

***TOWARDS 2002***  
***and the***  
***1996-1997 WORK PROGRAMME***

**Pacific Environment and Natural Resource  
Information Center  
PENRIC**

**South Pacific Regional Environment Programme**

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## South Pacific Regional Environment Programme

### Pacific Environment and Natural Resource Information Center PENRIC

#### 1. Background.

1.1. In the preparation for UNCED, SPREP Responded to the call of its 27 members, as a region, and in particular the island countries, to ensure that the Pacific island viewpoint would be understood fully during UNCED deliberations and reflected adequately in Agenda 21, The Earth Chapter and other UNCED decisions. SPREP took a major role in assisting its member countries in preparing their national Reports, convene a series of workshops and supported the work of Pacific delegations at the Preparatory Committee leading up to the conference at Rio de Janeiro.

1.2. The post UNCED period has presented new challenges for SPREP. UNCED emphasises that sustainable development can only be achieved by incorporating environmental considerations in to the socio-economic and development policies of pacific island countries. Agenda 21 calls for the integration of the environment and development information to support informed decision national, regional and global decision making. The UN General Assembly has called for strengthened capability to review the world's environment, and to provide information on important emerging regional issues.

1.3. These concerns, from the UN and in Agenda 21, are echoed in SPREP's mandate for action on environmental problems in the Pacific region; the 1991-1995 Action Plan for Managing the Environment in the South pacific. The Action Plan was updated subsequent to UNCED to reflect the above concerns on environmental information

1.4. UNCED also recognises the special vulnerabilities and problems of small island developing countries, and called for the Global Conference on Sustainable Development of Small Islands Developing States, which met in Barbados. The Program of Action that was developed by the Barbados Conference states the important of information for making more informed decisions on sustainable development in small island developing states, and specifically mentions the use of geographical information system (GIS) and remote sensing (RS) top provide some of this data.

1.5. In pursuance of the of the above aim, UNEP in collaboration with SPREP through the Regional Environment and Natural Resource Information Center (RENRIC) Network Strategy, setup the PENRIC Project to enhance collaboration in information capture and exchange, as well as building up of working partnerships between sub-regional organisations and institutions on the enviornment issues on hand. Also, to assist in building country capacities in utilising tools like GIS and RS for data collection and integration as an important part of sustainable environmental policy formulation.

1.6. PENRIC was setup when UNEP and SPREP agreed to a program of cooperation in the South Pacific to establish, enhance and maintain an Environment and Natural Resource Information Center (ENRIC) capability and regional networks. The proposal for PENRIC was supported at the July 1991 SPREP Intergovernmental Meeting. UNEP and SPREP then signed a Memorandum of Understanding in November 1991 to undertake a preparatory phase as a foundation for a more comprehensive program when further funds were secured. The program is on its 3rd Phase now with specific focus on State of Environment Reporting.

## 2 Accomplishment

2.1 SPREP has initiated consultation with governments in the South Pacific Region developing an acceptable mechanism and process for Reporting on the State of the Environment. The document is now in place and currently subject to further incountry consultation and validation as requested by Governments during the SoE/Action Plan Meeting in Suva, March 18, 1996. The Meeting was attended by 11 countries; Cook Islands, Fiji, Federated States of Micronesia, Republic of Kiribati, Republic of the Marshall Islands, Niue, Solomon Islands, Tonga, Tuvalu, Vanuatu and Western Samoa. There were 2 participants from each country ; one from the Environment and the other from Planning/Statistics department. As of the process, countries felt that there is need for a periodic assessment of the environment through preparations of national SoE which lead to a regional format and further to assist in the formulation of a Global SoE which is targeted for the year 2002, the next earth summit. The other objective was to look at a review of the current SPREP Action Plan, 1991-1995. The linkages that was illustrated between the Action Plan and the SoE Report was agreed upon and felt that both documents needs to be addressed simultaneously.

2.2. With regards to the framework on Environmental Assessment developed by UNEP, It was identified that SoE Reports needs to be more quantitative in context as it supports and validate the extremes of the environmental concerns faced by the countries. This has encouraged the formulation of an Environment Information Database or SoE database. The database is intended to serve as a knowledge base information for monitoring environmental trends and catastrophes. This justifies the frequency of environmental assessment in the region. As part of the SoE/Action Plan Meeting, participants had a 4 day training on the SoE Concepts and Methodology with a session on the SoE Database. UNEP EAP has developed a database format as a basis. in using this format, the consultant was asked to assess its appropriateness to the South pacific Region and during this session countries were advise to review the format. Changes will now be made before copies of the database will be send to the countries. Also as step in updating their data, each country was given a computer for the SoE database.

2.3. The University of the South Pacific ( USP), have been setup as the Regional GIS Training Center. This Unit was established through the collaboration of UNEP-EAP AP and SPREP/PENRIC. Currently GIS courses have been offered as prerequisites of degree courses in Geography and land management. This year, it has taken a step further with tremendous support from the University for the unit to pursue the Diploma Level. The University has shown keen support with future plans to an exchange scheme with the Asian Institute of Technology (AIT) for teaching GIS using a more integrated approach to other disciplines as well as pushing it further to degree level of its own. Other regional institutions like the University of Papua New Guinea, University of Guam, University of Hawaii, USP Extensions in the region, East West Center and Landcare Research New Zealand will be consulted to strengthen networking as well as the initiative as a whole.

2.4. Needs Assessment was carried out as to Identify National Environmental Information Systems. The Assessment was basically to carry out an inventory of the national capability in terms of data and personnel and most importantly existing collaboration on an existing system if there is any as well as potential plans in acquiring one. Needs Assessment were carried out for Fiji, Tonga, Vanuatu, American Samoa, Solomon Islands and Western Samoa. As a result, a system has been setup with the Environment Department in Fiji with Tonga and Western Samoa as the next potential sites.

2.5. SPREP/PENRIC held a joint training with UNFPA/Population and Environment on the use of GIS for Population Environment Integration for the Polynesian Countries, September 4-8, 1996, USP, Suva, Fiji. Countries attended were; American Samoa, Cook Islands, Niue, Tuvalu, Tonga and Western Samoa. In the training, participants were introduced to how GIS can be used to integrated biophysical data in terms of Environment with Demographic and other Socio-economic data. Similar training is planned in 1997 for the Micronesian and Melanesian Countries.

2.6. SPREP is a party to a Memorandum of Understanding signed to facilitate data and resource sharing among regional organisations. Other parties to the MoU are South Pacific Applied Geoscience Commission (SOPAC), South Pacific Commission (SPC), South Pacific Forum Fisheries (FFA) and the University of the South Pacific.

2.7. GIS awareness activities were carried out for:

- a) Pohnpei and Palau under the Pacific Biodiversity Conservation Program;
- b) Niue and Kiribati under the UNDP/National Environment Management Strategy

2.8 Others assisted;

- a) Community Development Project for Niue and Western Samoa (SPBCP)
- b) Palolo Deep Project for Western Samoa
- c) GIS Training and Installation of Pohnpei Watershed management Project in collaboration with AMSAT (SPBCP/ADB)
- d) Evaluation of a National Coastal Management Proposal for GIS utilisation for American Samoa
- e) Development of Boat harbour at Anibare and Gabab, Nauru (EIA)
- f) Epau Micro-Electric Power Project, Efate, Vanuatu (EIA)
- g) Anabare Conservation Area, Nauru (SPBCP)
- h) Komarindi Conservation Area, Solomon Islands (SPBCP)
- i) Ha'apai Conservation Area, Tonga (SPBCP)
- j) Rehabilitation of Neiafu Wharf, Vavau, Tonga (EIA)

3. Needs:

3.1. There is need to improve data and information availability and access as well as the use of information for decision making towards sustainable development.

3.2. During consultation with national governments on the Environment Assessment Program, countries express the need ;

a) **Capacity Building**

**Network**

- (i) assistance to build capacities of national governments to use data and information for sound decision making.
- (ii) Decentralised national network of cooperation and collaborating institutions

### ***Training***

- (i) Follow-up training on the SoE database at three levels; policy, professional and technical
- (ii) Need for case studies that can be used as training or awareness materials

### **b) *Data Management***

- (i) Assistance to provide access to information technologies<sup>1</sup> useful for integration and aggregation of spatial and related attribute data
- (ii) Continue the compilation of the macro data base at an appropriate scale for the South Pacific Region consisting of the minimum core data needs; geology, hydrology, soils, topography, administrative boundaries, demography, land use and infrastructure
- (iii) Pacific Spatial Information Directory/catalogue to be updated once a year.
- (iv) Agreements on format and access to data held by various regional organisations and institutions.

### **c) *Assessment and Reporting***

- (i) Assessment of the need for national State of the Environment Reporting
- (ii) Assistance on utilisation of frameworks, multisectoral analyses, indicators and the use of integrated data sets for assessment, SoE and Convention Reporting
- (iii) Assistance in formulating a standardise format of reporting for national, sub-regional and global SoE.
- (iv) Enhance capacity of national governments and sub-regional institutions to undertake an integrated and aggregated environment assessment and report production<sup>2</sup>; and
- (v) Better understanding of environment and development interactions and ways and means to address emerging issues

## **4: Goals and Objectives:**

4.1. To compliment UNEP Environment Assessment Division's mission which is

“to provide the world community with improved access to meaningful environmental data and information, and to help increase the capacity of governments to use environmental information for decision making and action planning for sustainable human development”.

4.2. To assist national governments build national capability to provide regular, quantitative assessment of the state of their environment as a build up for the year 2002 where national government will be expected to contribute significantly and substantially to the Earth Summit through a Global State of the Environment Report.

- 4.3. To enhance the approach of developing, strengthening and making operational the decentralised networks of national and sub-regional SoE and spatial databases. Coordinate training and information transfer for environment assessment, reporting and database management as well as providing hardware and software where necessary.
- 4.4. Coordinate regular subregional SoE Reporting and Assessment aggregated from national SoE Reports as to identify emerging environment issues for the sub-region. To provide more formal partnership with private sectors and NGO's on environmental assessment, reporting and database management.
- 4.5. To support the Regional Resource Center through information and data dissemination, exchange and standardization as well as utilizing potential assistance it may offer in terms of human resources. .ie. technical advisors and expertise.

## 5. Objectives

- 5.1. The targets to be achieved by year 2002 are summarised below under each component of the programme:

### 5.1.1 *Capacity Building*

- a) Enhancement capacities for environmental assessment of at least 11 countries through technology transfer and strengthening of decentralised national network of distributed databases;
- b) Strengthen capacities and operational structure of the PENRIC Program
- c) Establishment and enhancement of 2 GIS/EIS training facilities

### 5.1.2 *Data Management*

- (a) Development an Atlas of core data sets for the south pacific countries
- (b) Development of at least 6 case studies through the use of modern technology like GIS and Remote Sensing to catalyse performances which addresses priority environment issues in 6 different countries.
- (c) Technical support to the countries for the use of tools such as GIS and expert systems
- (d) Full customisation of the State of the Environment Database

### 5.1.3 *Assessment and Reporting*

- (a) Development and wide use of a conceptual framework for SoE and convention database and reporting
- (b) Generation of 2 subregional SoE for the South Pacific Region

- (c) National SoE and convention reporting for 11 countries
- (d) "Hot spot" area investigation for 11 countries

5.2. The targets to be achieved in the biennium 2000/2001 are summarised below under each component of the Programme.

#### 5.2.1 *Capacity Building*

- a) Enhancement capacities for environmental assessment of at least 9 countries through technology transfer and strengthening of decentralised national network of distributed databases;
- b) Strengthen capacities and operational structure of the PENRIC Program
- c) Establishment and enhancement of 2 GIS/EIS training facilities
- d) Establishment of 3 national Environment and Natural Resource Information Center (ENRIC)

#### 5.2.2 *Data Management*

- (a) Development of core data sets at the scale of 1:50,000 for the South Pacific Region
- (b) Development of at least 5 case studies through the use of modern technology like GIS and Remote Sensing to catalyse performances which addresses priority environment issues in 5 different countries.
- (c) Technical support to the countries for the use of tools such as GIS and expert systems
- (d) Customisation of the State of the Environment Database

#### 5.2.3 *Assessment and Reporting*

- (a) Development and wide use of a conceptual framework for SoE and convention database and reporting
- (b) Generation of 2 subregional SoE for the South Pacific Region (1998 & 2001)
- (c) National SoE and convention reporting for 9 countries
- (d) "Hot spot" area investigation for 9 countries



5.3. The targets to be achieved in the biennium 1998/1999 are summarised below under each component of the Programme.

5.3.1 *Capacity Building*

- a) Enhancement capacities for environmental assessment of at least 6 countries through technology transfer and strengthening of decentralised national network of distributed databases;
- b) Strengthen capacities and operational structure of the PENRIC Program
- c) Establishment and enhancement of 2 GIS/EIS training facilities

5.3.2 *Data Management*

- (a) Development of core data sets at the scale of 1:50,000 for the South Pacific Region
- GIS (b) Development of at least 4 case studies through the use of modern technology like and remote sensing to catalyse performances which addresses priority environment issues in 4 different countries.
- (c) Technical support to the countries for the use of tools such as GIS and expert systems
- (d) Develop customisation of the State of the Environment Database

5.3.3 *Assessment and Reporting*

- (a) Development and wide use of a conceptual framework for SoE and convention database and reporting
- (b) Generation of 1 subregional SoE for the South Pacific Region
- (c) National SoE and convention reporting for 6 countries
- (d) "Hot spot" area investigation for 6 countries

5.4. The targets to be achieved in the biennium 1996/1997 are summarized below under each component of the Programme.

5.4.1 ***Capacity Building***

- a) Enhancement capacities for environmental assessment of at least 2 country through technology transfer and strengthening of decentralised national network of distributed databases;
- b) Strengthen capacities and operational structure of the PENRIC Program
- c) Establishment and enhancement of 1 GIS/EIS training facilities

5.4.2 ***Data Management***

- (a) Development of core data sets at the scale of 1:50,000 for the South Pacific Region
- (b) Development of at 2 case studies through the use of modern technology like GIS and remote sensing to catalyse performances which addresses priority environment issues in 2 different countries.
- (c) Technical support to the countries for the use of tools such as GIS and expert systems
- (d) Develop customisation of the State of the Environment Database

5.4.3 ***Assessment and Reporting***

- (a) Development and wide use of a conceptual framework for SoE and convention database and reporting
- (b) Generation of a subregional SoE for the South Pacific Region
- (c) National SoE and convention reporting for 2 countries
- (d) "Hot spot" area investigation for 2 countries

E. **Planned Outputs and Activities for 1996-97 to achieve the targets described above are listed below by components of the Programme**

**6.1 Capacity Building and Servicing**

- a) Enhanced capacities for environmental assessment**
  - 1. Prepare draft proposal for 2 selected countries with UNEP EAP-AP
  - 2. Consultation with selected countries
  - 3. Provide incountry training
  - 4. Provide hardware/software
  
- b). Strengthen Capacities and operational structure of the PENRIC program**
  - 1. Provision for on the job training for one staff at the UNEP-EAP Office, Bangkok for 1 month
  - 2. Strengthen collaboration with other SPREP projects on GIS/RS Activities and Environment Assessment and Reporting
  - 3. Equipment Inventory every quarter
  
- c) GIS Training Facility**
  - 1. Establish 1 additional GIS Training facility with a sub-regional institution
  - 2. Continue to support an existing GIS facility with USP, Suva, Fiji
  - 3. Needs Assessment to be carried out every 6 months

**6.2 Data Management**

- (a) Development of core data set at the scale 1:50,000 for the South Pacific Region**
  - 1. Collect and digitise for spartial data for SPREP inhouse project
  - 2. Collaboration with other subregional organisations and institutons on data exchange and formats
  
- (b) Development of 2 Case Studies**
  - 1. Development of case studies
  - 2. Editing and compilation of case studies
  - 3. Publication of case studies
  
- (c) Technical Support for Countries on GIS/RS**
  - 1. Backstopping any problem on the systems e established in the countries
  - 2. Collaborate with available national computer vendor firms or suppliers for support.
  
- (d) Develop customisation of State of the Environment Database**
  - 1. Collaborate with UNEP EAP-AP to setup a user friendly, menu driven SoE database for the countries.
  - 2. Training on development.

**6.3. Assessment and Reporting**

- (a) Generation of Subregion SoE for the South Pacific**
  - 1. Collaborate with countries and UNEP EAP-AP on guidelines for SoE Reporting
  - 2. Develop database with support from UNEP EAP
  - 3. Review SoE Reports as required

- (b). **National SoE and Convention Reporting**
  - 1. Select 2 countries
  - 2. Schedule training for the selected countries
  - 3. Conduct training in collaboration with UNEP EAP
  
- (c) **"Hot Spot" Areas Investigation**
  - (1) Investigation in 2 countries
  - (2) Prepare and disseminate reports

2002 Budget

**Capacity Building:**

	UNEP	Other	Total
Project Officer	60,000		
Travel	20,000	5,000	
Project Assistant		40,000	
Travel		15,000	
Divisional Assistant		15,000	
	80,000	80,000	160,000

**Data Management:**

2 Case Studies	15,000	5,000	
Environment Consultant Database Production	2,000	3,000	
Spatial Directory of Institutions and subregional organisations on GIS/RS	4,000		
Equipment for PENRIC	5,000	10,000	
Equipment for 1 ENRIC	15,000		
Consultant	30,000		
Communication	5,000		
	77,000	18,000	95,000

**Assessment and Reporting:**

National SoE Analysis Report Production	5,000		
Subregional SoE Report ✓	10,000		
Case Studies	10,000		
SoE Database In-country workshop ✓	10,000		
Atlas of Core datasets	5,000		
Sub-regional Prep Meeting for Earth Summit	40,000		
	80,000		80,000
	220,000	98,000	318,000

2000-2001 Budget

**Capacity Building:**

	UNEP	Other	Total
Project Officer	60,000		
Travel	20,000	5,000	
Project Assistant		40,000	
Travel		15,000	
Divisional Assistant		15,000	
	80,000	80,000	160,000

**Data Management:**

2 Case Studies	15,000	5,000	
Environment Consultant Database Production	2,000	3,000	
Spatial Directory of Institutions and subregional organisations on GIS/RS	4,000		
Equipment for PENRIC	5,000	10,000	
Consultant	30,000		
Communication	5,000		
	61,000	18,000	79,000

**Assessment and Reporting:**

National SoE Analysis Report Production ✓	5,000		
Subregional SoE Report ✓	10,000		
Case Studies	10,000		
SoE Database In-country workshop ✓	10,000		
SoE Meeting ✓	40,000		
	75,000		75,000

1998-1999 Budget

**Capacity Building:**

	UNEP	Other	Total
Project Officer	60,000		
Travel	20,000	5,000	
Project Assistant		40,000	
Travel		15,000	
Divisional Assistant		15,000	
	70,000	80,000	150,000

**Data Management:**

2 Case Studies	15,000	5,000	
Environment Consultant Database Production	2,000	3,000	
Spatial Directory of Institutions and subregional organisations on GIS/RS	4,000		
Equipment for PENRIC	5,000	10,000	
Equipment for 2 ENRIC's	30,000		
Consultant	30,000		
Communication	5,000		
	81,000	18,000	109,000

**Assessment and Reporting:**

National SoE Analysis Report Production	5,000		
Case Studies Production	5,000		
Subregional SoE Report Production	10,000		
SoE Report/Database Meeting	40,000		
	60,000		60,000

1996-1997 Budget

**Capacity Building:**

	UNEP	Other	Total
Project Officer	60,000		
Travel	20,000	5,000	
Project Assistant		40,000	
Travel		15,000	
Divisional Assistant		15,000	
	80,000	60,000	

**Data Management:**

2 Case Studies	15,000	5,000	
Environment Consultant Database Production	2,000	3,000	
Spatial Directory of Institutions and subregional organisations on GIS/RS	4,000		
Equipment for PENRIC	5,000	10,000	
Equipment for 1 ENRIC's	15,000		
Consultant	15,000		
Communication	5,000		
	61,000	18,000	

**Assessment and Reporting:**

National SoE Analysis Report Production	5,000		
Case Studies	10,000		
SoE Database In-country workshop	10,000		
	25,000		

	105,000	78,000	183,000
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