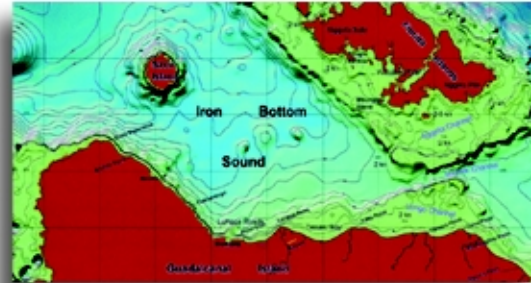


# SOPAC



## COUNTRY PROFILE



# SOLOMONS

# SOPAC



## *Our Vision*

*The improved health,  
well being and safety  
of the Pacific and its peoples*

The South Pacific Applied Geoscience Commission (SOPAC) is an independent, intergovernmental, regional organisation established by South Pacific nations in 1972, and dedicated to providing geotechnical services to the countries it serves. Its Secretariat is located in Suva, Fiji, and has about 40 professional and support staff.

SOPAC's work for its member countries focusses on three key areas; resource development; environmental geoscience; and national capacity development in the geosciences. To effectively deliver these services SOPAC maintains a regional data centre, provides information services, and offers technical and field services for specific project work.

THIS COUNTRY PROFILE WAS PRODUCED TO PROVIDE A SNAPSHOT OF THE CURRENT ISSUES FACED BY THE COUNTRY AND SOPAC'S ROLE IN ASSISTING COUNTRIES TO ACHIEVE SUSTAINABLE DEVELOPMENT



# SOLOMONS COUNTRY PROFILE



## Solomon Islands : Our Future

" The government of Solomon Islands will try to ensure the implementation of strategies ... in particular areas ... such as environmental awareness and education, environmental impact assessment of policy and development projects, introduction of environmental laws; strengthening environmental administration; and promoting sustainable use of resources."

Victor Ngele  
Hon. Minister for Natural Resources. (1993)

Capital:	Honiara
Population:	408 400 (1999 est.)
Land Area:	28 370 sq. km
Max. Height above Sea-level:	2 447 m (Mt Makarakombou)
Geography:	Consists of double chain of 6 large islands and many smaller ones; volcanic in origin; the 6 major islands are Choiseul, New Georgia, Santa Isabel, Guadalcanal (main island), Malaita and San Cristobal
EEZ:	600 000 sq. km
Climate:	Tropical, modified by oceanic environment
Rainfall:	Varies from 3 000 – 3 500 mm per annum
Mean Temperature:	26°C
Economy:	Dependent on agriculture, fisheries, forestry and gold; exports include gold, copra, wood products, fish products, palm products and cocoa
GDP per Capita:	US\$ 926 (1998 est.)
Currency:	Solomon Islands \$
Energy Sources:	Biomass, solar, hydro, wave, wind, geothermal
Freshwater Sources:	Groundwater, surface water
Natural Hazards:	Cyclone, storm surge, coastal flooding, river flooding, drought, earthquake, landslide, tsunami and volcanic eruption
Mineral Potential:	On-land – gold, silver, nickel; Offshore – polymetallic sulphides (gold, silver, copper, lead and zinc), hydrocarbons
Languages:	English (official), Pidgin and 87 other languages
Government:	Independent state and member of Commonwealth
SOPAC Membership:	Full member since 1971
Country Representative:	Permanent Secretary
	Ministry of Energy, Water and Mineral Resources
	PO Box G37. Honiara
	Tel: (677) 25 974/25 507
	Fax: (677) 25 11

profile



## The Solomon Islands

The Solomon Islands is the third largest archipelago in the South Pacific. The country consists of a double chain of volcanic islands with six major island groups: New Georgia, Guadalcanal and Makira to the south; and Choiseul, Isabel and Malaita in the northern group. Guadalcanal is the major island and the location of Honiara, the capital.



*Children of Solomons*

There are some 992 islands, atolls and cays that compose the Solomon Islands, the total land area of which is 28 370 sq km scattered in an Exclusive Economic Zone (EEZ) of 600 000 sq km. The population of the Solomon Islands was estimated at 408 400 in 1999<sup>1</sup> with the highest percentage located in the Malaita Province.

The Solomon Islands has a tropical climate from April to November followed by the wet season from December to March. Rainfall is variable, ranging from 3 000 mm to 3 500 mm per annum and average temperature is 26°C.

Agriculture, fisheries, forestry and minerals are the mainstays of the country's economy. Gold, copra, wood products, fish products, palm products and cocoa contribute to the export earnings of the country.

There are several resource and environmental issues, common to island nations, affecting sustainable development in the Solomon Islands. These include an array of issues from climate and sea-level variability, environmental degradation and pollution to resource management. More specific challenges to sustainable development include coastal erosion, water quality, water availability, sanitation, and natural hazards. Sustainable management of resources such as aggregate, terrestrial and offshore minerals and renewable energy are other issues in the Solomon Island's quest for development.

The Solomon Islands has been a full member of the South Pacific Applied Geoscience Commission (SOPAC) since 1971. SOPAC is an independent, intergovernmental, regional organisation, which provides expert technical assistance, policy advice and information on the sustainable management of these natural resources. SOPAC also contributes to a variety of geoscientific training and educational opportunities at all

levels to increase the country's capacity in science and resource management. Additional assistance is made available by SOPAC through technical support for the establishment and maintenance of database information systems and for electronic exchange of information. Expertise in hazard assessment, disaster preparedness, mitigation and management is also provided.

## Resource Development and Management

For Small Island Developing States (SIDS), natural resource development and management holds the key to rapid economic development. Unwise exploitation of non-renewable resources and exploitation of renewable resources at a pace higher than the natural rate of replenishment could prove detrimental to the sustainable development plans of the country.

The Solomon Islands has a large resource of virgin forests that supply a wide variety of timber and non-timber products. These forests are integral to the biodiversity, local traditions and catchment area and flood protection. Currently, the exploitation of the forest resources is not sustainable and there is need to rethink strategies to ensure that these resources are used judiciously for the welfare of the present and future generations. Minerals are, however, the key resources of the country.

<sup>1</sup>SPC Demography Programme (1999 Census provisional count)

## MINERALS

The Solomon Islands was named after the fabled 'King Solomon's Mines' by the Spanish explorer Alvarado de Mendaña in 1568. Scouting for gold in the Solomon Islands has continued since then, though with limited success. The Gold Rush of 1929 in the Massey River of New Georgia proved to be a red herring with no gold being found. Alluvial gold has been extracted for years, mainly from the Chovohio River that dissects the Gold Ridge Prospect, but annual production is only in the region of 2000-3000 ounces. Fortunes improved with the discovery and exploration of the Gold Ridge Prospect. The Gold Ridge Mine, the first gold mine of the Solomon Islands, opened in 1998, and accounts for 30% of the Gross Domestic Product of the country today. The contribution that the Gold Ridge project makes to the local economy portends the multiplier effect that proper development of the mining sector can have in the Solomon Islands.

The nickel prospects in Isabel are considered to be economically viable, and the tendering process has already begun. A manganese mine operated briefly in 1960 and exported some high-grade ore to Australia, before financial burdens closed it down. The Volcanic Province, which spans from Bougainville to Guadalcanal, could prove to be of economic importance.



*Goldridge*

Besides gold and nickel the area is believed to be prospective for copper, bauxite and silver.

Offshore exploration has been carried out to a limited extent in the Solomon Islands, but is still at a nascent stage. Exploratory surveys, however, reveal the presence of polymetallic massive sulphides (rich in copper, lead, zinc, gold and silver) in the EEZ of the Solomon Islands. However, further research is required in this area. In addition to this there is also a potential for hydrocarbons in the Solomon Islands.

## ENERGY

With mining, light industries and tourism acting as the main engines of economic growth, the energy requirements of the Solomon Islands have been growing rapidly. Currently power is generated from fossil fuels, and the fuel import bill has become a growing strain on the economy. Dependence on imported energy is among the key factors that aggravate the vulnerability of Small Island Developing States like the Solomon Islands. Honiara is served by a 11 000-volt distribution system from diesel stations located at Honiara and Lungga. There are a few isolated micro and mini hydroelectric power projects as well. The increasing demand for imported petroleum products for the growing fleet of vehicles and motorboats and for electricity generation on the outer islands, has been straining the foreign exchange reserves.

## WATER & SANITATION

Fresh water is a fundamental resource for small island nations. Most development plans are pivotal on the availability of fresh water. Clean water and proper sanitation enhance the health and productivity of the work force and have particular implications for the children and future generations. Rainfall in the Solomon Islands ranges from 3000 mm to 5000 mm annually. Although the nation is endowed with numerous rivers and streams, water availability is as variable as the rainfall. With poor water retention and natural and human disturbances in the catchment areas, the Solomon Islands is often confronted by water shortages and contamination.

Currently, 64% of the population have access to safe drinking water and only 16% have access to sanitation. This lack of sewage disposal facilities is a major concern. As the demand increases, proactive measures might be needed to increase supply and reach.

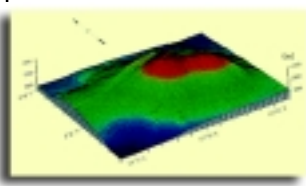
# Challenges to Sustainable Development and SOPAC's role in the Solomons

## MINERALS

SOPAC has been assisting Solomon Islands in addressing issues related to the development of mineral resources. Assistance has included field surveys, assessment studies, workshops, training sessions, public awareness campaigns and policy formulation.

Gold has been one of the key focuses of SOPAC's work in Solomon Islands. Investigation into the presence of gold at the mouth of the Matepono River and adjacent areas was carried out way back in 1975<sup>2</sup>. More studies on the placer gold potential were carried out in 1994<sup>3</sup>. A compilation was published with the aim of arousing the interest of the private sector in placer gold. A follow-up survey was carried out in 1995<sup>4</sup>.

SOPAC's work in the petroleum sector dates back to the assessment of oil potential in 1978<sup>5</sup>. A survey to assess hydrocarbon and petroleum potential was carried out in 1979<sup>6</sup>. Further studies in the area in 1983<sup>7</sup> were carried out to expand the



Seamount

knowledge base and stimulate private investment. Investigations in 1990 confirmed the presence of hydrocarbons in the Exclusive Economic Zone (EEZ) of Solomon Islands. However, to identify additional prospects for fossil fuels in the reef areas, magnetic profiling and collection of high-resolution multi-channel seismic data might be essential.

In 1993<sup>8</sup>, a detailed sampling and geochemical analysis was conducted to confirm and estimate the petroleum resource potential. Several potential source rocks for oil and gas have been identified, but detailed sampling and analysis is needed for confirmation. In the following year, surveys looked at the Mbokokimbo and Mole formations, outcrops on Florida Islands and deep-water facies on Malaita<sup>9</sup>.

With the goal of facilitating the further development of the petroleum sector in Solomon Islands, SOPAC reviewed the petroleum regulations in 1993<sup>10</sup>. The new set of regulations that were developed defined the regulatory hierarchy and introduced 'best practices'. This new regulatory framework allows the minister concerned to regulate licences, petroleum agreements, work obligations, area relinquishment, discovery and development of petroleum, environmental regime, marine resource management and operational, health and safety regulations.

In 1993<sup>11</sup>, SOPAC established a comprehensive Oil Company Database at the Secretariat to assist the member countries in their dealings with oil companies. This was a follow up to the consultancy that SOPAC offered in 1992, to promote the hydrocarbon potential of the South Pacific nations to the Oil Industry.

But gold, petroleum or hydrocarbons have not been the only focus of mineral development. In 1980<sup>12</sup>, a survey was undertaken to assess the potential of ceramic clays in the country. In 1985<sup>13</sup>, SOPAC surveyed North Malaita to assess the alluvial garnet resource. The key objective was to evaluate the quality of pyrope garnet, which could possibly stimulate a cottage industry in tumble-polished stones. The existence of garnet has been confirmed, though further studies would be required. Exploratory surveys were conducted in the Woodlark Basin in 1993<sup>14</sup> to assess the hydrothermal ore deposits. Further hydrothermal deposits were also discovered during this survey. In 1994<sup>15</sup>, a survey of

<sup>2</sup>SOPAC Technical Report 164

<sup>3</sup>SOPAC Technical Report 214

<sup>4</sup>SOPAC Technical Report 222

<sup>5</sup>SOPAC Technical Report 2

<sup>6</sup>SOPAC Technical Report 6

<sup>7</sup>SOPAC Technical Report 26

<sup>8</sup>SOPAC Technical Report 173

<sup>9</sup>SOPAC Technical Report 207

<sup>10</sup>SOPAC Technical Report 170

<sup>11</sup>SOPAC Miscellaneous Report 146

<sup>12</sup>SOPAC Technical Report 21

<sup>13</sup>SOPAC Technical Report 48

<sup>14</sup>SOPAC Technical Report 209

<sup>15</sup>SOPAC Technical Report 213

the magnetite beds was carried out as well. SOPAC has been assisting Solomon Islands in the macro level management of the mineral sector as well.



*Alluvial gold mining by locals*

Environmental pollution, adverse social impact and economic redistribution are the biggest concerns arising out of mining and mineral exploration. Air pollution, water pollution and deterioration of land quality are the primary damages inflicted by mining operations. The disposal of mine tailings is an arduous task for small, land-scarce islands. Mining also leads to loss of green cover and diminished aesthetic appeal of natural surroundings, and renders the land unsuitable for other applications, even long after the closure of the mine. Offshore mining could unleash a whole new host of problems ranging from the irreversible destruction of the fragile ecosystem to loss of fishing grounds.

Mineral resource development often leaves indelible scars on the fabric of traditional societies through the resultant change in lifestyle, perceptions and values that it inevitably effects. While displacement and compensation for externalities form a complex range of issues on their own, the assignment of pecuniary or economic value to communally owned properties like land has often lead to social disharmony. The loss of land or fishing grounds deprives many of their traditional lifestyles and the resultant unemployment catalyses alcoholism, violence and crime in the affected societies. SOPAC understands the impact of these externalities on Solomon Island's goal of sustainable development and has attempted to address them while framing policies. SOPAC has worked closely with the Government of Solomon Islands in framing the Terrestrial and Offshore Mineral Policy, and improving macro-level management of the mineral sector. Social cost benefit analysis and social and environmental impact assessments, are advocated for all mining projects in the country.

In 1998<sup>16</sup>, SOPAC along with the United Nations Development Programme (UNDP) reviewed the operation of the mineral sector in Solomon Islands to encourage private-sector participation. The mandate

<sup>16</sup>SOPAC Technical Report 256

and the goals were reviewed and an attempt to develop a strategic plan for donor coordination was developed. Developing mineral sector master plans and mineral resource policy<sup>17</sup> has been one of the key focuses of SOPAC's task profile for Solomon Islands. SOPAC and

the government of Solomon Islands understand that before private participation is invited, it is essential to have broad regulatory, legal and environmental regulations in place.

Offshore mining is emerging as a key development feature for the South Pacific countries. SOPAC has been involved in the formulation of the Offshore Mineral Policy for Solomon Islands<sup>18</sup>. In February 1999, SOPAC coordinated an Offshore Mineral Policy Workshop at Madang in Papua New Guinea to evolve the systems and guidelines for preparing Offshore Mineral Policies in South Pacific. The Pacific Exploration Technology Seminar that SOPAC had organised at Nadi in 1998, which had several modules on offshore mining as well, has proved to be useful in setting the stage for offshore mining.

Capacity development in the member states is one of the top priorities of SOPAC. Training in the field for technical personnel from the member countries is an ongoing process with the aim of enhancing in-country capacity to undertake assessment studies and field surveys. This training is carried out through workshops and seminars and through the courses in the Earth Science and Marine Geology Certificate Programme, which has been undertaken for 21 years. A correspondence course associated with the Earth Science course has also been trialed in the Solomon Islands<sup>19</sup>.

## ENERGY

Solomon Islands is confronted with the urgent need to introduce supply- and demand-side management

<sup>17</sup>Task Profile SB 97.015

<sup>18</sup>SOPAC Technical Report 287

<sup>19</sup>Task Profile SB 98.034

programmes to attain efficiency in the power sector. The country is greatly dependent on diesel for power generation and this dependence is growing with the installation of an additional diesel generator in Honiara to reduce the incidence of brown-outs.

SOPAC has assisted the development, implementation, monitoring and evaluation of an Air Conditioner Efficiency Programme in the Solomon Islands<sup>20</sup>. The objective was to determine the feasibility of reducing greenhouse gas emissions by improving the operational efficiency of air-conditioners.

## WATER & SANITATION

SOPAC has attempted to assist the Solomon Islands with the water and sanitation issues through field surveys, assessments and capacity building through training programmes and workshops.

Though surface and groundwater resources are abundant in the Solomon Islands, development and management of these resources need attention. Poor water management is a constraint to the development plans of Solomon Islands. This is exemplified in the country, where the water supply is not adequate to meet the domestic demand and the needs of manufacturing industries such as the brewery.

Sanitation and garbage disposal is another major predicament for small islands with fragile ecosystems. Sewage disposal is a major concern in urban areas where the high water tables rule out the construction of septic systems. Uncontrolled waste disposal and mine tailings are also emerging as pressing sanitation issues and threats to groundwater quality.

SOPAC's assistance in this area has been through an environmental study carried out in 1995<sup>21</sup> to collect baseline information on river discharge, waves and currents, sediment geochemistry, water quality and aquatic ecology at the mouth of the Matepono River. The study revealed the importance of systematic and regular monitoring of river water quality and sediment

discharge. In 1997<sup>22</sup>, SOPAC undertook a survey to review surface and groundwater use. The survey recommended the upgrading of water-sector activities and advised on potential groundwater sources. On-site staff training was also carried out as a part of the programme.

Several workshops have been organised by SOPAC to evolve strategies on water resource management and development. A regional consultation workshop on water resource management in the Pacific regions was held in 1996<sup>23</sup>. Some of the constraints specific to the Pacific Island nations that were identified are non-availability of data, inappropriate and underused equipment and lack of technical expertise. The same year SOPAC organised a workshop at the Secretariat on Technologies for Maximising and Augmenting Freshwater Resources in Small Islands<sup>24</sup>. This workshop contributed towards a Source Book of Alternative Technologies for Freshwater Augmentation in Small Island Developing States to be published by SOPAC in a user-friendly format for application by water-sector managers and planners in developing countries like Solomon Islands.



*Flow measurements in the field*

In 1997<sup>25</sup>, SOPAC organised a workshop to review the Photovoltaic pumping technology and determine the causes for its failure in the South Pacific. The workshop also looked at ways for making the technology more affordable to villages and households.

A review of the draft national water policy was carried out as part of the SOPAC work programme for 1999<sup>26</sup>. A training attachment completed at the beginning of the same year, equipped an official from the country with the use of groundwater database systems, Geographical Information System (GIS) and Geographical Positioning System (GPS) for borehole location and for a summary

<sup>21</sup>SOPAC Technical Report 239

<sup>22</sup>Task Profile SB 98.017

<sup>23</sup>SOPAC Miscellaneous Report 229

<sup>24</sup>SOPAC Miscellaneous Report 223

<sup>25</sup>SOPAC Miscellaneous Report 251

<sup>26</sup>Task Profile SB 99.001

<sup>20</sup>Task Profile SB 99.005



survey of the ground water resources in Guadalcanal Plains<sup>27</sup>. A review by SOPAC of the Honiara water-distribution system is also planned for the future.

The Small Scale Waste Water Treatment Plants project commenced in 1999<sup>28</sup>, with the stated goals of identifying appropriate wastewater treatment technologies such as treatment plants, high-loaded treatment lagoons and community septic tanks for selected villages in the Pacific countries.

Continued assistance is provided by SOPAC in building the human resource capacity of the Solomon Islands Water Authority. SOPAC since 1979 has been running an Earth Science and Marine Geology Certificate Programme for technicians. Since 1995, when the Water and Sanitation Programme was first attached to SOPAC, a module relating to water issues has been added to the certificate course at the University of the South Pacific.



*Aerial view of Honiara*

## HAZARDS & DISASTERS

Cyclones and earthquakes are serious threats to Solomon Islands as they could set the economy back by years. SOPAC undertook a study of the seabed morphology in the EEZ of Solomon Islands in 1989<sup>29</sup> to collect geophysical data. The survey studied the seafloor geology within the EEZ to understand the cause and origin of earthquakes.

A survey was also carried out to determine the characteristic ground response and geotechnical parameters for Honiara in 1996<sup>30</sup>. The data were used to develop a seismic microzonation of the city to facilitate the design of infrastructure with foundations and structures capable of withstanding earthquakes. The database assembled for the city will also provide a basis for assessing the vulnerability of Honiara to

tsunamis, storm surges and sea-level rise.

Comprehensive information on all buildings (including building usage, wall material and number of floors) in the city area was collected in 1998. This information is relevant when considering the response of a structure to cyclones, earthquakes, flooding and sea-level rise<sup>31</sup>.

Training on a geological, geotechnical and MapInfo database was provided to the Solomon Islands counterparts in 1997, 1998 and 1999<sup>32</sup>. SOPAC also provides support in the development of digital databases of geological and geotechnical information and sub-bottom seismic- reflection data<sup>33</sup>. In addition to this, SOPAC has been assisting with the mapping of volcanic hazard on Savo Island to improve the preparedness of the community and reduce its vulnerability<sup>34</sup>.

The Solomon Islands was the venue of intense warfare during World War II. Scores of warships, aircrafts and their hazardous payloads sank in Iron Bottom Sound. In 1999<sup>35</sup>, an assessment of contamination by the military hardware was carried out as part of the work programme. The study collected information on the military vessels and aircraft that sank and assessed the impact on the coastal and marine environment. The specific locations of shallow-water wrecks and the general water circulation patterns in the region were also recorded. An inventory of sunken ships and airplanes is also being compiled in GIS format<sup>36</sup>. Follow-up studies are planned for the area in 2000-2001<sup>37</sup>. This work will examine water quality and sediment quality, and include bathymetric surveying of the nearshore areas 0-100 m deep in Iron Bottom Sound.

All these contribute towards SOPAC's vision of

<sup>27</sup>Task Profile SB 98.018

<sup>28</sup>Task Profile SB 99.002

<sup>29</sup>SOPAC Technical Report 138

<sup>30</sup>Task Profile SB 97.004

<sup>31</sup>Task Profile SB 98.021

<sup>32</sup>Task Profile SB 98.016

<sup>33</sup>Task Profile SB 99.014

<sup>34</sup>Task Profile SB 99.038

<sup>35</sup>SOPAC Technical Report 280 & Preliminary Report 103

<sup>36</sup>Task Profile SB 99.003

<sup>37</sup>SOPAC Task Profile SB 99.004

strengthening Solomon Islands resilience and capability in assessing natural and man-made hazards.

## COASTAL MANAGEMENT

SOPAC has been supporting the Government of Solomon Islands to address the coastal erosion and management problems. There have been rapid changes in the coastal geography associated with increasing reclamation as a part of burgeoning tourism and urbanisation. Unsustainable sand and gravel extraction, as at the Ranadi Beach, and inappropriate coastal management and protection have also contributed to coastal erosion. Human settlements, infrastructure and property are threatened by coastal erosion, for example at Gizo.

To protect reclaimed land from the onslaught of the sea, various protection systems such as concrete walls, groynes, jetties and riprap revetments have been constructed haphazardly. However, the success of these protection structures has been minimal owing to a lack of understanding of the wave and current pattern around the islands, and the misconception that coasts are inherently and eternally stable. Poor construction and development practices, indiscriminate reclamation and aggregate mining in the reef areas cause coastal instability and erosion. In addition, coastal pollution destroys reef biota.



*Beach profiling*

In 1990<sup>38</sup>, SOPAC conducted a coastal survey at Gizo to assess the severity of coastal erosion and establish beach profiles. Similar surveys were also carried out at Kwai and Ngongosila<sup>39</sup>. In

1992<sup>40</sup>, a study of the Ranadi Beach assessed coastal erosion, shoreline changes, and optimal extraction of sand and gravel and natural rate of replenishment. The

work also included the review of the beach-profile monitoring programme. New source areas for sand and gravel such as East Lungga were also identified.

Given the critical importance of sustainable development to Solomons, SOPAC will continue to play an important role in coastal preservation and the development of sound policies to better manage coastal resources.

## STEPS INTO THE FUTURE: INFORMATION TECHNOLOGY & COMMUNICATION

For effective resource management and planning, the storage and processing of timely and accurate scientific data is critical. Island nations face the fundamental crisis of geographic isolation and high cost of communication between the various islands. Given the small size of these nations, technology providers are reluctant to supply cutting-edge technology because of poor economies of scale and difficulties in monitoring. Low human capital endowment further complicates the situation. These problems have remained a hurdle in Solomon Islands path to rapid growth.

SOPAC has been assisting Solomon Islands to improve its management systems and train personnel in Information Technology. Some of the projects undertaken include the development of a multi-channel-seismic shotpoint database for petroleum assessments in 1993<sup>41</sup>, fellowship attachment for Solomon Islands technical staff on MapInfo and Digitizing in 1998<sup>42</sup>, assistance with Internet and Intranet services<sup>43</sup> and the establishment of a mineral-resource database system<sup>44</sup>. SOPAC developed a GIS system for the national electricity- distribution system.

SOPAC created with Forum Fisheries Agency (FFA) a workshop in Honiara in 1994 for IT personnel. The objectives were to discuss the current trends in information technology with the intention of further developing the IT coordination and cooperation between

<sup>38</sup>SOPAC Technical Report 120

<sup>39</sup>SOPAC Technical Report 121

<sup>40</sup>SOPAC Technical Report 152

<sup>41</sup>SOPAC Technical Report 160

<sup>42</sup>Task Profile SB 98.042

<sup>43</sup>Task Profile SB 98.008

<sup>44</sup>Task Profile SB 98.031

regional organisations in this area: IT-PACNET.

A computing unit for GIS and remote sensing (RS) work was provided by SOPAC to Solomon Islands in 1993 through funding under Lome III.

Technical assistance, hardware and support continue to be an integral part of SOPAC's workplan for Solomon Islands.

As a regional data centre, SOPAC has been compiling geographic data on Solomon Islands.

In future, the focus will be on:

- Development of appropriate, economic and scalable technologies.
- Increasing the number of IT professionals in the local population.
- Improvement of Internet access.
- Further development of Geographical Information System and Remote Sensing techniques.



Waterfront houses

activity in both these areas as well. Training programmes, workshops and seminars will be organised regularly to assist Solomon Islands in creating a national capacity in geo-science. SOPAC will continue its work to reduce the islands' vulnerability to natural disasters and improve preparedness.

Island systems management will be a future area of focus, given its ability to improve database management and decision-making processes. SOPAC intends to support the development of information technology and communication infrastructure in Solomon Islands to achieve this.

By performing its functions as the specialised scientific organisation that it is, SOPAC has been addressing some of the fundamental factors that have impeded the development process.

## *Reference Materials*

SOPAC provides access to a variety of information related to the Solomon Islands. This can be accessed through the library database, PIMRIS and the Internet. SOPAC holds at its Secretariat:

- Maps of the Solomon Islands
- Aerial Photos
- Project Reports
- Videos
- Geological Samples
- Deep-sea mineral database
- General reference material on the Solomon Islands

Please refer to the Solomon Islands' Bibliography for full reference and material listing.

## *Future Directions in the Solomon Islands*

In future, SOPAC will continue its partnership with Solomon Islands, to overcome the hurdles in the path of sustainable development. SOPAC will use its key strengths - the expertise in applied sciences - to help the nation manage and develop its non-living resources sustainably.

SOPAC will further its partnership with Solomon Islands in developing onshore and offshore resources of minerals and hydrocarbons. Policy formulation will be one of the key areas that SOPAC will develop as a core professional activity. Development of appropriate legislations to manage coastal erosion and regulate aggregate mining will be a priority in the near future.

Sustainable development, conservation and management will be the guiding principles in the water and energy sectors. Policy development will be an

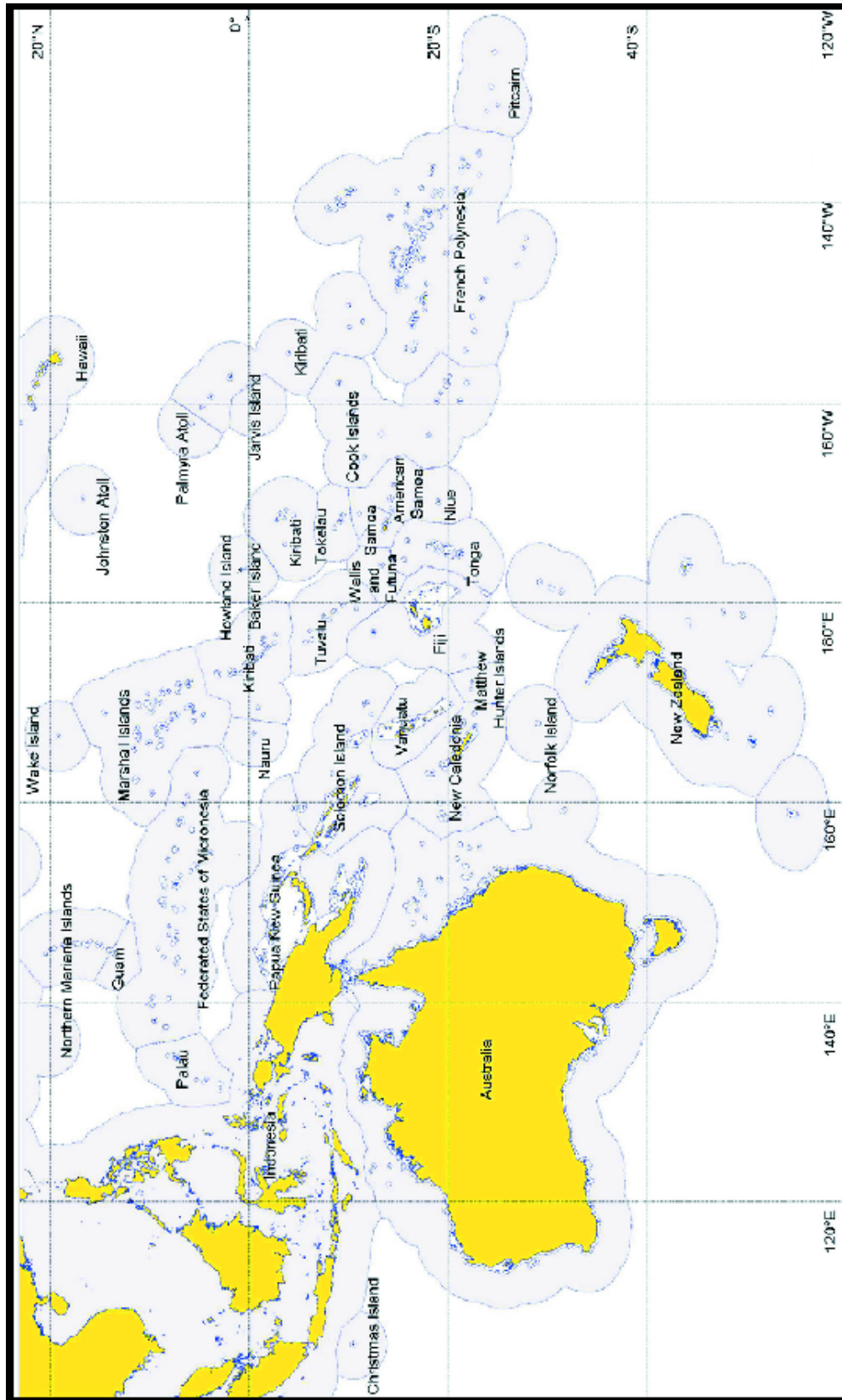
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Website : [www.sopac.org.fj](http://www.sopac.org.fj)

## Issues and SOPAC's Responses for Further Development

ISSUES	CONSTRAINTS	RESPONSES FOR FURTHER DEVELOPMENT
Water & Sanitation	<ul style="list-style-type: none"> <li>Limited water quantity to meet both domestic and industrial needs in urban areas</li> <li>Inadequate catchment and storage facilities</li> <li>Contamination of rivers and streams by intense rainfall and human intervention</li> <li>Water supply constraints owing to high population growth rate</li> <li>Insufficient sewerage systems for the entire population</li> <li>Lack of public knowledge of safe sanitation practices</li> </ul>	<ul style="list-style-type: none"> <li>Development of resource policy and legislation</li> <li>Advising on the improvement of infrastructure within the water and sanitation sector</li> <li>Undertaking pilot projects, research and feasibility studies</li> <li>Increasing public awareness on sustainable water management through training and workshops</li> <li>Training and educating local people on safe sanitation practices</li> </ul>
Coastal Management	<ul style="list-style-type: none"> <li>Absence of coastal management plans</li> <li>Unmanaged beach sand mining and gravel extraction</li> <li>High population growth rate putting increasing strain on coastal areas</li> <li>Poor awareness of the environmental impacts of coastal degradation</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of appropriate policies and legislation</li> <li>Identifying of alternative potential aggregate resources</li> <li>Educating the locals about coastal degradation and management through workshops and field training</li> </ul>
Minerals	<ul style="list-style-type: none"> <li>Inadequate scientific research to define full potential of resources</li> </ul>	<ul style="list-style-type: none"> <li>Development of resource policy and advice on the development and management of minerals</li> <li>Assistance in the tender process and handling mining companies</li> <li>Encourage further research</li> </ul>
Energy	<ul style="list-style-type: none"> <li>Use of fossil fuels to generate electricity, placing an increasing strain on the economy through imports</li> <li>Inadequate public awareness on renewable energy sources and management</li> </ul>	<ul style="list-style-type: none"> <li>Identifying and developing viable renewable energy sources</li> <li>Development of appropriate energy policies</li> <li>Enhancing the skills required by locals for management and operation of the energy sector through workshops and appropriate training</li> </ul>
Hazards & Disasters	<ul style="list-style-type: none"> <li>Prone to cyclones, earthquakes, climate change and ENSO related hazard impacts</li> <li>Communities lack awareness of the impacts of natural hazards, and measures to mitigate the impacts</li> <li>Rapid population growth in urban areas multiplies vulnerabilities to hazard impacts</li> </ul>	<ul style="list-style-type: none"> <li>Implementing national disaster policies and legislation</li> <li>Conduct training workshops on disaster management and response for disaster managers and the wider community</li> <li>Raise awareness of hazards and assist with preparedness and mitigation actions of vulnerable communities</li> </ul>
Information Technology & Communication	<ul style="list-style-type: none"> <li>Limited availability and poor access to information</li> <li>Lack of skilled personnel to manage the IT section</li> <li>Lack of relevant regional and local data</li> <li>High cost</li> </ul>	<ul style="list-style-type: none"> <li>Assisting in development of Internet and Intranet services</li> <li>Training of technicians in GIS</li> <li>Training of local staff in information technology</li> <li>Coordination, compilation and creation of standardised geographic data sets</li> </ul>
Human Resource Development	<ul style="list-style-type: none"> <li>Weak human resource base</li> <li>Limited financial and institutional resources</li> <li>Limited expertise</li> </ul>	<ul style="list-style-type: none"> <li>Conducting workshops and technical training programmes to improve national capacity in the geosciences</li> <li>Running the Earth Science and Marine Geology course to improve the human resource base</li> <li>Fellowship attachments</li> </ul>



*South Pacific Region Maritime Limits*

**SOPAC Member Countries:** 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.