period eight field surveys were completed in Cook Islands, Fiji, Federated States of Micronesia, Kiribati, Nauru and New Caledonia. The complex and varied nature of the coastal zone and its uses is reflected in the diverse range of activities completed during the year. These included the geophysical and geological phases of an outfall study, a geophysical study for port development, a survey to quantify sand resources, a sedimentation study in a bay for harbour development, an equipment support for a flood-alleviation study and the preparation of equipment for a coral reef monitoring programme.



Multi-beam sidescan imagery from a pearl farm in Manihiki Lagoon, Cook Islands showing clearly the anchor lines and oyster-carrying chapplets suspended in the water column. Such data can be used to gauge farming density in a environment which is normally hidden from view.

Coastal programme activities for 2001 included:

- The upgrading of the interactive graphical ocean database system to a Microsoft access database format for archiving water quality conductivity, temperature and pressure data from within the region.
- Updating the regional shallow-water bathymetry database with multibeam survey data from Cook islands, Fiji, New Caledonia and Vanuatu.
- Addition of a new Triton tide level, doppler current and wave gauge to upgrade ocean and coastal survey capabilities.
- Completed a major field programme for the formulation of an island system management database for Manihiki Atoll in the Cook Islands.
- Completed a coastal erosion assessment for Tagaqe, Village on the coral coast, Nadroga, Fiji.
- Completed a series of seabed surveys to aid the design and replacement of the Kinoya seabed outfall for the city of Suva, Fiji.
- Completed a multibeam survey for the Port of Suva development plans for Rokobili as a new port terminal.
- Completed a sand resource assessment for the supply of carbonate for the production of Portland cement in Fiji.
- An evaluation of sedimentation problems in the port of Draunibota Harbour, Suva, Fiji.
- A coastal erosion assessment for Malem, Kosrae in the Federated States of Micronesia was completed through assistance from the People's Republic of China.
- Completed a vulnerability assessment for Pohnpei the Pacific Islands Climate Change Assistance Programme coordination.
- An assessment of vulnerability to accelerated sea-level rise in South Tarawa was completed through assistance from the People's Republic of China.
- Project funding secured and terms of reference formulated for a project dealing with offshore sand recovery and environmental impacts in Majuro, Republic of the Marshall Islands.
- A series of maps depicting detailed bathymetry of Nauru was compiled from multibeam data.
- A coastal erosion monitoring programme and advice on response strategies was completed for the State of Nauru with assistance from the People's Republic of China.
- Monitoring and assessment of the Anibare Small-Boat Harbour Development project was completed with assistance provided by the Commonwealth Secretariat.
- A multibeam survey of the lagoon and forereef slope of Cap Bocage, near Moneo was completed for route planning and design for a submarine tailings outfall.
- A report detailing an assessment for marine aggregate resources and sand mining in Vava'u, Tonga was completed.



The seabed of Manihiki Lagoon based on multibeam bathymetry data showing depths from 0 to 70 metres. The "honeycomb texture" of the lagoon seafloor is a result of a complex set of climate, tectonic and hydrologic processes.

HAZARD ASSESSMENT

While reporting on the various tasks of Pacific Cities was the major emphasis of the Hazard Assessment Unit's work load for the year, the forward-looking integrated risk management approach throughout the Secretariat and the SOPAC region was the main guiding principle for the presentation of the data collected so far. The concept progresses the Pacific Cities into the new phase of using the accumulated data to analyse risks and presenting scenarios for reducing vulnerability in each city. The activities of the ongoing Pacific Cities programme therefore form a subset of the CHARM programme (see the report under Disaster Management for an introduction to the CHARM programme).

In 2001, as part of the integration of all hazard identification and risk analysis activities with disaster mitigation and training activities, a number of presentations were made at various local, regional and international conferences, workshops and venues. The presentations were to promote results, raise awareness and develop collaborative ventures in the Pacific cities themselves, among development partners in Asia and the Pacific; and to potential donors.

A comprehensive hazard and risk assessment was conducted on the Mele Bay area, Vanuatu, as a demonstration project of the integrated scientific-traditional community approach to strengthening resilience in member countries. The comprehensive assessment included conducting a GPS land survey, an aerial photo survey and a preliminary building assets survey of the study area in preparation for aerial photography/digital elevation modelling. Field survey results were combined with climate, geophysical and other relevant historical data sets to carry out various modelling scenarios for the area. This integrated scientific approach is expected to be combined with a traditional community approach to improve the resilience of the community to natural disasters. Within the broader context of disaster mitigation, the Mele Bay study is the pilot project in the Pacific for a comprehensive scheme, being developed by the World Bank, for the provision of insurance for catastrophic events in developing countries.

In the reporting activities for the five cities of the Pacific Cities Project, data CDs were published and distributed for Suva, Port Vila, Honiara, Apia and Nuku'alofa. The Second Edition of the Geophysical Institute of Israel/USAID study: "Site-Specific Earthquake Hazard Determinations in Capital Cities in the South Pacific" was also published and released for distribution.

Suva hosted the SOPAC Regional Workshop on Building Safer Urban Communities. Additional work in Suva, included compilation of a bathymetric database for Suva Harbour. An earthquake microzoning report for Apia was prepared along with digital elevation model and orthophoto. Aerial photography was also conducted in Apia during the period. Risk analysis work in Nuku'alofa included completing a building assets survey for the city. Port Vila and the Mele Bay areas in Vanuatu were well covered with bathymetric database compilation and various models developed for different aspects of risk to the community and other assets. Tasks were carried out in conjunction with the ongoing work under the 'catastrophe insurance' and 'strengthening community resilience' concepts of the Unit's work programme for 2001.



Surveying building assets in Nuku'alofa. A Tongan surveyor being shown how to use the GPS equipment.

OCEAN

The signing by Australia and the Secretariat of a Letter of Agreement for the inception phase of the Maritime Boundaries Delimitation Project was a key event in the year for the Ocean Unit. Regional decision makers deemed the Maritime Delimitation Boundaries Project better housed at SOPAC than at the Forum Fisheries Agency given that the main mechanism for delimiting boundaries is geoscience, as opposed to bioscience. As the primary donor for this fundamental yet visionary initiative, which seeks to assist Pacific States to define maritime and extended continental shelf boundaries to declare sovereignty and secure access to known and potential economic marine resources, Australia is commended for continuing its commitment to the Project.

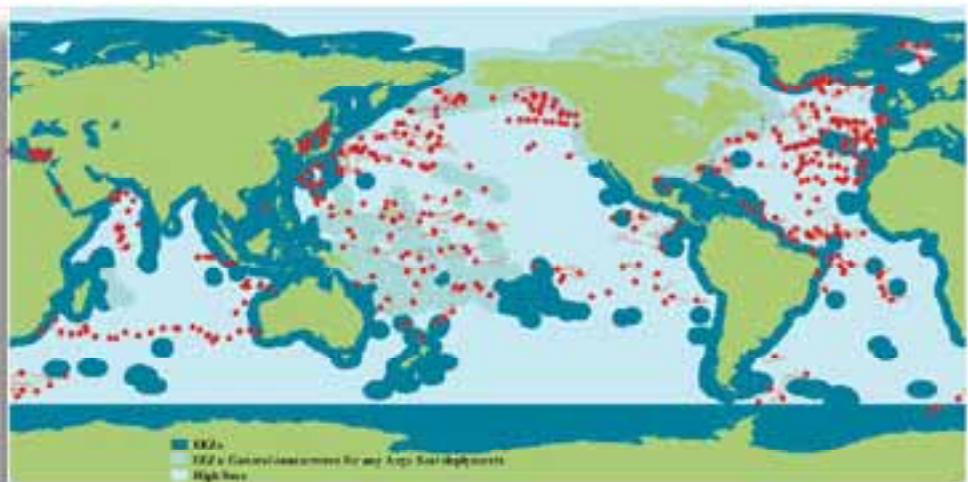
Under SOPAC's mandate to coordinate Law of the Sea related issues in the SOPAC region, the Director of the SOPAC Secretariat was re-elected to the Legal and Technical Commission of the International Seabed Authority. In addition to this, a number of papers were prepared and presented at international fora on behalf of the region. These included two papers prepared and presented in May at the Second UN Informal Consultative Process on Oceans and the Law of the Sea – one on "Initiatives and Priorities of Ocean Issues in the Pacific Region" and the other was "A Pacific Model for Improving Structure and Effectiveness in Marine Science and the Development and Transfer of Technology." The Ocean Unit was also heavily involved in the drafting of "A Pacific Islands Regional Ocean Policy" by the CROP-Marine Sector Working Group.

Further highlights from the 2001 Ocean Unit tasks are presented below under the following three components: Ocean Observing Systems; Marine Scientific Research; and, Maritime Boundaries Delimitation.

Ocean Observing Systems

Collaboration and cooperation continued with international (global) ocean observing systems (GOOS) such as the Triangle Trans-Ocean Buoy Network and the International Argo Project to facilitate buoy and float deployment, maintenance and data retrieval and accessibility in the SOPAC region. Representatives from Fiji, Papua New Guinea and Kiribati attended a training workshop in Japan, in February, on ocean observing systems in the West and Central Pacific Ocean region. The representatives of the same countries who attended the earlier ocean observing system workshop with the addition of representatives from the Marshall Islands, the Federated States of Micronesia and the Secretariat attended a further Argo science-planning meeting for the Pacific Region, in Japan, in March.

PacificGOOS activities in line with the global objectives of GOOS for developing a regionally relevant, global ocean observing system that is sustained and integrated, saw a draft PacificGOOS Strategic Plan completed; the strengthening of current relationships; and the signing of a Memorandum of Understanding as a partner to SEREAD. SEREAD is a pilot PacificGOOS project for awareness raising of Argo floats in selected Pacific secondary schools. These PacificGOOS initiatives resulted from recommendations of the "Regional Workshop on Coastal Global Ocean Observing System for the Pacific Region" held in Apia, in August 2000.



The location of autonomous Argo buoys as of July 2002. The buoys have been deployed as part of the International Argo Project. [Source: <http://argo.jcommops.org>]



Regional participants with their Japanese hosts and instructors at the month-long workshop on the Asia/Western Equatorial Pacific Ocean Study Network organised by the Japan Marine Science and Technology Centre.

As potential contributions to the global ocean observing system or GOOS products and services, new initiatives and proposals were developed for long-term environmental monitoring in various lagoons in the Cook Islands, Fiji and Kiribati.

Marine Scientific Research (MSR)

A regional workshop to discuss marine scientific research issues and the broadening aspects of the responsibilities of participating states in managing their exclusive economic zones was recommended by the 29th Session of the Governing Council. Funding for the workshop was sought and secured from the Korean Ministry of Ocean and Maritime Affairs and Fisheries, the Metal Mining Agency of Japan, the Japan Marine Science and Technology Centre and the Government of Papua New Guinea, and the workshop convened in Port Moresby in Papua New Guinea in February-March. The three-day workshop provided an appropriate forum for all stakeholders, wherein key issues of concern in marine scientific research were addressed through constructive dialogue between SOPAC coastal states and organisations from researching states. Recommendations to resolve these issues were agreed to by workshop participants as the proactive way forward.

Further to this initiative, a Pacific Islands Regional Marine Scientific Research Guidelines paper was prepared; a review of the current SOPAC Marine Scientific Research cruise database was undertaken and coordination of cruise activities in the region were provided for cruise initiatives in Kiribati, Fiji, Papua New Guinea, Vanuatu and the Federated States of Micronesia. Reports on both the marine research guidelines and the review of the cruise database are logged as miscellaneous reports at the Secretariat.

It is a requirement, under provisions within UNCLOS, for all research organisations undertaking geoscientific research activities within the exclusive economic zone of a coastal State to seek their consent to conduct research activities, to invite onboard participation and, to furnish copies of data collected during, and reports produced following, the research cruises.

Maritime Boundaries Delimitation

The Maritime Boundaries Delimitation Project Design Document (MBD-PDD) was completed with the technical assistance of AusAID. Their independent appraisal was received, with advice that an inception phase was required before approval for full project implementation would be considered.

The inception phase mainly involved the effective transfer of existing data and information from the Forum Fisheries Agency to SOPAC; a review and comprehensive inventory of FFA outputs; independent quality assurance and control of existing data and information; stakeholder consultation to gauge commitment and determine priorities of project activities; finalisation of the project design document; and, security of co-financing partners. As the inception phase of the MBDDP required the recruitment of a project co-ordinator, the position Manager-Ocean Affairs was advertised, with the position to be filled January 2002.

Programming arrangements, through inclusion as a key activity within the MBD-PDD as the renewal of former effective partnerships, were put in place to facilitate the enormous task of updating the Regional Bathymetry Map of the Southwest Pacific Region. First published nearly twenty years ago in 1983 and with more than 10,000 maps in circulation, the update of the regional chart is long overdue. The increased SOPAC membership since 1990 to cover the Central-West and Northern Pacific; the vast volume of accessible digital data; the increased use of state-of-the-art seafloor mapping technology; and the existence of sufficient staffing and resources within the Ocean Unit, are factors that make it timely and appropriate to update the chart. The update will expand the geographic scope of the chart and incorporate the latest digital data and technology. The chart will be a vital resource for fishers, managers of harbours and ports, researchers and developers of both the extractive and non-extractive resources in the SOPAC region.

Data collection to facilitate the preparation of preliminary claims for extended continental shelf jurisdiction is underway for several SOPAC member countries. Claims by participating states are to be based upon sound geological, geophysical and bathymetry evidence. To this end, it was an indispensable first step to collect, collate and assess all existing data and information on the areas in question, to properly justify claims to extended continental shelf jurisdiction by member states. While collation of data and information have commenced for the Federated States of Micronesia, Fiji, Papua New Guinea, Solomon Islands and Tonga, only Tonga has progressed to a near-complete desktop review. Aside from drawing on their bilateral NZODA funds to support the desktop study, the Government of Tonga also sought NZODA support to acquire 130-line km of deep multi-channel seismic data, in support of their extended continental shelf claim. A confidential report was prepared and a meeting was held in Tonga in June to discuss the findings of the preliminary desktop study.

As a complementary task to justifying preliminary claims to extended continental shelf jurisdictions, collecting and evaluating all existing geological data and information, as well as assisting States through the claims preparation process, has been programmed into the Maritime Boundaries Delimitation Project.



The Hakurei Maru No. 2 owned by the Metal Mining Agency of Japan, which successfully drilled polymetallic massive sulphide mounds in the North Fiji Basin, during its research campaign in December 2001.



Yves Lafoy, a public servant of the French territory of New Caledonia, is a geologist by profession. He has had an association with SOPAC since 1991, the same number of years that New Caledonia has been Associate Member of SOPAC.

"The Associate Membership in SOPAC was desired by the authorities in New Caledonia to maintain a presence in the southwest Pacific region through the sharing of scientific and technical expertise between member countries. In support of this, New Caledonia established a specific work programme within the framework of its associate membership that would neither diminish the resources of the other member countries nor overload the Secretariat.

"Apart from the technology [sharing], New Caledonia wanted to benefit from SOPAC's expertise in the lagoonal areas within the Pacific. We paid SOPAC for surveys conducted in 1999, because we did not have the technology in the country at that time.

"Within the ZoNéCo programme that aims at assessing the non-living and living resources of New Caledonia's EEZ, the lagoon area remains under-explored.

"We are mainly interested in: locating potential sites for submarine tailings outfall; and identifying carbonate resources (onland and nearshore) to chemically neutralise nickel tailings.

"Our expertise that could be shared with other SOPAC member countries are

- non-living and living resources assessment expertise (ZoNéCo programme);
- environmentally-friendly mining (nickel); and
- training (mining, remote sensing, marine geology) through linkages between SOPAC, USP, University of New Caledonia, Institute de Recherche pour le Développement and Service des Mines et de l'Energie."

INFORMATION TECHNOLOGY

In 2001, the Information Technology Unit (ITU) continued its focus on the two task development areas of Information and Communication Technologies (ICT) and GIS and Remote Sensing that were originally rationalised in 2000.

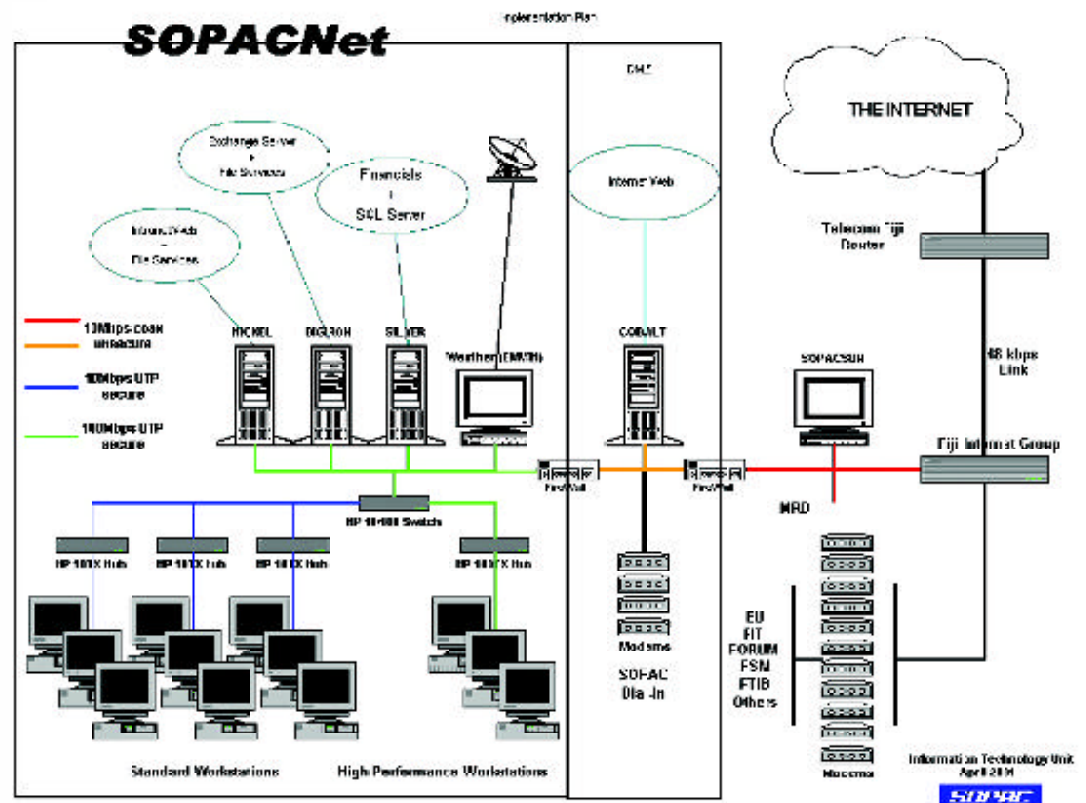
Information and Communication Technologies – The most important activity during 2001 was the Pacific Regional ICT Strategy meeting organised jointly with The Secretariat of the Pacific Community and the Forum Secretariat. Held in Nouméa in August 2001, the meeting drafted a regional ICT plan for submission to countries. Meanwhile the work of ITU inside the CROP ICT Working Group has increased to be able to prepare recommendations and directions for the Telecommunication Minister meeting in April 2002.

ITU is also participating in international fora such as the Internet Society (ISOC) annual meeting INET2001 and ICANN meetings. The participation of ITU, presents ICT issues faced by Pacific Islands, and allows these advisory boards to steer ICT development with Pacific Islands' issues in mind.

ITU also participated in the development of many network infrastructures in our member countries, the most visible example is the continuous support to the Internet Service Provider managed by the Tuvalu Government, and the inter-departmental network of the Kiribati Ministry of Natural Resources Development.

In terms of conferencing, ITU has acquired wireless technologies, which allow participants to SOPAC conferences to check their e-mail and surf the Internet from their laptop, from anywhere inside the conference room.

ITU has been studying the emergence of new Open Source software to be used in Pacific Islands. GNU/Linux operating system has been deployed in SOPAC and in some countries to leverage the cost of proprietary software solutions as well as to increase the resilience of organisations against attacks and viruses. Further exciting developments in this area are expected.



SOPACNet – A schematic diagram of the Local Area Network/Wide Area Network for the SOPAC Secretariat and Fiji Internet Group.

ITU is still supporting the Fiji Internet Group to provide affordable Internet access to developing partners in Fiji. This is an important aspect of the role of SOPAC in being able to communicate and report effectively with its member countries.

Finally ITU has increased the development of its international image by enhancing its web site (www.sopac.org), putting more databases online, more reports, more maps and creating a forum for broad stakeholder participation in the activities of SOPAC. Participation of Pacific Islanders in the day-to-day activities of SOPAC will increase.

GIS and Remote Sensing – ITU is continuing the promotion of Geographic Information Systems (GIS) and Remote Sensing technologies throughout the region by organising several workshops in the Federated States of Micronesia and the Marshall Islands, publishing the GIS & Remote Sensing Newsletter in collaboration with the University of the South Pacific and finally with the acquisition and processing of high-resolution satellite images (4 m to 1 m ground resolution).

This last activity has largely increased during 2001 and is now a major component in many of SOPAC activities. ITU is working closely with the Pacific Disaster Centre to share imagery of the region.

The two workshops and developments in Federated States of Micronesia and Marshall Islands were focused on vegetation-change mapping using IKONOS satellite imagery as well as historical aerial photography.

Using GIS and Remote Sensing technologies, ITU has compiled several image backdrops to be used digitally in many Pacific Islands.

ITU has also worked with the Fiji Meteorological Office to develop expertise in tracking cyclones and displaying and communicating climate changes via GIS.

Amazing new developments – ITU participated actively in re-organising SOPAC through the building of the new SOPAC Corporate Plan. The unit will now be part of the Community Lifelines and Corporate Services key programme areas, while having impact in all other key programme areas. This new re-organisation will allow ITU to respond more effectively to member countries requests in ICT or GIS and Remote Sensing.

In the same manner, the role of ITU has been essential in drafting some of the components of the SOPAC/EU project on Island Systems Management. This new SOPAC initiative will provide member countries better access to accurate and timely information necessary for the management of their ecosystems and resources via the use of imagery acquisition, data warehousing and communication systems to ensure all stakeholders have seamless access to relevant information.



IKONOS satellite image of the Outrigger Hotel, Majuro, Marshall Islands, pan-sharpened to 1-m resolution on the ground.

DISASTER MANAGEMENT

Meeting the challenge

The second year of the Disaster Management Project provided a number of challenges for the staff at the Disaster Management Unit (DMU) as we continued to advocate for and support a broader approach to disaster reduction and risk management within the region.

The size of the challenge becomes clear to anyone who is familiar with the size of the Pacific and just how isolated and vulnerable our communities are to the many hazards and risks that exist in this part of the world.

The Development of CHARM

One of the major activities for the DMU has been in assisting Pacific Islands Countries to develop an improved disaster reduction capability through the adoption of an integrated and whole of country approach to risk management, which is defined as Comprehensive Hazard and Risk Management (CHARM). CHARM is essentially a programming tool within the context of an integrated national development planning process.

The development of CHARM in the Pacific is consistent with the regional vision of overcoming vulnerability to the effects of natural hazards, environment damage and other threats and very much aligned to the United Nations International Strategy for Disaster Reduction initiative. Charm has been developed through a consultation process with stakeholder countries and is currently being introduced in Kiribati, Fiji, Tonga and Vanuatu.

Australia and New Zealand have provided the initial support funding for CHARM however; as national risk reduction priorities are identified through the use of this tool other international donor support will be required.

In partnership with the Queensland Department of Emergency Services – Counter Disaster and Rescue Services Division the DMU have developed CHARM regional guidelines, which will assist Pacific Island Countries to adopt and implement this broader community risk management approach.

Community risk management programmes that are linked to hazards and their impact on development programmes and community resilience are cross cutting and therefore require the integrated support and cooperation of national governments, regional organisations, NGOs and in many cases the private sector to be successfully implemented.



The Honourable James Cecil Cocker, Minister for Works and Disaster Relief Activities, launching the first of the CHARM workshops: Sensitisation and Strategic Planning Workshop at the Kahana Resort, Tonga.

The CHARM programming approach will therefore:

- Intrinsically link development priorities and programmes of individual countries
- Clearly identify gaps within existing or proposed country project activities
- Enable SOPAC to work closer with its regional partners and to develop the Community Risk Programme annual work plan and activities schedule around clearly identified country needs and priorities

Community risk management, using the CHARM approach, is a new concept that requires training and skills enhancement of national development planners and disaster managers. The potential benefits are a systematic process for analysing and evaluating risks in all development programmes.

The concept of CHARM has the endorsement of the SOPAC Member Countries and therefore international donors will be encouraged to support its successful implementation over the next three to five years as a mechanism for strengthening community resilience and enhancing sustainable development in the region. To assist Pacific Island countries to implement this programme, CHARM regional guidelines have been developed.

During 2001 the development of CHARM gained momentum on many fronts.

- It is being introduced in-country through three separate Workshops – CHARM I Sensitisation and Strategic Planning, CHARM II Multi-Agency Introduction to the CHARM Tool, and CHARM III Programming Follow-Up.
- Workshops were conducted in Tonga and Vanuatu and, as they were the first in this new initiative, they really served more to assist in the consolidation of the development processes of the Regional CHARM Guideline. As an outcome of the Vanuatu workshop, work started on the development of a “How-To Manual” to adapt the regional CHARM guideline for Vanuatu national use. Staff from the Queensland Department of Emergency Services have been heavily involved with the CHARM guideline development.
- Presentations on CHARM introducing it to high-level official members of the National Disaster Management Committee were undertaken respectively in the Marshall Islands and Palau.
- The draft Regional CHARM Guideline was finalised in September at the 10th Pacific Disaster Management Meeting and the decision subsequently endorsed by SOPAC Governing Council. The Guideline has since been prepared to be ready for printing early in 2002.
- Following the growing success in strategic partnership with Queensland Department of Emergency Services, Australia, approaches were made to New Zealand and Hawaii. A presentation of SOPAC and DMU programmes to the New Zealand Ministry of Civil Defence and Emergency Service in mid-December was successful in obtaining support for New Zealand involvement in DMU regional programmes, particularly CHARM implementation. Memorandums of Understanding are being drafted to delineate the areas of mutual support and cooperation.
- In November a high-level advocacy team consisting of Dr Langi Kavaliku, Tonga and Roger Jones, Australia were appointed to assist the DMU to promote the concept of CHARM to national governments.
- The development of the Public Safety Risk Management Course will provide formal training in the concepts of CHARM.

Professional Development Activities

Establishing a sustainable capacity to design, implement, manage and evaluate national disaster and risk management programmes will only be achieved by enhancing the existing skills and competencies of disaster reduction practitioners. The DMU Professional Development programme has specifically targeted the following areas of capacity building:

- A Comprehensive training needs analysis has been conducted and training and development gaps have been clearly identified.
- All existing training courses have been reviewed, new courses are being developed, and a number of work-study and training opportunities have been provided. Negotiations are currently taking place for professional development courses to be institutionalised within recognised training establishments.
- An annual evaluation of national capacities will commence in 2002.



Representatives of SOPAC and partner organisations at the Australian Emergency Management Institute to develop the Pacific Public Safety Risk Management Course.

Training Needs Analysis

A major achievement during 2001 was the completion of a comprehensive professional development training needs analysis. This was conducted by Dr Joe Griffin from Australia and copies of his findings have been provided to member countries to assist with the human resource capacity building process for disaster management practitioners in a wide range of organisations including response agencies, NGOs, disaster committees and the staff of national disaster management offices.

Regional, sub-regional and national training plans developed will be based on identified needs as specified in the report. Consolidation of training needs will also be determined by follow-up country consultations, work-place assessments and through discussions between national training providers and disaster managers represented on the National Training Advisory Committee.

It is planned to establish a regional training advisory committee to consist of local, regional and international educational institutions, as well as disaster managers from the region, to discuss regional training needs.

Disaster Reduction and Risk Management Training Courses

A training policy has been developed, which includes policies on course development, course review and course evaluation. These policies will provide standard formats in the formulation and review of courses.

Over the years, there have been courses sponsored by the UN South Pacific Disaster Reduction Project, Office for Foreign Disaster Assistance and Australian Institute of Emergency Management. As outlined in the Professional Development Needs Analysis report, the programmes conducted provide an excellent basis for the strengthening of the delivery of disaster and risk management professional development throughout the region by a variety of means.

One of the major training gaps that was identified was in the area of management and understanding the application of risk management practices to strengthening community resilience and sustainability. To address this identified need, a new Public Safety and Risk Management Course is being developed which will be linked to a recognised university qualification.

SOPAC DMU, in partnership with Asian Disaster Preparedness Centre, Australian Emergency Management Institute, The Asia Foundation/US Office of Foreign Disaster Assistance and Swinburne University of Technology, are currently developing the Public Safety Risk Management course which aims to provide middle to senior-level managers with knowledge, skills and tools to more effectively perform their roles and responsibilities in disaster reduction and risk management in their countries.

An Executive Leadership course is also planned for the latter part of 2002, and this will also be developed in a partnership arrangement.

The DMU are also working with the University of the South Pacific to develop risk management training courses for the Pacific.

Training Courses Institutionalised

It was felt that one of the ways of raising the profile of disaster reduction and risk management in the region was to offer qualifications from recognised training establishments. Hence the collegial approach to the development and delivery of courses.

Discussions have been conducted with local, regional and international institutions to introduce disaster reduction and risk management courses into their suite of programmes.

National Training Advisory Committees have been established in Fiji and Palau, and it is planned for similar committees to be set up in other countries. The committees are made up of disaster managers and training providers to encourage the inclusion of disaster reduction and risk management courses into training establishment's programmes of study.

Annual Evaluation of National Capacities

Evaluations of national capacities will be conducted by the Project Monitoring and Evaluation Group. A diagnostic tool will be developed to ensure the appropriateness of training provided. Evaluation will be conducted to identify improvements or enhancements to training.

Partnerships

During 2001 a number of strategic partnerships were developed by the DMU to more effectively coordinate capacity building activities in the region. One of the most important partnerships is with The Asia Foundation/Office of Foreign Disaster Assistance (TAF/OFDA), which has been very active in the Pacific for a number of years developing and delivering a range of training and development activities.

To ensure continued cooperation with the DMU, TAF/OFDA have funded two positions for training support staff to be attached to the DMU office. All TAF/OFDA programmes are now integrated as part of the regional training programme for the Pacific. TAF/OFDA will continue to support in-country and regional training programmes and will further develop two additional courses in 2002.

Through the development of partnerships with Rotary International Queensland they arranged for two Emergency Medical Response vehicles to be donated to the Samoa Volunteer Fire Service.

To support the strengthening of the Fire services in Pacific Island countries the Melbourne Fire and Emergency Service and the New South Wales Fire Service have generously donated vehicles and equipment to the Cook Islands and Tonga.



SOPAC coordinated the donation of two emergency vehicles by Rotary International Queensland to the Samoa Volunteer Fire Service. The vehicles were presented by representatives of the Samoa Rotary Club to the Police Commissioner and Fire Service representatives.

HUMAN RESOURCES DEVELOPMENT

The year 2001 was a relatively quiet one for the HRD unit at the SOPAC Secretariat. While numerous fellowship training attachments were undertaken under the auspices of the other units at the Secretariat, a Training Coordinator was not appointed to revive activities in this unit until November 2001.

With support from the Commonwealth Fund for Technical Cooperation, Dr Russell Maharaj from Trinidad & Tobago was recruited for six months solely to complete the current three-year cycle of the SOPAC Earth Science and Marine Geology Certificate Programme (ESMG). The current cycle was suspended after Year 2 in 2000, following the May 2000 civil unrest crisis in Fiji.

Following the Training Coordinator's recruitment, two project assistants were also hired to prepare for Year 3 of the current ESGM cycle and assist with project work. The teaching of the courses to complete the current cycle was scheduled to be carried out from January-April 2002.

With future funding looking more likely to be secured in the new year for a full-time Training Coordinator, the human resources development component of the SOPAC Work Programme is expected to have a more active year in 2002.



Earth Science and Marine Geology students, who began their final year of studies (after the disruption in May 2000) in November 2001.



"SOPAC's role should remain strictly as a regional geoscientific information centre, only coordinating geoscientific projects/ programmes crossing international boundaries. To use the Secretariat to carry out member-country projects should be discouraged. Member-country projects instead should be coordinated so that donor countries should plan with and carry out the project with the host country, so that it will be sustainable, boost institutional capacity and develop local staff.

Perhaps SOPAC might want to discuss short-term (1 month) and long-term (12 months) secondments to needy countries to assist in their programmes. A big organisation out of reach in Fiji is of no use to anyone.

Further, geoscientific libraries and its information infrastructure in various countries should be boosted in manpower and resources and most importantly be electronically accessible and networked with the SOPAC information and library services and archives; so that SOPAC's fundamental charter is realised by all its member countries and seen to be implemented."

Stevie Nion is currently Deputy Secretary of the Department of Mining in Papua New Guinea.

PUBLICATIONS AND LIBRARY

The complement of staff in the publication and library service of the Secretariat was raised to four in 2001, with the addition of a Publishing/Graphics Arts Assistant. Reuben Vulawalu, a Fiji Institute of Technology School of Printing graduate, joined the team in March. His entry was clearly seen in the sudden proliferation of images onto the covers of SOPAC corporate publications, and the all-round facelift given to most of our routine publications and reports. We expect this increase in capacity to be reflected in the new year by a more regular and timely production of flagship publications like the annual report and quarterly newsletters.

A new record was set in the year 2001 with 135 internally-produced reports (first time past 100) processed within the editorial/publishing process which includes soliciting for technical editorial assistance from external sources and a more rigorous peer review process. This higher volume is the effect of the full integration into SOPAC's publication processes of the energy and disaster management projects which had transferred into SOPAC. It is also due in part to the presence of the EVI Project.

While good progress was made on the electronic capturing of historical reports to complete the electronic record of all SOPAC reports and publications the task is proving daunting when taken together with the ongoing task of keeping an active and . Even with one full-time staff dedicated to the task, it is still a time-consuming exercise. While scanning a whole loose-leafed document is quick with a document feeder, the document is then processed page by page with an optical character recognition software, which is then checked line-by-line against the original document. When this process is considered along with the fact that the SOPAC Secretariat has at least thirteen report series that each have a substantial amount of historical data to be captured, this task is envisaged to be ongoing for the next five years. The five years will include the follow-up work that will be the next logical step in the mammoth task of digitising all hardcopy data, which will be the digitising of large-format resource material like charts and maps.

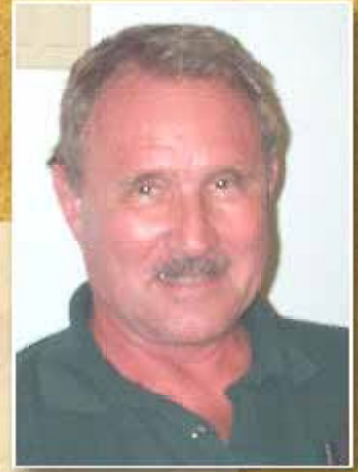
Assistance to member countries with geoscience reference collections was requested by the Vanuatu Department of Geology, Mines and Water Resources for an assessment and reorganisation of the Department library, neglected since the departure of the then Library Technician in 1998. Ms Caroline Joel, the clerk/typist assigned to look after the Vanuatu Department Library undertook a week-long fellowship attachment at the SOPAC Library in August, when she was trained in the basic skills of librarianship. The training rounded off with the SOPAC Librarian accompanying Ms Joel back to Port Vila and the pair physically reorganising the Library, and updating the Library Catalogue and Manual. Enough skills were transferred for the trainee to maintain the reorganised Library collection, but it is recommended that the skills base be upgraded after two years.

Other activities that utilised a considerable portion of staff time were preparations of Work Program documentation for the 30th Session of the SOPAC Governing Council, held in October in Majuro, Republic of the Marshall Islands. The Publications Coordinator was also Rapporteur of the Meeting, and was responsible for producing the Proceedings of the annual Council meeting. Support to various international and regional women in environment; and science and technology NGOs and networks was provided through production of newsletters and general IT support including database development advice and maintenance.



Phylis Solo from the Solomon Islands underwent training in basic library skills at the Secretariat during 2001, an activity postponed in 2000 because of the problems in the Solomon Islands and Fiji.

"This organisation is so damned good, it's unbelievable!" declares the first scientist and staff member of the SOPAC Secretariat. Loren Kroenke established the technical secretariat for the UN project that eventually evolved into SOPAC, the regional organization in the early 1970s. A geophysicist by profession, he is currently based at the University of Hawaii at their School of Ocean and Earth Science Technology.



Dr Kroenke watched the organization grow from one where he was the sole round-the-year technical advisory on all matters geoscientific in the Pacific to one where the chief technical representative would declare in 2001, that scientists "from within the region are making extremely valuable and clearly articulated presentations." He was the Secretariat's first Project Manager from 1974 and 1976 and it's only staff member for most of that time, with memories still fresh in his mind of hours that grew into weeks and months of poring over charts and maps of member countries with his draftsmen helpers from the Fiji Mineral Resources Department on the floor of the building accommodation provided by the Department.

The Secretariat's first and only home, so far, has been the Fiji Mineral Resources Department, as the vision and drive to establish the body that is now SOPAC, belonged to the then representative of Fiji, Ronald Richmond who became the first local Director of Mineral Development in 1973. Ronald Richmond was a regular participant at the UN/ECAFE (later ESCAP) meetings of the SOPAC equivalent body for Asia and the Far East, CCOP/EA, from where the idea to create SOPAC was birthed. When the first Technical Secretariat office was established by the fledgling body in 1974, Ronald Richmond (Fiji) offered accommodation, and Loren Kroenke moved office into the compound, under UNDP sponsorship.

Working closely with SOPAC member country representatives, Dr Kroenke managed, early on, to launch numerous offshore survey cruises in member country waters, using the M/V Savaii, M/V Ata, and the M/V Ravikai, among others. With considerable support from New Zealand, he was also able to initiate publication of SOPAC's first Proceedings volumes, Technical Bulletins, and South Pacific Marine Geological Notes.

Dr Kroenke returned to the Secretariat for one year, from mid 1980 to mid 1981, as SOPAC's structural geologist. Travelling from country to country, he compiled information on the geological framework of the SOPAC region, incorporating much of it into Technical Bulletin 6 (Cenozoic Tectonic Development of the Southwest Pacific) that was published in 1984. From 1985 on, he chaired the SOPAC Tectonics Working Group (now the Science, Technology and Resources Network, abbreviated STAR).

Dr Kroenke has attended every single annual meeting of the organisation in its various forms, except one, when he was at sea on board the Drillship Joides Resolution, drilling into the Ontong Java Plateau. He saw the accelerated growth of the organization once it became free of UN control, which was good for a season. SOPAC retained the Technical Advisory Group (TAG) from the old order and has over the years of rapid expansion since 1990, strengthened the ties with what is largely an external body, and made them closer.

"This closeness of TAG, the Secretariat and the member countries should be a model for other regional organizations worldwide. SOPAC is truly a regional organization with global support. It's the only organization I know in the world that is like this, and I attribute the success of this model to the people involved."

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 and the phasing in of a new Performance Management System at the Secretariat,
- Administration, office and property support services which include relocation and refurbishing of Units' work spaces,
- Design, implementation and maintenance of operational systems,
- Development and maintenance of project databases,
- Implementation, operation and maintenance of finance package funded by Australia (Sun Business Account, Fixed Asset Register & Purchase Order module).

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.
UNDP	Financial reporting included follow up for reimbursement of funds.
Other Funding	Ad-hoc reports and financial statements for new and ad-hoc donor funding provided during the year.



Participants at the 30th Session of SOPAC hosted by the Republic of the Marshall Islands in Majuro, in October 2001, after the opening ceremony by the Honourable President of the Republic, HE Kessai H. Note.

WORK PROGRAMME MANAGEMENT

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

The major management preoccupation in 2001 was the crafting of the SOPAC Corporate Plan for the period 2002-2004. Several consultations took place during the year among all the stakeholders, and a corporate workshop that involved the SOPAC Chair and Suva-based member country representations and the Secretariat finally arrived at a first draft which was subjected to further refinement before a final draft was ready to put before Council.

SOPAC Governing Council's 30th Meeting was hosted in Majuro by the Government of the Republic of Marshall Islands. The 30th Council meeting appointed Dr Russell Howorth the new Deputy Director of the Secretariat and approved the creation of a new position of Executive Officer to enhance the management team. The Council Meeting was preceded in Majuro by the Regional Meeting of Stakeholders in Wastewater Management, fully reported on in the Water Resources Unit report in this document.

The death of mineral geologist, Jackson Lum, at the end of May naturally affected the overall delivery of the Mineral Resource Unit work programme for the year. His Unit Head responsibilities were shouldered jointly by Craig Pratt, EVI Project Leader and Robin Koshy, Resource Economist (until October 2001). This tragedy cast a shadow over what was a fruitful and eventful year for SOPAC, the region and for that matter, the world.

EVI PROJECT

Since 1998, when SOPAC first initiated the Environmental Vulnerability Index (EVI) Project, significant progress has been made towards achieving its primary goal of formulating a methodology for determining the environmental vulnerability of countries.

Completion of the first two phases of EVI development has seen the formulation of a workable framework for measuring environmental vulnerability of states and extensive exposure of the EVI model to expert peer review. Preliminary testing of the EVI was also carried out on several Pacific countries including: Fiji, Tuvalu, Samoa and Vanuatu.

Generous support from New Zealand, Ireland, Norway and Italy has enabled the project to undertake Phase III, aimed at comprehensive mathematical testing of the EVI using real country data. Recommendations made at the Expert EVI Think Tank in Fiji, 1999, stressed that at least 15 countries that characterise the possible global extremes for environmental systems should be represented in our testing process. This has required the support of several non-Pacific countries in the provision of environmental vulnerability data for use in the testing and refinement of the EVI to ensure its global applicability, workability and robustness.

Efforts by the EVI team to compile country environmental vulnerability data profiles both internationally and regionally continue. Focus on compilation of environmental vulnerability profiles for SOPAC member countries has resulted in significant progress with the successful compilation of 13 Pacific country EVI data profiles, all with over 80% of the required data. To facilitate this work, each country has been visited by the SOPAC EVI team to establish and strengthen links with government agencies; build capacity to identify, collect and collate environmental vulnerability data and most importantly use the EVI tool. Australia and New Zealand have initiated compilation of EVI data profiles while other SOPAC member countries including Solomon Islands, Guam, New Caledonia and French Polynesia have yet to begin environmental vulnerability data collection.

To facilitate greater involvement of countries outside of the Pacific, SOPAC has strengthened links with the United Nations Environment Programme. This resulted in the co-convening of a Global EVI Meeting at UNEP's International Environment House in Geneva, Switzerland from 27 – 29 August 2001. The meeting was successful with several representatives from non-Pacific countries including Bangladesh, Greece, Kyrgyzstan, Malta, Nepal, Philippines and Thailand attending and also contributing essential environmental vulnerability data needed for Phase III. Expressions of interest in participating in the EVI project have been received from several other countries and some progress has been made in compiling their country environmental vulnerability profiles. The countries include Barbados, Botswana, Costa Rica, Jamaica, Kenya, Mauritius, St Lucia, Singapore and Trinidad.



Participants at the Global EVI Meeting co-hosted and organised by UNEP and SOPAC, 27-29 August 2001, Geneva, Switzerland.

Several other activities have been undertaken by the EVI team to promote awareness of the EVI project and issues surrounding environmental vulnerability. An EVI booklet has been produced to provide a simple easy to understand introduction to the issue of environmental vulnerability and how the EVI works.

The EVI team continues to make presentations at various regional and international fora and maintain a discussion website which provides access to all material being produced by the project. Positive reactions to the website indicate that it has proven to be a valuable way of maintaining communication links with participants in the project. The EVI team has also enhanced this link recently by initiating a regular newsletter to keep participants better informed of progress with the project.

Two scientific papers have also been prepared and submitted to international scientific peer-reviewed journals for publication to raise awareness and establish the scientific validity of the EVI. The papers include The Environmental Vulnerability Index and Profiles: Outcome-focused Environmental Management at the Scale of Countries and Smart Indicators, Environmental Vulnerability Index (EVI) and describing ecosystem health.

The target for the project for 2002 is to compile sufficient environmental vulnerability data and country profiles to comprehensively test and refine the EVI into a robust workable tool.

APPENDIX 1: SUMMARY OF 2001 DONOR FUNDING (BY PROGRAM)

ANTICIPATED SOURCE OF FUNDS	GRAND TOTAL	RESOURCE DEVELOPMENT PROGRAM	ENVIRONMENTAL SCIENCE PROGRAM	NATIONAL CAPACITY DEVELOPMENT PROGRAM	CORPORATE SERVICES PROGRAM	WORK PROGRAM MANAGEMENT
AUSTRALIA: Annual Grant Special Grant	482,987 593,558	164,987 142,200	318,000 132,012	461,546		
CANADA/CUSO	142,200					
CFTC	260,630		84,500	176,130		
CHINA	140,500		140,500			
DFID	587,296	217,000	133,729	236,567		
EMA	23,529			23,529		
FIJI	103,000		103,000			
FRANCE	193,449		26,449	167,000		
GEF	14,000	14,000				
ITALY (UNDESA Trust Fund)	223,423					223,423
JAPAN	95,000	95,000				
KOREA	40,000	20,000	20,000			
NEW CALEDONIA	106,500		106,500			
NEW ZEALAND: Annual Grant NZ Special Grant	373,094 465,814	246,000 85,789	71,094	380,025		56,000
Norway	150,928				0	150,928
OFDA	47,983			47,983		
TAIWAN/ROC	308,000	21,000	287,000			
UNEP/GPA	208,333	208,333				
UNITED KINGDOM (ODI)	122,000	122,000				
UNITED NATION (UN)	194,700	154,000	30,700	10,000		
VANUATU	5,000	5,000				
Total Budget	4,811,924	1,495,309	1,453,484	1,815,464	0	430,351

APPENDIX 2: LIST OF REPORTS & PUBLICATIONS (AS AT 15 AUGUST 2001)

PROCEEDINGS

Proceedings of the Twenty-ninth Session (hosted by the Government of the Republic of Kiribati) in Tarawa, Kiribati, 26 September – 4 October 2000, 152 pages.

SOPAC TECHNICAL REPORT

Smith, R. 2001. Assessment of sand reserve, Lease 6, Nukubuco Reef, Laucala Bay, Suva, Fiji Islands. SOPAC Technical Report 283 (in prep.)

Wong, L.W., Lum, J. 2001. Detrital gold assessment: Drilling, Nasivi Delta, Tavua, Fiji Islands, 17 November – 04 December 1999. SOPAC Technical Report 289.

Shorten, G. & others 2001. Site-specific earthquake hazard determinations in capital cities in the South Pacific, 2nd Edition. SOPAC Technical Report 300.

Butcher, A.S. & others 2000. Hydrogeological investigations in the Asau area, Savai'i, Samoa. SOPAC Technical Report 304.

Smith, R. 2000. Hydrodynamic simulation with MIKE 21 for Abaiang Atoll, Kiribati. SOPAC Technical Report 312. Restricted.

Lelaurin, J. 2000. Hydrodynamic simulation with MIKE21 of Abaiang Atoll, Kiribati. SOPAC Technical Report 313: 35 p.

Tereapui, T., Fairbairn, P. 2000. Report on energy audit Aitutaki Island Power Supply, Aitutaki - Cook Islands 16-17 June 2000. SOPAC Technical Report 314

Teakle, G., Biukoto, L. 2001. Building damage assessment, Suva, Fiji Islands. SOPAC Technical Report 315: 32 p.; 2 app.

Maharaj, R.J. 2001. Evaluation of the impacts of harbour engineering, Anibare Bay, Republic of Nauru (RON). SOPAC Technical Report 316.

Maharaj, R.J., Assessment of coastal engineering and environmental impacts of a boat harbour facility at Anibare Bay, Nauru. SOPAC Technical Report 317 (in prep).

Mario, R. 2000. Efficiency monitoring of solar hot water systems in the Fiji Islands and the Kingdom of Tonga. SOPAC Technical Report 318: 26 p.; 3 annexes

Wong, L.W., Lum, J. 2001. Preliminary report on detrital gold assessment: diamond drilling, Nasivi Delta, Tavua, Fiji Islands. SOPAC Technical Report 319.

Kojima, K. 2001. Summary of report on the cooperative study project on the deepsea mineral resources in selected offshore areas of the SOPAC region: sea area of the Republic of the Fiji Islands. SOPAC Technical Report 320: 42 p.; 9 app.; 21 figs.; 4 tables

Burke, E. 2000. Environmentally sound technologies for wastewater and stormwater management in small island developing states in the Pacific. SOPAC Technical Report 321.

Chao-Xiong He, Assessment of the vulnerability of Bairiki, Bikenibeu and Bonriki (South Tarawa, Kiribati) to accelerated sea-level rise. SOPAC Technical Report 322. (in prep)

Chao-Xiong He, Coastal erosion monitoring and advice on response strategies Nauru. SOPAC Technical Report 323. (in prep)

Atkinson, J.E., Collen, J.D. 2000. Environmental setting of Namuka Reef, Suva, Fiji Islands. SOPAC Technical Report 324: 19 p.; 10 figs.; 4 tables

Kojima, K. 2001. Japan/SOPAC deepsea mineral resources programme: a synthesis of the first stage (1985-1999). SOPAC Technical Report 325: 143 p.; 6 app.; 128 figs.; 35 tables.

Smith, R. 2001. Multibeam bathymetry Moneo Lagoon, Northern Province, New Caledonia. SOPAC Technical Report 326: 14 p.; 6 app.; 4 figs.; 1 table

Mario, R. 2001. The regional institutional wood fired stoves project in the Fiji Islands, Kiribati, Tonga and Tuvalu (An evaluation of Phase II/Stage One). SOPAC Technical Report 327: 18 p.; 1 annex

Yeo, S. 2001. A review of flooding in Macuata Province Fiji Islands: April 2000. SOPAC Technical Report 328: 20 p.; app.; figs.; tables.

Smith, R. 2001. Interpretation of seismic reflection data for Rade De Kone and Rade De Pouembout Lagoons, Koniambo, Northern Province, New Caledonia. SOPAC Technical Report 329: 13 p.; 5 figs;

Smith, R. 2001. Multibeam survey for Kinoya Sewer Outfall, Laucala Bay, Fiji Islands. SOPAC Technical Report 330.

Smith, R., Sharma, S., Frost, G. 2001. Water quality analysis, Manihiki Lagoon, Cook Islands. SOPAC Technical Report 331. (in prep.)

Chung, Q., Smith R., 2001. Lagoon Sand Resources Vava'u, Kingdom of Tonga SOPAC Technical Report 332. (in prep)

Atkins, C., Chung, Q., Gallois, M., Smith, R., Coastal Change Taqage, Nadroga Fiji), SOPAC Technical Report 333. (in prep)

Overmars, M. 2001. Water resources assessment of Banaba Island. SOPAC Technical Report 334. Smith, R., Motuiwaca, S. 2001. Vibro-coring investigations, Kinoya sewer outfall, Laucala Bay, Fiji Islands. SOPAC Technical Report 337.

Yeo, S. 2001. A review of flooding in Apia, Samoa, April 2001. SOPAC Technical Report 338.

Smith, R. 2001. Sedimentation in Draunibota Bay, northwest Suva Harbour, Fiji. SOPAC Technical Report 339.

SOPAC CRUISE REPORT

Binns, R., Dekker, D., Franzmann, P. 2001. Cruise Summary R/V Franklin FR 03/00, Binatang-2000 Cruise. SOPAC Cruise Report 150.

SOPAC PRELIMINARY REPORTS

McLeod, H. 2000. Draft Compensation Policy for Fiji's Mineral Sector. SOPAC Preliminary Report 123.

Maharaj, R.J. 2000. Coastal engineering of a rip-rap revetment system for shoreline protection, Yaren district, Republic of Nauru (RON). SOPAC Preliminary Report 124: 48 p.; 32 figs.; 1 table

Teakle, G., Biukoto, L. 2000. GPS control survey, South Tarawa, Kiribati, 3-4 October 2000. SOPAC Preliminary Report 125: 18 p.; 8 att.; 5 tables, 1 fig.

Teakle, G., Swamy, M. 2001. Preliminary site-specific earthquake hazard determinations for Apia, Upolu, Samoa. SOPAC Preliminary Report 126: 50 p.

Maharaj, R.J. 2001. Assessment of coastal engineering and environmental impacts of a boat harbour facility, Anibare Bay, Republic of Nauru (RON). SOPAC Preliminary Report 127: 51 p.; 1 app.; 34 figs.; 2 tables.

Kojima, K. 2001. Preliminary report on the results of the Japan/SOPAC deepsea mineral resources survey in the Cook Islands waters. SOPAC Preliminary Report 129: 13 p.

Smith, R. 2000. Preliminary multibeam survey report for Moneo Northern Province, New Caledonia. SOPAC Preliminary Report 130: 12 p.; 4 app.; 6 figs.

Dawe, P. 2001. Review of the Rotuma water supply and distribution system, Fiji Islands. SOPAC Preliminary Report 131: 16 p.; 2 app.

Smith, R. 2001. Resource evaluation of lease 6, Nukubuco Reef, Laucala Bay, Suva, Fiji Islands. SOPAC Preliminary Report 133: 21 p.; 3 app.

SOPAC MISCELLANEOUS REPORT

Mario, R., Tareti, T. 2000. Energy Information Database User Manual for Member Country Energy Offices. SOPAC Miscellaneous Report 377.

South Pacific Applied Geoscience Commission (SOPAC) 2000. Imagery: 8th EDF Pacific Regional Indicative Program: reducing the vulnerability of Pacific Island states: an island systems management approach. SOPAC Miscellaneous Report 385. RESTRICTED.

South Pacific Applied Geoscience Commission (SOPAC) 2000. ICT Equipment: 8th EDF Pacific Regional Indicative Program: reducing the vulnerability of Pacific Island States: an island systems management approach. SOPAC Miscellaneous Report 386: 21 p. RESTRICTED.

Collen, J., Howorth, R. (eds.) 2000. Abstracts of papers presented at the STAR session 2000. SOPAC Miscellaneous Report 387: 50 p.

Allinson, L. 2000. LAN/WAN proposal for Republic of Nauru Government. SOPAC Miscellaneous Report 388: 26 p. RESTRICTED.

Allinson, L. 2000. Registry upgrade proposal for Republic of Nauru Government. SOPAC Miscellaneous Report 389: 21 p. RESTRICTED.

Allinson, L. 2000. ISP upgrade proposal for Republic of Nauru Government. SOPAC Miscellaneous Report 390: 5 p. RESTRICTED.

Allinson, L. 2000. GIS and remote sensing workshop proposal for Republic of Nauru Government. SOPAC Miscellaneous Report 391: 10 p.; 3 app. RESTRICTED.

Siwatibau, S., Muller, P. 2000. SOPAC-SPC integration study. Report. SOPAC Miscellaneous Report 392: 48 p.

Mario, R. 2000. Energy Audit of the South Pacific Applied Geoscience Commission. SOPAC Miscellaneous Report 393.

Mario, R. 2001. Used batteries in the Fiji. SOPAC Miscellaneous Report 394.

Dawe, P. 2000. Workshop on Hydraulic Network Modelling with WaterCAD, 16-20 October 2000. SOPAC Miscellaneous Report 395: 49 p.; 5 app.

Channan, L. 2000. Water quality database, user manual. SOPAC Miscellaneous Report 396: 18 p.

Mearns, A., Overmars, M. 2000. Guidelines for water and sanitation utilities risk management planning. SOPAC Miscellaneous Report 397: 21 p.

Maharaj, R.J. 2000. Geology and sustainable development challenges for the new Millennium. Report of the 31st International Geological Congress (IGC) Rio De Janeiro, Brazil, 6-17 August 2000. SOPAC Miscellaneous Report 398: 15 p. Note: Abstracts of two conference papers

Maharaj, R.J. 2000. Pacific Islands at risk: foreshore development and its implications for vulnerability and adaptation to climate change: report of the APN/SURVAS/LOICZ Joint conference on coastal impacts of climate change in the Asia-Pacific region, 14-18 November 2000, APN Center, Kobe, Japan. SOPAC Miscellaneous Report 399: 39 p.

Mario, R. 2001. The National Energy Supply/Demand Database Manual, Tuvalu. SOPAC Miscellaneous Report 400. (in prep.)

Allinson, L., Forstreuter, W. 2001. Proposal - establishment of GIS for Kiribati Power Utilities Board (PUB). SOPAC Miscellaneous Report 401: 5 p. Note: RESTRICTED.

Allinson, L. 2000. Proposal for establishment of meteorological GIS environment for risk reduction. SOPAC Miscellaneous Report 402: 3 p. RESTRICTED.

Allinson, L. 2000. Proposal to implement SPDRP Virtual Library. SOPAC Miscellaneous Report 403: 3 p. RESTRICTED.

- Maharaj, R.J. 2001. Monitoring and control of coral reef dredging. Engineering and environmental implications in Pacific SIDS. SOPAC Miscellaneous Report 404: 16 p.
- Pratt, C., Koshy, R., Kaly, U., Pal, R. (et al.) 2001. Progress report: Environmental Vulnerability Index (EVI) Project: progress towards a global EVI. SOPAC Miscellaneous Report 405: 20 p.
- Mario, R. 2001. Hybrid energy systems and their potential in the Pacific Islands. SOPAC Miscellaneous Report 406. (in prep)
- Maharaj, R.J. 2001. Assessment of dredged coral rubble for construction in the Federated States of Micronesia. SOPAC Miscellaneous Report 407: 8 p.
- Maharaj, R.J. 2001. Assessment of quarried volcanic rock for construction in the Federated States of Micronesia. SOPAC Miscellaneous Report 408: 8 p.
- Pratt, C. 2001. Regional workshop on the issues and challenges of marine scientific research in the Pacific - summary record - 27 February - 1 March 2001, Port Moresby, Papua New Guinea. SOPAC Miscellaneous Report 409: 17 p.; 2 annexes
- South Pacific Applied Geoscience Commission (SOPAC). Disaster Management Unit 2001. Report on Regional Advocacy Strategy Workshop, Suva, Fiji Islands, 14-15 February 2001. SOPAC Miscellaneous Report 410: 9 p.; 4 annexes
- Hardstaff, P., Allinson, L. 2001. Regional information and communication technologies needs assessment and project planning conference. Planning session 1. Mon 2 - Tue 3 April 2001, SPC, Noumea. SOPAC Miscellaneous Report 411: 3 p.; 5 annexes. RESTRICTED.
- Allinson, L. 2001. Proposal to upgrade Vanuatu mineral resources database. Department of Geology, Mines and Water Resources, Port Vila, Vanuatu. SOPAC Miscellaneous Report 412: 4 p.; 1 attachment. RESTRICTED.
- Allinson, L. 2001. Proposal to implement a communications network (LAN-WAN), Department of Geology, Mines and Water Resources, Port Vila, Vanuatu. SOPAC Miscellaneous Report 413: 4 p.; 2 app. RESTRICTED.
- Allinson, L. 2001. Proposal to conduct national GIS and remote sensing workshop. Department of Geology, Mines and Water Resources, Port Vila, Vanuatu. SOPAC Miscellaneous Report 414: 2 p.; 2 app. RESTRICTED.
- Pratt, C., Howorth, R. 2001. Ocean issues in the Pacific region in 2000: initiatives and priorities. SOPAC Miscellaneous Report 415: 19 p.
- Dawe, P. 2001. Course on basic hydraulics for the Vanuatu Rural Water Supply. SOPAC Miscellaneous Report 419: 5 p.; 4 app.
- South Pacific Applied Geoscience Commission (SOPAC) 2001. Proposal to establish a GIS for Pohnpei Power Utilities Corporation. SOPAC Miscellaneous Report 420: 11 p.; 7 attachments. RESTRICTED.
- Maharaj, R.J. 2001. Commonwealth Secretariat/CFTC Expert Terminal Report June 1998-June 2001. SOPAC Miscellaneous Report 421: 8 p. RESTRICTED.
- Allinson, L. 2001. Tuvalu ISP re-establishment report and upgrade proposal. SOPAC Miscellaneous Report 422: 14 p.; 6 attachments. RESTRICTED.
- Allinson, L. 2001. Proposal to conduct GIS and Remote Sensing Workshop, Ministry of Natural Resources, Energy and Environment, Funafuti, Tuvalu. SOPAC Miscellaneous Report 423: 2 p.; 1 attachment. RESTRICTED.
- SOPAC. 2001. 10th PIMRIS Steering Committee Meeting. Report of SOPAC Library. SOPAC Miscellaneous Report 424: 2 p.
- Bower, R., Graham, B., Dworsky, M., Overmars, M. 2001. Consultation meeting of stakeholders in sewage management, 2 February 2001, Auckland, New Zealand. SOPAC Miscellaneous Report 425: 21 p.; 2 app.

Bower, R., Channan, L., Overmars, M. 2001. Consultation Meeting of stakeholders in sewage management, 23 March 2001, Apia, Samoa. SOPAC Miscellaneous Report 426: 15 p.; 2 app.

SOPAC Disaster Management Unit, 2000. Scoping the Professional Development Requirement for Disaster/Risk Management in the South Pacific. SOPAC Miscellaneous Report 427 (in prep).

SOPAC Disaster Management Unit, 2001. Warning Systems in National Disaster Management Planning – A guide to Warning Systems for Natural Hazards in Guam, February 2001. SOPAC Miscellaneous Report 428.

SOPAC Disaster Management Unit, 2001. Warning Systems in National Disaster Management Planning – A guide for planners and policy makers in Fiji, February 2001. SOPAC Miscellaneous Report 429.

Barr, J., 2000. Civil crisis in Pacific Islands Countries – A framework for delivery of humanitarian assistance to those in need. [Paper prepared for SOPAC and the Forum Secretariat for consideration by the Forum Officials Committee in October 2000]. SOPAC Miscellaneous Report 430.

Pratt, C. 2001. Review of the SOPAC Cruise Database. SOPAC Miscellaneous Report 431 (in prep).

Pratt, C. 2001. Data and Information Catalogue for the Solomon Islands. Preliminary phase to preparing a claim for an extended continental shelf. SOPAC Miscellaneous Report 432 (in prep).

Pratt, C. 2001. Data and Information Catalogue for the Federated States of Micronesia. Preliminary phase to preparing a claim for an extended continental shelf. SOPAC Miscellaneous Report 433 (in prep).

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Pratt, C. 2001. Data and Information Catalogue for Fiji. Preliminary phase to preparing a claim for an extended continental shelf. SOPAC Miscellaneous Report 435 (in prep).

Pratt, C. 2001. Draft Pacific Islands Regional Marine Scientific Research Guidelines. SOPAC Miscellaneous Report 436 (in prep).

Kojima, K. 2001. Research programme for Environmental Study on hydrothermal deposits – a proposal. SOPAC Miscellaneous Report 437. RESTRICTED.

SOPAC Secretariat. ITPACNet 2001. SOPAC Miscellaneous Report 438.

Mario, R. 2001. Results of Energy Audit of the South Pacific Applied Geoscience Commission (SOPAC). SOPAC Miscellaneous Report 439.

SOPAC DATA RELEASE REPORTS (NEW)

Biukoto, L. & others, 2001. Pacific Cities CD, Apia, Samoa, Version 1.0. GIS Hazards Database. SOPAC Data Release Report 1.

Biukoto, L. & others, 2001. Pacific Cities CD, Honiara, Solomon Islands, Version 1.0. GIS Hazards Database. SOPAC Data Release Report 2.

Biukoto, L. & others, 2001. Pacific Cities CD, Nuku'alofa, Tonga, Version 1.0. GIS Hazards Database. SOPAC Data Release Report 3.

Biukoto, L. & others, 2001. Pacific Cities CD, Port Vila, Vanuatu, Version 1.0. GIS Hazards Database. SOPAC Data Release Report 4.

Biukoto, L. & others, 2001. Pacific Cities CD, Suva, Fiji Islands, Version 1.0. GIS Hazards Database. SOPAC Data Release Report 5.

Mario, R., Tareti, T., 2001. Energy Information Database User Manual for Regional Organisations. SOPAC Data Release Report 6. (in prep)

Mario, R., Tareti, T., 2001. Regional Energy Information Database User Manual. SOPAC Data Release Report 7. (in prep)

Mario, R. 2001. The National Energy Supply/Demand Database Manual – Samoa. SOPAC Data Release Report 8. (in prep)

Mario, R. 2001. The National Energy Supply/Demand Database Manual – Solomon Islands. SOPAC Data Release Report 9. (in prep).

SOPAC TRAINING REPORT

Fairbairn, P.L. 2000. Report on the SPF maintenance and training workshop, Tokyo and Yokohama, Japan, 17-24 July 2000. SOPAC Training Report 86: 13 p.

Lelaurin, J. 2000. Hydrodynamic simulation with Mike 21 of Abaiang Atoll, Kiribati. SOPAC Training Report 87: 65 p.

Prasad, S. 2000. Library attachment at SOPAC Secretariat (for Phyllis Solo, Technical Records Clerk, Division of Geology, Solomon Islands) 20-24 November 2000. SOPAC Training Report 88: 5 p.; 3 annexes.

Moly, Y. 2000. Realisation of a bathymetric map "Abaiang Lagoon". SOPAC Training Report 89: 11 p.; CD-ROM. RESTRICTED.

Butcher, A., Fepuleai, A. 2000. Report on the 2000 courses for the certificate in Earth Science and Marine Geology. SOPAC Training Report 90: 18 p.; 3 app.

Maharaj, R.J., Beaches and Shorelines. Guidelines for monitoring, data collection & evaluation, skills for development. SOPAC Training Report 91.

SOPAC TRIP REPORT

Bower, R. 2000. Commonwealth Young Professionals Millennium Conference: report of visit to the United Kingdom, 14 March 2000. SOPAC Trip Report 270: 11 p.; 7 annexes

Bower, R. 2000. Report of visit to Kiribati Islands 22 February - 2 March 2000. SOPAC Trip Report 271: 10 p.; 4 app.

Pratt, C. 2000. Environmental Vulnerability Index Vanuatu data profile: summary trip report, July 1999. SOPAC Trip Report 272: 8 p.

Pratt, C., Pal, R. 2000. Environmental vulnerability Index Samoa data profile: summary trip report, August 1999. SOPAC Trip Report 273: 7 p.

McLeod, H., Pal, R. 2000. Environmental Vulnerability Index Fiji data profile: summary trip report, December 1999. SOPAC Trip Report 274: 7 p.

Pratt, C., Pal, R. 2000. Environmental Vulnerability Index Kiribati data profile: summary trip report, April 2000. SOPAC Trip Report 275: 8 p.

Pratt, C., Pal, R. 2000. Environmental Vulnerability Index Nauru data profile: summary trip report, April 2000. SOPAC Trip Report 276: 8 p.

Pal, R., Koshy, R. 2000. Environmental Vulnerability Index Tonga data profile: summary trip report, July 2000. SOPAC Trip Report 277: 9 p.

Pratt, C. 2000. Environmental Vulnerability Index Cook Islands data profile: summary trip report, August 2000. SOPAC Trip Report 278: 9 p.

Allinson, L. 2000. Trip report - Nauru - address ITU tasks. SOPAC Trip Report 279: 10 p.

Koshy, R. 2001. Environmental Vulnerability Index: Federated States of Micronesia Data Profile: summary trip report. SOPAC Trip Report 280: 16 p.

- Koshy, R. 2000. Environmental Vulnerability Index: Palau Data Profile: summary trip report. SOPAC Trip Report 281: 13 p.
- Pal, R. 2000. Environmental Vulnerability Index: Marshall Islands Data Profiles: summary trip report. SOPAC Trip Report 282: 6 p.; 2 tables
- Pal, R. 2000. Environmental Vulnerability Index: Niue Data Profiles: summary trip report. SOPAC Trip Report 283: 5 p.; 3 tables
- Pal, R., Sale-Mario, E. 2001. Environmental Vulnerability Index: Papua New Guinea data profiles: summary trip report. SOPAC Trip Report 284: 10 p.; 3 tables
- Pratt, C. 2000. Caribbean mission: Country Environmental Vulnerability Data Profiles: Barbados, Jamaica, St Lucia, Trinidad & Tobago. Summary Trip report. SOPAC Trip Report 285 : 13 p.
- Overmars, M. 2001. Report of visit to Ocho Rios, Jamaica, 19-23 February 2001. SOPAC Trip Report 286: 5 p.
- Mearns, A. 2001. Visit to Australia and the Solomon Island, 18-31 March 2001. SOPAC Trip Report 287: 5 p.
- Allinson, L. 2001. Trip Report : New Caledonia and Vanuatu, 31 March 2001 – 10 April 2001. SOPAC Trip Report 289.
- Allinson, L., Forstreuter, W. 2001. Trip Report : SPC 14th Regional Conference of Permanent Heads of Agriculture and Livestock Production Services, 30 April – 4 May 2001, Tanoa Hotel, Nadi, Fiji Islands. SOPAC Trip Report 290.
- Allinson, L. 2001. Trip Report, Tuvalu, 18 June – 2 July 2001. SOPAC Trip Report 292.
- Overmars, M. & others. 2001. Report of visit to Samoa, 19-30 March 2001. SOPAC Trip Report 293.
- Overmars, M. 2001. Report of a visit to Samoa, 7-11 June 2000. SOPAC Trip Report 294.
- Butcher, A., Overmars, M. 2001. Report of a visit to Nauru, 22-24 August 2000. SOPAC Trip Report 295.
- Channan, L., Overmars, M. 2001. Report of a visit to Marshall Islands, 16-20 October 2000. SOPAC Trip Report 296.
- Overmars, M., Bower, R. 2001. Report to management on missions to IHP meeting in Christchurch and to WSSCC meeting in Foz do Iguassu, Brazil. SOPAC Trip Report 297.
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- SOPAC Joint Contribution
- Briguglio, L., Kaly, U., Pratt, C. (eds). 1999. Report of the meeting of experts on the environmental vulnerability index, Valletta, Malta 29 November - 3 December 1999. (SOPAC Joint Contribution 133). 36 p., 5 app.
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Tappin, D.R. 2001. Preliminary report on a potential extended continental shelf claim by the Kingdom of Tonga from a consultancy between the Kingdom of Tonga and the British Geological Survey. (SOPAC Joint Contribution 135). RESTRICTED

JAMSTEC. 2001. Preliminary report of SOS-4 Cruise (NT01-01) off Vanimo-Sissano-Aitape, Northern Coast of Papua New Guinea. 8-20 February 2001. R/V Natsushima. (SOPAC Joint Contribution 136). Note: includes CD-ROM

Japan International Cooperation Agency (JICA), Metal Mining Agency of Japan (MMAJ). 2001. Report on the cooperative study project on the deepsea mineral resources in selected offshore areas of the SOPAC region (volume 1) sea area of the Cook Islands. (SOPAC Joint Contribution 137).

ROUTINE PUBLISHING PROJECTS

Annual Report Summary 2000

1 issue of SOPAC News

2 issues of Pacific GIS & RS News

1 issue of Hazardous Times & 1 issue of Risky Business, formerly Hazardous Times (DMU)

1 issue of SOPAC Water & Sanitation newsletter (WRU)

NON-ROUTINE CORPORATE PUBLISHING PROJECTS

SOPAC Poverty Policy Paper: "Poverty Alleviation, SOPAC's Philosophy and Approach." SOPAC

Miscellaneous Report 370. January 2001.

SOPAC Library Services leaflet (in response to public demand)

UN South Pacific Disaster Reduction Program (SPDRP):

Publishing projects transferred to PLU for completion at the closure of the Project

1. Regional El Niño Social and Economic Drought Impact Assessment and Mitigation Study/by Chris Lightfoot. SOPAC Technical Report 303.
2. Gender, Households, Community and Disaster Management: Case studies from the Pacific Islands/by Penelope Schoeffel Meleisea.
3. Vulnerability Reduction package by FSPI Island Consulting to include:
 - A Community Training Guide for Pacific Island Countries;
 - Lessons Learnt from Community-Level Disaster Preparedness Training in Pacific Island Countries;
 - Community Disaster Preparedness Training Kit, Palau & Community-Level Vulnerability Reduction Training Report; and
 - Community Vulnerability Disaster Reduction – Vanuatu Trial
4. Suva Earthquake Risk Management Scenario Pilot Project (SERMP) – Summary Report/by Shane Cronin to be co-produced in one package with "Workshop Report on Implications of Kadavu Volcanic Hazards to Development in Eastern and Central Division," – Workshop for Central & Eastern Divisions Government Officials conducted by Shane Cronin
5. Savai'i, Volcanic Hazards Project, Samoa, October 2000/by Shane Cronin, Paul Taylor & Faatoia Malele.
6. Emergency Operations Centres : A Training Manual for Pacific Island Countries/by Joe Barr.
7. Damage and Needs Assessment Course package:
 - Instructor Guide
 - Student Workbook

APPENDIX 3 SECRETARIAT STAFF LIST (AS AT AUGUST 2001)

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 2004
Mineral Resources Unit					
2 Marine Geologist	Jackson Lum	Fiji	Oct 1998	Oct 1998	May 2001
3 Offshore Geologist	Kazuhiro Kojima	Japan	Mar 1999	Mar 1999	Mar 2001
4 Resource Economist	Robin Koshy	India	Oct 1999	Oct 1999	Oct 2001
5 Senior Geology Technician	Sekove Motuiwaca	Fiji	April 1980	Jan 2001	Dec 2004
Water Resources Unit					
6 Water & Sanitation Specialist	Clive Carpenter	United Kingdom	April 2001	April 2001	April 2004
7 Economist Civil Engineer	vacant				
8 Hydrogeologist	Marc Overmars	Netherlands	April 2000	April 2000	March 2002
9 Hydraulic Engineer	vacant				
10 Workshop Assistant	Setareki Ratu	Fiji	Oct 1986	Jan 2001	Dec 2004
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 2004
Coastal Unit					
14 Marine Geophysicist	Robert Smith	Australia	May 1998	Jul 2001	Jul 2004
15 Coastal Geologist	Russell Maharaj	Trinidad & Tobago	Jan 1998	Jan 1998	Jun 2001
16 Coastal Geologist	Chao Xiong He	China	Jul 1998	Sept 1998	Sept 2001
17 Senior Electronics Technician	Simon Young	Fiji	Jan 1993	Jan 1996	Jan 2002
18 Electronics Technician	Peni Musunamasi	Fiji	Jun 1989	Jan 2001	Dec 2004
19 Assistant Surveyor	Andrick Lal	Fiji	Aug 2001	Aug 2001	Aug 2004
Hazard Assessment Unit					
20 Coastal Engineering Geologist	Graham Shorten	Australia	Oct 1995	Jan 1999	Jan 2002
21 Technical Support Assistant	Graeme Frost	Fiji	Mar 1992	Jan 2001	Dec 2004
Ocean Unit					
22 Marine Affairs Advisor	Cristelle Pratt	New Zealand	May 2000	May 2000	May 2002
NATIONAL CAPACITY DEVELOPMENT PROGRAMME					
23 Programme Assistant	vacant				
Human Resource Development Unit					
24 Training Coordinator	vacant				
Disaster Management Unit					
25 Disaster Management Coordinator	Alan Mearns	Australia	June 2000	Jun 2000	Jun 2003
26 Disaster Management Adviser	Atu Kaloumaira	Fiji	Dec 2000	Jan 2000	Dec 2004
27 Professional Development Officer	Dawn Tuiloma	Samoa	Feb 2001	Feb 2001	Feb 2004
28 Disaster Management Trainer	Lesu Waqaniburotu	Fiji	Dec 2001	Dec 2001	Dec 2003
Support Officer					
29 Programme Assistant	Vive Vuruya	Fiji	Sept 1998	Jan 2001	Dec 2004

SECTIONS	NAME	COUNTRY OF ORIGIN	DATE JOINED SOPAC	DATE CONTRACT STARTED	DATE CONTRACT EXPIRES
NATIONAL CAPACITY DEVELOPMENT PROGRAMME					
Information Technology Unit					
30 Information Technology Manager	Les Allinson	Australia	Nov 1992	Nov 1998	Nov 2001
31 Database Development Officer	Frank Martin	France	Sep 1993	April 2000	April 2003
32 Computer Geologist	Myriam Gallois	France	Aug 2000	Aug 2000	Nov 2001
33 Information Technology Officer	Timoci (Jim) Tora	Fiji	May 2001	May 2001	May 2004
Publications and Library Unit					
34 Publications Coordinator	Mereseini Bukarau	Fiji	Nov 1985	Oct 2000	Sept 2003
35 Library / Programme Assistant	Sunita Prasad	Fiji	May 1989	Jan 2001	Dec 2004
36 Publishing/Graphic Arts Assistant	Reuben Vulawalu	Fiji	April 2001	Mar 2001	Mar 2004
CORPORATE SERVICES PROGRAMME					
37 Programme Assistant	Annette Warbrooke	Fiji	Oct 1990	Jan 2001	Dec 2004
38 Executive Assistant	Litia Waradi	Fiji	Apr 1989	Jan 2001	Dec 2004
Management Unit					
39 Director	Alfred Simpson	Fiji	Feb 1995	Feb 2001	Feb 2004
40 Deputy Director	vacant				
41 Programme Manager	Russell Howorth	New Zealand	Mar 1998	Mar 1998	Mar 2002
42 Finance & Administration Controller	Mohinish Kumar	Fiji	Mar 1998	Mar 2001	Mar 2004
Finance Unit					
43 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 Assistant	Nazmeen Whippy	Fiji	July 1986	Jan 2001	Apr 2001
46 Administrative Officer	Karen Datta	Australia	July 2001	Jul 2001	July 2004
47 Receptionist / Clerk	Unaisi Bainiloga	Fiji	Feb 1987	Jan 2001	Dec 2004
48 Driver / Clerk	Enele Gaunavou	Fiji	July 1988	Jan 2001	Dec 2004
49 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 EVI Project Assistant	Craig Pratt Emma Sale Mario	United Kingdom Fiji	Aug 1998 Feb 2001	Feb 2001 Feb 2001	Feb 2002 Feb 2002
Water Resources Unit Sanitation Project Officer CUSO Volunteer Water Quality Officer	Rhonda Bower Paula Dawe Lina Channan	Fiji Canada Fiji	Nov 1998 Nov 1999 Aug 1999	Mar 2001 Nov 1999 Mar 2001	Mar 2002 Nov 2001 Mar 2002
Energy Unit Consultant	Rupeni Mario	Fiji	Oct 1998	Mar 2001	Mar 2002
Coastal Unit Short-Term Assistant COU I Short-Term Assistant COU II	Shereen Sharma Quan Chung	Fiji Fiji	Aug 1999 Aug 1999	Jan 2001 Jan 2001	Dec 2001 Dec 2001
Hazard Assessment Unit Geohazards Project Assistant Short-Term Assistant HAU I	Monika Swamy Purnima Naidu	Fiji Fiji	Jan 1998 Aug 2000	Jan 2001 Aug 2001	Dec 2001 Aug 2002
Oceans Unit Short-Term Assistant OCU I	Famiza Yunus	Fiji	Jan 1999	Aug 2001	Dec 2001
Disaster Management Unit Hazard & Information Management Adviser	Litea Biukoto	Fiji	Mar 1998	Aug 2001	Dec 2001
Information Technology Unit Remote Sensing Specialist Short-Term Assistant ITU I Short-Term Assistant ITU II Short-Term Assistant ITU III	Wolf Forstreuter Anthony Browne Avinash Prasad Elizabeth Matalomani	German Fiji Fiji Fiji	Jan 1999 Feb 1998 Jun 1999 Oct 2000	Jul 2001 July 2001 Feb 2001 Oct 2000	Jul 2002 Dec 2001 Dec 2001 Dec 2001
Publications and Library Unit Short-Term Assistant PLU I	Abigail Duiabe	Fiji	Jul 1999	June 2001	Dec 2001
Finance Unit Temporary General Accounts Clerk	Abdul Dean	Fiji	Feb 1997	June 2001	June 2002

APPENDIX 4: 2001 REVISED BUDGET & 2002 APPROVED BUDGET

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

	2001 Revised Budget F\$	2002 Approved Budget F\$
PROGRAMME HEADS		
Resource Development Programme	1,717,731	2,397,350
Environmental Science Programme	1,582,984	2,561,366
National Capacity Development Programme	2,147,781	2,733,000
Corporate Services Programme	1,061,000	1,274,500
Work Program Management Programme	683,351	138,000
TOTAL	7,192,847	9,104,216

APPENDIX 5: LIST OF ACRONYMS

Argo	– Array for Real-time Geostrophic Oceanography
CHARM	– Comprehensive Hazards and Risk Management
CROP	– Committee of Regional Organisations of the Pacific
DFID	– Department for International Development (UK)
EEZ	– Exclusive Economic Zone
EU	– European Union
EVI	– Environmental Vulnerability Index
GEF	– Global Environmental Facility (World Bank-UNEP-UNDP)
GIS	– Geographic Information Systems
ICANN	– The Internet Corporation of Assigned Names and Numbers (www.icann.org)
INET	– The name for the annual Internet Conference of the Internet Society (www.isoc.org)
JICA	– Japan International Cooperation Agency
MMAJ	– Metal Mining Agency of Japan
NGO	– Non-Government Organisations
SPREP	– South Pacific Regional Environment Programme
UNEP	– United Nations Environment Programme
UNESCO	– United Nations Educational Scientific and Cultural Organisation
USP	– University of the South Pacific
WHO	– World Health Organisation

