

**The Capacity of Solomon Islands to Meet its Obligation  
Under the  
United Nations Framework Convention on Climate  
Change**

**A National Capacity Self-Assessment**

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## 1.0 INTRODUCTION

This is a report focusing on the capacity of Solomon Islands to meet its obligation under the United Nations Framework Convention on Climate Change (UNFCCC). The report is part of a National Capacity Self Assessment (NCSA) exercise that is being implemented through the United Nations Development Program (UNDP) with funding from the Global Environmental Facility (GEF).

The Department of Environment and Conservation who is also the National GEF Focal Point is the lead agency responsible for the oversight and on-ground implementation of the exercise. Overall the NCSA has the task to assess the local capacity to meet not only the obligations under Climate Change Convention but also the UN Conventions on Bio-diversity and Land Degradation.

## 2.0 SOLOMON ISLANDS OBLIGATION UNDER THE UNFCCC

### 2.1 The Issue of Climate Change and Sea Level Rise

In the 1980's, scientific evidence has shown that greenhouse gas emission from human activities has caused changes in the global climate. In 1988, the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) established the Intergovernmental Panel on Climate Change (IPCC) to assess scientific, technical and socio-economic information relevant for the understanding of climate change, its potential impacts and options for adaptation and mitigation. The IPCC consisted of hundreds leading scientists and experts on global warming and is a crucial source of information on climate change. It publishes at five-year intervals comprehensive progress reports on the state of climate change science, the latest of which (the Third Assessment Report) appeared in 2001. The Third Assessment Report (TAR), have concluded that 'An increasing body of observations gives a collective picture of a warming world and other changes in the climate system' and 'The global average surface temperature has increased over the 20<sup>th</sup> century by about 0.6 degrees Celcius'. It is currently working on its fourth assessment report.

This problem was a great concern for world leaders and governments through series of global forums called for a treaty to address the problem. The UN General Assembly responded to this call in 1990 by establishing the Intergovernmental Negotiating Committee for the Framework Convention on Climate Change (INC) to develop the treaty.

Pacific Island countries including Solomon Islands have realized how adversely the impacts of climate change and sea level rise could have on the region. Regionally the expression of this concern was first established in the communiqué of the nineteenth meeting of the South Pacific Forum in Nuku'alofa, Tonga, in 1988.

It was recognized that Pacific countries among many other small island nations are highly vulnerable to not only climate change and rise in the sea level over the longer timescales but are also susceptible to the variability in climate that occur within shorter time periods. Ultimately, climate change and sea level rise has the potential to impact multiple sectors. When this happens a cause of disruptions could affect the socio-economic and environmental functions within communities in the region.

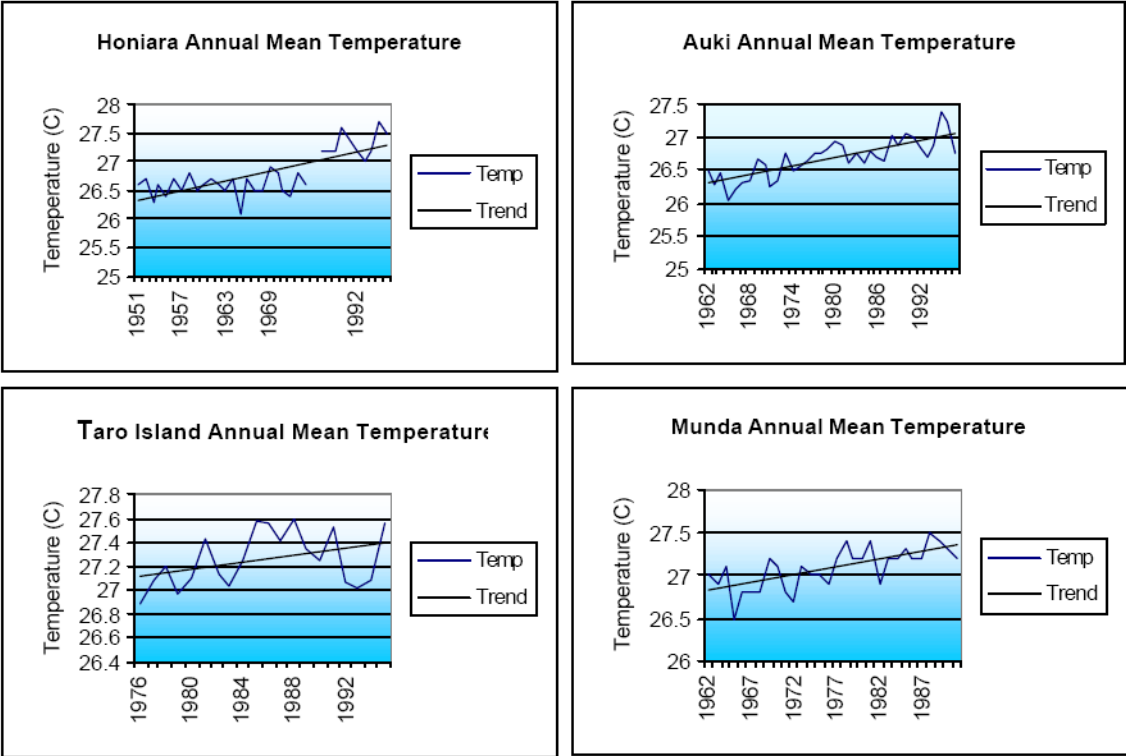
Having discovered the seriousness of the problem, countries in the region realized the need to take immediate action. The matter continued to become a frequent subject at regional and international forums and as a result many Pacific countries, including Solomon Islands were amongst the first to sign the Convention and subsequently ratified it.

**2.1.1 Effects of Climate Change in Solomon Islands**

According to the first Climate Change Vulnerability and Adaptation Assessment carried out in the country, which has been incorporated in the Initial National Communications, the following are some of the findings:

Solomon Islands’ temperature data (for some locations) which are plotted below indicate some revealing evidence. The temperature plots suggest increasing annual mean temperature trends of 0.14 degrees Celcius to 0.28 degrees Celcius (0.7 degrees Celcius to 0.14 degrees Celcius every 50 years), an average of 0.2 degrees Celcius per decade. The Southwest Pacific ‘...as a whole has warmed at a rate of about 0.2 degrees Celcius per decade...’ (IPCC: Regional Impacts of Climate Change - An Assessment of Vulnerability, p.339)

**Temperature trends for locations in Solomon Islands**



A sea frame gauge was installed in Honiara, Solomon Islands in July 1994 as part of the regional AusAid funded Sea Level and Climate Monitoring Project to monitor changes in sea level and climate in the Pacific. The sea level trend to date (year 2005) is +3.7 mm/year but the magnitude of the trend continues to vary widely from month to month as the data set grows. Accounting for the precise level results and inverted barometric pressure effect, the trend is +3.5 mm/year. The resulted trend should be used with care as this output was generated with about 12 years of data. A much reliable result needs datasets more than 30 years. A nearby gauge, with longer records but less precision and datum control shows a trend of -2.21 mm/year.

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; the limited analytical capability; and the absence of previous studies. However, despite these limitations it is possible to make some qualitative statements based on present knowledge.

### **Subsistence and commercial agriculture**

Climate conditions have a strong influence on both subsistence and plantation agriculture in Solomon Islands. At present there is insufficient information to make any quantitative assessment of the effects of climate and sea-level change on agriculture. However, it is possible to make some qualitative judgements based on the effects of climate variability and extremes.

Subsistence food crops are already adversely affected by extreme events like droughts and cyclones. Any increase in frequency or intensity of extremes in the future could lead to lower crop yields. In the coastal lowland of Makira taro production has been reduced (less tubers and lower yields) in some recent years because of wave overtopping and warmer temperatures. Similarly, Malaita experienced a shorter fallow period during the warmer and drier conditions of the 1997/98 El Nino. Thus, warmer and drier conditions under climate change would lead to increased losses in production of important crops such as taro and kumara. Additionally, salt and water intrusion and flooding in low-lying coastal areas would further reduce yields.

Plantation agriculture in Solomon Islands has also been affected by these extreme events. For example, Solomon Islands Plantation (SIPL) experienced serious losses to oil palm production as a result of the heavy flooding from cyclone Namu and more experienced losses through wind damage and as a result of the 1997/98 El Nino drought. Any increase in cyclone frequency and severity could have serious impacts on palm oil production, particularly given the fact that it took ten years to recover from the effects of cyclone Namu. Similarly, warmer and drier conditions in the future could lead to further production losses.

Subsistence and plantation agriculture in Solomon Islands depends heavily on good quality land. However, if there is loss of land (through sea level rise) and reduced quality of land (e.g. through erosion) the agriculture sector will be significantly affected.

## Coastal environments and systems

There have been very few quantitative studies on coastal environments and systems in Solomon Islands. This section is based on a case study in Gizo, for which some limited, more qualitative information was available, as well as on studies in the wider Pacific island region and island states internationally.

### Flooding and inundation

The lack of high resolution contour data and data on vertical land movement are serious impediments to any detailed quantitative analysis of flooding and inundation risk.

Gizo has been identified as one area at risk. As a high island, it has coastal areas typical of other sensitive areas in Solomon Islands. It has experienced flooding and inundation in its lowland areas which are mainly associated with seasonal storms, high tides and storm surges associated with tropical cyclones. The effect of sea level change combined with storms and cyclones could pose an even higher risk of flooding and inundation.

Areas of highest risk in the Solomon Islands are the low-lying islands and atolls including Reef Islands, Ongtong Java and Sikaiana. Sea level rise alone, with no change in climate variability, would increase the risk of flooding and inundation. It is possible that in the extreme case these islands will become uninhabitable.

### Coastal erosion

Coastal erosion is already evident in many parts of the country. In Gizo this is affecting Malakarava village. Protective works along the shoreline have been eroded and the situation now is that parts of the road passing through it have been washed out. This process has been observed over a number of years but at a faster rate in recent years. In addition the erosion of the road is particularly worsened by rainfall runoff from the steep hill over-shadowing the village. If it were not for the outer ridge of the reef, which acts as a buffer for the stronger wave energies, the erosion would be more severe and have affected the village.

### Coral reefs

At present there is very limited information about 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. During the recent El Nino there were lower sea levels, which resulted in warmed coral habitats and coral bleaching in some parts of the country, particularly in Western Province. As sea surface temperatures already frequently exceed the temperature tolerance of coral species (25°C to 29°C), it is likely that any increase in sea surface temperature will result in more frequent and severe episodes of coral bleaching.

### Mangroves

In 1976 the total area of mangrove forest throughout Solomon Islands was approximately 650 km<sup>2</sup>. However, no recent information on distribution and condition of mangroves exists. The possible effects of sea level rise on mangrove systems in Solomon Islands are poorly understood.

### **Human Health**

Falciparum and vivax malaria, transmitted by Anopheles faurati, are endemic in Solomon Islands and eradication efforts have had little success. The life cycles of both mosquitoes and malaria parasites are dependent on climatic conditions. Rainfall is important for the mosquito life cycle, hence it has an effect on the mosquito population. Most importantly, temperature influences the rate of parasite multiplication in carrier mosquitoes as well as mosquito biting rates. Thus, overall temperature strongly influences epidemic potential. Higher humidity increases mosquito longevity. It is anticipated that the projected increases in temperature will increase the incidence of malaria in areas already affected. Furthermore, it is likely that mountain areas of islands like Guadalcanal and Makira where malaria incidence is known to be relatively low would likely experience an increase in incidence. Higher temperatures may also favour an increase in incidence of the more dangerous falciparum malaria.

Extreme events such as cyclones and flooding are known to be associated with several direct negative effects on public health including loss of life, injury and outbreaks of cholera and other diarrhoeal diseases. Conversely, deteriorated water quality and water shortages as may be experienced **under drier future conditions may result in an increase in diarrhoeal disease.**

### **Water resources**

Climate change is likely to affect both water quantity and quality in sensitive areas of Solomon Islands. Present scenarios for Solomon Islands suggest little change in future annual mean rainfall and thus imply that climate change would have minimal effect on water resources.

However, in the past, events such as El Nino have had significant impacts on water sources in some part of the country. The worst was during the 1997/98 El Nino where many areas of South Guadalcanal, Malaita and Western Province, including Gizo Town, suffered water crises. Thus, any decrease in average future rainfall or increase in drought frequency or length would adversely affect water supply in such areas.

Sea level change may result in salt water intrusion of the important fresh water lenses of the low-lying islands and atolls. This would be worsened by flooding and inundation.

## **Marine resources**

There is presently little knowledge about the effects of climate and sea level variations on marine resources. What is known presently is that the distribution of tuna stocks is affected by sea surface temperature variations. The changes in sea surface temperature and ocean currents associated with the 1997/98 El Nino reduced the Solomon Islands tuna catches. If average sea surface temperatures change in the future diminished catches might occur more often. A more detailed study of the fishery resource, both in Solomon Islands and regionally, and the effects of sea surface temperature changes is required.

### **2.1.2 Effects of environmental and socio-economic changes**

Importantly to note, climate change has occurred largely due to the anthropogenic inducement of greenhouse gases to the atmosphere by humans through their activities. Thus it is essential to consider the social and environmental changes also.

The following are some of the issues that has been identified in the first vulnerability and adaptation assessment.

The rapid environmental and socio-economic changes presently occurring within Solomon Islands will continue into the future, and will have effects even in the absence of climate and sea-level change. Thus, it is important that any effects of climate and sea-level change are interpreted within the context of these on-going non-climatic changes.

## **Subsistence and commercial agriculture**

Due to a rapidly increasing population in Solomon Islands, and fast development of infrastructure, especially in Guadalcanal, land for subsistence and commercial agriculture is decreasing. Concurrently there are growing conflicts over customary ownership of land. The continued population growth will continue to increase pressures on existing land used for both subsistence and commercial agriculture. This could result in reduced productivity and negative effects on both the cash and subsistence economy. If climate change also leads to low production there could be serious effects on the economy, health and well-being of the people. One consequence would be increased dependency on imported food, which in turn would have continued negative impacts on subsistence food production.

## **Coastal environments and systems**

The projected increase of people living in coastal areas including low-lying areas at risk of inundation and flooding will place more people at risk from the effects of sea-level change and the associated increased risk of flooding and inundation from cyclone events. It is likely that increasing infrastructure in these areas will result in more risk of infrastructure damage and potential for loss. Conversely, increased population and environmental pressure on sensitive coastal environments including mangroves and coral reef systems will worsen the effect of climate and sea-level change on these systems



and consequently may enhance potential for flooding and inundation. Likewise, increased population and land pressure in upland areas could lead to enhanced erosion and sediment run-off resulting in negative effects on coral reef systems, but possibly enhancing the ability of mangroves to keep up with projected sea level rise.

### **Human health and well-being**

Increasing population, numbers and densities would enhance the spread of communicable diseases and transmission of malaria. A continued shift from traditional, subsistence diets to increased dependence on less nutritious, imported, food could be accelerated as a consequence of the effects of climate change. Continued economic and social changes could lead to breakdown of extended family and traditional coping mechanisms (such as sharing and reciprocity) in times of trouble, such as during droughts and after cyclones. In addition, informal settlements and overcrowding could increase the potential for health effects arising from cyclones.

### **Water resources**

The continued population growth will continue to increase demand for good quality water. Increased urbanisation, in Honiara and provincial centres will place increasing demands on their water supply systems, which would be exacerbated by, for example, any increase in drought risk. Similar effects could arise from growth in industrial activities.

Continuing land use changes could negatively impact on water catchments and supply systems, resulting in the potential for more severe impacts from both droughts and floods.

### **Marine resources**

Because the majority of Solomon Islanders are coastal dwellers they depend heavily on marine resources to meet their subsistence food needs. The rapidly growing population, combined with continued development of a cash economy will place increasing pressure on marine resources. The tuna fishery is an important contributor to the Solomon Islands economy. Thus, over-fishing of this important resource combined with possible reductions in catch sizes from oceanic temperature and circulation changes, as experience in the recent El Nino, could strongly impact on the viability of the tuna fishery and thus the economy.

#### **2.1.3 The Importance of Local and Traditional Knowledge**

A great deal of local and traditional knowledge about climate change and its adverse effects exists, but relatively little of it has been documented. Traditional information about climate change can complement scientific information, offering a more regional, more holistic, and longer-term perspective. Local information and local experience can provide a level of regional detail beyond the capacity of current scientific models and analyses.

There have been reported observations across the country of the impacts of climate change. For example, high seas intrusion of man-made islands which has not been seen and felt in the past, frequency and severity of droughts and changes in the coastal topography due to coastal erosion.

## 2.2 The Convention

The INC drafted the Convention and adopted it on 9 May 1992 at the UN headquarters in New York. This UN Framework Convention on Climate Change (UNFCCC) was open for signatures in June 1992 at the Rio Earth Summit in Brazil. The Convention came into force in 1994.

Solomon Islands ratified the UNFCCC on 28<sup>th</sup> December 1994. As of 31 October 2005, 194 countries have ratified the Convention

The fundamental objective of the Convention is the “*stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic (human-induced) interference with the climate system.*” And that “*such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.*”

Under the Convention, Parties have acknowledged a common concern that changes in the earth’s climate has an adverse effect on mankind and have agreed to take measures to address these concerns. This way, Solomon Islands being a Party is bound by the measures as contained in the provisions of the convention.

The UNFCCC is the legal agreement that establishes the framework and a process for the international community to agree to specific actions in response to the challenge of climate change. It provides the framework and seeks to establish a global partnership to address the causes and the adverse effects of climate change through their “*common but differentiated responsibilities.*” Through the Convention, countries commit themselves to undertake measures to limit their emissions of greenhouse gases, and to bring in financial and technological resources to assist each other in undertaking these measures, and to prepare for the likely impacts and adverse effects of climate change.

Accordingly, under Article 1 of the Convention “adverse effects of climate change” means “*changes in the physical environment or biota resulting from climate change which have significant deleterious effects on the composition, resilience or productivity of natural and managed ecosystems or on the operation of socio-economic systems or on human health and welfare.*”

### 2.2.1: Convention Requirements

The Parties commitments are in four areas, namely:

- ◆ Mitigation
- ◆ Adaptation
- ◆ Reporting to the Conference of the Parties
- ◆ Gathering and Dissemination of Information

The Parties commitments are provided under Article 4 and 12 of the convention. Specifically, Article 4.1 contains a list of commitments (mitigation, adaptation and reporting to the COP) that all Parties undertake, but taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances.

Articles 4.3, 4.4 and 4.5 are developed country funding and tech transfer obligations.

Article 4.7 is more in the nature of a principle than a commitment – “Extent to which developing country Parties will effectively implement *their commitments* will depend on developed country Parties’ commitments related to financial resources and tech transfer. And will take into account that *economic and social development, poverty eradication are the overriding priorities of developing country Parties.*”

Articles 4.8 and 4.9 are the Articles under which negotiations have continued on identifying appropriate actions both on adaptation to the adverse effects of climate change and the adverse effects of response measure to climate change. Article 4.8 is where that problematic linkage occurs.

Article 12 calls for all parties to communicate to the UNFCCC Secretariat information regarding the implementation of the Convention. The information is submitted in the countries ‘National Communications (NC)’. Solomon Islands has produced its Initial National Communication and submitted in 2004. The proposal for the Second NC is in progress.

The table below summaries the actions taken by Solomon Islands to address the different obligations of the Convention:

Obligations	What it Addressed?	How far in addressing?
<b>Mitigation</b>		
Art 4.1 (a)	Develop GHG Inventories	First GHG Inventory completed
Art 4.1 (b)	Formulate national and regional programmes containing <i>mitigation</i> and adaptation measures	The draft National Implementation Strategy (NIS) should be a guide to formulate such programmes
Art 4.1 (c)	Cooperate in development and transfer of technology in all relevant sectors that reduce or prevent emissions	A regional mitigation option in energy undertaken under PICCAP. The draft NIS should assist in this area. A regional program on Mitigation is currently being developed by SPREP
Art 4.1 (d)	Promote sustainable management of sinks	The NIS is the avenue to address the issue
Art 4.1 (f)	Take climate change into consideration in social, economic and environmental policies	The NIS is the avenue for a way forward

<b>Adaptation</b>		
Art 4.1 (b)	Formulate national and regional programmes containing mitigation and adaptation measures	The draft NIS should be guide to formulate such programmes
Art 4.1 (e)	Cooperate in preparing for adaptation; develop integrated plans for coastal zone management, water resources and agriculture and for the protection of areas affected by drought and flood	The first Vulnerability and Adaptation (V&A) Assessment undertaken. The NIS and the National Adaptation Programme of Action (NAPA) should be avenues for a way forward
Art 4.1 (f)	Take climate change into consideration in social, economic and environmental policies	The NIS is a way forward
<b>Reporting</b>		
Art 4.1 (j) and Art 12	National Communications to the COP, with information related to implementation	Initial NC submitted. The proposal for the Second NC in progress
<b>Gathering and Dissemination</b>		
Art 4.1 (g) and Art 5	Promote and cooperate in scientific research, systematic observation, development of data archives	There are regional and national programmes in place to address this issue
Art 4.1 (i)/Art 6	Promote and cooperate in education, training and public awareness related to climate change	<ul style="list-style-type: none"> <li>• Climate Change issues incorporated in the national curriculum</li> <li>• Training of experts in GHG Inventory and V&amp;A</li> <li>• A Climate Change Unit is established</li> <li>• Training in negotiation skills</li> <li>• Participation in international negotiations</li> </ul>
<b>Other Obligations</b>		
Art 4.3	Funding for developing countries	<ul style="list-style-type: none"> <li>• The Global Environment Facility (GEF) provided funding to produce the Initial NC.</li> <li>• The GEF will fund the Second NC.</li> <li>• The Special Climate Change Fund is created under the Convention to assist developing countries</li> </ul>

		implement the Convention
Art 4.4	Funding for particularly vulnerable developing countries	• Funding for NAPA
Art 4.5	Transfer of technology particularly adaptive technology	The Adaptation Fund once operationalise should fund such a technology
Art 4.7	Links commitment to funding and technology transfer	The funding mechanisms in place will ensure that appropriate technologies are transferred to developing countries
Art 4.8	Actions for developing countries	A five-year programme on Adaptation is still being negotiated at the COP
Art 4.9	Actions to consider special needs of LDCs	NAPA is the avenue to deal with this Article.
Art 12	Communication of information regarding implementation of the convention - 'National Communications'	Initial NC submitted in 2004

The Convention divides countries into three main groups with differing commitments: Annex I Parties include the industrialized countries that were members of the OECD (Organisation for Economic Co-operation and Development) in 1992, plus countries with economies in transition (EIT Parties). Annex II Parties consist of the OECD members of Annex I, but not the EIT Parties. Non-Annex I Parties are mostly developing countries who are mostly vulnerable to the adverse effects of climate change.

### 3.0 NATIONAL ISSUES AND THE IMPLEMENTATION OF THE CONVENTION

#### 3.1 Establishment of a National Implementation Strategy

At present much of the national climate change activities have been so far driven by support received through regional and international mechanisms. At the country level, the establishment and adoption of a policy framework which outlines the country's perspective with regard to climate change and UNFCCC and how they relate to the country's economy and national developments plans; the commitments and opportunities available under the Convention; and the country's national policies, measures and actions to implement the Convention could be a step forward to the formation of a structured process to properly address climate change and its adverse effects at the national level, having in consideration also the vulnerability of the country and the challenge of putting in place suitable adaptation options as countermeasures to the effects of climate change.

The policy document in the form a National Implementation Strategy (NIS) would recommend to the government on areas such as the establishment of an effective institutional framework for coordinating policy development, planning, and the identification of needs relevant to the implementation of the UNFCCC; and to recommend any other future activities and projects

that are appropriate and pertinent to the implementation of the Convention. A draft NIS was prepared in 2002 and needs to be updated and finalised.

Moreover the NIS should be set with the following purpose as outlined and these are more or less attributable to the Articles of the Convention.

To:

1. Continue raise awareness and increase understanding of policymakers in both government and non-government organisations and the general public about climate change and UNFCCC and build consensus on national responses.
2. Facilitate an on-going preparation and submission of national communications as required by the UNFCCC;
3. Establish a framework for integrating climate change considerations into national development planning and relevant sectoral policies;
4. Initiate assessment of possible mitigation and adaptation policies and measures; and to
5. Establish procedures and criteria for identifying and assessing climate change projects that meet national needs and for submitting them to GEF and other potential donors.

### **3.2 Requirement by Developed Country Parties**

To effectively implement the commitments under the convention, the developed country parties must meet their commitments under Article 4.2 (a) and (b) and those related to the provision of financial resources, and development and transfer of environmentally safe technology to developing country Parties as provided for in the various provisions of the Convention, including Articles 4.3, 4.4, 4.5, 4.8 and 4.9 mentioned previously.

The implementation of the commitments by developing countries are conditional upon the actions of developed country Parties, as stipulated in Article 4.7 which states that developing country Parties will only effectively implement their commitments under the Convention if developed country Parties effectively implement their commitments under the Convention.

### **3.3 The Kyoto Protocol**

The first review of the adequacy of developed country commitments under the Convention was conducted at the First Session of the Conference of the Parties (COP1), which was held in Berlin, Germany in 1995. The Parties decided that the commitments by developed countries to aim at returning their emissions to the 1990 levels to prevent 'dangerous anthropogenic (man-made) interference with the climate system by the year 2000 was inadequate.

The Parties responded by adopting the 'Berlin Mandate', which seeks to strengthen developed country commitments. An Ad hoc Group on the Berlin Mandate was established to draft an agreement. In December 1997 at the Third Session of the Conference of the Parties (COP3) in Kyoto, Japan, the conference decided to adopt a Protocol, the Kyoto Protocol (KP), which calls

for developed countries to reduce their combined greenhouse gas (GHG) emissions by at least 5% compared to 1990 levels by the period 2008-2012. This is a legally binding commitment, which promises to produce a reversal in the increasing trend in emissions from the industrialised countries.

The KP supplements and strengthens the Convention, providing a framework for remedial and precautionary action to tackle adverse effects of climate change.

The KP was opened for signature on 16 March 1998. The Protocol came into force on 16 February 2005. As of April 2006, 163 countries and regional economic integration organizations have deposited instruments of ratifications, accessions, approvals or acceptances to the Protocol.

The Solomon Islands became a signatory to the Protocol in September 1998 and ratified it on 13<sup>th</sup> March 2003.

The Kyoto Protocol offers three innovative mechanisms, so-called the Kyoto Mechanisms or sometimes referred to as the flexible mechanisms. They are the Clean Development Mechanism (CDM), Joint Implementation (JI), and Emissions Trading (ET). They were designed to boost the cost-effectiveness of the climate change mitigation by opening ways for Parties to cut emissions, or enhance carbon 'sink', more cheaply abroad than at home.

The treaty has set designated countries, these are basically developed nations included in Annex 1 of the Convention, to commit themselves in reducing their GHG emissions below that of 1990 levels. The instrument puts an imposition on these countries to at first take domestic actions in meeting their reduction targets before any external collaboration.

The Kyoto mechanisms by itself have been setup as a flexible means for developed countries to cope in their reduction efforts while at the same time may benefit developing countries. Through these mechanisms developed countries have the advantages to reduce the global emissions through international partnerships. For instance, there are environmental and energy technology firms available in developed countries that could be transferred to developing countries through such partnership. The Mechanisms also presents opportunities for businesses. Under the CDM and JI mechanisms there is potential to provide companies and businesses in developed countries with the markets to sell their products and services abroad and at the same time create job opportunities.

On the other hand there are capacity building programs pertinent to the implementation of CDM and JI sustainable development projects that should provide opportunities that lead advantageously to the initiatives to build the overall capacity of countries such as Solomon Islands to meet its obligations under UNFCCC. Limited activity has been done so far under the CDM mechanism to less capacity and capability.

On the whole the Protocol has paved the way forward so that countries like Solomon Islands could benefit through the opportunities made available such as specified in Article 11.2 (a) and (b) and Article 12.2 and 12.8 of the Protocol.

Article 11.2 (a) makes reference to the provision of additional financial resources to meet incurred costs by developing countries in implementing existing commitments while Article 11.2 (b) refers to similar arrangement but rather more on technological transfers. Generally Article 12 of the Protocol defines and describes the clean development mechanism and the benefits that shall come through it for both the developing and developed countries.

### **3.4 Constraints and Issues in Implementing the Convention**

The major constraints in implementing the convention in Solomon Islands were identified to be the lack of expertise and trained local manpower and the technical know-how on one hand; and the lack of relevant data and information and financial resources on the other. The NIS is an avenue to guide the country in implementing the Convention and in the long-term addresses the constraints and challenges.

The climate change problem requires an effective global response with the active cooperation and strengthened action by all countries in accordance with their common but differentiated responsibilities and respective capabilities. But developed country Parties must take the lead in combating climate change and its adverse effects. The legally binding commitments in the Kyoto Protocol is a significant first step forward in ensuring effective global action to combat climate change.

#### **3.4.1 Financial Resources**

Solomon Islands is a least developed, small island developing state and it recognizes the adverse effects and impacts of climate change may have on its social and economic development. However, it will not be expected to meet its obligations under the convention unless the necessary financial resources are provided to meet its obligations and to implement the Convention. The scarce and very limited financial resources of the government are foremost directed towards the development and maintenance of the essential services in the social and economic development of the country.

The Parties through the Convention have established three special funds to assist developing countries to meet their obligations and commitments. They are Special Climate Change Fund and the LDC Fund under the Convention, and the Adaptation Fund under the Kyoto Protocol. Solomon Islands has been able to access the LDC Fund for the preparation of NAPAs.

#### **3.4.2 Technology Transfer**

Solomon Islands uses out-dated and in-efficient technology especially in the energy and the transportation sectors. Its energy supply is subjected to in-efficient generation, transmission and in-efficient end-use technology such as air conditioning systems, lighting, industrial machinery, and negligence; it could not adequately meet the demand for its energy supply. The transportation sector uses refuge vehicles imported from overseas as re-conditioned vehicles and is causing traffic congestion on the poorly road system of the national capital.

The transfer of environmentally sound technology and know-how by the developed country parties to developing countries, an obligation under Article 4.5 of the Convention, is critical to the effective participation of developing countries like Solomon Islands in implementing the



Convention and dealing with climate change. Appropriate and environmentally friendly technologies include those for mitigation of greenhouse gases in the energy sector, such as those used in the generation, transmission, high-efficiency end-use, renewable and clean energies such as, hydro, solar and wind as well as those technologies for adaptation to climate change and sea level rise. Adaptation has been identified as one of the key response measures Solomon Islands can undertake to respond to climate change.

## 4.0 POLICIES AND INSTITUTIONAL ARRANGMENTS

### 4.1 Relevant Policies

Solomon Islands has no policy that deals directly with issues relating to mitigation of climate change, although there exists certain government statement of policies on the energy and forestry sectors that appear to have some relevance to climate change. These policies expressed national interests to “...the need to develop its renewable energy potential...”, “...the urgent need to start phasing out large-scale logging operations...” and “... a scheme will be established to assist resource owners carry out reforestation in logged areas.”. This is an ongoing process.

The Government Medium Term Development Strategy 1999-2001 further has policy actions directed to the construction of hydro projects in the rural areas as well as exploring the possibilities of introducing solar powered energy projects.

Under the National Economic, Recovery, Reform, and Development Plan 2003, which are currently being reviewed, environment sustainability is dealt with only indirectly, with the priority area dealing with revitalizing the productive sector.

In 1992, a National Environment 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. NEMS is a synthesis of reports on identified key areas of the environment and resources of the country. It also offers formulated strategies for sustainable implementation and management of the resources and detailed program profiles covering the aims and scope and the cost estimates for implementation have been included.

After so many years there has now been an Environment Act (1998), which provided the establishment of the Environment and Conservation Division as well as the setting up of an Environment Advisory Committee. Objectives of the Act were for the establishment of an integrated system of development control, environmental impact assessment and pollution control; prevention of environmental degradation; and to reduce risks to human health that may be associated with environmental changes and contaminations.

Additionally there is an Environmental Health Act (1980), which is merely a basic Act to safeguard the state of the environment health.

There are other sector specific legislations that have been drafted with good intents and if administered and enforced properly should provide the country with some level of sustainable management and protection with regard to its resources.

## 4.2 Legal and Institutional Arrangements

Although there is an official focal point office, the country does not have a properly established coordination body to ensure that UNFCCC provisions are well met. As such it is important that a kind of instrument is set up to oversee the proper coordination and implementation of UNFCCC. In this regard, perhaps with the idea of NIS, an established framework could be put in place that could lead to the formulation of legal instruments.

Efforts to ensure the up-keep of strengthened institutions and establishment of a form of coordinated information network under the Pacific Islands Climate Change Assistance Program (PICCAP) had only come in vain following the years of upheaval that the country passed through.

It maybe worth mentioning that with any capacity building initiatives that may be undertaken in the future, institutions that are relevantly important for effective implementation of the Convention should be identified for their full participation and strengthening.

## 5.0 NATIONAL CAPACITY BUILDING ACTIVITIES – PAST AND PRESENT

Article 6 of the Convention makes provision on the issues of education, training and public awareness. All parties are encouraged to promote activities to give the general public a better understanding of climate change and its effects. It requests all parties to cooperate in and promote the development and implementation of education and training programs, including the strengthening of national institutions and training of experts in the field of climate change. A well-informed public should render the support for policy measures to deal with climate change and should also foster public participation in measures related to climate change.

Under the Convention, relevant sections dealing with capacity building, training and public awareness are normally stressed and elaborated on in decisions adopted at COP meetings. Such decisions include the Marrakesh Accords during COP7 in Marrakesh, Morocco and the New Delhi Work Program which is a decision taken during COP8 in New Delhi, India.

The Marrakesh Accords provides merely the general framework for capacity building on identified areas in developing countries and those country Parties whose economies are in transition. It is intended to serve a guide for the activities of the GEF and other funding bodies. The COP7 at Marrakesh also saw the outcome of the National Adaptation Programme of Action (NAPA).

The New Delhi Work Program sets a 5-year program that ... *“sets out the scope of, and provides the basis for action on activities related to Article 6 in accordance with the provisions of the Convention”*. It was anticipated that the work program...*“should serve as a flexible framework for country-driven action addressing the specific needs and circumstances of Parties to UNFCCC, and reflecting their national priorities and initiatives”*.

With the New Delhi Work Program various workshops had been organized at different regions of the globe. For Asia and the Pacific and Asia-Pacific Seminar on Climate Change and the Asia and Pacific Regional Workshop on Article 6 of the UNFCCC were held in Yokohama, Japan,

in September 2005 in which Solomon Islands participated. The Work Program has a review term in 2007.

There is also the Buenos Aires Program of Work on Adaptation and Response Measures that came out at COP10. This work program encourages particularly developing country Parties to make use of the strategic adaptation priorities and capacity building provided by GEF.

In relation to the above, Solomon Islands should benefit from the NAPA that has been established for LDCs following decision taken during COP7 at Marrakesh. While considering existing coping mechanisms at the community level, NAPAs offers a process for LDCs to identify their urgent prioritized needs for adaptation to climate change. Greater emphasis would be to focus on enhancing these adaptive capacities. In the NAPA process much onus is given on a bottom-up approach where communities at the grassroots level would participate and become the major player. NAPA is established as an action-orientated and country-driven program. It is an 18-month project with a budget of USD220,000- including in-kind government contributions. The steps for the preparation of the NAPAs include synthesis of available information, participatory assessment of vulnerability to current climate variability and extreme events and of areas where risks would increase due to climate change, identification of key adaptation measures as well as criteria for prioritizing activities, and selection of a prioritized short list of activities. The development of a NAPA also includes short profiles of projects and/or activities intended to address urgent and immediate adaptation needs of LDC Parties.

### **5.1 The Enabling Activities of UNFCCC & GEF**

Through the financial resources obtained from Global Environment Facility (GEF) for the enabling activities of the convention, Solomon Islands benefited under the PICCAP Programme as follows:

- a. A National Greenhouse Gas (GHG) Inventory was completed using available data and information
- b. Information and data gaps for GHG inventory identified and a pilot mechanism for data recording, reporting and collection put in place
- c. Public awareness and education workshops for senior government officers, NGOs and private sectors conducted
- d. National Vulnerability and Adaptation (V&A) Assessment undertaken
- e. Regional mitigation options on energy undertaken
- f. Limited capacity building and training of national experts on GHG inventory and V&A.
- g. Initial National Communications compiled and submitted to the UNFCCC
- h. A Draft of the National Implementation Strategy for climate change

The current capacity building activities in place are in the following areas:

- a. Establishment of a Climate Change Unit

A climate change unit has been established within the Solomon Islands Meteorological Service. It is still in its infant stage and it needs financial and

human resources to enhance its functions and responsibilities. With the much anticipated NIS, resources to an adequate level could be pulled in for proper operation of such office.

b. Participation in the Conference of the Parties

Solomon Islands had been participating actively in the Conference of the Parties since the inception of the Convention. It has also participated in pre-COP regional sessions to enhance negotiation skills of participating countries in the convention process. However, the participation of Solomon Islands at the COPs is always limited due to low financial resources from the UNFCCC Secretariat. To ensure that there is active participation at these annual COPs, the government needs to be fully engaged to ensure that more appropriate personnel attend for a much stronger voice. Normally COP sessions have multipartite meetings and side events besides the main plenary. All of which takes place simultaneously. In this case it is more appropriate to always have a delegation of more than two officials attending to ensure wider coverage and active participation in numerous sessions if not all.

c. Participation in On-going Regional and Sub-regional Capacity Building Workshops.

Besides the COP and pre-COP meetings, Solomon Islands has been able to take part in regional and sub-regional workshops and training programs such as the one in Yokohama in September 2005 and the recent vulnerability and adaptation assessment workshop held in Jakarta, Indonesia in March 2006. There are other events in this regard that is being anticipated to take place in future.

## 5.2 Public Awareness and Education

In Solomon Islands, public awareness on climate change is limited to the urban centers, constrained by lack of financial resources and available trained personnel. Public awareness and education program on climate change is necessary to inform the general public on the causes, impacts and effects of climate change, as well as the possible measures that can be undertaken locally, nationally, regionally and internationally to mitigate and respond to climate change. These programs should be on going, targeting the rural population, schools, senior government officers, policy and decision makers.

The majority of people (85%) in Solomon Islands live in rural areas. They are at the frontline, more vulnerable to the impacts and effects of climate and sea level change and less able to cope and adapt. It is therefore, important that they are made aware of the possible impacts and effects of climate and sea level change. Such awareness programs should involve public talks, video shows and dissemination of information fact sheets on climate change that are of relevance to the Solomon Islands situation.

Environmental education has been introduced into the formal education sector and climate change can be integrated into it. Students at all levels of the formal education sector should learn about their local environment with specific focus on issues relating to the causes, impacts and effects of climate and sea level change. It must be recognized that the school children are an important audience for climate change education as they are the future leaders of tomorrow. Students can also contribute towards awareness-raising. This program should involve the development of climate change education materials and the training of teachers about climate change.

Apparently, secondary schools in country have been making steps in this direction to include climate change and extreme weather events such as tropical cyclones as choices of research topics that build into their final examination results at the form 5 and form 6 levels.

The Meteorological Service was involved in the Science Advisory Committee for the revised curriculum for primary education. Climate Change issues has been incorporated in the revised curriculum.

However, ultimately, the policy and decision-makers are the major players and they should be the prime targets of any awareness programs. With regard to this concern, these programs should ensure that the policy and decision-makers are aware of not only the impacts and effects of climate change, but also the opportunities available in implementing the Convention and the Protocol, including financial assistance and transfer of technology.

Few workshops have been held in the past which brought together participants from within the government sector, the private and NGOs with the aim of bringing up the awareness amongst these concerned stakeholders.

## **6.0 LESSON LEARNED THROUGH TRAINING AND CAPACITY BUILDING ACTIVITIES**

Like many of the developing countries, Solomon Islands do not have the trained manpower and expertise on climate change. Nor does it have well established institutions and the financial resources to plan and implement appropriate responses to climate change and sea level rise. Relatively, there is deficiency in the capacity to properly meet and address its obligations and commitments under the Convention.

Training and capacity building will always be an on-going undertaking to support national capacities to address climate change at the national level and to enable countries to meet their obligations and commitments. The following are some pressing concerns that are deemed important for national climate change activities and require financial and technical input.

- More information of present baseline conditions in Solomon Islands is required. This would include: identification of sensitive areas and ecosystems; information on land use change and practices; information on natural ecosystems including forests, mangroves and coral reefs; development of fine resolution contour data; and, better understanding of the present effects of social and economic change on the environment.

- More information is needed to understand climate and sea-level sensitivities of the following: subsistence and plantation crops; coastal processes and coral reef systems; ground and surface water resources; malaria; and, marine resources such as the tuna species.
- There is a need for detailed regional and national projections of future changes in climate and sea level and possible changes in cyclone frequency and/or in features of climate variations such as El Nino.
- Further research and information is needed about the effectiveness of proposed adaptation measures in reducing vulnerability.
- There is a need for developing local skills and expertise and the strengthening of institutions, which will be, involved in ongoing climate change related activities.
- There is need for capacity building under the CDM including the establishment of institutional linkages; project formulation and identification; monitoring, verification, auditing and certification of projects; development of baselines; assessment of costs and risks; and information and data acquisition.
- Development of expertise and skills at higher levels through fellowships and scholarships.
- Identification and assessment of appropriate mitigation and adaptation technologies including information and analysis of constraints to the transfer of technology.

## **7.0 FUTURE NATIONAL DEVELOPMENT AND THE IMPLEMENTATION OF THE CONVENTION**

In order to fully implement the Convention locally, a framework such as the NIS should facilitate the development of a National Climate Change Action Plan, policies and measure that address climate change and integrate it in the national development plans. The plan will look at strategies or ways on how the country will implement the UNFCCC and what will be required to undertake such actions.

The Action Plan will facilitate the implementation of the country's commitment under the Convention. This will include the preparation of the National Communications, integration of climate change considerations into national development planning, relevant sectoral policies, establishing procedures and criteria for identifying and assessing climate change (mitigation and adaptation) projects that meet national needs and to submit them as CDM or to GEF/UNDP and other potential donors. In the not so distant future, Solomon Islands will involve in the preparation of the NAPAs and the Second National Communications, which will certainly enhance the skills and the knowledge of nationals.

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