



**SOLOMON ISLANDS NATIONAL ASSESSMENT
WORLD SUMMIT ON SUSTAINABLE
DEVELOPMENT (Rio + 10)
JOHANNESBURG, 2002**

Synopsis of Issues, Activities, Needs, and
Constraints: Sustainable Development 1992-2002
Solomon Islands

Prepared by the Solomon Islands Coastal Marine Resources Consultancy Services (SICFCS) in close collaboration with the National Steering Committee (World Summit for Sustainable Development (WSSD Working Group)).

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Overview

The preparation of this National Assessment (NA) is guided by the requirements of the UNDESA and the CSD acting as the Secretariat for the World Summit for Sustainable Development (WSSD) event. The UNDESA guides and protocols call for the preparation of National Assessment (NA), which is a review of achievements since 1992, issues, trends, constraints and future needs. The NA shall be the key documents for regional submissions to be debated and use for negotiations at the WSSD.

The NA has been compiled by Solomon Islands Coastal Fisheries Consultancy Services (SICFCS) in association with the Rio + 10 National Steering Committee, a Working Group formed on 8th May 2002 to coordinate Solomon Islands National submission as well as input into Pacific Islands Sub-regional submission to the WSSD. The NA structure is guided by templates that have been forwarded from the UN system and the original Barbados Programme of Action.

Inputs from a week of the Multi-Stakeholder Consultative Meeting 7-8 May 2002 are most invaluable in the preparation of this NA. The outputs and outcomes of the Consultative Meeting will be addressed in subsequent chapters.

Introduction

Geography

The Solomon Islands are the northern group of a huge arc of islands delimiting the Coral Seas and is situated in the Western Pacific. The Main Group Archipelago, MGA, orientated northwest to southeast, stretching about 1700 km between Bougainville, at the eastern tip of Papua New Guinea (PNG) to the northern-most islands of Vanuatu. The central archipelago of islands lies between latitudes 5° S and 12° S and longitudes 152° E and 163° E.

The Solomon Islands comprises a double chain of six large islands (Choisuel, Santa Isabel, New Georgia, Guadalcanal, Malaita and Makira) as well as many smaller ones making a total of 997 islands. The country has a total land area of 28,785 sq. km and an exclusive economic zone (EEZ) which covers 1,340,000 sq. km. The total internal waters within the 12 mile zone is 0.3 sq. km.

Demographic profile

The population of Solomon Islands is 409,042 (Solomon Islands Census, 2000), most of whom, live near or on the coast. The bulk of the populations are rural dwellers living a subsistence life heavily dependent on gardening, fishing and hunting. The present population growth rate is 2.8% a drop from 3.5% for 1976-86 period. The population density is currently at 13 persons per square kilometer. In terms of population distribution per Province, Malaita has a highest population of 122,620 and

lowest in Rennell-Bellona and Temotu provinces with 2,377 and 18,912 respectively. There is continuous flow of young population from rural to urban centres.

Climate

Two climate systems affect the Solomon Islands. These are the southeasterly trade winds that blow from May to October and the northeasterly trade monsoon winds that blow from December until March. Between April and November, the country experiences fine, sunny, calm weather.

Being close to the equator, air temperatures does not vary considerably. Mean daily temperature throughout the year range from a minimum of 23 degrees Celsius in the early mornings of the easterly trade winds and a daily maximum of 30 degrees Celsius. Rainfall ranges between 3000-5000 mm per year. There is generally a higher rainfall in the wet (monsoon) season.

Vegetation

Solomon Islands is dominated by lowland tropical rainforest and woody vegetation. The flora has strongest affinities with that of Papua New Guinea but with fewer families, genera and species. There is a low level of plant endemism compared to fauna.

A major constraint to environmental planning for forestry and agriculture is the lack of recent information on vegetation. There has been no assessment of rare or endangered plants species in the Solomon Islands, nor any assessment of the impact of invasive species.

Forestry and Agriculture profile

There is continuous forest destruction through shifting cultivation and commercial logging. Logging in the forestry sector has until 1997 accounted for about 45-55% of foreign exchange and 20-30% of government revenue. The annual rate of extraction is 750,000 cubic meters which is three times the sustainable extraction level. Presently, the government policy is aimed at restoring the logging rate to sustainable levels.

The agricultural sector exports up until 1998 are primarily palm oil, palm kernels, copra, coconut oil and cocoa. Palm oil and kernel export ceased at the height of the ethnic tension in 1999. The cultivation of these cash crops resulted in marginal sloping lands being cultivated for food production without any form of land conservation measures. Land degradation is therefore widespread under shifting cultivation in areas of high population densities.

There is substantial fish resource in the country's EEZ and the biologically sustainable annual catch level (120,000 tons) has never been attained. Fisheries and agriculture are key contributors to GDP, but subsistence agriculture is the dominant economic activity.

Customary Land/Marine Tenure

About 80-85% of the land and marine resources in the Solomon Islands is customarily owned by family groups or clans. A tribal property rights usually extend from forested inland to the outer extremity of reefs. Land Ownership and Customary Marine Tenure (CMT) embraces far more than just resources (including fishing) rights, and their functions range beyond the organisation of economic activities (Hviding and Ruddle 1991).

In the Solomon Islands, CMT forms part of the framework that regulates social and political relationships and defines cultural identities. The land and marine tenure system dictates that family groups or clans legally have strong rights to ownership of and decision making for their forest and inshore marine resources. Their livelihood is dependent on the continuation of these resources.

Economic and social profile

The estimated GDP at current (2001) market prices is US\$213 m and continue to drop from a peak of \$367m in 1995. Over the same six-year period the GDP per capita has fallen by more than half from US\$1010.00 in 1995 to an estimated US\$500.00 in 2001 while growth in real GDP dropped from positive 10% in 1995 to negative 10% in 2001. The sharp drop in GDP is attributed to the ethnic tension that has crippled the country's economy during 1999 to 2001 period. The decline was due to manmade disaster.

Chapter 1 Socio-Economic Dimensions & Frameworks for Sustainable Development

Context

It is well documented that there is strong inter-relationship between environment, economic development and society. They are so closely inter-linked that to examine one without considering the implications for the others, would deem the exercise superfluous. It is economic development, social driving forces and pressure that mankind exerts on the environment cause environmental degradation. It is therefore fundamentally important for governments and civil society to understand how people and the economy have changed over time, and how they may change in the future, so we can understand how the pressure its people exert on the environment will change over the years.

1. SUSTAINABLE ECONOMIC DEVELOPMENT

1.1 ECONOMIC SECURITY

The estimated GDP at current (2002) market prices is US\$213 m and continue to drop from a peak of \$367m in 1995. Over the same six-year period the GDP per capita has fallen by more than half from US\$1010.00 in 1995 to an estimated US\$500.00 in 2001 while growth in real GDP dropped from positive 10% in 1995 to negative 10% in 2001. The sharp drop in GDP is attributed to the ethnic tension that has crippled the country's economy during 1999 to 2001 period.

The following are current economic issues facing Solomon Islands. The issues are exacerbated by the recent ethnic tension and two decades economic mismanagement by the government:

- High inflation rates; balance of payments deficits; falling external reserves; and public sector deficits
- Vulnerable to falling export prices, rising import prices, overseas interest rates.
- Need to improve public sector financial management
- Need to reduce public service
- Stability controlled by global influences:
 - Export & import prices
 - Overseas interest rates and increasing Government debts
- Budget deficits are common thus there is need to:
 - Improved budget design
 - Improved accounting and control systems
 - Management of revenue & expenditure
 - Accountability to legislatures needed
 - Transparency needed
- Heavy reliance on foreign Aid
- Fluctuating/worsening Commodity prices like copra, coconut oil and cocoa
- Increased imports of consumer goods, used motor vehicles and capital goods
- Political instability and civil unrest
- Lack of security, confidence and certainty in land and resource access and tenure which :
 - Stifled investment opportunity
 - Nullifies a land economy opportunity
 - Inequitable and disjointed development

Actions/activities:

National Coordination

Solomon Islands do not have a sustainable development plan in parallel to its current economic development. This is considered a major downside for the country especially at this time when there is mounting pressure for actions to be taken on sustainable development. The Ministry of Development Planning and Human Resources is putting together a National Framework to address Sustainable Human Development in Solomon Islands. The work is being organised under the auspices of the United Nations Development Program (UNDP).

At this stage, Solomon Islands only have a national guideline on sustainable development. The guideline provides the mechanisms needed to formulate a Sustainable Development Plan.

National initiatives in terms of policies that are in place such as:

- Medium Term Development Strategies
- Government Programme of Action
- Budget (Translation of policy into programmable actions)
- Structural Adjustment Programme
- Tourism Plans (ecotourism)
- National Women's Policy

In terms of economic development, Solomon Islands Government (SIG) is committed to economic reform and thus has established the Ministry of Economic reform and Structural Adjustment. In collaboration with other relevant ministries such as Development Planning, Public Service Division in the Prime Ministers Office and other stakeholders like the Solomon Islands Public Employees Union (SIPEU), it is embarking on the following issues.

- Budgetary practices
- Public Sector reform
- Trade and Investment policies
- Promotion of Public service reduction

Annual Action Plans

- Broadening tax basis through goods tax
- Economic reform and private sector development programs
- Reform sources in:
 - Taxation
 - Civil service
 - Corporatisation and privatization of utilities
 - Financial sectors & trade
- It has established Solomon Islands National Provident Fund.

1.2 TRADE DEVELOPMENT

- Solomon Islands like other Pacific Island Countries and Territories is vulnerable from global, regional and internal influences. Problems for International Trade include:
 - Small population
 - Fragmented land (tenure)
 - Dispersed islands
 - Remoteness
 - Fragmented agricultural capability
 - Lack of skilled labour
 - Under-developed economic infrastructure
 - Shortage of water & utility services.
- Dis-economics of scale:
 - High overhead / transaction costs in all aspects of economic and social development, goods and services: transport, energy provision, information supply, telecommunications, banking, insurance, building etc.
 - Potential only through in-country and/or regional collaboration.

- Exports dominated by small volume primary commodities; copra; cocoa; fish and sawlogs but most of these have become badly affected during the recent ethnic tension and still remain:-
 - Sensitive to variations of natural processes (weather, disasters)
 - Sensitive to world markets.
- As production base is small, Solomon Islands has limited capacity to adjust to volatilities.
- Balance of Payments (BOP) have been maintained through foreign aid but substantially decreased during and after the ethnic tension which have paralyzed the country during 1999 to 2001
- Need to expand and increase export growth to improve foreign reserves which is currently at record low.

◆ Trade Liberalisation

- Solomon Islands is losing control of economic development to global and regional influences:
 - Conditions to aid
 - Trade imbalance between trading partners and Melanesian block
- Negative impact of WTO agreements on Solomon Islands economy need to be explored & mechanisms made available:
 - Erosion of Export markets
 - Domination of international disciplines in services, investment measures, trade related I.P.R and agricultural trade.
- Reduced Government income from removal of import tariffs and unnecessary granting of tax exemptions.

2.0 SUSTAINABLE HUMAN DEVELOPMENT

2.1 POPULATION AND SETTLEMENT

The population of Solomon Islands is 409,042 (Solomon Islands Census, 2000), most of whom, live near or on the coast. The bulk of the populations are rural dwellers living a subsistence life heavily dependent on gardening, fishing and hunting. The present population growth rate is 2.8% a drop from 3.5% for 1976-86 period. The population density is currently at 13 persons per square kilometer. In terms of population distribution per Province, Malaita has a highest population of 122,620 and lowest in Rennell-Bellona and Temotu provinces with 2,377 and 18,912 respectively. There is continuous flow of young population from rural to urban centres. The following are current issues:

- High population growth rate outpacing economic growth
- High population density especially in coastal and urban areas leading to uncontrolled development and poor quality of life especially health problems
- Need for joint consideration of population, environment and development.
- Drivers for urbanisation need to be targeted:
 - Uncontrolled development in rural, village, towns and cities;
 - Non-alignment of infrastructure with population growth;
 - No decentralization incentives
 - Corporatisation targeting economic efficiency - favours concentration
 - Depletion of natural resources;

- Pressures on subsistence lifestyles
- Land and resources access conflict
- Influence of preferences for monetisation and commercial product markets (based around urban centers)
- Human resource development: Capacity building efforts hampered by:
 - Pressures for trained people to leave for higher levels of pay and work conditions
 - Exposure to different qualities of life during study - training;
 - Lack of job creation, growth and security;
 - Limited infrastructure for various levels of training in remote islands;
 - Relevance of externally designed education/training systems

Chapter 2 Climate Change

Context

The contribution of Solomon Islands to global greenhouse gas emissions and its role in causing climate change is insignificant, but as a vulnerable island state, it must act responsibly to avert the worst global effects and consequences of climate change.

The four greatest anticipated consequences of any global warming are expected to be sea-level rise, an increase in climate related natural disasters (storms, floods and droughts), disruption to agriculture due to changes in temperature, rainfall and winds, and less resilience of forests subject to greater pressures.

Climate change presents a great challenge to national planning. Potential sea level rises, increased frequency of extreme weather events, such as cyclones, floods and droughts would have dramatic impacts on all islands, especially the coastal communities where most islanders live and current impacts are marginal.

1.0 NATIONAL ACTIONS

ACHIEVEMENTS – Programmes and Projects

◆ **PICCAP- Framework Convention Climate Change**

PICCAP officially began on 8th April 1997 and in general, it supports the preparation of Solomon Islands National Implementation Strategy (NIS) on climate change, which will be the basis for the preparation of the National Communication required under Article 12 of the Climate Change Convention. Since the implementation of PICCAP in Solomon Islands, the following in country activities were conducted:

- Establishment of country team and country team workshops
- Organisation of national conference on climate change
- A Greenhouse gas inventory
- An assessment of vulnerability to climate change and adaptation options

INSTITUTIONAL FRAMEWORKS – Implementation and Decision Making

◆ **Framework Convention Climate Change**

- Solomon Islands ratified the United Nations Framework Convention on Climate Change (UNFCCC) on 28th December 1994. As a party to the convention, Solomon Islands has continuing and long –term commitment to implement its obligations.
- Also ratified Kyoto protocol
- Completed First National Communications
- Have in Draft the National Implementation Strategy

◆ **Policy Development**

- In 1992, with the assistance of the UNDP, a National Environmental Management Strategy (NEMS) was prepared. This Strategy is perhaps the most far-reaching project to have been prepared in Solomon Islands in relation to environmental management. Sector-specific management strategies have also been prepared, the major ones being on Fisheries and Forestry Management. Others included Strategies for tourism, population and energy.
- Some Provinces too have taken the initiative to compile proper environmental management plans/policies and action programmes to safeguard against possible destruction due to over-exploitation of natural resources and other hazards. The Western Province has an explicit Environmental Policy which lays down certain principles for the protection of the province's environmental heritage.

◆ **Adapting to Climate Change**

- Carry out preliminary assessment of vulnerability to climate change and adaptation options and this work is ongoing since determination of the country's vulnerability is needed
- Direction to link with integrated Coastal Management

◆ **Information**

- Solomon Islands have data collection systems but not well coordinated and remain fragmented
- Infrastructure for regional based data summary needed

◆ **Monitoring and Vulnerability**

- Completed a preliminary assessment study

2.0 NEEDS & CONSTRAINTS

- Training in undertaking Climate Change technical studies is a great need. Technical studies include the following:
National greenhouse gas inventory
Vulnerability and adaptation assessment
Mitigation analysis
- Training is also required in the following policy-related areas:
Preparing national implementation strategies
Preparing the initial national communications;
- There is also a great need for establishment of a national mechanism for climate change-related project identification, development and coordination. The main limitations to a comprehensive understanding of the effects of climate and sea-level change in Solomon Islands are the lack of quantitative data; limited analytical capability; and absence of previous studies. There is a need to:
(a) Carry out quantitative assessment of the effects of climate and sea-level change on agriculture especially land degradation and crop yield.

- (b) Carry out quantitative analysis of flooding and inundation risk especially in areas of highest risk such as the low-lying islands and atolls including Reef Islands, Ongtong Java and Sikaiana.
- (c) Quantify the effects of climate and sea level change on coral reefs in Solomon Islands. Coral reefs are important in Solomon Islands as they are the main source of sediment for beach formation, provide protection from storm events and are productive habitats and ecosystems.
- (d) Carry out a more detailed study of the fishery resource, both in Solomon Islands and regionally, and the effect of sea surface temperature changes. There is presently little knowledge about the effects of climate and sea level variations on marine resources.
 - Comprehensive study of greenhouse gas sources and sinks for all sectors included in the NIS. It is only proper that sources of greenhouse gases be identified and acknowledged now than later.
 - Commissioning of a study to assess the economic and environmental impact of the introduction of new carbon/energy taxes.
 - Development of national/regional climate change impact models to examine the effects of climate change (e.g. on agriculture, coasts, health and water resources) would support and enhance research activities as well as provide a tool for technical training, environmental analysis, policy development, and decision-making.
 - Institutions important for effective implementation of adaptation measures should also be identified and strengthened through capacity building.
 - There is a need to build the government capability in providing required technical expertise, especially to coordinate and implement national climate change programmes. Support for a project to establish a national climate change unit to carry out such a task is therefore a priority. Others will be pilot projects mainly to provide on-the-job training as a capacity building of the nation's human resources in areas of climate change.
 - Establishment of advance communication links through e-mail and world wide web access is required to enhance the capacity of national climate change unit access to information on UNFCCC , climate change science, sustainable technologies, and policy developments in other countries. Information gathered through this means could be made available to policy makers.
 - Increase public awareness and curriculum development for schools. The target of this programme is the formal education sector. The programme will not only create an education and awareness programme, but would also enhance the interest of students to undertake higher level studies on climate change and related issues.

Chapter 3 Natural and Environmental Disasters

Context

Solomon Islands like its Pacific neighbours is also vulnerable to natural and environmental disasters. Both natural and environmental disasters have had catastrophic effects on human life, housing and physical infrastructure, agriculture, and tourism and have severe and long-lasting economic consequences for the country. For example, the 1986 cyclone Namu caused significant damage to infrastructure and the national economy.

Environmental disasters are likely to occur through transportation of oil and other hazardous substances or wastes by sea and through storage, handling and transportation of hazardous materials on land. Solomon Islands does not have in place effective safety regulation and practices. The strong public opposition to the planned importation of hazardous waste from Taiwan reiterates the potential threat such materials have on human health and ecological hazards and consequences associated with it.

With the likelihood that the frequency and intensity of weather extremes will increase with global warming, Solomon Islands' ability to develop a strong productive base for sustainable development is jeopardized.

1. NATIONAL ACTIONS

1.1 ACHIEVEMENTS – Programmes & Projects

- The National Disaster Council is the institute responsible for natural disaster preparedness.
- The NDC's development of disaster preparedness has been supported by the UNDP, SPDRP and SOPAC
- SPREP and WMO have collaborated in providing equipment to receive low-orbit weather satellite images
- SPREP has also provided real-time computer displays to the national meteorological services

2. INTERNATIONAL HIGHLIGHTS

- National committees for the International Decade of for Natural Disaster Reduction were actively promoted.

3. NEEDS & CONSTRAINTS

- There is a need for:
 - Accurate and timely prediction when and where disasters will strike;
 - Rapid emergency response to victims; and
 - Land use planning to reduce vulnerability.
- National and local capacity to respond during natural or environmental disasters needs to be strengthened

Chapter 4 Management of Wastes

Context

Solomon Islands share with other countries in the region, the critical problems associated with the disposal of waste and the prevention of pollution.

Prior to the 1970s most waste products were biodegradable and the concentration of populations was not sufficiently high - the status has quickly changed over the past two decades.

Independence, growing urban populations, increasing imports of non-biodegradable material and chemicals related to agricultural and manufacturing and western lifestyles has brought with them environmental health problems and a rapid confrontation with the realities of waste and toxic/hazardous substances management. The geographic location of Solomon Islands in the Pacific Ocean means that any transshipment of nuclear waste from France to Japan pass close to the Exclusive Economic Zone (EEZ) posing danger in a grander scale.

The country's dependence on a marine and terrestrial resources, make them Solomon Islands vulnerable to contamination by solid and liquid waste, toxic and hazardous wastes and chemicals, as well as radioactive materials.

Solid waste management is a particular concern for Solomon Islands where the urban centers, particularly the capital, Honiara lacks suitable available land for waste disposal sites. The current site is located in the middle of an industrial area and is becoming full rapidly.

Variations in commodity importing has led to dramatic shifts in the waste stream with plastics, cardboard, paper and metals now being of greater significance than organic matter. Increased dependence on imports due to a lack of in country manufacturing have exacerbated this problem. Increased demand for marine port facilities directly impacts coastal environments.

Increased urbanisation also places demands on infrastructure including sewerage, power, communications and transportation services. Inadequate sewerage facility has severe health and environmental implications causing degradation of river, sub-surface and coastal water quality with adverse effects on subsistence living and other coastal activities.

Inadequate sanitation systems for the disposal or treatment of liquid wastes have resulted in high coliform contamination in surface waters, coastal waters and in groundwater near urban areas.

There is also over-reliance on a range of chemicals for agriculture and manufacturing. The Solomon Islands in general has no capacity for monitoring the pollution from toxic or hazardous substances but there is increasing awareness of the impacts and magnitude of the problem.

Recently, the government of Solomon Islands considered importing industrial waste from Taiwan as a source of income for the country. The idea received firm opposition from the technical expertise within the government as well as a public outcry against such imports.

A recent study of persistent organic pollutants in the region found that considerable stockpiles exist in some countries and that a number of sites had been contaminated through past disposal or storage of these chemicals

Various incidents of pollution from industrial waste have been reported including effluent from fish canneries; leachate from logging areas; and tributyl-tin and other chemicals used in the marine industries and the preservation treatment of wood respectively.

Incidents of dangerous and illegal pollutants being discharged into streams and oceans have increased, hand in hand with uncontrolled growth of urban centres and establishment of manufacturing industries. Point source pollution from industrial wastes and sewage, inappropriately sited and poorly managed garbage dumps, and disposal of toxic chemicals are all significant contributors to marine pollution and coastal degradation.

The most commonly identified issues included the need to upgrade existing national hazardous waste management facilities and a lack of legislative and regulatory controls on hazardous materials management.

There is a need for Solomon Islands to develop appropriate environmental legislation, guidelines or similar protocols for the management of all waste streams, including hazardous wastes. The gaps in legislation and the lack of enforcement of existing legislation resulted in ad hoc waste management practices that often failed to protect environmental values. Development of stricter legislative controls for the control of industrial discharges and regulation of the importation, storage and application of hazardous materials is pressing.

Raising community awareness and the need to develop a co-ordinated approach between government departments was an important issue facing the country. There is a need for education of senior government officials as well as the general public. This would provide the essential foundation for implementing future hazardous materials programs, developing new legislation and better management of hazardous materials in general. On-going community education programs would facilitate the required change in public attitudes towards hazardous waste management and would support agreed commitments within government programs.

Dis-economies of scale for many PICs affect opportunities for recovering of waste materials or recycling. Management of toxic substances, such as pesticides, PCBs, waste oil and heavy metals, is problematic. Solomon Island do not have the systems or physical capacity to isolate and dispose of these substances.

Waste and pollution from ships is a concern to the region, in particular, the potential for the introduction of invasive species.

1. NATIONAL ACTIONS

1.1 ACHIEVEMENTS – PROGRAMMES & PROJECTS

◆ Marine Pollution

- Support for management of marine pollution has occurred with the implementation of the Strategy for the Protection of the Marine Environment in the Pacific (and particularly PACPOL).

◆ Solid Waste, Effluent and Land Based Pollution

- State of the Environment Reports in early 1990s broadly identified the causes and constraints of waste disposal for Solomon Islands;
- National Environment Management Strategies (NEMS) contained national priorities for waste management and pollution prevention,
- There is a scatter of environmental regulations under Forestry, Quarantine, Health, Environment and Fisheries Acts covering waste management, however they are not integrated with environment or development laws

◆ Information

- SOEs and NEMS identified lack of information available in a form to assist in decision making and use of simple methods for dealing with waste
- Little information exists on levels of contamination and effects, especially upon streams, coasts and lagoons.

1.1 INSTITUTIONAL FRAMEWORKS

◆ International Conventions

- Solomon Islands have ratified the following conventions:
 - Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matters;
 - Protocol for the Prevention of Pollution of the South Pacific region by dumping;
 - Protocol Concerning Co-operation in Combating Pollution Emergencies in the South Pacific
 - Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
 - Waigani Convention to ban the importation of Hazardous and Radioactive Waste
- Slow progress has been made with corresponding national laws and regulations.

2. REGIONAL INITIATIVES

2.1 ACHIEVEMENTS – Programmes and Projects

The Regional Waste programs or programmes with major elements relating to waste and pollution are:

- Preparation of A Strategic Action Programme for the International Waters of the Pacific Region in 1998;
- Pacific Pollution Prevention Programme (PACPOL);

- Development of a regional marine spill contingency plan (PACPLAN) and assistance to countries to develop national marine spill contingency plans (NATPLANs).
- Establishment of a regional marine pollution surveillance system (PACPOLPatrol).
- Establishment of Regional Marine Spill Reporting Centre (PACRep).
- Environmental Management Guidelines for Pacific Island Ports.
- UNITAR/IOMC National Profiles to Assess the National Infrastructure for the Management of Chemicals Project;
- Management of Persistent Organic Pollutants in the Pacific;
- Development of the Hazardous Waste Management Strategies in Pacific Island Countries Project; and
- 1998 SPREP & EU: ‘Pacific Regional Waste Awareness & Education Programme (WASTE)’:
 - Promoting understanding of ways to reduce solid wastes in Pacific ACP States;
 - improve the behaviour of significant target groups;
 - audit and characterisation of the waste stream
 - understanding the sources of waste;
 - how it enters a country;
 - the quantity and nature of material generated;
 - education and awareness of selected target groups (Chambers of Commerce, Politicians, public health officials, NGOs, community educators, etc.);
 - legislative aspects (polluter pays principles, duties and taxes, better enforcement of Anti Litter legislation).
- AusAID 1996-9: “Pacific Regional and Multicountry Waste Management Development Project” Profiles of proposed projects: “Improving Waste Minimisation in Pacific Island Countries”.
- Regional Waste Management and Pollution Prevention Programme 1998 (coordinated by SPREP)
- Designed to implement strategies for the prevention and control of pollution in land, coastal and marine environments
- Support is from Australia, Canada and New Zealand and WHO, UNEP, USP and the SOPAC Pacific Water and Sanitation Program.

◆ **Marine pollution**

- SPREP and the International Maritime Organization (IMO) have developed a Strategy and Workplan for the Protection of the Marine Environment in the South Pacific (PACPOL).
- Will assist with technical, legal and scientific cooperation for the protection of the marine environment from pollution from ships and related activities,
- In 1999, model marine pollution legislation was produced for Pacific Island countries through collaboration between SPREP, SPC and PIE.

◆ **Hazardous Waste**

- Waigani Convention, 1995 - PICs through the Pacific Islands Forum formulated the Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to control the Transboundary Movement and Management of Hazardous Wastes

- Complements the global Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)
 - Activities associated include:
 1. banning import of hazardous and radioactive wastes
 2. minimizing the production of hazardous wastes
 3. establishing proper disposal methods
 4. developing national legislation to prevent illegal trafficking of wastes.
 - Thirtieth South Pacific Forum meeting, 1999: dialogue between Forum members & nuclear industry representatives on liability and compensation regime for the shipment of radioactive materials and Mixed Oxide Fuel (MOX).
 - Management of Persistent Organic Pollutants in Pacific Island Countries (SPREP, 2001) project aims at identification and removal of stocks of unwanted and waste chemicals and clean up of contaminated sites.
- ◆ **Solid Waste, Effluent and Land Based Pollution**
- SPREP's Pollution Prevention and Waste Management Programme (1995) - terrestrial component: targets solid waste management and minimization, chemical management, wastewater management and integration with land use planning.
 - The region participates in the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (1995)
 - I. Recognition that up to 70 percent of marine pollution is derived from land based sources;
 - II. Seven key areas are targeted:
 - Persistent organic pollutants including pesticides;
 - Sewage
 - Heavy metals
 - Excessive nutrients from organic sources and sediment mobilization
 - Oils and solid wastes including plastics and litter
 - Radioactive substances; and
 - Physical disturbances including habitat modification and destruction.

2.2 CAPACITY BUILDING

- Public Awareness and Education-
 - ❖ The EU-funded Regional Waste Education and Awareness Programme began in 1998 to improve public knowledge and awareness of the problems of solid wastes
 - ❖ The project aims to :
 - I. Review and acquire information on solid waste management in 9 Pacific island countries
 - II. Develop and distribute a multimedia regional programme of general waste awareness education
 - III. Identify, develop and implement country and theme specific awareness and education campaigns;

IV. Identify priority legislative measures relating to waste management and

V. Encourage and assist the implementation of recycling activities.

- A USP/University of Victoria/CIDA project (1996) supported staff attachments, training workshops in marine pollution, post-graduate student projects in the field of marine pollution and scientist attached to the Institute of Applied Sciences (IAS) at the USP.
- Solomon Islands participated in the training in the Environmental Impacts of Submarine Tailing Disposal

3. INTERNATIONAL HIGHLIGHTS

- Global Programme of Action for the Protection of the Marine Environment from Land-based Activities

4. NEEDS & CONSTRAINTS

Issues on need and constraints included

- Future training programs on hazardous waste management ;
- Increased access to information, including internet access and technical publications; and
- The need to develop legislation for the management of hazardous materials and contaminated sites.

On-going training programs that targeted senior government officials, industry representatives, and other individuals and groups involved in chemicals management, may assist in achieving a more unified approach towards future waste management programs.

Increasing access to technical and other information, would better equip government officials, private industries and the general public, to make more appropriate decisions regarding the management of hazardous materials, hazardous wastes and contaminated sites. There is difficulty in identifying and accessing suitable technical information. Better access to such information would also alleviate the need for external training programs and reduce the requirements for outside support.

Specific legislation dealing with the management of hazardous materials and hazardous wastes needs to be developed and adequately enforced to better manage the environmental and health impacts associated with these materials. The current lack of appropriate legislation and enforcement processes, is resulting in the adoption of substandard management practices.

- Insufficient promotion of the need for good waste management, the options available and the regulatory regimes already in place
- There are limited facilities for receiving ship-borne waste in ports.

- Continued pressure from population, economic development and poor land use practices leading to contamination of groundwater, freshwater and the marine environment
- Increasing quantities of solid waste
- Lack of controls on chemicals imported into the region
- Lack of capacity to manage chemicals
- Continued pressure for introduced marine species, ship wrecks and marine spills (oil, chemicals and other hazardous materials); ships' waste (oil, sewage, chemicals and garbage); Antifouling paints on vessels,
- The transport of nuclear materials
- The physical impacts and pollution from World War II wrecks is of grave concern
- Particular effort is required at the national level to strengthen the capacity of the country to minimise and prevent pollution

Continuing resourcing and pragmatic application of:

- Global programme of Action for the Protection of the Marine Environment from Land based Sources (GPA)
- The International Convention for the Prevention of Pollution from Ships (MARPOL);
- Need for demonstration projects which promote technology transfer
- Further development of alternatives to current use and disposal patterns
- Education and awareness campaigns
- The development of appropriate legislation.

Chapter 5 Coastal and Marine Resources

COMPILE BY MICHELLE LAM

Context

The Solomon Islands, although a larger Melanesian High Island country, is considered entirely coastal in nature. Therefore, coastal resource management means the management of the whole island and its surrounding waters. Fish and other marine resources from coastal inshore waters is the most accessible primary source of protein. The major resources available for export for Solomon Islands come from the pelagic tuna fisheries. The sustainable development of these fisheries is, therefore, a key factor in the development of country's economy.

Historical pressures on the marine and coastal environment in the Solomon Islands has not been not well documented but export statistics has shown a steady decline in commercial species being exported. With the vast majority of Solomon Islanders living in the coastal zone, there is considerable pressure on coastal and marine resources. Centralised management authority has led to over-fishing in many commercial species. With a strong sense of Customary Marine Tenure in the Solomon Islands, the Ministry of Fisheries and Marine Resources has begun the re-introduction of traditional fisheries protection strategies such as closed seasons and areas (tabus) to compliment its own inadequacy of enforcing management regimes.

Concentration of development along the coasts of has also posed imminent threats to marine and coastal resources. These include:

- Nutrients derived from sewage, soil erosion and agricultural fertilizers
- Solid waste disposal particularly in urban areas.
- Sedimentation resulting from land clearance from shifting cultivation, large scale logging and increased erosion
- Physical alterations through destruction of fringing reefs, beaches, wetlands and mangroves for coastal development and by sand extraction.
- Over-exploitation of coastal food fisheries, particularly commercially important ones as well as the use of destructive fishing methods

Solomon Islands, being in the Western and Central Pacific supports the world's largest tuna fishery. The challenge facing the region in terms of the oceanic environment is to ensure that over-capacity and over-exploitation (which have had both severe economic and biological consequences worldwide) are not repeated in the region.

Reefs

Coral reefs are among the most biologically diverse ecosystems on the planet but many of these ecosystems have been destroyed by human activities. Increased human population, several economic problem due to a length ethnic unrest has increases the use of destructive and un-controlled use of the reef and its resources.

Bryant et al, 1998 also reported that thirty one percent of Pacific reefs are at medium risk and ten percent at high risk of further degradation.

Coastal fisheries

A high percentage of fish catch is primarily for local consumption. Over-fishing of marine resources poses a major threat to Solomon Islands (World Bank 1999). There have been minimal pro-active management interventions aimed at protecting degraded fisheries. Programs over the last decade have aimed at capacity building through marine science training, post harvest handling and conservation area implementation. Further capacity development is required to balance against rising pressures.

Population growth, density and economic development in coastal areas shall place continued pressure on wetlands and mangroves, and coastal fisheries.

Oceanic Fisheries

The Solomon Islands earns a major portion of its economic returns from oceanic fisheries with Distant Water Fishing Nation (DWFN) through multi-lateral and bilateral access agreements, fishing access fees, etc. This represents a significant proportion of its foreign earnings valued at approximately US dollars (Preston 1997).

The Secretariat of the Pacific Community (SPC) continues to monitor and advice on a rational sustainable exploitation of the pelagic fishery which proves to be vital to the improved economic performance of Solomon Islands.

Sand and Aggregate

Beach mining of sand has been on going since the early 1970s to provide suitable construction grade sand and aggregate for infrastructure development. The practice is not particularly damaging in the high islands of Solomon Islands but an increase in demand with the high population growth will cause real concerns.

Marine Mineral Resources

Deepsea minerals pose an economic opportunity as well as environmental challenge for Solomon Islands. There is the untapped potential resources such as cobalt rich crusts; manganese nodules; polymetallic massive sulphide deposits; petroleum; gas; gas hydrates.

1. NATIONAL ACTIONS

1.1 ACHIEVEMENTS – PROGRAMMES AND PROJECTS

- ◆ **NEMS**
- ◆ **Oceanic Fisheries**
 - ◆ **Observers Project**
 - ◆ **Port Sampling Project**
 - ◆ **Bilateral Tuna Treaties and Commission**
- ◆ **Coastal Fisheries Programme**
 - The Ministry have been developing partnerships with local communities in management of coastal resources and with NGOs on establishing marine conservation areas.
 - SI National Live Reef Fish Trade project (socio-economic study to develop management plan)
 - Status of Inshore Fisheries Project Phase I (funded by with WWF) and Phase I I (funded by OFCF Atoll Project) – survey on rural communities' perspective on resource levels, Education and Awareness Program and resource planning advice.
 - GEF International Waters Project
 - Marovo Marine Protected Area Project
 - Arnavon Marine Conservation Area (AMCA) Monitoring work
 - Public Awareness Program - (poster, calendar and Fisheries Regulation brochure production)
 - Solomon Islands government and ICLARM's Postlarval Fish Project
 - Coral Reef

1.2 INSTITUTION FRAMEWORKS - Implementation And Decision Making

- Responsibility for coastal resource management is mainly with the Ministry of Fisheries and Marine Resource but a number of specific species (e.g. crocodiles and turtles) and issues (habour pollution enforcement, port management) are spread across a number of agencies.
 - Pro-rata large areas to be managed without sufficient support.
- ◆ **Integrated Coastal Management**

- PIC NEMS provided strategies for coastal management in Pacific Island countries.
- Few have agencies that are mandated to also deal with coastal management.

Fisheries Management

The recognition that Ministry of Fisheries and Marine Resources required a separate portfolio was done in 2000 by the Sogavare Government.

- Implementation of fisheries management at a local (village) level remains a problem.
- Pelagic fishery: major issue is ensuring compliance with fisheries agreements.

1.3 INFORMATION

- Shortage of National based data to provide for effective coastal management, and evaluating the effects of management.
- Monitoring is limited, but is slowly improving.
- Assistance with coastal mapping needed.

2. REGIONAL INITIATIVES

2.1 ACHIEVEMENTS – Programmes and Projects

◆ Integrated Coastal Management

- SOPAC and SPREP have programmes in integrated coastal management:
 - policy/legislative analysis, and training workshops (SPREP)
 - technical/practical initiatives with respect to shoreline protection and management (SOPAC).
- Coastal protection: SPREP and SOPAC have worked closely together to provide the region with advice and technical assistance.
- International Ocean Institute Operational Centre (IOI-South Pacific) at University of the South Pacific (USP) has developed training courses focusing on:
 - coastal fisheries
 - ocean policy, and
 - resource economics for small islands
- The Ocean Resources Management Programme (ORMP) at the USP offers undergraduate courses in integrated coastal management.
- The Institute of Applied Science (IAS), Marine Science Programme (MSP) at USP does considerable work in this area:
 - Locally-Managed Resource Planning - USAID-funded Biodiversity Conservation Network;
 - University of Rhode Island Coastal Resources Centre project – integrating local projects into larger-level ICM.
 - Studies and Consultancies sponsored by Canadian C-SPOD and Packard Foundation programmes
 - Training in value adding to local resources
 - a. Via bioprospecting to assess additional commercial uses of chemicals in plants and marine organisms.

- b. Use alliances to bring new technologies to region to study and add value to samples locally.
- c. Looking at simple processing methods that can be applied at local level to add value to local fruits and nuts such as dawa (*Pometia pinnata*) and ivi (*Inocarpus fagiferus*),
- d. Intellectual Property Rights - model agreements with overseas entities which attempt to reflect best practice in access and benefit sharing agreements and passes on these lessons to national and regional entities

◆ **Offshore Fisheries Management**

- [Offshore fisheries](#) managed by Forum Fisheries Agency and the SPC.
- SPC provides a scientific analysis of the status of the offshore fish populations.
- FFA mediates agreements between distant water fishing nations and its 14 Pacific island members; designs management and enforcement strategies
- FFA supported the Multilateral High Level Conferences on South Pacific Tuna Fisheries ([MHLC](#)) from 1994 to 2000.

2.2 INSTITUTIONAL FRAMEWORKS – Legislative Policy Platform

◆ **Regional/International Treaties**

- Agreement on Straddling Fish Stocks and Highly Migratory Fish.
- The Forum Fisheries Agency (FFA) provided technical support.
- Coming into force of UNCLOS [1994]: a number of PICs are now State Parties to UNCLOS-SOPAC.
- SOPAC Programmes relating to: Deepsea mining; extended Continental Shelf; Maritime boundaries delimitation

2.3 INFORMATION and CAPACITY BUILDING

- SOPAC has a number of programmes areas and units able to assist with technical data collection, eg Seafloor swath mapping of coastal and offshore areas.
- SOPAC has conducted a number of beach profiling and erosion studies in a number of countries.
- SPREP is continuing capacity building in coral reef monitoring and training.
- Pacific Environment and Natural Resource Information Centre (PENRIC) established in SPREP to assist countries with the collection, assessment and reporting of environmental information.
- Other major networks and modes of information exchange include:
 - PIMRIS (Pacific Island Marine Resources Information Service) based at the USP, Suva;
 - PSDNP (Pacific Sustainable Development Network Program) based at the SPC, Suva; and,
 - ICRI (International Coral Reef Information Network) a programme about to commence and managed by SPREP.

3. INTERNATIONAL HIGHLIGHTS

- UNEP funded the establishment of a GIS laboratory at the USP under the PENRIC programme.
- The International Coral Reef Initiative (ICRI) was adopted in 1994.

- The ICRI Pacific Regional Strategy for coral reefs and related ecosystems was produced in 1995.
- Implementation of the agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks was opened for signatures in December 1995.
- The UN Convention on the Law of the Sea (UNCLOS) entered into force in 1994.
- International collaboration created the Global Ocean Observing System [GOOS] with SOPAC & IOC as the lead agencies.
- UNESCO established a multi-disciplinary project on coasts and small islands to disseminate global experience in integrated coastal management.
- Ocean observing systems, the Tao/TRITON array located in the western equatorial Pacific has and continues to improved understanding of ENSO

4. NEEDS and CONSTRAINTS

- Recognition of a regionally endorsed strategy for aqua-culture development
- Support and resources for the development of aqua-culture: continued international support needed
- Continued economic and social pressures for the over-exploitation of inshore fisheries – needs specific attention.
- Lack of effective local management systems that use and respect local knowledge.
- For offshore fisheries: access by distant water fishing nations (DWFN) is a continuing problem. Continued support is required in :
 - Effective regional vessel register
 - Effective vessel monitoring systems
 - Effective minimum terms and conditions of access to maximise the retention of ‘multipliers’ in-region.
 - Statistical reporting for monitoring the sustainability of tuna fisheries
- For off-shore fisheries generally the continued international support in the following areas:
 - scientific research and database development
 - the development and maintenance of a legal framework for sustainable fisheries management
 - the development of management plans and policies
- For Coastal resources international support is required for:
 - community based conservation and management
 - alternative livelihoods such as aquaculture and ecotourism
 - post harvest management
 - integrated management
 - research and transfer of technology to assess the impact of exploitation of living and non-living resources.
 - further implementation of Pacific Coral Reef Action Plan as part of the International Coral Reef Initiative
- Additional International support for the exploitation of deep sea minerals in a sustainable manner.
- Support from the international community to assist national and regional efforts to assess resource information and to develop appropriate policies and legislative regimes.

- Support for the acquisition of baseline data and information [geophysical, sidescan; swath; seismic] and long-term monitoring of oceanographic data [physical and chemical parameters]
- Need for Ecosystem-based approach to ocean resource management to lead to integrated work programmes of the CROP organizations
- Additional support for Maritime Boundaries delimitation programme, & preparation for claims for extended continental shelves.
- Recognition that Integrated Coastal Management (ICM) is a long term process needing support at a village level.
- Further work needed on Coastal Models for coastal management – suited to the Pacific Islands
- Lack of guidance and resources on means to institute integrand coastal management across ‘whole of government’.
- Need for continued training of local fishermen on sustainable use of coastal and marine resources.
- Continued socio-economic pressures for the exploitation of intertidal areas, mangrove ecosystems and the extensive reclamation of foreshores.
- Continued commitments needed to institute actions within country extending from the RAMSAR Convention on Wetlands.

Chapter 6 - Freshwater Resources

Context

Clean and reliable water supply and sanitation are vital foundations for economic growth, social development and in some cases basic survival of Solomon Islanders. Population growth, urbanization, clearance of water catchments, inappropriate agricultural activities and inadequate waste disposal are factors that has an increasing impact on water supplies throughout the country. Improvements in water resource management is fundamental and will require a coordinated effort across many sectors including: improvements in watershed management; reductions in deforestation rates; raising public awareness of wise water use and management; controls over agricultural activities and improvements in waste disposal, especially sewage disposal facilities.

Solomon Islands Government (SIG) is responsible for the National Planning and Policy making in the water resources sector through functions and obligations of various organizations directly involved in the sector. Apart from Water Resources Division, there are other organizations in the country which have their own policies and programs regarding water resources sector which is part of the government overall objectives and priorities. Such organizations include the Solomon Islands Water Authority being charged with the responsibility to provide safe water supply and waste water services to the urban areas; the Rural Water Supply and Sanitation for provision of providing safe water supply and sanitation to rural population; and, Environmental Health Division, to ensure water supply for human consumption is free of contamination and pollution.

1. NATIONAL ACTIONS

1.1 ACHIEVEMENTS - Programmes And Projects

◆ Water Monitoring and Protection

- Solomon Islands Water Authority regularly monitor urban water supplies for contamination by sewage.
- The Rural Water Supply section of the environmental health division established water supplies in rural areas of Solomon Islands. Water sources are evaluated and monitored for possible contamination before putting in the infrastructure.

◆ Integrated Water Management and Planning.

- National Environmental Management Strategies (NEMS) provided strategic approaches for water management.
- Freshwater management is an integral component of Integrated Coastal Management. In other islands watershed management and waste control strategies cover the major aspects of fresh water management.

1.2 INFORMATION & CAPACITY BUILDING

- Monitoring of fresh water is inadequate since there is a lack of technical equipment, trained technicians, lack of catchment data and knowledge of freshwater sources.

2. NEEDS and CONSTRAINTS

2.1 IMPLEMENTATION AND DECISION MAKING

The Water Resources Division is established to carry out the "Policy and Planning Objectives" of the Department of Mines, Energy and Water with regard to water resources sector in the country.

The primary goal in the policy and planning objectives are: -

1. To promote the most efficient and beneficial use of water
2. To promote the maintenance and improvement of the quality of all natural water

The management strategy to achieve these goals is outlined as follows: -

- **Assessment of present resources:** Assessment of the present water resources of the Solomon Islands will involve measurement of the quantity and quality of both surface and ground water. A national program is required to cover all provinces in the country, although some form of priority will be needed to divert the limited manpower and equipment resources available.
- **Identification of community needs:** The need to identify and schedule community needs in regard to water will cover requirements for irrigation, rural and urban water supply, recreation and hydropower. In addition to present needs it is necessary to predict future requirements to allow an allocation strategy to be planned.
- **Creation of legislation:** To manage the surface and ground water resources of the Solomon Islands there is a need for some form of regulation. To achieve the best management of the resources by the most appropriate means a comprehensive legislative framework needs to be put in place. This will ensure that the statutory obligations of the nation or its provinces to the people, with regard to the management and conservation of its vital water resources will be met.

Although the current emphasis of the Water Resources Division is on the assessment of the water resources, there is a need to assess the demands on these resources and develop some legislation, which will ensure a fair and efficient usage of the natural waters of the Solomon Islands.

Chapter 7 - Land Resources

Context

Land resources depletion and land degradation are major problems confronting Solomon Islands. Land resources are the basis for the majority of subsistence and commercial production but are being mismanaged. High population growth and/or density rates, displacement of traditional land and resource management systems, introduced agricultural systems, mining and forest utilisation have placed serious stress on land resources and the communities that depend on them.

Shortage of suitable arable lowlands due to a combination of increased population, land tenure issues, and the introduction of tree cash crops, has increased pressure on marginal and sloping lands that are now being cultivated. Cultivation of marginal sloping lands is unsustainable and is responsible for widespread soil erosion, loss of soil fertility, decline in crop yield, and widespread land degradation. Land degradation is also exacerbated by population growth, agronomic restructuring, excessive forestry, over-grazing, weed and pest infestation, and poorly designed development assistance programs. Coastal lands are under more threat than inland areas due to the intensity of activities (urban, peri-urban and rural) in these areas.

Land dispute over access and rights to land and resources has been heightened by the transition from traditional farming to cash crop and market crops - which require individual entity investment in difference to family unit holdings. Land conflict stemming from socio-economic influences has dramatic implications for land and biodiversity degradation. To avoid conflict families either reduce the shifting nature of land use, shortening fallow periods.

Forest conversion by logging and deforestation through shifting cultivation is occurring at a alarming rate. With deforestation comes the potential for accelerated soil erosion and land degradation. Although Solomon Islands still have significant and valuable stands of hardwood species, most are unsuitable for commercial exploitation. The potential economic rent from these remnants means there are extant pressures for their exploitation.

1. NATIONAL ACTIONS

1.1 ACHIEVEMENTS – Programmes and Projects

◆ Land and Resource Use Planning

- The land resource study conducted at reconnaissance level conducted by British Overseas Development Assistance in 1975 to 1980 provide an overview and basic information on land resources of Solomon Islands. During the survey Agriculture Opportunity Areas were identified.
- In 1992 to 1994 AusAID funded Solomon Islands Forestry Inventory System (SOLFRIS) project provided information on forest resource and set guidelines for sustainable harvesting of the country's forest resource.

- In 1996 to 2000 AusAID funded PACIFICLAND soil management project which was set up to quantify soil erosion rates and amounts and identify sustainable cropping systems for steepland sites.
- Under the new Environment Act of 1998, EIA of new development projects are required.

1.2 INFORMATION

- Land Information Systems and Geographical Information Systems although are used more widely in the region, they are of limited use in Solomon Islands

1.3 INSTITUTIONAL FRAMEWORKS

- Through the AusAid funded Forestry Inventory Project efforts have been made since 1994, to improve the collective management of the country's forest resources.
- Code of Conduct for Logging has been produced.

1.4 CAPACITY BUILDING

- UNDP/FAO South Pacific Forestry Development Program conducted a range of training activities in the forestry sector and Solomon Islands took part of the training.
- Training and capacity building in the agriculture sector is supported principally by SPC (Suva), USP (Alafua Campus), and by the FAO Pacific Office (Apia).

2. INTERNATIONAL HIGHLIGHTS

- FAO is strengthening its Pacific subregional office in Samoa to deal with Land Degradation issues

3. NEEDS and CONSTRAINTS

- National, regional and international support is required for ongoing environmental education and awareness programmes regarding the need for effective land resources management.
- There is little data available on the extent of land degradation in Solomon Islands – this knowledge is essential in determining priorities for support for remediation and promotion of better land resource planning.
- National, regional and international support is required to develop a comprehensive land use and development plan for Solomon Islands. This will include:
 - Strategic approaches especially in relation to use of land capability assessments for agricultural, rural and urban development.
 - Institutionalisation of Land Use or Resource Use decision systems to assist with land capability analysis for sensible allocation of rural, coastal and urban development.

- The resolution of sustainable land management must deal with communal tenure systems, traditional land use practices, cultural values and the integration of environmental and development decision-making.
- Efforts to develop and implement sustainable land management policies be given priority. Means of application need to be directed at the grass-roots community level.

Chapter 8 - Energy resources

Context

Energy is a very important ingredient in achieving sustainable economic growth in Solomon Islands as well in the Pacific Islands region. Solomon Islands face unique and challenging situations with respect to energy for sustainable development which include:

- Demographics vary widely between islands, and often feature small, isolated population centres.
- 80% of the total population is without access to electricity.
- Solomon Islands comprise a wide range of ecosystems and habitats that are predominantly influenced by marine systems.

The responsibilities to manage and develop the energy resources lies with the Energy Division of the Ministry of Mines and Energy. Solomon Islands Electricity Authority (SIEA) is responsible for providing electricity to all the urban and provincial centres. The non-government organisation such as APACE, GREA etc. had constructed small renewable energy projects mainly solar and hydropower for rural and remote communities.

1. NATIONAL ACTIONS

1.1 ACHIEVEMENTS – Programmes and Projects

- Rural electrification programmes using solar photovoltaic panels were conducted in Solomon Islands particularly on Guadalcanal.
- There are small to mid-sized hydroelectric facilities particularly in rural areas.
- Taxes on petroleum products are low by world standards.
- Little attention is given to the significant economic contribution that can be made by reducing oil imports through increasing end-use energy efficiency.

2. NATIONAL INITIATIVES

2.1 INSTITUTIONAL FRAMEWORKS – Implementation and Decision Making

◆ Formulation of energy policy

The government adopted the national energy policy of seeking to increase the contribution of the energy sector to the welfare of the nation in an efficient, equitable and sustainable manner. While working in unison with national economic and social development policy. The Policy encourages the energy sector participants to maximise the appropriate, proven and cost-effective renewable technologies utilising

indigenous resources to meet the energy demands and needs. However, the detail framework is required and needs to be developed.

2.2 CAPACITY BUILDING

- GTZ Regional Energy Counselling Project (1994-1996) provided technical assistance and training in rural electrification.
- The government is working to establish a Rural Electrification Advisory Committee [REAC] focusing on rural electrification using Solar Home System [SHS] and micro hydropower generation.
- The government is in the process of establishing links with Credit League Institutions to provide incentives, supports and assistance for rural people to develop renewable energy resources for their energy needs.

2.3 RESEARCH AND TECHNOLOGY

◆ Research and policy development

- Many technological developments in the utilization of ocean-based energy resources, wind, biomass and land-based energy resources (OTEC & geothermal) for power generation energy using indigenous energy resources.
- Development of indigenous energy sources is constrained by the unavailability of monitored/assessed data.
- SOPAC has been engaged in the monitoring of ocean-based energy resources:
 - Ocean/Wave Energy
 - Geothermal
 - Wind Energy Resources

3. NEEDS AND CONSTRAINTS

◆ CAPACITY BUILDING

- Solomon Islands is heavily dependent on fossil fuel based systems. About 90 % of electricity through out the country are generated by diesel engine.
- Energy not equitably available to remote populations.
- The capacity of the country to deliver efficient and sustainable energy remains limited
- The country is dependent on outside technical assistance and expertise.
- Energy planning and management capacities of Pacific Island countries need to be strengthened.
- Energy pricing and taxation policies may be needed to encourage energy efficiency, reduce growth of energy imports, and assist in insulating countries from external shocks.
- Remote community dependency makes them vulnerable to increased costs and vagaries of supply affects sustainable development.
- International community support is required to assist Solomon Islands to:
 - Access and coordinate donor funding support for priority renewable energy initiatives to achieve economies of scale;

- Access and develop human resources for the regional renewable energy sector
- Develop mechanisms to encourage R&D and private sector investment in priority renewable energy projects.

3.1 LEGISLATIVE AND POLICY PLATFORMS

◆ Power

The country recognises that reliable and affordable electric power is essential for its economic development and social progress. The goals of the government is to facilitate access to power for people in all rural and urban areas; improve conditions for private sector investment; improve the safety, reliability, and affordability; and manage the negative environmental, social, and economic impacts. The country needed support to:

- Establish an enabling and competitive environment for the introduction of providers that are efficient, reliable, and affordable to consumers;
- Develop regulatory frameworks that ensure minimal detrimental impact of privatisation on consumers.
- Enforce appropriate international best-practice regulations and standards.
- Encourage the introduction of new commercially proven technologies and generating systems that are environmentally, economically, financially and socially viable.

◆ Energy for Transportation

Road and marine transport consume over half of the petroleum products imported into the country. Continued international support in needed to:

- Develop transportation infrastructure that offers improvements in vehicle and vessel reliability and efficiency.
 - Evaluate emerging environmentally clean technologies and alternative fuels.
 - Institute adequate emission control regulations and effective enforcement procedures.
 - Encourage co-operative regional arrangements, to provide more efficient services to remote and isolated areas.

◆ Renewable Energy

While most of the renewable energy projects previously constructed; were disappointing or have failed. The government appreciated that the renewable energy sources (hydropower, wind, geothermal, solar, wave, ocean thermal, and sustainable biofuels) are the potential contributor in meeting long term energy demand and recognise the need to take a more business like approach in evaluating the appropriateness of renewable energy project. International support is needed to:

- Involve power utilities, renewable energy services companies, and the private sector in managing financially sustainable stand-alone power systems.
- Promote market-driven renewable energy technologies.
- Encourage research and development for renewable energy systems suitable to Solomon Islands.

◆ Energy And The Environment

There is a need to incorporate environmental considerations into energy sector planning, and reduce the negative environmental impacts of petroleum and biomass fuels. Support is required to:

- Require full life-cycle analysis of proposed energy projects, including waste disposal and decommissioning
- Incorporate mechanisms for waste oil management into fuel supply contracts.
- Incorporate plans for the ultimate disposal of solar photovoltaic system components, batteries, and panels into programme designs.
- Integrate environmental regulations into all related energy sector plans, including transportation, power supply, and building codes.

Chapter 9 Tourism Resources

Context

The tourism industry in Solomon Islands has shown a significant growth from mid to late 1990 but was substantially reduced in 2000 due to the ethnic tension. Only about 4000 tourists visited Solomon Islands in 2000. There is however great potential for sustainable growth in this sector with a focus on eco-tourism. Numerous obstacles such as lack of supporting infrastructure, poor promotions, inadequate facilities, lack of qualified personnel, and lack of funds hinders potential growth. The onslaught of the ethnic tension dealt a severe blow to the industry. Timely and reliable information on the tourism sector remains an area of concern.

Projected growth in international tourism trends, and regional forecasts for growth into this region suggests that Solomon Islands can plan to tap into increases in tourist arrivals over the longer period. Studies on global tourism trends by the World Tourism Organisation, World Bank and the UK-based Economics Intelligence Unit (EIU) predicted visitor volumes to the Pacific region as a whole would double over the next decade. However, given the recent terrorist attacks, this projection may not reach its target.

1.0 NATIONAL ACTIONS

1.1 ACHIEVEMENTS – Programmes and Projects

- Solomon Islands is aware of the economic advantages and the environmental and cultural disadvantages of large scale tourism development.
- In 1999 Solomon Islands Visitor's Bureau (SIVB) undertook the initiative to improve its data system on the tourism sector.
- The SIVB is working closely with the Ministry of Culture, Tourism and Aviation as well as the Department of Conservation and Environment to integrate activities for long term sustainability.

- A positive development in the sector is the completion of RIPEL owned Yandina Plantation 12 room resort during the height of the tension at a cost of SBD\$1.8 million.
- **Ecotourism**
 - Solomon Islands sees ecotourism as an important strategy to promote sustainable tourism
 - It is also an important strategy for funding community based conservation areas

◆ **Integrated Plans for Sustainable Tourism**

The SIVB master-plan links development and environmental quality through ecotourism.

◆ **Niche markets**

- Greater focus is needed to foster closer links between tourism offices and those involved in the establishment of conservation areas.
- Ecotourism can also bring negative impacts to the natural environment.
- The Environment Act stipulates the need to complete EIAs for all large tourist and hotel developments.

2. REGIONAL INITIATIVES

- The SPTO (1990) published *Guidelines for Integration of Tourism Development and Environmental Protection*.
- SPTO with UNDP also carried out Tourism Development Plans and Sector Reviews for the various member countries.
- SPTO (2001) produced the *Regional tourism Strategy for the South and Central Pacific* –Draft, which looks at opportunities, constraints and future needs for the tourism industry.
- The current focus for the SPTO is Ecotourism. As part of this focus, efforts will be made to improve human resource development and research & development, as well as to advocate sound environmental practices.
- Regional meetings have been held to discuss environmental issues in relation to tourism planning and investment.
- The SPTO and SPREP have recently developed a TOR for generating a Regional Framework for Environmental Assessment of tourism.

3. NEEDS AND CONSTRAINTS

3.1 IMPLEMENTATION AND DECISION MAKING

• **Sustainable Tourism**

- More effort is needed to ensure recognition of the social, cultural and environmental impacts of tourism that can be both positive and negative.
- human resource development at all levels of tourism to build institutional capacity.

3.2 CAPACITY BUILDING, EDUCATION AND TRAINING

- USP's Tourism Studies Programme has offered undergraduate degrees since 1995.
Two aims of programme:

- (i) understand development of international tourism, its impact and role in PICs, its problems and successes.
- (ii) Carry out, encourage and coordinate research in tourism, both in terms of impacts and to assist in the development of environmentally, economically, socially and culturally sustainable tourism.

3.3 COORDINATION AND COOPERATION

- Limited links between national tourism offices, agencies, industry and environmental agencies/NGOs.
- With expected growth in the tourism sector, particular attention will need to be paid to the links between environmental quality and the sustainability of tourism development.
- Further work is required to develop strong links between both the National Tourism Offices and tourist industry and those involved in conservation activities.

This will assist in identifying opportunities for environment-based tourism that will have benefits for tourism development but also for the sustainability of community-based conservation

Chapter 10 - Biodiversity Resources

Context

Solomon Islands including some of the Pacific Island countries (New Caledonia, Papua New Guinea, Solomon Islands and Vanuatu) are renowned for their terrestrial and marine biodiversity. There are high levels of species diversity and endemism. Terrestrial and marine biodiversity in the country are highly vulnerable to change. People of Solomon Islands rely heavily on biological resources for their economic, social and cultural well being. Use of natural resources for food, artisanal and medicinal purposes is an essential expression of the culture of Solomon Islands. The country also has extensive coral reef system and these too are coming under increasing pressure from land and ship based pollutants or insensitive exploitation.

The challenge for Solomon Islands is to achieve protection of biodiversity resources within the context of sustainable use. Biological diversity can best be protected with the cooperation of the people living in the area and using the resources. However there is generally considered to be a lack of financial and technical resources available for biological diversity conservation to be effective at a village level.

1. NATIONAL ACTIONS

1.1 ACHIEVEMENTS - Programmes and Projects

◆ National Strategies for Biological Diversity

- PIC (NEMS) address protection of natural biodiversity as a key topic and provide strategic objectives at the national level.
- The biological diversity is incorporated into other planning frameworks.
- Solomon Islands address marine biodiversity as part of an Integrated Coastal Management project.

1.2 INSTITUTIONAL FRAMEWORKS – Implementation and Decision Making

◆ Ratifying the Convention on Biological Diversity (CBD)

- Solomon Islands is a party to the Convention
- The implementation of existing strategies (eg, NEMS) and addressing the new issues of intellectual property rights and biosafety - are seen as urgent priorities.
- The country is constrained by the lack of financial and human resources to deal with IPR and biosafety.

◆ Programmes to Promote Community Support

- The South Pacific Biological Conservation Programme (SPBCP) funded by the Global Environment Facility and executed by SPREP, uses community participation as a major theme. The Marine Conservation Project at the Arnavon Islands is supported under this project.
- The Marine Turtle Strategy commenced in 1997 and covers the whole region and is based on a network working towards conserving the species. Solomon Islands is actively participating in this project.
- Conservation International is working in partnership with a community in Makira to convert about 600 ha of tropical forest site into a conservation area.
 - Lake Tegano on Rennel Island has become a World Heritage Site

- WWF: promoting resource conservation in the country and manages the UNDP NBSAP programme (with SPREP), and facilitating understanding of environmental economics.
- A marine monitoring survey of Arnavon Island (Solomon Islands) by the Nature Conservancy (TNC).

1.4 INFORMATION

- As part of a global initiative on the sustainable use of plant resources, UNESCO, WWF and USP have established a Pacific People & Plants network:
 - (i) a network based on USP extension centres that will conduct rapid ethnobotanical studies;
 - (ii) a WWF project in PNG and the Solomon Islands to preserve local knowledge of useful plants and;
 - (iii) national projects to collect, publish and apply botanical and ethnobotanical information.

2. THE WAY AHEAD

2.1 IMPLEMENTATION AND DECISION MAKING

Maintaining Solomon Islands' biological diversity in both marine and terrestrial environments is critically important for ecologically sustainable development. In support of the recently revised Action Strategy for Nature Conservation in the South Pacific, international support is required for Solomon Islands efforts to formulate and implement Biodiversity Strategic Action Plans.

- Given the special attention to land tenure and resource ownership, which in many cases extends to coastal and inshore areas, the successful protection and management of natural areas depends on the full participation and active support of the local communities.
- New issues requiring particular attention include invasive species, biosafety, intellectual property rights and the conservation of marine biodiversity through, for example, the International Coral Reef Initiative.

Chapter 11 - National Institutions and Administrative Capacity

Context

Solomon Islands have a long history of successful traditional practice, which have retained sensitive ecosystems for centuries but these have come under pressure from current socio-economic development

Although Solomon Islanders are aware of their reliance on their natural resources, current practices pose a threat to the environment and thus its fragility calls for the need to adopt sustainable development.

A number of NGOs are currently taking active participation and playing an important role in environmental management and are effectively involved in a wide range of community level activities in the country. They provide the opportunity to facilitate people centred development. This is especially important due to the community's role as natural resource managers and their knowledge of the resources. The local NGO, Solomon Islands Development Trust (SIDT) has been taking a leading role in community awareness through its network of village based demonstration workers.

The government, to varying degrees, have institutionalised environmental policy with economic development plans or statements but are still fragmented and very few has instigated integrated environmental planning and management functions or has legislation that supports and links environmental objective with economic objectives. The focal point for environmental planning and management are the Ministry of Development planning and the Ministry of Forest, Environment and conservation.

Some of the activities described in the chapters in this report have included an element of strengthening the capacity. This includes environmental education, community understanding and involvement and strengthening of institutions and NGOs. This chapter focuses on in country institutional strengthening and capacity building.

1. NATIONAL ACTIONS

1.1 ACHIEVEMENTS – Programmes and Projects

◆ Strengthen institutional arrangements and capacity

- The preparation of the National Environment Management Strategies (NEMS) through the Capacity 21 UNDP Programme.
- Strengthening of capacity for sustainable development planning through establishment of National Coordination Committee on Sustainable Development.
- Through the National Coordination Committee, Solomon Islands is looking at ways of inter-sectoral coordination and integration of decision making through the establishment of National Council for Sustainable Development (Government Civil Society).

1.2 INSTITUTIONAL FRAMEWORKS – Implementation and Decision Making

◆ Provide adequate resources for enforcement.

The enforcement of environmental legislation remains a problem in Solomon Islands. The Environmental Act 1998 has not been gazetted. More work is needed on decision support systems (technical, legal, policy and administration) suited to Solomon Islands.

2. REGIONAL INITIATIVES

2.1 ACHIEVEMENTS – Programmes and Projects

◆ NEMS

- Preparation of **National Environmental Management Strategies (NEMS)** was coordinated by SPREP with the assistance of the ADB, UNDP, and Australia.
- Processes involved in producing the NEMS included a legislative review, a state of the environment report, national seminars and, ultimately, a national environmental strategy.
- While the strategy sets priorities for the nation and provides guidance for assistance from external agencies, it does little to advocate integrative frameworks for decision making.

◆ Capacity 21

The **Capacity 21 Project** concluded in 1997, and had four components but only two components were implemented in Solomon Islands:

- *Land and Sea Resources Management Capacity*: aimed to improve governments' capacity to promote land and sea management practices, which lead to sustainable development.
- *Contribution of land holding peoples organisations to sustainable development*: aimed to improve the participation and capacity of those peoples organisations which are traditional Pacific islander institutions.
- The South Pacific Commission is facilitating the Pacific Sustainable Development Network (PSDN), designed to strengthen the capacity for information exchange.
- The USP has established the Pacific Centre for Environmental and Sustainable Development (2000). Core areas of activity include:
 - Climate Change: to include sea level rise, changes in atmospheric composition, paleoclimatology, energy studies, V&A,
 - Climate Variability resulting from ENSO and other extreme events
 - Biodiversity: to include both marine and terrestrial
 - Integrated Coastal Zone Management
 - Land use and cover change
 - The human dimension

3. NEEDS AND CONSTRAINTS

As described in Chapter 1 of this report on Socio-Economic Dimensions and Frameworks for Sustainable Development, there is much that is required to strengthen the fundamental capacity for PICs to plan, administer and finance development that is sustainable. Within this context, the integration of environment and development within national institutions and administrative arrangements will remain a priority.

Chapter 12 - Regional Institutions and Technical Cooperation

Context

Solomon Islands is a Small Island Developing State (SID) and thus is vulnerable to external forces both natural and manmade. For example large and powerful nations and multi-nationals can dictate the evolution of world trade, finance and other economic relationships and thus often overwhelm the interests of a small country like Solomon Islands. Working in partnerships with regional institutions and organisations are able to overcome such shortcomings by pooling human resources, linking national efforts and attracting international resources. Such arrangement allows for the sharing of technology and knowledge, and also provide administrative savings.

I. NATIONAL INITIATIVES

Solomon Islands is actively participating and cooperating through its membership in 8 regional agencies known as the Council of Regional Organisations of the Pacific (CROP). In line with the differing policy interests and needs of Pacific countries, membership of each organisation varies.

Membership provides several benefits including attendance at meetings, which provide an opportunity to share experiences and discuss problems in the areas of common interest and cooperative approach in areas like trade and shipping. On the international stage the existence and effective operation of the regional organisations are a demonstration of regional solidarity and increase the negotiating power of these small countries (eg COP 6 and Kyoto Protocol). The CROP agencies collectively address issues covering the marine sector, land resources sector (agriculture, forestry and mining), health and population, trade and the private sector, human resource development and information.

1.1 INSTITUTIONAL FRAMEWORKS – Implementation and Decision Making

- ◆ **Improved cooperation, regional programming and technical assistance**
- Regional Strategy operates on five principles:
 - I. Pacific Island Countries must establish clear and consistent national development objectives and priorities.
 - II. Select for regional action aspects of their priorities that can be best addressed through joint use of resources.
 - III. Donors must recognise that the priorities identified by the PICs.
 - IV. PICs must prioritise the requirements submitted for joint regional action.
 - V. CROP and others must develop full project/programme proposals based on the profiles.
- UNDP, through the Special Unit for Technical Cooperation Among Developing Countries (TCDC), New York, has initiated the project TCDS-INFOSIDS, which stands for Information on Small Island Developing States. It is designed to support the SIDS by collecting, maintaining and disseminating information on institutions and individuals with recognised expertise in sustainable development.

- The EU Pacific Regional Indicative Programme (PRIP) under the 9th European Development Fund (EDF) has begun the exercise of regional programming. This exercise requires a series of actions including the development of an agreed regional support strategy and requires extensive consultations with Pacific member states, CROP agencies and Non-state actors.
- Working groups will focus on the agreed programming areas of Human Resource Development, regional economic integration and natural resources development
- Through the Canada South Pacific Ocean Development Programme Phase II (CSPODP II), member countries are building capacity to the sustainable development in the management and protection of the region's living marines resources.
- The START Initiative (1998): Stands for SysTem for the Analysis Research and Training in global change issues of which Climate Change is an important component.
- Start maintains the Asia Pacific Network for Global Change Research (APN).

2. NEEDS AND CONSTRAINTS

◆ Improving UN Coordination

- Barbados Programme of Action and Agenda 21 will require the UN to make more effective use of resources.
- Need to improve coordination mechanisms for focused and harmonised delivery of priorities relevant to SIDS
- Governing bodies and work programmes of UN system agencies seem to have their own mandates, not necessarily reflecting the recommendations of timely implementation of the BPOA and provisions in Agenda 21 to oceans and SIDS. International support is needed to:
 - strengthen the operational effectiveness of the UNDP Resident Coordinators with respect to inter-agency cooperation;
 - improve the linkages between central offices of the UNDP and country offices in the Pacific;
 - strengthen links between UN Regional Co-ordinators and agencies for bilateral assistance.
- Need to improve the alignment of UN activities with existing regional organisations' strategies, work plans and coordination mechanisms. These clearly identify regional and individual states needs in a consistent manner.
- The use of single Focal Points between CROP agencies and PIC Governments and Civil Society is not effective in conveying specific ongoing country needs or implementation issues. Resources are needed to develop Country Profiles to assist with programme/project design and delivery.

Chapter 13 - Transport and Communications

Context

Transportation

The country's geography and long distances to small isolated populations centers result in costly transport. Inter-island shipping services are irregular and unreliable. Services to outer islands pose particular difficulties. Safety and comfort standards in both formal and informal shipping sectors operating inter island services are generally low. Despite these problems, sea transport provides the only major links among islands.

The country's road systems and network are not well developed and in a poor state due to lack of timely and high cost of maintenance. The only road networks are found in urban areas or towns but again suffer from over-use and poor long-term maintenance regimes.

Civil aviation has evolved rapidly in recent years, which show the only national airline Solomon Airlines operating both domestic and international flights. It is however facing serious financial difficulty, which made its domestic service are unreliable and almost non-functional . It has mutually made beneficial commercial arrangements with other regional airlines but continue to struggle to survive against competition from regional carriers and other metropolitan countries.

It must be pointed out here that better and reliable transport system is vital for sustainable economic growth and resource development. Solomon Islands is way behind in achieving this.

Communications

Access to basic telecommunications and the Internet is very expensive and associated higher costs have negative impacts on development of essential services such as education, health, and greater economic opportunities. The communication sector is a monopoly by Solomon Telekom but limited and small market makes it very difficult to reduce costs. Limited human and institutional capacity and the high cost of information management systems inhibit development of new methods in commerce, education, and public administration. Adaptation is needed urgently at the national and regional levels to ensure that the greatest possible economic and social benefits are gained from new developments.

I. NATIONAL ACTIONS

◆ Transport Services and Facilities

- Safety and standards of shipping are being addressed through application of the South Pacific Maritime Code and ratification of several international maritime conventions (IMO) but lack of capacity and policing of relevant regulations and existing laws makes implementation very difficult on the ground..
- Generally safety standards in civil aviation are low but are being addressed through harmonisation and contracting of technical assistance.

◆ **Communication Facilities**

- For most urban centres in the provinces, communication facilities have been installed and improved dramatically in the last decade.
- Mainly communities, remote church stations and provincial stations in rural areas use short wave radios.
- Telecommunication: the number of lines per hundred population remains low.
- Internet penetration is very low, ranging from 1 to 50 users per thousand population.
- People First Network initiated the rural email facilities in rural areas in year 2000 and is expanding.

2. REGIONAL INITIATIVES

◆ **Transport Services and Facilities**

- Coordination of air and sea transport policies within carried out through the Forum Secretariat.
- Co-operation exists with the Association of South Pacific Airlines (ASPA).
- Initiatives include proposals for co-operative airspace management, multilateral air services agreement, and regional safety regulation and oversight.
- International agencies such as ESCAP, ICAO, IMO, ITU, and UNCTAD are expected to continue supporting the efforts of the countries rationalise services in transport operations.

◆ **Communication Facilities**

- Service provision is through monopoly provider, Solomon Telekom, a joint-venture company.
- There is little direct technical assistance provided through regional organisations.

◆ **USPNet**

- The Network was established in 1974 to provide a communications system to bridge distances between the campus in Suva and other USP campuses (2) and centres delivering USP's distance education services (11).
- Evolved from the radio to PeaceSat satellite, to 64kbps leased lines

◆ **USPNet - 2000**

- USPNet-2000 is a new USP-dedicated VSAT telecommunications network funded by the Governments of Japan, New Zealand and Australia.
- USPNet provides for audio tutorials, e-mail, access the World Wide Web, live video broadcast and participation in video conferences.

4. NEEDS & CONSTRAINTS

4.1 IMPLEMENTATION AND DECISION MAKING

◆ **Transportation**

- All transport problems are related to maintenance, the availability of spare parts due to isolation, and training opportunities for technicians.
- Priority should be given to ensuring that existing facilities receive increased maintenance funding rather than creating new assets.

- Civil aviation: need to improve the infrastructure equipment and adequate maintenance support.
- Need to update Civil Aviation legislation and harmonise Civil Aviation technical regulations.
- Action required to ensure policies and strategies minimise environmental impact:
 - preparation of assessment framework of transport related environmental issues;
 - case studies of experience in environmental problems caused by transport
 - seminars and workshops to create awareness and impart training.
- ◆ **Communications**
- Need to develop a knowledgeable workforce in the domain of Information and Communication Technologies (ICT) and to capitalise on income-generating opportunities.
- Improvements are needed to national ICT networks for reliable, fast, cost effective and adaptive access.
 - Expertise needs to be developed to maintain ICT infrastructure and improve quality of service.

Chapter 14 - Science and Technology

Context

Most Solomon Islanders survive on traditional knowledge and its application. This knowledge however, is being threatened through adoption of global technologies and scientific understanding. The intimate relationships between technology choices, the development process, people and the environment, will require that there be a mix of community/local knowledge and science for sustainable development. For this to occur, Solomon Islands' decision-makers need to possess a basic literacy in science and decision making management. At the same time, the dire lack of natural scientists must be overcome. Scientists and environmental management people in the country should be assisted through exposure to technologies and methodologies, which give them good tools for decision making. Sometimes this may require multi-skill training and development with cross-sectoral methods and techniques.

Training in science and technology has improved over the last decade however given the unique situation and sensitivities in the country, it is inadequate, particularly in number of scientists and environmental professionals produced and in range of areas covered. There is also limited capacity of Solomon Islanders to access and utilise developments in science. The scarcity of local scientists and reliance on expatriate researchers often result in the loss of value adding to the country. Despite substantial efforts for development and for transfer of environmentally sound technologies, lack of trained personnel and appropriate management infrastructure restricts the country's ability to develop endogenous technologies, and they are therefore heavily dependent on imported technologies.

1. NATIONAL ACTIONS

- The science and technology infrastructure in the country is very limited.
- Tertiary sector comprises only of Solomon Islands College of Higher Education plus USP distance education.
- Limited Research facilities are found in government technical ministries like fisheries, forestry, geology and agriculture
- There appears to be no effective coordination mechanism between these facilities
- Private science and technology research mainly through NGO interest.
- NEMS have identified applied research and technology needs.
- For example: groundwater assessment programs, marine resources information; marine biodiversity; and marine resources.

2. REGIONAL INITIATIVES

- The Pacific Economic Cooperation Council (PECC), a business/ government/ research body often provides input to APEC, Asia-Pacific Economic Cooperation.
- The UNDP funded Pacific Sustainable Development Network, implemented by SPC, has strived to meet some scientific information needs in the region.
- Regional organizations like USP, SPREP, SPC, FFA & SOPAC conduct scientific activities in particular fields, related to programme delivery.

3. INTERNATIONAL HIGHLIGHTS

- UNESCO has a broad mandate to cover both natural and social science issues, including links to education and culture, and in promoting national and international management of science and technology.

4. NEEDS AND CONSTRAINTS

- Preferred approach: to build on existing regional communities' expertise in forest knowledge, land capabilities & problems, biodiversity, climate change with a mechanism to directly benefit each individual country like Solomon Islands.
- Specific application areas: agriculture, land & water resources and marine science, and sustainable development.
- NEMS: form a good basis for identifying national science needs but support is needed to institute.
- Science & technology activity needs to become an integral part of the development process.
- Treat science at a national sectoral level
- The application of GIS systems as an effective tool for synergetic actions - needs more support.
- Common or integrated platforms to enable Solomon Islands to link, manage and update information and data across sectors and themes of people, economics and environmental systems is extremely limited.
- Better support for regional organization collaboration is needed to:
 - define a simple framework for the advancement of S&T activities in or as part of the sustainable development process.
 - assistance to Pacific island countries to adopt this framework to their specific situation, and to use it to review their S & T activities in relation to environmentally sound and sustainable development.

Chapter 15 - Implementation, Monitoring and Review

Context

This Chapter will focus on matters of institutional frameworks (capacity building, information), financial resources and vulnerability. It was agreed in Barbados (Barbados Programme of Action) that special attention should be paid to SIDS especially to finance, trade, technology transfer, legislation, human resource development and the vulnerability of island countries. Solomon Islands is a member of SIDS and thus effective design, inception, implementation, monitoring and review of the Barbados Programme of Action are integral to the sustainable development in Solomon Islands and Pacific Island countries.

1. INSTITUTIONAL FRAMEWORKS – Implementation and Decision Making

◆ **Advisory Committee**

- In accordance with paragraph 132 of the Programme of Action, Heads of Pacific governments at the 25th South Pacific Forum, 1994 agreed to establish a regional mechanism to coordinate and facilitate the implementation of the Barbados Conference outcomes.
- Agreed the mechanism should utilise the resources of SPREP and the ESCAP Pacific Operations Centre (ESCAP/POC).
- The Seventh SPREP Meeting, October 1994, recommended the modalities for coordination and facilitation.
- ESCAP's Special Body on Pacific Island Developing States, April 1995, called on the ESCAP Secretariat, in collaboration with SPREP, to develop a mechanism to effectively perform the monitoring role.

◆ **Implementing multi-lateral agreements (M.A.s)**

- There has been only partial implementation of relevant regional and global agreements and conventions in the Pacific.
- International dimension of the problem: Too much 'duplication' between MAs. UN agencies do not always use existing regional protocols to guide activities.
- Support is therefore needed for:
 - UN agencies use Pacific conventions and protocols as the umbrella for programme design and co-ordination of programmes with existing regional conventions and other mechanisms.
 - UN system agencies to fulfil their commitments to assist SIDS build the capacity necessary to consider ratification and to implement relevant conventions and protocols (this may entail synthesis of M.A.s for manageable reporting).
 - support for the use of sub-regional consultations;

◆ **Strengthening links between environment and integrated development**

- Decisions about resource allocation continue to be made on a sector by sector basis.
- There is a critical need to build upon efforts to integrate environment and development.

- This integration should continue to promote a holistic approach to sustainable island development. To make most effective use of the capacity within countries and regionally the following capacity development is required.
 - Planning and or Resource Use Planning systems (suited to countries needs ie some remote islands may need conservation/community management planning frameworks in lieu of formal planning processes).
 - Support for institutional processes and administrative systems integrating sectoral priorities for sustainable island development.
 - support in the short term for the integration of environment, physical and economical development plans and programmes.
- ◆ **Integrating health, population and development**
 - Ensure that the explicit links between health, population and the environment.
 - Efforts are required to address a wide range of population and health issues in all sustainable development programmes and projects related to: high rates of population growth, increased urbanisation and the resultant unsustainable use of resources.
 - Addressing these issues should include the issue of gender.
 - Further recognition is required of the regions commitment to the Port Vila (Population) and Yanuca Island Declarations and Rarotonga Agreement (Healthy Islands).
 - Additional support is required for the integration of population and health with environment and development planning and for the region's efforts to implement the CEDAW Convention.

1.1 CAPACITY BUILDING

- ◆ **Building capacity through education, training and awareness raising**
 - Despite of considerable progress, there remains inadequate skills training, basic and higher education opportunities for sustainable development.
 - Current efforts are insufficient and the resources needed to improve this capacity are limited.
 - Environmental concerns and the achievement of sustainable development require the active contribution of the community.
 - Awareness of issues and trends and how they can be addressed are ingredients for engagement of Civil Society.
 - Support is therefore needed for:
 - implementation of the region's human resource development strategies, education for sustainable development and context-sensitive gender balance in the delivery of all education and public awareness programmes;
 - bringing into operation sustainable development management concepts within sectoral management agencies;
 - greater use of traditional and indigenous skills, training and awareness approaches and the use of local languages in the development and presentation of resource material;
 - the development of partnerships that will increase the skills of the private sector (in particular technical and management skills) and re-invigorate community involvement in education, training and awareness programmes;

- support for regional training and scientific research centres.

1.2. INFORMATION

◆ Activities Database

- To assist with connectivity and correlation of efforts for sustainable development - a database of activities to implement the Programme of Action for the Sustainable Development of Small Island Developing States is required (linked to SOE initiatives). This should ultimately include measures of sustainability (indicators) currently under development in SPREP with CROP agencies and in association with UNEP.
- Indicators of social and economic sustainability of Pacific Island countries need to be integrated with prior efforts in environmental indicators to provide an effective tool for sustainable development.
- Despite some progress in larger PICs the state of data collection in the Pacific Island region is generally poor.
- Data collection and analysis overall is not satisfactory in terms of consistency and frequency of reporting.
- The lack of recent geographic or spatial data in many of the habitable PICs and means to derive data/information from it is a primary cause of the problem in terms of data aggregation, analysis and reporting.
- Training not only in the types and form of data to be collected but also, more crucially, in the use of data for decision making is essential. Emphasis has been dominated by training in data collection and analysis for science or economic analysis – for reporting purposes only.

◆ Developing benchmarks and information for sustainable development

- As stated above communities require basic knowledge of sustainable development issues, trends and how they can be addressed:
 - Basic information that establishes baselines or benchmarks and ongoing systems for monitoring is required.
 - Key indicators that can be used to assist decision making and measure progress to implement sustainable development are essential.
 - Effective communications and networking systems to share that information are needed.
- More substantive support is required for national and regional efforts to collect, store and analyse basic information for State of Environment Reporting.
- Related to the above substantive support is required to develop cost effective communications and networking systems to distribute this information to all stakeholders, in particular, civil society and the private sector;
- Greater support of the efforts of UNEP in the areas of environmental assessment and reporting is required.
- rapid implementation of the clearinghouse mechanisms for the Convention on Biodiversity, the Framework Convention on Climate Change and the Global Programme of Action for the Protection of the Marine Environment from Land

Based Activities, is required within the Pacific region through existing regional organisations.

- Support Pacific region initiatives to capacity build in the areas of strategic environmental assessment – use of data information for decision making.

2. VULNERABILITY INDEX

An earlier attempt of a Vulnerability Index by ESCAP/Pacific Operations Centre has been superseded by a 'local' vulnerability index development managed by SOPAC – the Environmental Vulnerability Index (EVI).

- The need for composite vulnerability index of economic physical and ecological/environmental parameters was highlighted in the Barbados Programme of Action.
- The 1998 South Pacific Forum agreed the index should be included among criteria for determining Least Developed Country status.
- SOPAC's Environmental Vulnerability Index Project, has a focus on hazards disasters, human and non-living resources.
- Some living resource indicators have been included – however the emphasis has been on the process and mechanic of the EVI methodology.
- The Regional and National SOE development programme (11th SPREP Meeting 2000) should see the identification of socio-economic and environmental indicators that can augment the EVI process. Resources however have yet to be secured for this work.
- The PICCAP (Climate Change programme) also developed a vulnerability Index targeting climate change (PACCLIM). It is a forward looking model aiming to portray implications on PICs based on scenarios in Climate Change.
- Both EVI and PACCLIM should culminate over time with a useful tool for in-country planning and sustainable development decision making. Both at this time suffer from a lack of basic data.
- Pacific region efforts the development of a vulnerability index will contribute to efforts of UNDP, the World Bank and Commonwealth Secretariat to development a composite vulnerability index.
- International support is required for:
 - UN System agencies to assign the necessary resources to support work in the region to on State of Environment, Climate Change modeling and the Environmental Vulnerability Index.
 - Long term support to ensure key indicators, SOE (national and regional) development, calibration of the PACCLIM model and development of the EVI are complimentary. The objective should be for substantial progress by 2004 (BPOA +10).

3. RESOURCES AND COORDINATION

- The signals indicate that for most PICs there is a greater share of National budgets directed towards environmental conservation, sustainable resource use development and sustainable economic planning. Levels of staffing of environment or like agencies have been used as an indicator (Pacific Islands Environment Outlook 1999).

- However at this time government indebtedness is high in some countries is growing, there is pressure to reduce employment in the public sector and other external detrimental socio-economic pressures (see chapter 1) which continue to diminish financial resources.
- The use of economic instruments in relation to environmental protection and sustainable development has again been raised by PICs as a means to provide financial resources for sustainable development. SPREP has commenced a programme design under its Key Result Area No. 4 *Sustainable Economic Development* for capacity building in this area. Work will build on that already undertaken in the region especially that through the UNDP/WWF NBSAP programme.
- At a regional level, environment/sustainable development-related initiatives have continued to broaden and be strengthened. The total expenditure of the region's environment programme, SPREP, has more than double since 1991 from US\$3 million to US\$8 million.
- At the international level, focus has been on the Global Environment Facility in accordance with the Barbados Programme of Action.
- To date, Pacific island countries have been recipients of GEF assistance for biodiversity conservation, climate change, and the implementation of the Strategic Action Plan for the Protection of International Waters (commenced in mid 2000). The share of GEF resources based on the englobo inheritance of external impacts by the Pacific Islands region has at times been questioned.
- Consistent with the Barbados Programme of Action (and reviews): adequate resources will be required to focus on national level capacity building to effectively integrate environment and development. To maximize the benefits/resources the fullest possible coordination among donors at international, national and regional levels is essential.
- At the international level, in accordance with paragraphs 91-95 of the Barbados Programme of Action, the provision of financial resources will be required to reflect the increased significance attached to sustainable development and the need to take account of environmental and social dimensions of ongoing economic reforms.
- Effective partnerships among all stakeholders, and in particular local communities, NGOs and the private sector, will be essential for sustainable development.
- International support is required to develop specific mechanisms to facilitate the development of partnerships for sustainable development in (eg. national summits and other forms of multistakholder consultative mechanisms).