

# **UNDP Project Document**

**Government of the Federated States of Micronesia**

**United Nations Development Programme**

## **ENABLING ACTIVITIES FOR THE PREPARATION OF THE FEDERATED STATES OF MICRONESIA'S SECOND NATIONAL COMMUNICATION TO THE UNFCCC**

### **Brief Description**

The proposed project will enable Micronesia to prepare its Second National Communication to the Conference of the Parties of the UN Framework Convention on Climate Change. The activities within the Second National Communication are a continuation and update of the work done by Micronesia to prepare its Initial National Communication (INC) that was carried out under the Pacific Islands Climate Change Assistance Project (PICCAP) and Phases II enabling activities. The main components of the project are: a) Inventory of GHG Emissions b) Programmes containing measures to facilitate adequate adaptation to, and mitigation of climate change, c) and Programmes and national action plans that are considered relevant for the achievement of the objectives of the UNFCCC. The Project will further enhance the national capacities and will raise general knowledge and awareness on climate change and its effects. It will also contribute to putting climate change issues higher on the national agenda through strengthened cooperation and increased involvement of all relevant stakeholders in the process. In addition, it will strengthen and build national capacities for participation in different mechanisms related to GHG mitigation and to fulfilling other commitments under the UNFCCC.

## Table of Contents

<b><u>Subject</u></b>	<b>Page</b>
<b>1. Elaboration of the Narrative</b>	<b>4</b>
<b>1.1 Situation Analysis</b>	<b>4</b>
<b>1.2. Strategy</b>	<b>5</b>
<b>1.3. Management Arrangements</b>	<b>6</b>
<b>1.4. Monitoring and Evaluation</b>	<b>6</b>
<b>1.5. Legal Context</b>	<b>8</b>
<b>2. Total Budget</b>	<b>10</b>
<b>3. Appendices</b>	<b>11</b>
<b>Appendix A: Summary report of the self-assessment exercise</b>	<b>11</b>
<b>Appendix B: Technical components of the project proposal</b>	<b>21</b>
<b>Appendix C: Terms of Reference</b>	<b>46</b>
<b>Appendix D: Endorsement letter</b>	<b>60</b>
<b>UNDP Signature Page</b>	<b>61</b>

## ACRONYMS

APRs	Annual Project Reports
CCA	Common Country Assessment
CoP	Conference of the Parties
CP	Country Programme
DEA	Department of Economic Affairs
ESDU	Environment and Sustainable Development Unit
ENSO	El Nino-Southern Oscillation
INC	First National Communication
GHG	Greenhouse Gases
IPCC	Intergovernmental Panel on Climate Change
INC	Initial National Communication
MDGs	Millennium Development Goals
NBSAP	National Biodiversity Strategy and Action plan
NCCC	National Climate Change Coordinator
NCCCT	National Climate Change Country Team
NCSA	National Capacity Self Assessment
NEX	National Execution
NGO	Non-Governmental Organization
PICCAP	Pacific Islands Climate Change Assistance Project
PICs	Pacific Islands Countries
PIREP	Pacific Islands Renewable Energy Projects
QPRs	Quarterly Projects Reports
SBAA	Standard Basic Assistance Agreement
SIDS	Small Islands Developing States
SNC	Second National Communication
SPREP	Secretariat for the Pacific Regional Environment Programme
TECs	Technical Environmental Components
TWGs	Thematic Working Groups
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Program
UNDP-CO	United Nations Development Programme - Country Office
UNFCCC	United Nations Framework Convention on Climate Change
V&A	Vulnerability and adaptation assessment

## 1. ELABORATION OF THE NARRATIVE

### 1.1. SITUATION ANALYSIS

Similar to the other Pacific Island Countries (PICs), Federated States of Micronesia (Micronesia) is very much aware and concerned about environmental degradation and global warming and their detrimental effects. The Federated States of Micronesia is a young, independent nation created from part of the former United States administered United Nations Strategic Trust Territory of the Pacific Islands following conclusion of a Compact of Free Association with its former administrator, the United States, in 1986. In 1991, the FSM became a member nation of the United Nations.

The FSM includes the most geographically and culturally diverse part of the greater Micronesian region located in the western Pacific Ocean between the equator and 14 degrees North latitude, and between 136 degrees and 166 degrees East longitude. The nation is comprised of four states – Yap, Chuuk (formerly Truk), Pohnpei (formerly Ponape), and Kosrae (formerly Kusraie) – lying along the equator and stretching about 1,700 miles (2,700 kilometers) in geographic sequence from west to east. Each state has considerable autonomy within the federation, but their unity provides greater resources with which to face the challenges of development. The states have devised their own strategies for development, while an integrated perspective for the federation is provided by the national government. This overall national development vision is described in the most recent FSM National Development Plan.

Micronesia ratified the UN Framework Convention on Climate Change (UNFCCC) on 18 November 1993 and the Kyoto Protocol on 21 June 1999. Micronesia has submitted its Initial National Communication (INC) to the UNFCCC on 04 December 1997 and its addendum on 30 October 1999. Following the preparation of its INC (under the Pacific Islands Climate Change Assistance Project (PICCAP) and Phase II Enabling Activities the country has initiated efforts to create an institutional set-up that seeks to focus on integrating climate change issues into the national legal frameworks.

Ratification of the UNFCCC and the Kyoto Protocol and, the submission of its initial national communication are some of the steps forward in terms of commitment to addressing climate change and related issues. Micronesia is also a Party to many other UN conventions, such as those, among others: biological diversity, biosafety, persistent organic pollutants, and combating desertification

In pursuit of its policy response to climate change FSM had formulated policies which took into account the following options: (1) a source-oriented policy response of developing mitigation measures (i.e., control of greenhouse gas emissions); (2) an effect-oriented policy response of developing adaptation measures (e.g., coral reef protection, coastal protection, human resettlement); (3) an effect-oriented and source-oriented policy response of developing a mix of both adaptation and mitigation measures; and (4) “no action” which it considers to be counterproductive and therefore values the opportunity to participate in international efforts to address climate change issues affecting the country.

The President’s Council on Environmental Management and Sustainable Development (SD) Council was created in the mid-1990s by the President through Presidential Order No. 14 to address matters, including climate change, affecting the environmental management and sustainable development of the nation. The Council is composed of the

FSM Vice President as Council Chair, the Deputy Assistant Secretary for the Sustainable Development Unit (SD Unit) as the Secretariat, and representatives from all four states and six National Government departments, two offices and other NGOs: Department of Health, Education and Social Affairs, Department of Economic Affairs, Department of Foreign Affairs, Department of Justice, Department of Transportation, Communication and Infrastructure Department of Finance and Administration, National Oceanic Resource Management Authority (NORMA), the Office of Disaster Control and other NGOs/civil society such as the Nature Conservancy, Micronesia Conservation Trust and Pohnpei Conservation Society. The purpose of the SD Council is to ensure that the national government takes a consistent stand on development and the environment, and to ensure that all available resources and technical abilities are tapped when providing coordination services and technical assistance to the states.

## 1.2. STRATEGY

In compliance with its obligation as a non-Annex I Party to the UNFCCC, Micronesia intends to prepare its Second National Communications (SNC). The proposed project will assist the Government of Micronesia in implementing activities needed to enable the country to prepare its SNC, following the guidelines adopted by the Conference of Parties (CoP).

The activities within the SNC are continuation of, and an improvement of the work done under the USCSP and PICCAP, where Micronesia prepared its INC and an addendum. During the duration of the project, particular attention will focus on addressing identified gaps and constraints during the SNC stocktaking exercise, making good use of the information derived from such exercise, and utilization of the results of relevant previous or ongoing national or international activities related to the climate change issues.

The proposed project is fully in line with the Micronesia's national development objectives, and its pursuit of improving natural resource management and promoting environmental sustainability. The UNDP is assisting Micronesia in obtaining sustainable environmental management and energy development that will improve the livelihoods and security of the poor. This is achieved through strategic areas of focus covering: institutional framework for sustainable environmental management and energy development; monitoring and assessment of environmental sustainability; and national capacity for participation in global conventions, regulatory regimes and funding mechanisms for environmentally sustainable development. The SNC, which is the main output of the project, as well as activities for improvement of the country's capacities to implement the UNFCCC, will directly contribute to the achievement of the UNDP-Micronesia's UNDAF and CP outcomes (2003-2007).

At the national level, the proposed project will develop synergies with a number of ongoing UNDP-GEF enabling activities such as Micronesia's National Capacity Self-Assessment (NCSA) activities, as well as with other UNDP funded activities in the area of sustainable energy. It also has inherent linkages with other donor-assisted climate change projects in the country. At the regional level, Micronesia is participating in a number of Pacific multi-country energy interventions, which directly addresses climate change issues, particularly the UNDP funded Pacific Island Energy Policies and Strategic Action Plans (PIEPSAP) project, the UNDP-GEF funded Pacific Islands Renewable Energy Project (PIREP).

The project will engage the best local expertise available in the country and the region, to assist in the project implementation. The project will make use of linkages and cooperation with ongoing climate change and relevant environment projects that are addressing the national development priorities, and will strengthen the dialogue, information exchange and cooperation among all the relevant stakeholders including governmental, non-governmental, academic, and private sectors. By doing so, it is expected that the climate change related issues would be accorded higher priority on the agenda and ensuring its integration in the national planning and development strategy formulation processes in the country.

The project will make use of the capacity built and institutional arrangements that were set up during PICCAP. However, capacity building activities will still form part of the project and will be provided through training workshops, and encouragement of the information exchange between the States, national and relevant regional and international institutions. This is to augment the existing capacity, as well as address capacity gaps that were identified during the SNC stocktaking exercise, from the ongoing NCSA project in the country, and in the ongoing regional climate change mitigation projects participated in by Micronesia.

The project will be executed by the Sustainable Development Unit within the Department of Economic Affairs in close collaboration with other relevant ministries and institutions, and the four state agencies and authorities particularly those that make up the country's National Climate Change Country Team (NCCCT). The National Climate Change Coordinator (NCCC) will work closely with the Global Environment Facility (GEF) and UNFCCC focal points, NCCCT and UNDP-CO.

### 1.3. MANAGEMENT ARRANGEMENTS

Please refer to the Section 5, Institutional Framework and Project Implementation, Appendix B: Technical Components of the project proposal.

### 1.4. MONITORING AND EVALUATION

UNDP guidelines and procedures on reporting, monitoring and evaluation will be followed throughout the project cycle. In addition, the project's National Coordinator will be under the immediate and daily supervision of the Deputy Assistant Secretary (the National Project Manager) for the SD Unit of the Department of Economic Affairs and provide regular progress reports to UNDP, copies to all members of NCCCT and the National Project Manager. These reports will enable the NCCCT and UNDP to evaluate the progress of the project on a regular basis and identify difficulties and shortcomings with a view to overcoming them during the period of project implementation. These reports will be reviewed by UNDP for their quality and standard, comprehensiveness, and conformity to the proposed terms of reference and dates of completion. In addition, a mid-term review between UNDP and the DEA may be conducted. An independent evaluation by a qualified consultant will be conducted at the end of the project.

The NCCCT will meet every two months to review project implementation and provide scientific, technical, policy and strategic guidance. The minutes of these meetings will be shared with all participating institutions.

An independent financial audit will be conducted according to the UNDP rules and procedures. During the implementation of the project, regular financial statements will be prepared and provided to UNDP for accessing funds for project activities.

### Monitoring Responsibilities and Events

A detailed schedule of project review meetings will be developed by the project management, in consultation with project implementation partners and stakeholder representatives and incorporated in the Project Inception Report. Such a schedule will include: (i) tentative time frames for Steering Committee Meetings, (or relevant advisory and/or coordination mechanisms) and (ii) project related Monitoring and Evaluation activities.

*Day to Day Monitoring of Implementation Progress* – This will be the responsibility of the NCCC based on the project's Annual Work Plan and its indicators. The Project Management Team (PMT) will inform the UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion.

*Periodic Monitoring of Implementation Progress* – This will be undertaken by the UNDP-CO through quarterly meetings with the project proponent, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.

### Project Monitoring Reporting

The project's National Coordinator in conjunction with the UNDP-GEF extended team will be responsible for the preparation and submission of the following reports that form part of the monitoring process.

#### *(a) Inception Report (IR)*

A Project Inception Report will be prepared immediately following the Inception Workshop. It will include a detailed First Year Work Plan divided in quarterly timeframes detailing the activities and progress indicators that will guide implementation during the first year of the project. The Report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 months time-frame.

The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. In addition, a section will be included on progress to date on project establishment and start-up activities and an update of any changed external conditions that may effect project implementation.

When finalized the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, the UNDP Country Office and UNDP-GEF's Regional Coordinating Unit will review the document.

### *Quarterly Progress Reports*

Short reports outlining main updates in project progress will be provided quarterly to the local UNDP Country Office and the UNDP-GEF regional office by the project management team.

### *Technical Reports*

Technical Reports are detailed documents covering specific areas of analysis or scientific specializations within the overall project. As part of the Inception Report, the project management team will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent Annual Project Reports (APR). Technical Reports may also be prepared by suitable consultant(s) and should be comprehensive, specialized analyses of clearly defined areas of research within the framework of the project. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.

### Audit Clause

The Government of Micronesia will provide the UNDP-CO with certified periodic financial statements, and with an audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

### 1.5. LEGAL CONTEXT

This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of Micronesia and the United Nations Development Programme, signed by the parties. The host country implementing agency (UNDP) shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agency described in that Agreement.

UNDP acts in this Project as Implementing Agency of the Global Environment Facility (GEF), and all rights and privileges pertaining to UNDP as per the terms of the SBAA shall be extended mutatis mutandis to GEF.

The UNDP Resident Representative is authorized to effect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by GEF Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes:

- Revision of, or addition to, any of the annexes to the Project Document;
- Revisions, which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;



- Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and,
- Inclusion of additional annexes and attachments only as set out here in this Project Document.



## **APPENDIX A: SUMMARY REPORT OF THE SELF-ASSESSMENT EXERCISE**

### **A. DESCRIPTION OF THE PROCESS AND APPROACH ADOPTED FOR THE STOCKTAKING EXERCISE**

The objective of the stocktaking exercise is to build upon existing activities, institutions and knowledge relating to the preparation of the national communication to the United National Framework Convention on Climate Change (UNFCCC) and to identify gaps and additional stakeholders who could contribute to the national communication process.

A team of one consultant and two members of the Department of Economic Affairs of Micronesia carried out the stocktaking exercise, which involved a three-day stocktaking and stakeholder consultation meetings. National Stocktaking included and stakeholder consultation meetings with the National Climate Change Country Team NCCCT included, among others, the collection and synthesis of all information relevant to the preparation of SNC ( i.e., priorities, gaps, needs and lessons-learned, opportunities for synergy) and the development of a detailed workplan, budget and timelines for the preparation of the technical components of the SNC.

The three-day meeting was used to solicit and collect information from various ministries, agencies, institutions of government and non-government organizations that are represented on the NCCCT as well as identify any new stakeholders who could be involved in the preparation of the second national communication.

The elements of information covered in the consultation meetings included work carried out under previous climate change enabling activities (e.g., PICCAP I & II, NAPA, NCSA), gaps/uncertainties identified, new areas of work to be undertaken, priorities for SNC, opportunities for promoting synergy/linkages with related programmes (NCSA, NAPA, NBSAP), and lessons learned and or best practices in INC process that would be useful for the preparation of SNC. The discussions with various ministries, agencies, and institutions/organizations were centered on the following components of the national communication:

- a) National circumstances (development priorities, geography and climate, information needs for adaptation, and mitigation, capacity needs and constraints, institutional arrangements);
- b) Greenhouse gas (GHG) inventories (main sources of emissions and removals, data sources, adequacy and reliability, accessibility, availability and management of data, capacity needs and constraints);
- c) Programs containing measures to facilitate adequate adaptation to climate change (vulnerable sectors, gaps and uncertainties, methods and tools, methods for assessing adaptation options, capacity needs and constraints, priorities for vulnerability and adaptation in the SNC);
- d) Programs containing measures to mitigate climate change (main sectors, methods and tools, and priorities to be addressed and the linkages to the other development priorities);
- e) Other information such as technology needs and other technology transfer-related issues, PICCAP Phase II outcomes, research and systematic observation, education, training and public awareness needs and the linkages to NCSA and other capacity building activities
- f) Constraints and gaps, and related financial, technical and capacity needs (areas for improvement and any new information to be included).

## **Institutions and individuals involved**

A total of 15 departments, agencies and institutions of intergovernmental, government and non-government organizations in Micronesia involving 28 experts were consulted during the stocktaking and stakeholder consultations. Many of the individuals and/or organizations are also members of, or are represented on, the National Climate Change Country Team (NCCCT). The stocktaking and stakeholder consultations were carried out over a 3-day period (04-06 May 2005).

## **B. MAIN OUTCOMES OF THE STOCKTAKING, INCLUDING PRIORITIES IDENTIFIED**

### **I. WORK CARRIED OUT UNDER PREVIOUS CLIMATE CHANGE ENABLING ACTIVITIES**

The work carried out under the previous enabling activities such as the Pacific Islands Climate Change Assistance Programme (PICCAP), its Phase II (Top-Up) and the recently launched National Capacity Self-Assessment have generated information which is pertinent to the preparation of the second national communication.

#### **NATIONAL CIRCUMSTANCES**

The Federated States of Micronesia (FSM) is a former United Nations Trust Territory of the Pacific Islands (TTPI) administered by the United States of America. In 1986 a Compact of Free Association was signed between the FSM and the USA, culminating in the termination of the trusteeship in 1991, thus becoming a young independent nation. The Compact treaty established a special relationship with the USA and provides economic support to the FSM. The funding provisions under the original compact have been recently re-negotiated between the two countries to determine their future relationship.

The total landmass of the FSM is 438 square miles with a declared Exclusive Economic Zone covering over 1 million square miles. The FSM is comprised of 608 islands with land elevation ranging from sea level to the highest elevation of about 2,500 feet. The archipelago lies in a broad east-west swath across 1.6 million square kilometers of the western Pacific Ocean above the equator between 1.0-9.9oN and 138.2-162.6oE. The northeast trade wind belt heavily influences the tropical climate of the FSM.

Trade winds prevail from December through April, periods of weaker winds and doldrums occur from May to November. Rainfall is extremely variable high on the volcanic islands of Kosrae, Pohnpei and Chuuk and can exceed 400 inches a year. The region is affected by storms and typhoons that are generally more severe in the western islands, and by periods of drought and excessive rainfall associated with the "El Nino" (ENSO) phenomena.

The indigenous population is Micronesian with most of the people residing on the main islands of the State capitals. The 2000 census preliminary count of the population is 107,000 (July 2000). The population of the FSM increased from about 62,357 in 1973 to 105,506 in 1994 to 107,008 in 2000. The population by state according to the National Census Report (2002) was 11,241 in Yap, 53,595 in Chuuk, 34,486 in Pohnpei and 7,686 in Kosrae. The population density (persons per square mile) in the FSM in 2000 was about 395 persons per square mile (244 in Yap, 1,094 in Chuuk, 261 in Pohnpei and 179 in Kosrae).

Traditional, social and cultural institutions are still very strong in Micronesia. Micronesian society is based on the extended family, which is responsible for the family welfare, especially in relation to customary family land. Ownership of land and aquatic areas varies between States. In Kosrae and Pohnpei, land is both privately and State owned, while aquatic areas are managed by the State as public trusts. In Chuuk, most land and aquatic areas are privately owned and acquired through inheritance, gift, or, recently, by purchase. In Yap, almost all land and aquatic areas are owned or managed by individual estates and usage is subject to traditional control. IN all States, land cannot be sold to non-citizens of the FSM. These land and aquatic ownership patterns greatly influence the strategies and actions required to sustainably manage the biodiversity of the nation.

The economy of FSM is small and is largely dependent on aid provided through the Compact of Free Association with the USA. The majority of activities are government services, wholesale and retail, and subsistence farming and fishing. The government services dominate the economy at 42%. The commercial tuna fishery (international and domestic) is the nation's second highest revenue earner with annual revenues between US\$13-20 million dollars. Fifty thousand tourists entered the FSM in 2000, contributing small revenue earnings to the economy of the country. Real GDP per capita for 2001 is US\$2,030.

The overall labour force participation rate of persons 15 years and over in the FSM was 58 percent in 2000, an increase of 15 percentage points since 1994. The male participation rate (67%) was higher than that of women (50%). The unemployment rate for the FSM in 2000 based on ILO classifications is 22%. Out of about 29,000 employed persons in 2000, about 15,000 persons (52%) were engaged in agricultural, fishery, or related activities. About 30 percent were engaged in market oriented agricultural, fishery, or related activities while the remaining 70 percent were on subsistence. The total number of housing units has increased from 16,000 in 1994 to over 17,300 in 2000. In 2000, about 54 percent of the housing units had electricity, compared to 51 percent in 1994.

## NATIONAL GREENHOUSE GAS INVENTORY

A review of the Initial National Communication notes that the emission of CO<sub>2</sub> from the energy sector represents the primary source of greenhouse gas emission in the FSM. The data had been collected regionally at the company's main office in Guam.

The quality of data from the energy sector is reasonably good especially those on fossil imports even though another competitor (Micronesian Petroleum Company) has featured in the oil supply scenario for the FSM. Mobil has been a sole provider for the FSM since 1994 the base year for the Initial Communication. Another petroleum company, the Pacific Petroleum Company is also servicing the States of Yap and Kosrae.

## VULNERABILITY AND ADPTATION ASSESSMENT

Between 1993 and 1999, vulnerability assessments (including assessments funded by NOAA, FSM and the PICCAP) were undertaken in three States of the FSM (Yap, Chuuk and Kosrae). The assessments collectively provide an initial assessment of the potential effects of climate change on four types of islands in the FSM with an emphasis on the consequences of accelerated sea level rise. The assessments projected that: atolls and reef islands are expected to suffer severely as a consequence of accelerated sea-level rise; water resources are being threatened by projected climate change; coastal resources of both atolls and lowland areas of high islands are at severe risk from shoreline erosion; and local food production will be adversely affected due to prolonged drought

periods. Preliminary adaptation measures to reduce FSM's vulnerability to climate change were also addressed.

A pilot project evaluating FSM's adaptation options to climate change was recently completed by an international and local consultants under the auspices of CLIMAP, an ADB funded regional technical assistance program on adaptation. Focusing on two infrastructure development projects (Sokehs village and Kosrae coastal road), the project explored a range of climate proofing options and their associated costs. The final report has been submitted to the National government for endorsement.

Adaptation to climate extremes in the FSM region is becoming urgent as evidenced by the recent spate of typhoons that have hit the region. For example, a strong typhoon CHATA'AN in 2002, caused 60 landslides on the lagoon islands of Chuuk State, 47 casualties, 109 injuries, and 39 people to be hospitalised. NOTE: Typhoon Sudal totally devastated Yap's main island in April 2004 with no casualties and Taito should have some information on this...

The Hazard Mitigation Grant Program (HMGP), a US Federal Program of the Federal Emergency Management Agency (FEMA) is currently being implemented in the region and tied very closely to post disaster hazard mitigation planning activities. In this programme, communities are being assisted to address vulnerabilities such as salt-water inundation, salinisation of water lenses, coastal erosion and housing rehabilitation especially in Yap and Chuuk. Specific activities that have been carried out under this programme include building of man-made concrete taro patches.

FSM has also initiated a monitoring the use of land resources through land use planning and watershed legislations which have been approved by some of the States. In the case of Kosrae State, SOPAC has assisted in beach profiling to monitor erosion progress and a CLIMAP project which focused on a comprehensive vulnerability and adaptation impact assessment of a road project that takes into consideration incremental costing<sup>1</sup>.

## RESPONSES TO CLIMATE CHANGE AND SEA-LEVEL RISE

As with other SIDS, Micronesia is well aware of the adverse effects of climate change and sea-level rise which are likely to increase in the future. Many of the environmental projects that have been implemented in Micronesia have included climate change sea-level rise concerns. Climate change initiatives currently implemented by the FSM reflects international programmes driven by the UNFCCC convention and are largely assessment and capacity building based. Examples of such activities include the Initial National Communication that was implemented in the FSM through the PICCAP project executed by SPREP. Such programmes include:

- French government funded two pilot communities in Yap and Pohnpei States taking advantage of solar energy and at present are working well. Several programmes are in the pipeline to be carried out with funding from the European Union under the Cotonou Agreement on new and renewable sources of energy. Scope of the project currently being developed will include the use solar, wind, coconut oil and biomass. NOTE: The FSM Government has ruled out coconut and biomass under the EU funding scheme.
- Coral reef initiative as part of the NBSAP – Areas of Biological Significance

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<sup>1</sup> Cost that are attributed to change in climate.

Given the importance of climate change and sea-level rise in Micronesia, a climate change programme with two permanent staff, has been established as a program within the Environment and Sustainable Development Unit, Department of Economic Affairs, to oversee the climate change issues including the integration of climate change issues and concerns into various national development plans and policies that include FSM's environment matrix and Strategic Development Plan 2002.

The Country Team approach put in place during PICCAP to develop the Initial National Communication was hailed as a success but needs several improvements to take into consideration the various constraints in travel and communication through the FSM region. When the PICCAP programme phased out in the FSM, the excellent progress made slowly diminished to a stage where climate change activities were limited mostly to covering international negotiations. There was no clear direction as to the way forward for the FSM as funds have desiccated. Top-Up phase for the FSM did not eventuate therefore the National Implementation Strategy for the FSM to provide the roadmap into the future was not developed and it was left to the States to progress activities without any clear direction from the National government.

## **SYNERGY BETWEEN ENABLING ACTIVITIES AND OTHER PROJECTS**

Adaptation and capacity building are considered as being key cross cutting issues that would promote synergy between and among the UNFCCC and the UN Convention on Biological Diversity (UNCBD) and the UN Convention on Combating Desertification (UNCCD). Adaptation to climate change has very close linkages with activities relating to the preparation of the National Biodiversity Strategy (NBSAP) under UNCBD and National Action Plans under the UNCCD. Activities relating to the preparation of vulnerability and adaptation assessments for national communication will therefore have closer links on adaptation and capacity building issues with other reporting requirements.

Opportunities already exist for promoting and strengthening synergy with related programmes such as NCSA, NBSAP, NAPs and CLIMAP in the process of the preparation of SNC. The SNC will build on other related projects (e.g., NCSA, NAP and CLIMAP) and other national activities carried out under other relevant international conventions (e.g., UNCBD and UNCCD). This is especially important for vulnerability and adaptation activities. Adaptation issues transcend many of the activities of the three Conventions thus increasing the potential for cooperation and collaboration among the various ministries, agencies, institutions and individuals who are already involved in their implementation. Given that many activities of the SNC and other related programmes have overlaps between the various sectors, there are bound to be many cross-sectoral synergies.

In the area of mitigation, Micronesia has been implementing several projects related to sustainable energy (see section 1.2 of this proposal) which will provide input to the mitigation assessment under the SNC project. Many of the experts involved in sustainable energy projects will also participate in either the NCCCT or carrying out mitigation assessment activities, thus promoting potential for synergy.

## **II. NEW AREAS OF WORK FOR THE SECOND NATIONAL COMMUNICATION**

A number of new areas which were not considered previously in the initial national communication will have to be explored in the preparation of the second national communication. These new areas include:

- Issues relating to the development and transfer of technology. This would involve carrying out a technology needs assessment to determine priority technology needs for adaptation and mitigation in FSM.
- The participation in and contribution to research and systematic observation including Micronesia's involvement in the global observing systems. Micronesia already participates and contributes to the Pacific Island – Global Climate Observing System (PI-GCOS) and the South Pacific Sea-Level and Climate Monitoring Programme (SPSLCM).
- Education, training and public awareness and information and networking - Some level of public awareness activities and education and training have been provided to Micronesian nationals in the area of vulnerability and adaptation assessment work and the sea-level and climate monitoring programme. Some of these programmes ended soon after the completion and submission of initial national communication. Recently much of the climate change work involving Micronesian nationals has been focused on international climate change negotiations. Thus, the focus in this project will be to heighten the awareness of policy makers and other stakeholders both at the National and State level. Education, training and public awareness often involved participation in and exchange of information at regional and international workshops, seminars and fora. This activity will be strengthened during the preparation of second national communication.
- Capacity-building, particularly in relevant areas to enable the implementation of the activities/tasks relating to the preparation of national communication and the implementation of the Convention. The NCSA project which will start very soon in Micronesia and will help identify the key and evolving priority capacity-building needs which will have to be addressed over the long term.
- Gaps, constraints and related financial, technical and capacity needs. As with other projects and programmes, the implementation of the activities (e.g. GHG inventory, V&A assessment, Mitigation assessment, technology needs assessment and research and systematic observation) relating to the preparation of second national communication will most likely highlight some of the critical capacity gaps and related financial and technical constraints. Some of these gaps and constraints may be overcome through addressing specific problems but many will not be overcome during the process of the preparation of second national communication.

### **III. PRIORITIES FOR SNC IDENTIFIED UNDER VARIOUS COMPONENTS**

#### **NATIONAL CIRCUMSTANCES**

Many of the activities relating to environment carried out at the State level will be included in the preparation of second national communication. This will help build awareness and promote ownership of climate change issues among many stakeholders. Additionally, States are already developing approaches to addressing some of the extreme events they are already facing which include policy support and actual implementation of activities that promote sustainable use of resources and conservation. For example in the State of Kosrae, Land Use Plans have been developed and endorsed by the leaders and in Pohnpei State the Conservation Society of Pohnpei and the Nature Conservancy are working on a watershed management project which also address climate change and sea-level rise concerns. In Chuuk State, many projects currently undertaken focus on typhoon rehabilitation activities with opportunities for support from the US federal Emergency Management Agency (FEMA). For Yap, rehabilitation and recovery activities in preparation for the next climate extremes are being carried out in the coastal, housing and water sector also through FEMA funding. There is a need for the Second NATCOM to be more State driven and a process need to be in place



to ensure that such an understanding is factored into the institutional processes that will drive the production of FSM's Second NATCOM. Better coordination of the NCCCT will be crucial in providing guidance and support to the effective implementation of the various activities.

## GREENHOUSE GAS INVENTORY

Since the completion and submission of the INC, a number of factors have changed and will impact on the outcomes of the national greenhouse gas inventory. These factors include the following:

- Registered vehicles in FSM average 8,000 per year, with 8,208 registered in 2001. More than half of the registered vehicles are in Pohnpei. In 2001, about 60 percent of the registered vehicles were in Pohnpei, followed by Yap at 19 percent, Kosrae at about 14 percent then Chuuk at about 7 percent.
- The number of aircraft arrivals in the FSM decreased annually while sea vessels arrivals increased. There were 1,101 aircraft arrivals in 1997 compared to 643 in 2001. The decline was due to the decreased number of commercial aircrafts servicing the FSM. The number of sea vessel arrivals increased from 432 in 1997 to 482 in 2001. The peak was in 2000 at 611. This increase was due to increase in the number of fishing boats and other vessels calling at FSM ports. This information is important to the FSM in relation to GHG emissions.
- Activities that affect land-use change and forestry for the FSM are quite limited, and it is assumed that net emissions, if any, from this sector is usually offset by uptake from existing forests and other plants and vegetation. It is noted from discussions with experts during the consultation workshop that burning as a means for plantation preparations in the State level has declined over the years and this is attributed to better land use advice from the Agriculture and Forestry sectors concerned and availability of modern farming implements.
- The agriculture sector has some important sources of greenhouse gases that need looking into for the sake of fully carrying out the inventory in future but still, it is believed that the total greenhouse gas emission from this sector may well be very insignificant on a global scale.
- Since major industries are very few in the FSM, the only emission that may be of significance for this sector comes from the CO<sub>2</sub> emitted from lime production.
- Lack of relevant data from land-use change and forestry, industrial processes, agriculture and waste will likely hampered the calculations of emissions from these sectors.
- Good data management systems especially within key national and state institutions need to be developed and more experts need to be trained to carry out inventory work on a continuing basis.
- Capacity-building is required for one individual per State in the area of GHG Inventory and ability to use the IPCC GHG Inventory Guideline, GPG, and GPG for LULUCF.

## STEPS TAKEN OR ENVISAGED TO IMPLEMENT THE CONVENTION

### Measures to facilitate adequate adaptation

While some vulnerability assessment work has been undertaken in the FSM, until recently, these assessments have not factored into the assessment process the issue of adaptation costs. These assessments were further hampered by a lack of technical expertise, as well as the paucity of baseline data required for the whole FSM and limited financial resources. Therefore there is a need for:

- Training and capacity-building in the use of methodologies for costing of adaptation strategies and measures.

- Vulnerability assessments to be more comprehensive and should take into consideration the cost of adaptation measures. Many islands in the FSM group are already facing adverse effects of current climate extreme events and there is a need for these islands to be visited and their vulnerabilities documented. There is a need to collect the results of assessments and centralize the collected data so that it can be drawn upon for planning purposes.
- Vulnerability and adaptation assessment work to be more focused on the most vulnerable sectors and locales, i.e. water; agriculture particularly for the small islands

### Measures to mitigate climate change

As part of its overall development strategy, FSM is in the process of developing an energy policy that will reflect its future development trajectory. In this regard efforts are being made to promote energy efficiency and conservation as well as issues relating to renewable energy development and technologies.

Training and capacity building is required in the use of appropriate technologies, methodologies and tools for assessment of mitigations options and development of mitigation scenarios particularly in sectors with significant mitigation potential.

### OTHER INFORMATION CONSIDERED RELEVANT FOR THE ACHIEVEMENT OF THE OBJECTIVES OF THE CONVENTION

#### Technology transfer

There is a need to carry out technology needs assessments to identify the barriers and ways to promote renewable energy technologies for renewable energy development (would be best to talk with Solomon on this one since he did PIREP for FSM – a report that is incomplete thus far). Other issue relating to technology transfer includes, capacity building needs, enabling environment, technology information and mechanisms for the transfer of technology.

#### Research and systematic observation

Strengthening of the capabilities and expertise of Micronesia to contribute to and participate in research and systematic observation, data collection and processing, archiving, analysis and dissemination is crucial in dealing with climate change issues. Therefore, there is a need to enhance the capacity of the institutions and personnel responsible for Micronesia's contribution to and participation in the global climate observing system and other global observation systems.

#### Capacity-building

Capacity-building is regarded as a key issue in all areas of work relating to the preparation of national communication. It is therefore important that sufficient resources are provided for this activity on an on-going basis so that activities/tasks required are implemented in an effective manner. Opportunities already exist for collaboration and synergy between the various Convention processes as they relate to capacity building and technology transfer and therefore it is important to ensure these are further strengthened.

#### Education, training and public awareness

In respect of education, training and public awareness Micronesia is in the process of incorporating climate change issues within the education curriculum. Such efforts are highly commendable and will need resources (human and financial) to continue this work as the priorities and needs for climate change science evolve.

Generally the awareness levels of policy makers are low and systemic arrangements at national and state level cumbersome in FSM. This is further reflected by weak system of particularly from the National to the State level. It was acknowledged that consultation after and before the Initial NATCOM was minimal and very little effort was made to disseminate the final Initial NATCOM to the State level. Other constraints discussed include lack of data and management, data fragmentation and difficulty to access plus ownership issues.

There is a need to continue and improve the efforts in training and awareness-raising on climate change issues at the community and national level. Existing networking and information exchange between the various levels of society should be strengthened and where relevant new networks and information exchange mechanisms should be explored.

#### Needs and constraints, and related financial, technical and capacity gaps

Great efforts are being made to fulfill and overcome some of the needs and constraints relating to financial, technical and capacity gaps with the assistance of bilateral and multilateral organizations. However, there are many more needs and constraints that are being identified and for which no or very limited resources are available to help address these evolving issues and priorities. Therefore it is recommended that resources (human, technical and financial) made available should be commensurate with the evolving priority needs and concerns.

## **IV. MAIN LESSONS LEARNED OF THE SELF-ASSESSMENT EXERCISE**

### **LINKAGE WITH FIRST ENABLING ACTIVITIES INCLUDING TOP-UP ACTIVITIES**

A number of lessons learned from the previous work relating to the preparation of the INC and on-going work currently being carried out under various projects include the following:

- a) Strong institutional arrangement is critical in the management of the projects and their implementation. Despite the relegation of climate change activities to mainly climate change negotiations, there has been sufficient participation in the climate change process by policymakers (e.g. participation of the FSM Vice President in the international climate change negotiations and other processes). Pacific Islands Renewable Energy Project (PIREP) and CLIMAP continue to be monitored by the Environment and Sustainable Development Unit of the DEA.
- b) The main issues/concerns that may arise in the preparation of SNC and its various components relate to the clarity over roles and responsibilities of various National and State government, agencies and institutions and the need to strengthen institutional arrangements, and to develop in-country capacity and in-country training.
- c) The level of collaboration and cooperation between and among the various agencies, institutions of government and non-government organizations and communities in the implementation of

projects needs to be strengthened, a factor that will facilitate effective implementation of the various components of the SNC.

- d) Many activities relating to the implementation of the various components of the second national communication will require capacity building and training. This could include skills upgrading and outsourcing experts and institutions to carry out the tasks/activities in a timely manner.

## REGIONAL COMPONENT

Regional components may include specific capacity building and training exercises in areas such as GHG inventories assessment, technology transfer, data management systems, project management, mitigation, adaptation and vulnerability analysis, monitoring, evaluation and prioritization of policies, strategies and indicators.

Technical assistance is required in all of the above areas given that many national institutions lacks or have limited capacity in certain specialized fields. For example SOPAC staff has been engaged over the years to set up lagoon monitoring automated systems in the Cook Islands as well for other resource management capacity building exercises. Assistance for strengthening data management systems and databases will continue to be appreciated.

Regional support should also include the screening of proven technologies and their assimilation for adoption by national programmes. Often, countries are pressured to adopt certain technologies with regional institutions knowing that the potential for success is less than 50% and unlikely to be sustained.

Information dissemination is important and that role could see SPREP continue to act as conduit or clearinghouse mechanism for climate change activities including capacity building, education, training and public awareness, technology transfer, and other important programme components.

SPREP is encouraged to consult with and involve countries in more decision-making processes at the regional level. Miscommunications between regional and national coordinators could see delays in project implementations due to poor administrative processes such as the funding disbursement etc.

## **APPENDIX B: TECHNICAL COMPONENTS OF THE PROJECT PROPOSAL**

### **1. BACKGROUND/CONTEXT**

As a small island developing State, Micronesia faces challenges that are common amongst other small island States in relation to sustainable development, especially the interplay of such factors as smallness, remoteness, geographical isolation, vulnerability to natural disasters, the fragility of ecosystems, constraints on transport and communication, isolation from markets, vulnerability to economic as well as environmental shocks, lack of natural resources, limited fresh water supplies, heavy dependence on imports, and migration (particularly of personnel with high level skills,). Micronesia continues to endure high costs for energy, infrastructure, transportation, communication and access to other services.

The INC has facilitated the development of local climate change expertise, enhanced the institutional capacity, and increased the awareness of public and institutions concerning the UNFCCC and the global warming issues. During the preparation of the INC, Micronesia established the NCCCT, which consisted of senior officials from the relevant government, private sector and NGO entities to carry out the INC activities as well as to lead the national efforts in addressing the climate change issues in general.

After completion of its INC, the country has initiated efforts to create an institutional set-up that seeks to mainstream climate change issues into the national legal frameworks. A number of national environmental and related policies have been prepared and adopted by the Government, to guide the implementation of initiatives that address environmental issues, including climate variability and change.

Following the new guidelines for the preparation of national communications, Micronesia (through this proposal) seeks to prepare and submit its Second National Communication (SNC) to the UNFCCC. The activities within the SNC are a continuation of, and an improvement of the work done under the INC. During the duration of the project, particular attention will be put on addressing identified gaps and constraints during the SNC stocktaking exercise, making good use of the information derived from such exercise, and utilization of the results of relevant previous or ongoing national or international activities related to the climate change issues.

### **2. PROJECT OBJECTIVES**

The proposed project aims to strengthen the technical and institutional capacity of Micronesia in preparing and submitting its Second National Communication to the UNFCCC thereby meeting its obligations under the convention.

### **3. PROJECT STRATEGY**

Please refer to section 1.2 of this proposal for details.

## 4. PROJECT ACTIVITIES

### 4.1. NATIONAL CIRCUMSTANCES

Information provided on national circumstances is critical for understanding Micronesia's vulnerability to the adverse effects of climate change, its capacity and its options for adaptation, as well as its options for addressing its GHG emissions within the broader context of sustainable development.

Information on national circumstances will include the analyses of national and or regional development priorities and objectives that Micronesia is pursuing and those that would serve as the basis for addressing climate change and sea-level rise issues. More information on climate change and its impacts of relevance have been generated through the activities of various projects that have been implemented since the completion of the INC which will also be incorporated in this section of the SNC. Information on national circumstances will be linked to information provided in other chapters of the national communication. The analyses of development priorities and objectives should be of interest to other national stakeholders investigating the benefits of specific activities and policies and the linkages between the activities and policies relating to climate change and those of other Conventions, such as the CBD and the UNCCD.

Information will include:

- Geographical characteristics, including climate, forests, land use and other environmental characteristics,
- Population: growth rates, distribution, density and other vital statistics;
- Economy, including energy, transport, industry, and tourism, agriculture, fisheries, waste, health and services sector,
- Education, including scientific and technical research institutions,
- Any information considered relevant by the Party, e.g., information relating to Article 4.8 and 4.9, of the Convention
- A description of institutional arrangements relevant to the preparation of the national communications on a continuous basis including distribution of responsibilities within government departments, universities, research institutions, etc.
- NCCCT as a relevant coordinating body
- Involvement and participation of other stakeholders;
- Thematic Working Groups on GHG inventory, vulnerability and adaptation assessment, mitigation, etc.

### 4.2. GREENHOUSE GAS INVENTORY

GHG inventory is a key component of a national communication which will also form the basis for climate change mitigation measures. A reliable and accurate GHG inventory will also be useful for developing appropriate baseline for emission reduction and other planning purposes.

#### Proposed Activities

On the basis of the previous inventory, national GHG Inventory for direct greenhouse gases carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) and for indirect greenhouse gases carbon

monoxide (CO), nitrogen oxides (NO<sub>x</sub>) and non-methane hydrocarbons (NMVOC), as well as sulfur dioxide (SO<sub>2</sub>), will be undertaken for the year 2000 in five source/sink categories – energy; industrial processes; agriculture; land-use change and forestry; and waste, using the IPCC 1996 Revised Guidelines for National Greenhouse Gas Inventories.

In addition a key-source analysis will be carried out to determine the sectors with significant emissions where resources can be targeted. This activity will include training in and capacity building on the use and application of the IPCC 1996 Revised Guidelines for National Greenhouse Gas Inventories, the IPCC Good Practice Guidance on National Greenhouse Gas Inventories and Uncertainty Management, and the IPCC Good Practice Guidance on Land Use, Land Use Change and Forestry and related applications of geographic information systems and remote sensing techniques.

Emissions of methane and nitrous oxide from international bunkers and aviation will also be estimated for the year 2000. The activity data of hydro fluorocarbons (HFCs), per fluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>) will also be collected for the same year where available.

An improved factor of CO<sub>2</sub> emission/sink from/to soils in Land-Use Change and Forestry in the Pacific region with similar conditions to Micronesia will be assessed and identified, as well as methane emission factor from agricultural soils, with a view to reducing the uncertainties and enhancing the data quality in these sources and sinks.

As one of the aims of this component is to improve the GHG inventory, quality assurance and quality control (QA/QC) procedures based on the IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gases Inventories will be applied on all categories, so as to ensure that the results of the inventory are as reliable as possible.

A database for carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>) oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), non-methane volatile organic compounds (NMVOC) and sulphur dioxide (SO<sub>2</sub>), will be developed during the inventory work. A new database of hydrofluorocarbon (HFCs), perfluorocarbon (PFCs) sulphur hexafluoride (SF<sub>6</sub>) will be established, as appropriate. Data from international bunker fuels will be provided as memo item and will not be included in the national totals. In order to facilitate ease of comparison between sectors global warming potentials of IPCC (1995) will be applied to the aggregate emissions to determine relative importance of direct GHG. An efficient and user-friendly database system will be developed for these gases and their emission factors for ease of archiving, updating and maintenance.

Tables 1 and 2, provided by the UNFCCC Guidelines (annex to decision 17/CP.8) and the IPCC software for estimating emissions will be used for reporting the national GHG inventory. This activity will be coordinated with any regional efforts wherever possible.

A national workshop involving all relevant stakeholders will be held to review the results. The involvement and participation of relevant stakeholders including policy will help enhance their awareness on the importance of GHG inventory and its consideration in national development planning and for building a long-term programme on the improvement of future GHG inventories.

The Thematic Working Group (TWG) on GHG Inventory will undertake the inventory work. The capacity of the group will be strengthened through their participation, in the sub-regional, regional and international training workshops on GHG inventory, so as to share and gain from exchange of

experiences and lessons learned with other countries. Further training of the group will be conducted on the use application of IPCC methodology, including data collection, analysis and management, as well as on the IPCC Good Practice Guidance and Uncertainty Management in National GHG Inventories.

### Major Outputs and Indicators

The major outputs and indicators of this component will be:

- Establishment of thematic working group on GHG inventory;
- Updated and improved inventory data for CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, CO, NO<sub>x</sub>, NMVOC and SO<sub>2</sub>, and new inventory data for HFCs, PFCs and SF<sub>6</sub> for the year 2000;
- An updated, improved and user-friendly GHG inventory database;
- New activity data for Land-Use Changes and Forestry and Agriculture sectors;
- An updated GHG inventory report, including technical annexes with the inventory procedures and calculations;
- Identification of constraints and gaps of the IPCC Guidelines in relation to the local conditions;
- Recommendations on areas of targeted research to improve future inventories and recommendations for revisions to the existing IPCC GHG inventory methodology;
- Strengthened human, scientific, technical and institutional capacity to undertake a GHG inventory; and,
- The review workshop report, including major conclusions and recommendations presented.

### 4.3. PROGRAMMES CONTAINING MEASURES TO FACILITATE ADEQUATE ADAPTATION TO CLIMATE CHANGE

This component of the project will address gaps that were identified during the SNC stocktaking exercise regarding previous work on vulnerability and adaptation assessments during the INC.

#### Proposed Activities

Based on previous work, an integrated vulnerability assessment is to be undertaken for key socio-economic sectors, such as coastal zone and reefs, agriculture, land-use change and forestry, water resources, health, fisheries, biodiversity, food security, public infrastructure, and culture/tradition.

Relevant global and/or regional circulation models may be used to construct climate change scenarios for the region that includes Micronesia. Where possible, integrated assessment modeling may be used to assess the impacts of climate change in Micronesia. Based on these quantitative analyses, appropriate cost-effective adaptation options and measures will be identified and assessed. The impacts of climate change on national development strategies; plans and programmes will be evaluated. Appropriate policy options will be identified and developed for response strategies.

Two of the possible major impacts of climate change are the shift in seasonal and latitudinal rainfall patterns, and the increase in extreme weather events, both of which could have significant implications for Micronesia in terms of tropical cyclones (typhoons) and drought. In addition, the frequency, persistence and magnitude of El Niño are projected to increase under the climate change scenario. El Niño could induce drought in Micronesia and many parts of the western Pacific. In view



of these projected changes, further assessment of vulnerability will be carried out focusing on specific sectors using outputs of regional circulation models and targeted research.

Previous work on vulnerability and adaptation assessments, which identified a number of critical actions and measures, could contribute to enhancing adaptive capacity and towards achieving adequate adaptation to climate change.

Although a lot of information has been generated in the area of vulnerability and adaptation assessments during the INC and other projects a lot of gaps still exist in the area of data collection, monitoring, expertise, skills and know-how required to conduct vulnerability and adaptation assessments on a continuous basis. Therefore there is an urgent need for training and capacity building in the following areas:

- Development and use of appropriate methodologies and tools for conducting vulnerability and adaptation assessments at the community, national and sectoral levels. The training would include downscaling of global circulation models to reflect projected changes in specific sectors and or communities within timeframes that are relevant and appropriate for decision-making.
- Strengthen existing and where appropriate develop data management systems to ensure that a vulnerability and adaptation assessment is carried out on continuous basis.
- Evaluation (including cost-benefit analysis), prioritization and costing of adaptation options, strategies and measures.
- Incorporation of vulnerability and adaptation assessment work into development planning including risk-based assessment methods.
- Research, systematic observation and data collection, analysis and dissemination.
- Assessment of the climate variability and climate change in Micronesia, including their trends and impacts;
- Assessment of the impacts of climate change on oceanographic processes and ocean productivity and on reef systems and associated resources,
- Climate change and sustainable development in Micronesia.

At the end of the assessment, a workshop will be held to review the results and the draft National Adaptation Programme of Action that will build on and complement existing and evolving needs priorities. Policy makers and other stakeholders will be invited to participate in the workshop, so as to enhance their awareness on the various adaptation options, which should be taken into consideration in national development planning.

The Vulnerability and Adaptation Thematic Group will undertake the above tasks, using methodologies that they consider better reflecting the national situation, as well as existing methodologies and guidelines such as the *IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations* (Carter et. al., 1994); *UNEP Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies* (Feenstra et al., 1998); *International Handbook on Vulnerability and Adaptation Assessments* (Benioff et al., 1996); *Developing Socio-Economic Scenarios for Vulnerability and Adaptation Assessments*; *MAGICC/SCENGEN Climate Scenario Generator: Version 2.4, Technical Manual* (Wigley et al., 2000); and *Compendium of Decision Tools to Evaluate Strategies for Adaptation to Climate Change* ([www.unfccc.int/issues/meth\\_tools.html](http://www.unfccc.int/issues/meth_tools.html)) and other regional methodologies where appropriate, will be used to undertake the assessment. Other methods to be used will include community vulnerability and adaptation assessment methodology

developed under the Canadian International Development Agency-funded project titled *Capacity Building for Development of Adaptation Measures in the Pacific Island countries (CBDAMPIC)*.

A thematic working group on vulnerability and adaptation assessment will be responsible for carrying out the assessment work. The group will be supported by the experience and lessons learned from activities from the INC process and the recently completed CLIMAP project.

The capacity for this group on the application of the above-mentioned methodologies, including data collection, analysis and management, will be further strengthened and enhanced where necessary. The capacity-building activities will include the participation of the selected team members in sub-regional, regional and international training workshops on vulnerability and adaptation assessment, so as to share experiences and lessons learned with other countries. It is hoped that this team will be maintained in a sustainable manner even after the project cycle.

### Major Outputs and Indicators

The major outputs and indicators of this component will be:

- Strengthened and/or developed human, scientific, technical and institutional capabilities and capacities to undertake vulnerability and adaptation assessments;
- A wide range of stakeholders involved in the preparation of vulnerability and adaptation assessments including participation by communities in the assessment work and development of adaptation options, strategies and measures that are viable and culturally acceptable;
- Heightened awareness of the risks imposed by climate change, variability and sea-level rise and also facilitate.
- Improved, and/or better understanding of the key vulnerabilities and the risks imposed by climate change, climate variability and sea-level rise on various sectors, communities and infrastructure;
- Analyses (i.e., cost-benefit analyses, evaluation and prioritization) of the various adaptation options, strategies and measures for key/priority socio-economic sectors based on established methodologies, including possible least-cost adaptation options and adaptation technologies;
- Identification of targeted research on climate variability, climate change, tropical cyclones, drought and precipitation trends and their relationship with El Niño-Southern Oscillation impacts;
- Policy options for adequate adaptation and response strategies for climate change impacts on key socio-economic sectors, including a draft National Climate Change Adaptation Action Plan;
- Identification of the country's needs and priorities with respect to adapting to current climate variability and future climate change including vulnerabilities to current climate variability and future climate change, specific human systems (livelihood), areas or sectors that are most critical, difficulties or barriers to adaptation in critical areas or sectors and opportunities and priorities for adaptation;
- Consideration of the broad implications for the country as a whole and integration of effects including the most important sectoral linkages and associated effects, based on current understanding (Parties might wish to use boxes, arrows and diagrams for this purpose) and the needs for a better understanding of indirect and cumulative effects.
- Identification of gaps, constraints and research needs, as well as specific financial, technical and institutional and research needs for capacity-building;
- The review workshop report, including major conclusions and recommendations.

#### 4.4. PROGRAMMES CONTAINING MEASURES TO MITIGATE CLIMATE CHANGE

Although Micronesia is not required to take on emission reduction commitments, undertaking climate change mitigation and assessment could provide ancillary benefits for sustainable development, such as particulate pollution reduction, increase in technological efficiency and effectiveness, improvements in the security and availability of power supply, reduction in road congestion when a shift from private to public transport takes place, and increase in employment resulting from mitigation projects.

Mitigation assessment would entail the generation of information on the national or regional analysis of the potential costs and impacts of the various technologies and practices to mitigate climate change. This information should be relevant for sustainable development and useful for policy makers, and should also help formulate and prioritize mitigation programmes.

##### Proposed Activities

In order for Micronesia to undertake mitigation assessment as part of its development strategy, the Thematic Group on Mitigation, including *inter alia*, will carry out a number of pertinent activities:

- Collection, collation, analysis and archiving of data for the different sectors of the economy, where appropriate and relevant;
- Training and capacity building for national experts and institutions to undertake the preparation of the mitigation assessment;
- Training of personnel in the use of methods, models and tools for the generation of climate and socioeconomic scenarios, at both the national and sectoral levels; and,
- Preparation of mitigation projects for funding.

Training and capacity building is required in the use of appropriate technologies, methodologies and tools for assessment of mitigations options and development of mitigation scenarios particularly in sectors with significant mitigation potential.

Several methods and models that may be used in mitigation assessment, ranging from a broad description of main development trends and statistics to formalized modeling at sector and macro-economic levels. Many of these methods and models are provided in a number of technical resource such as Such as *Technologies, Policies and Measures for Mitigating Climate Change* (IPCC Technical Paper I); *Greenhouse Gas Mitigation Assessment: A Guidebook by the U.S. Country Studies Program* and *Climate Change 2001: Mitigation* (Contribution of Working Group III to the Third Assessment Report of the IPCC). Given the likely dominance of the energy sector (including transport) in terms of emissions, models such as LEAP, ENPEP and MARKAL will be used to undertake mitigation assessment.

Based on the above analyses, a draft National Mitigation Plan will be developed. The Plan will most likely highlight the barriers for adopting cleaner technologies, as well as for promoting cleaner production and consumption. Appropriate mitigation projects will also be identified for bilateral and multilateral funding. Mechanisms will be explored to promote the participation of private sector in mitigation measures, perhaps through a public-private sector partnership. For example, in the hotel

industry, eco-practice, such as the avoidance of washing towels and bed-sheets on a daily basis, will be promoted, so as to save energy and water resources.

At the end of the proposed activities, a workshop will be held to review the results and the draft National Mitigation Strategy for GHG Emission Reduction. Policy makers and other stakeholders will be invited to participate in the workshop, so as to enhance their awareness on the importance of GHG mitigation in terms of sustainable development.

Much of this work will build on and complement the work already started by the GEF-funded *Pacific Island Renewable Energy Project (PIREP)*, which focuses on the removal of barriers to the adoption of renewable energy technologies. The Mitigation Working Group will include the PIREP Task team.

The capacity-building for the Mitigation Working Group on the application of the above-mentioned methodologies and models, including data collection, analysis and management, will be further strengthened and enhanced. The capacity-building activities will include the participation of the selected team members in the sub-regional, regional and international training workshops on mitigation assessment, so as to share experiences and lessons learned with other countries. Training workshop on the application of macro-economic models and relevant energy models will be organized with the assistance of both national and, where appropriate, regional or international consultants as well as the use of expertise available from the UN agencies.

#### Major Outputs and Indicators

The major outputs and indicators of this Component will be:

- Generation of important baseline data for key socio-economic sectors required for assessing GHG mitigation options;
- An assessment of mitigation options for key socio-economic sectors based on established methodologies, including possible least-cost mitigation options and environmentally-friendly mitigation technologies;
- A draft Mitigation and Renewable Energy report including appropriate legal and economic instruments, and public-private partnerships for mitigation measures;
- Strengthened human, scientific, technical and institutional capacity for mitigation assessment;
- Identification of constraints and specific financial, technical and institutional needs for capacity-building on mitigation and renewable energy technologies and on the development of mitigation measures and strategies;
- The review workshop report, including major conclusions and recommendations.

#### 4.5. OTHER INFORMATION CONSIDERED RELEVANT TO THE ACHIEVEMENT OF THE OBJECTIVE OF THE CONVENTION

##### **4.5.1. Development and transfer of technologies**

Micronesia participated in a workshop on Capacity-Building for Renewable Energy and Energy Efficiency in Small Island Developing States on 7-11 July 2003, for all SIDS of the Pacific. The workshop called for SIDS to advance their own sustainable energy agenda, and identified the renewable technology applications in Small Island setting as a priority. Apart from this workshop and

its involvement in the PIREP project, there has been no technology needs assessment undertaken for Micronesia.

### Proposed Activities

A technology needs assessment (TNA) will be carried out by the thematic group on technology transfer and research and systematic observation to identify technology needs for adaptation and mitigation. The TNA will be undertaken by using the assessment methodology developed by UNDP. The TNA group will use a six-step process to complete the TNA.

The synthesis report from this assessment will provide input to the chapters on vulnerability and adaptation and mitigation assessments in the Second National Communication.

Thematic working group on technology transfer will carry out the following activities:

- Assessment of the country-specific technological requirements and opportunities of their use, transfer and introduction in key socio-economic sectors, as well as their social, economic and environmental impacts for adaptation and mitigation;
- Capacity-building and training for the TWG will include learning how to apply the TNA methodology and the use of appropriate technology information databases such as the UNFCCC's TT:CLEAR and any relevant information provided by the Center for Technology Information.
- The barriers to the adoption of environmentally-sound technologies in Micronesia will be identified, with a view to facilitating their removal, building on the work already done by PIREP Team on mitigation.
- Various public awareness programmes focusing on the benefits of ESTs (e.g., CFL rather than incandescent lights, eco-labeling, use of "star-rated" consumer appliances, etc).

It is necessary to build or strengthen the human, scientific, technical and institutional capacity for identifying, assessing, designing, developing, monitoring, evaluating and hosting technological projects, including targeted research projects, for bilateral and multilateral funding.

Selected members of the thematic working group on Technology transfer and research and systematic observation will participate in relevant sub-regional, regional and international training workshops and conferences to share experiences and lessons learned, as appropriate.

At the end of the proposed activities, a workshop will be held to review the results and outcomes, of technology needs assessments, which will serve as important inputs for both the National Adaptation Programme of Action and the National Mitigation Plan.

### Major Outputs and Indicators

The major outputs and indicators of this Sub-Component will be:

- Completion of technology needs assessment including priorities for adaptation and mitigation;
- Important inputs for both the National Adaptation Programme of Action and the National Mitigation Plan;
- Technology information networks;

- Strengthened human, scientific, technical and institutional capacity;
- The reports of the review workshop, including major conclusions and recommendations.

#### **4.5.2. Research and systematic observation**

##### Proposed Activities

The following activities are envisaged:

- Improvement in data collection, analysis and management, with emphasis on data quality assurance, building on the data recovery programme supported by the World Meteorological Organization through its South Pacific Sub-regional Office;
- Trend analysis in existing temperature and rainfall data;
- Strengthening of early warning systems for ENSO and tropical cyclones as part of the work on vulnerability and adaptation assessment;
- Analysis of the impact of climate change on the frequency of extreme climatic events including ENSO. This work will also be part of the vulnerability and adaptation assessment work;
- Analysis of rainfall (including floods and drought) under future climate change scenarios, current climate variability including tropical cyclones and ENSO. This work will be carried out in close collaboration with the V&A thematic working group;
- Participation in and contribution to the activities and programmes, as appropriate, of regional and global research networks and observing systems, such as the Pacific Island - Global Climate Observing System (PI-GCOS) programme, which aims to establish a robust and sustainable climate observation and application system that meets the climate change and variability observations and application needs of the Pacific island nations and region and meets GCOS requirements;
- Climatic information networking with relevant regional and international organizations;
- Preparation of a draft synthesis report on Research and Systematic Observation with special focus on ENSO, tropical cyclones and drought, so as to provide technical and policy guidance for a more sustainable programme. The synthesis report will also include constraints, financial, technical, human and institutional needs for capacity-building needs.

The above activities will be undertaken by the TWG on Technology Transfer and Research and Systematic Observation, which is composed of staff members from the Micronesia Meteorological and Hydrological Services. The capacity of the study team members will be strengthened where necessary, through their participation in sub-regional/regional/international workshops on data collection, analysis, management and climate monitoring.

At the end of the proposed activities, a workshop will be held to review the results and outcomes, including the draft Synthesis Report on Research and Systematic Observation, with the participation of stakeholders from the public and private sectors, including NGOs, communities and civil societies.

##### Major Outputs and Indicators

The major outputs and indicators of this component will be:

- Improved climate database;
- Specific research relating to ENSO, tropical cyclones and drought;

- Early warning systems for ENSO, tropical cyclones and drought established;
- Participation in and contribution to the PI-GCOS programme;
- Climatic information networks with regional and international organizations;
- Draft National Strategy for Research and Systematic Observation;
- Strengthened human, scientific, technical and institutional capacity;
- The reports of the review workshop, including major conclusions and recommendations.

#### **4.5.3. Education, training and public awareness and information and networking**

##### Proposed Activities

Based on the previous activities, the following activities are proposed:

- Preparation of outreach materials (leaflets, booklets, calendars, posters, quarterly newsletters, video, CD) and dissemination of these materials through mass media (TV, radio, newspapers, magazines, Internet, etc.). The information provided by SPREP, IPCC, WMO, IUC/UNEP, UNITAR and the UNFCCC Secretariat through their web pages would be used as sources of information for outreach activities where appropriate. This activity will build on education, training and awareness initiatives that are already being undertaken in Micronesia.
- Establishment of a local website for climate change – This will facilitate information dissemination and sharing of experiences and lessons learned among communities. Capacity-building for updating and maintaining this website is essential in order to ensure its sustainability even after the completion of the project;
- Strengthening of education on climate change at the primary and secondary levels, as well as at the College of Micronesia;
- Incorporation of climate change issues into non-formal education and into the different levels of curricula of the formal education systems;
- Identification of further constraints, gaps and specific financial, technical and institutional needs for capacity-building on public awareness, education and training will be identified and highlighted at the end of the activities.

In order to achieve the above proposed activities, which will be undertaken nationally throughout the various thematic working groups, reasonable financial resources will be needed, not only for both for human and institutional capacity strengthening, but also for the acquisition of relevant equipment.

##### Major Outputs and Indicators

The major outputs and indicators of this component will be:

- Educational and public awareness programmes at national and local village levels;
- Outreach materials in English and Micronesian;
- Strengthened primary, secondary and post-secondary school curriculum on climate change;
- Strengthened human, scientific, technical and institutional capacity;
- The reports of the review workshop, including major conclusions and recommendations.

Access to and the use of information technology, such as Internet, will be essential to ensure efficient exchange and sharing of information both within and outside the country. Information networking is an important activity in any project cycle.

### Proposed Activities

- Establishment of list serve for various thematic working groups to facilitate information exchange and networking;
- Participation and contribution to sub-regional and regional information networks on climate change issues, especially those relating to national communications;
- Provision of a list of national experts, including their expertise, who have participated in the preparation of the SNC
- Assessment of current capacity in information communication technologies;
- Institutional strengthening, including human resources development, technical and technological capabilities on the use of information technology for climate change information sharing.

### Major Outputs and Indicators

The major outputs and indicators of this component will be:

- Information networks and regular exchange of information among thematic working groups and between countries of the region;
- Strengthened human, scientific, technical and institutional capacity in information networking.

#### **4.5.4. Capacity-building**

### Previous Activities

The process of the preparation of the INC has highlighted limited human, scientific, technical, technological, organizational, and institutional and resources capabilities in Micronesia for fulfilling its commitments, including the reporting requirements. Based on the results of a survey, special capacity building needs have been identified in the INC.

### Proposed Activities

This component will aim to address the specific needs that have been identified in the INC, taking into consideration of decision 2/CP.7. Building on the work already done under the INC and the NCSA the following activities will be carried out:

- Identification of the specific needs, options and priorities for capacity-building such as those identified in the INC and phase II enabling activity projects, PIREP, CLIMAP and national capacity self-assessment,
- Status of activities and level of participation in and promotion of South-South cooperation with other institutions in developing countries of the Pacific and elsewhere,
- Promotion and level of involvement of a wide range of stakeholders (governments, national and international organizations, civil society),
- Status of activities relating to the coordination and sustainability of capacity-building activities,
- Dissemination and sharing of information on capacity-building activities,
- Capacity-building activities aimed at integrating adaptation to climate change into medium- and long-term planning,



- Promotion of synergy in the implementation of the UNFCCC, CBD and UNCCD

Every effort will be made to address some of the priority areas relating to the preparation of national communication (GHG inventory, V&A assessment, technology transfer, mitigation, research and systematic observation) as identified in the initial scope of the capacity building framework of the UNFCCC.

### Major Outputs and Indicators

The major outputs and indicators of this component will be strengthened human, scientific, technical and institutional capacity at all levels on major aspects relating to climate change.

#### 4.6. CONSTRAINTS AND GAPS, AND RELATED FINANCIAL, TECHNICAL AND CAPACITY NEEDS

During the preparation of the SNC, new constraints and gaps relating to financial, technical and capacity needs will be encountered and these will be included under this component. Special attention will be paid to the previously identified gaps and needs under the previous activities such as INC and phase II enabling activities. The information will also include the descriptions of these gaps and constraints and how these gaps and constraints have been addressed.

An analysis will be made of the level of financial and technical resources for the preparation of national communications made available by Micronesia, the Global Environment Facility (GEF), Annex II Parties, bilateral or multilateral institutions. This would include:

- In-kind cost, staff resources and associated costs
- The GEF, through one of its implementing agencies (i.e. UNDP)
- Annex II Parties, through either bilateral programmes (AusAID, USAID) or a multilateral institution (e.g. Regional Development or World Bank)
- Other multilateral and bilateral programmes and activities

### Main Outputs

- Status of the constraints and gaps (technical, institutional, methodological, financial, capacity) from previous studies.
- New constraints and gaps (technical, institutional, methodological, financial, capacity), if any related to each thematic area (inventory, abatement analysis, V&A) and elaborate needs to overcome and fill them.

Constraints and gaps (institutional, financial, technical capacity) related to Article 6 activities, Article 4.5 and decision 2/CP.7 which are cross-cutting issue relating to the preparation of SNC will be highlighted and elaborated with a view to finding ways to overcome these needs.

#### 4.7. TECHNICAL SUPPORT AND REGIONAL COMPONENT

Although good progress has been made in Micronesia to develop its human resources there is still a shortage of staff available to deal with diverse environmental issues. This has a direct effect on the capacity to deliver environmental benefits at the national and local levels. It also affects the capacity

of institutions to carry out the required tasks/activities in the preparation of national communication in an effective manner.

In recognition of the capacity constraints a regional support component is being proposed to provide, *inter alia*, technical advice and support (expertise, skills and know-how); nationally-adapted methods and tools; tool-kits, a roster of regional experts who could be used to assist the countries undertake some of the activities relating to the national communication; training and capacity building institutes on various elements of the national communication, and methodologies for prioritization and ranking of adaptation actions/activities.

Regional training, while focusing on vulnerability and adaptation assessments, national GHG inventories, mitigation analysis, will also focus on data management systems for various elements of the national communication. The training will include best practices such as those initiated by the CIDA-sponsored work on adaptation, NAPA and the evaluation (and costing) of adaptation options, strategies and measures.

Regional support may come from a planned clearinghouse mechanism for climate change, which will be hosted at SPREP. The clearinghouse and technical support mechanism will include support for capacity building, education, training and public awareness, technology transfer, research and systematic observation (PI-GCOS). Additionally, a Regional Climate Center to be hosted at SPREP with help from WMO RAV could be established to enhance capacity building in climate science and its related fields to support in-country activities/tasks on climate change.

UNDP, as the GEF Implementing Agency for this SNC preparation project, will be consulted on all aspects during the execution of the project. It will be fully informed of all activities and invited to actively participate in all technical and policy workshops related to the project, so that it can provide useful inputs and contributions to ensure the successful implementation of the project.

Technical assistance from other national, regional and international organizations, consultants and experts will be sought where and when necessary and appropriate.

## **5. INSTITUTIONAL FRAMEWORK FOR PROJECT IMPLEMENTATION**

The NCCCT, the National Climate Change Coordinator (NCCC) and the Thematic Working Groups will form the project management team for the preparation of second national communication. This project management arrangement worked well for the preparation of INC. The Project Management Team (PMT) will work and undertake its tasks under the auspices of the Department of Economic Affairs with the support of other relevant government departments, the private sector, and NGOs.

The following thematic working groups will be formed to assist with the preparation of various components of the national communication: (i) National Greenhouse Inventory, (ii) Vulnerability and Adaptation; (iii) Mitigation; (iv) Technology transfer, Research and systematic observation; (v) Education, training, public awareness and information and networking and Capacity-building; and (vi) Compilation of national circumstances and integration in the second national communication. Each thematic working group will comprise of a number of experts drawing both from public and private sectors, communities, and NGOs, as appropriate.

The NCCCT will provide technical and policy oversight to the project, facilitated by the NCCC who will be assisted by one secretarial support. The NCCC will report to the Secretary of the Department

of Economic Affairs and be responsible for the operational programme of project implementation and will be located in the office of the said department. The project management Unit (Director of Economic Affairs, NCCC, secretary) will have adequate and appropriate computer and telecommunication facility, including Internet, to enable them to efficiently and effectively undertake their activities.

Figure 1 shows the institutional framework and project management structure. As in the case of the INC, the SNC preparation project will be executed by the Department of Economic Affairs, with the support of various government ministries:

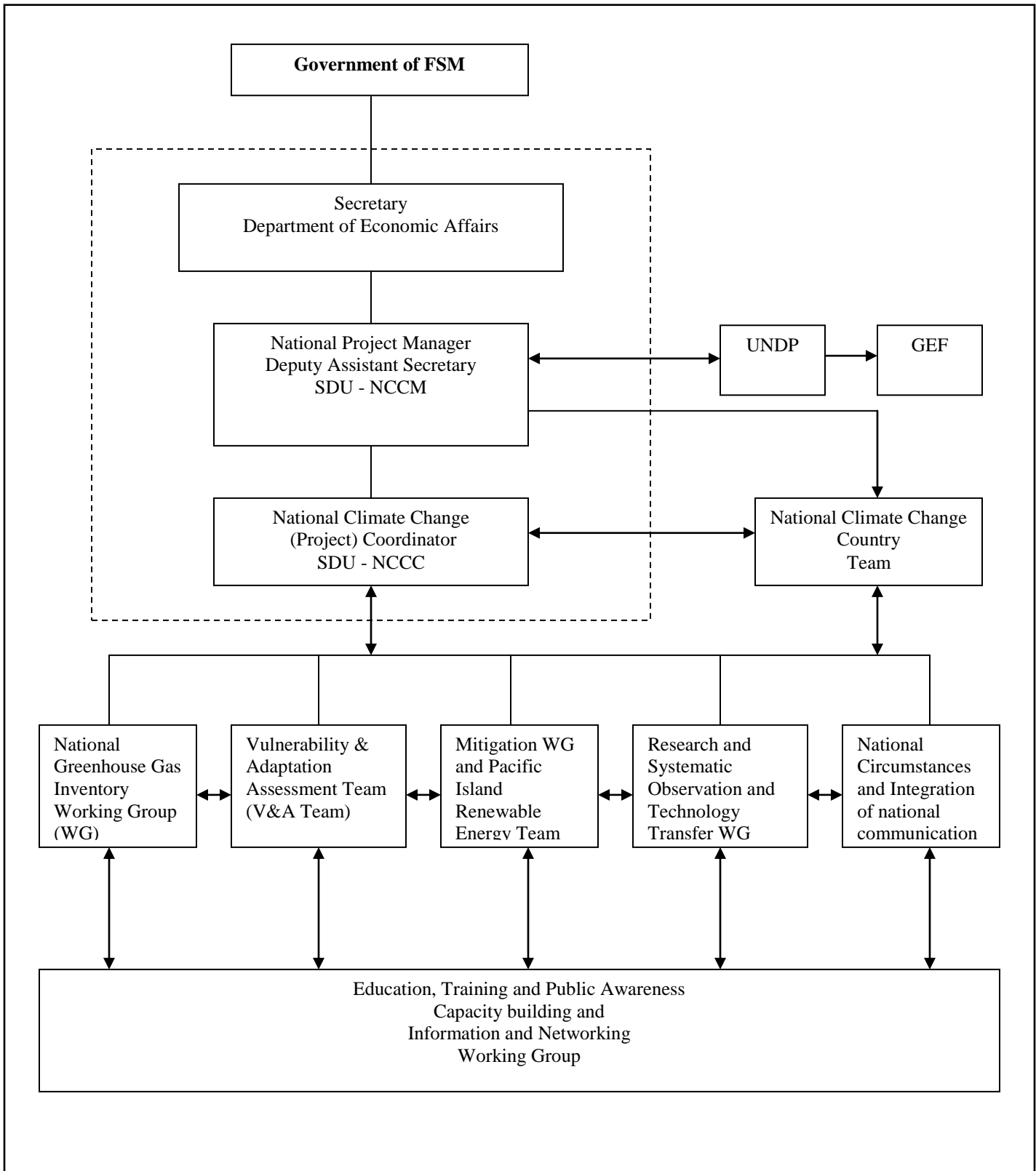
Additional assistance will be provided to the project by regional and international organizations based in Micronesia in relevant areas. The NCCCT will comprise of various ministries and relevant departments, as well as representatives from the private sector, local communities and NGOs. The NCCCT will ensure that the recommendations of the project are integrated into overall national development planning process.

A National Coordinator will be appointed to coordinate the day-to-day execution of activities to be carried out by six thematic working groups, which will include experts both from public and private sectors, education institutions, local communities and NGOs. A secretary will support the national coordinator. The National Coordinator, a secretary and the thematic working groups will also provide secretariat support to the NCCCT.

The NCCCT will meet every two months to review project implementation and provide scientific, technical, policy and strategic guidance. The minutes of these meetings will be shared with all participating institutions.

The NCCCT will meet to review project implementation and provide scientific, technical, policy and strategic guidance. The minutes of these meetings will be shared with all participating institutions.

**Figure 1: SNC Project Implementation Arrangements**



## 6. ASSESSING PROJECT IMPACT

UNDP guidelines and procedures on reporting, monitoring and evaluation will be followed throughout the project cycle. In addition, the National Coordinator will provide a six-monthly progress report to UNDP and copy to all members of NCCCT and the DEA who will be hosting and executing the project. If possible, these reports may be compiled into electronic newsletters that will be distributed to all participating institutions. These reports will enable the NCCCT and UNDP to evaluate the progress of the project on a regular basis and identify difficulties and shortcomings with a view to overcoming them during the period of project implementation. These reports will be reviewed by UNDP for their quality and standard, comprehensiveness, and conformity to the proposed terms of reference and dates of completion. In addition, a mid-term review between UNDP and the DEA may be conducted. An independent evaluation by a qualified consultant will be conducted at the end of the project.

An independent financial audit will be conducted according to the UNDP rules and procedures. During the implementation of the project, regular financial statements will be prepared and provided to UNDP for accessing funds for project activities.

An end-of-project evaluation will be carried out to assess the success and impact of the SNC process and results. A short-term consultant will be for this purpose. The UNDP country office may decide to utilize the UNDP Environmental Outcome Evaluation to determine the impact of the project.

At the beginning of the project, a practical framework to assess capacity development and the potential impacts of the national communication process will be developed. The framework may look into five strategic areas: 1) Capacity to conceptualize and formulate policies, legislation, strategies and programmes; 2) Capacity to implement policies, legislation, strategies and programmes; 3) Capacity to engage and build consensus among all stakeholders; 4) Capacity to mobilize information and knowledge; 5) Capacity to monitor, evaluate, report and learn will be included in the framework.

The framework will identify a few practical indicators to assess the impacts of the SNC in incorporation climate change concerns into development and sectoral planning, as appropriate. The National Communications Support Programme (NCSP) would provide guidance on developing an impact assessment framework, linked to the different components of the SNC, and the possible indicators that may be used to assess impacts.

In developing this framework, capacity development impacts may be given special attention. In general, capacity development can be assessed at three levels:

- a) At the individual level - the process of changing attitudes and behaviors, most frequently through imparting knowledge and developing skills through training, learning by doing, participation, ownership, and processes associated with increasing performance through changes in management, motivation, morale, and levels of accountability and responsibility.
- b) Capacity development at the organizational level - overall performance and functioning capabilities, such as developing mandates, tools, guidelines and information management systems for the ability of the organization to adopt change.
- c) At the systemic level - creation of enabling environments i.e. the overall policy, economic, regulatory and accountability frameworks within which institutions and individuals operate, relationships and processes between institutions.

It is important to note that the development and adoption of such a framework would be a country-driven exercise that seeks to bring the SNC process closer to development priorities in the context of national policy-making. Under the guidance of the NCSP, Yemen would design an impact assessment framework that meets the country's needs and priorities in terms of facilitating the linkage between the SNC and development issues.

## **7. BUDGET**

As the proposed activities are standard enabling activities required for the preparation of national communication, so the incremental cost for undertaking these activities are also full cost, and hence no incremental cost analysis is required.

Thus, the total requested funding of US\$343,500 as itemized in Table B-1 reflects the current real needs and concerns of the country in order to cope with adverse effects of climate change. Although some capacity has already been built during the INC and Phase II top-up funding project, further capacity-building, including training, for the project team members, especially those new members, are still very much needed. A significant portion of the funding requested would be used for human and institutional capacity-building or strengthening, with a view to slowly building up a solid technical team that would be responsible for preparing future national communications in a sustainable manner.

The proposed budget for each proposed component of activity has been estimated and thoroughly reviewed by UNDP and the NCCCT before it is fully endorsed by the UNFCCC Focal Point and the national GEF Operational Focal Point.

## **8. DETAILED WORK PLAN**

It is expected that the proposed three-year project will commence November 2005 and end in November 2008. The detailed work plans for each component will be developed by the National Coordinator in full consultation with the NCCCT after the approval of the project, with the guidance and assistance of UNDP, which will be consulted throughout the project cycle. Table B-2 shows the schedule of the SNC preparation activities.

**Table B-1: SNC Preparation Budget (USD)**

<b>Activities</b>	<b>Cost (,000)</b>	<b>Total Cost (,000)</b>
<b>II. NATIONAL CIRCUMSTANCES</b>		
Development priorities, objectives and circumstances, etc.	3	<b>7</b>
Existing arrangements for preparing communications continuously	4	
<b>III. NATIONAL GREENHOUSE GAS INVENTORIES</b>		
National GHG Inventories	10	<b>33</b>
Cost-effective programs to develop country-specific emission factors	10	
Arrangements to collect and archive data for continuous inventory preparation	6	
Level of uncertainty associated with the inventory data	7	
<b>IV. GENERAL DESCRIPTION OF STEPS</b>		
Steps towards formulating programs to facilitate adequate adaptation	30	<b>112</b>
Vulnerability to adverse effects of climate change & on adaptation	25	
Evaluation of strategies & measures for adapting to climate change	20	
Policy frameworks for developing and implementing adaptation strategies	20	
Steps for formulating programs to mitigate climate change	17	
<b>V. OTHER RELEVANT INFORMATION</b>		
Transfer of, and access to ESTs, development of endogenous capacities; enabling environments	5	<b>21.5</b>
Climate Change research and systematic observation	5.5	
Climate Change education, training and public awareness	5	
Capacity Building Activities, Options and Priorities	3	
Efforts to promote information sharing and networking	3	
<b>VI. CONSTRAINTS &amp; GAPS; RELATED FINANCIAL, TECHNICAL, &amp; CAPACITY NEEDS</b>		
Constraints, gaps and needs, and activities for overcoming gaps, etc.	1	<b>10</b>
Financial resources and technical support provided by various sources	3	
Projects proposed for financing or in preparation for arranging support	3	
Opportunities, barriers for implementation of adaptation measures	3	
<b>VII. TECHNICAL ASSISTANCE</b>		<b>65</b>
<b>VIII. COMPILATION, PRODUCTION OF COMMUNICATION, INCLUDING EXECUTIVE SUMMARY &amp; ITS TRANSLATION</b>	10	<b>10</b>
<b>IX. PROJECT MANAGEMENT (BASED ON 3 YEARS DURATION)</b>	75	<b>75</b>
<b>X. MONITORING AND REPORTING</b>	10	<b>10</b>
<b>TOTAL</b>		<b>343.5</b>





Outputs/Activities	Year 1				Year 2				Year 3			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
of IPCC technical guidelines, GPG and GPG for LULUCF												
2.4 Identify key-source categories of emissions												
2.5 Gather available data from national sources to fill inventory data gaps and identify and develop methods for overcoming inventory data gaps if there is no available data												
2.4. Undertake national GHG inventories for the year 2000,												
2.5 Describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, and efforts to make this a continuous process, including information on the role of the institutions involved												
2.6 Organize workshop for presentation and discussion on the results obtained from the GHG inventory												
2.9. Prepare final GHG Inventory following the UNFCCC guidelines												
<b>3. Programmes Containing Measures to Facilitate Adequate Adaptation to Climate Change</b>												
3.1. Formation of the thematic working group on vulnerability and adaptation assessment												

Outputs/Activities	Year 1				Year 2				Year 3			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Organize a training workshop for the TWG on V&A on the use of available methods and tools for conducting V&A assessment												
3.2. Review the scenarios for climate change, applying the most recent updated version of MAGICC-SCENGEN and examine climatic conditions for Micronesia												
3.3. Analyze the climate changes for the period 1961-2000 to identify trends for temperature, precipitation, wind, cloudiness and sunshine hours												
3.4. Analyze the time series data for ENSO events and climate extremes												
3.5. Analyze anecdotal evidence of impacts of climate change and sea-level rise in communities/villages building on NAPA process												
3.6. Undertake impact assessment in key vulnerable sectors												
3.6. Describe links between climate, and socio-economic baseline conditions of the country in the most vulnerable sectors												
<b>Draft adaptation strategy</b>												
3.7. Identify high priority adaptation												

Outputs/Activities	Year 1				Year 2				Year 3			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
strategies and measures												
3.8. Carry out cost-benefit analysis of proposed adaptation measures												
3.9. Synthesize information and prepare a national adaptation plan of action building NAPA												
3.9. Organize workshop to discuss the results from V&A												
3.10. Final Vulnerability assessment and national adaptation plan following the UNFCCC guidelines												
<b>4. Programmes Containing Measures to Mitigate Climate Change</b>												
4.1. Formation of thematic working group on Mitigation												
4.2. Review previous work on mitigation and renewable energy development building on PIREP project results												
4.3. Conduct training workshop for the TWG on Mitigation on the use of methods and tools for mitigation analyses and assessment												
4.4. Based on the results from the GHG Inventory, develop a baseline scenario for mitigation												
4.5. Develop a series of mitigation scenarios to abate the increase of the GHG emissions in terms of sustainable development objectives												

Outputs/Activities	Year 1				Year 2				Year 3			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
4.6 Prepare a draft mitigation plan building on the outcomes of PIREP project												
<b>5. Other Information Considered Relevant to Achievement of the Objective of the Convention</b>												
5.1. Formation of thematic working group on technology transfer and research and systematic observation												
5.2. Conduct training workshop for TWG on technology transfer and research and systematic observation on how to conduct TNA												
5.3. Assess the technology needs for adaptation and mitigation												
5.4. Prepare a synthesis report on the TNA												
5.5. Review needs and priorities for research and systematic observation (RSO), building on the outcomes of PI-GCOS.												
5.6. Prepare a report on RSO using the UNFCCC guidelines												
5.7. Compile and analyze information on activities relating to the implementation of Article 6 of the Convention and the New Delhi work program												
5.8. Compile and analyze information on capacity-building activities in												

Outputs/Activities	Year 1				Year 2				Year 3			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
accordance with the UNFCCC's capacity-building framework.												
<b>6. Constraints and Gaps and Related Financial, Technical and Capacity Needs</b>												
6.1. Prepare an analysis of financial, technical and capacity needs while undertaking the activities, measures and programmes to implement the Convention and improve the national communication on the continuous basis												
6.2. Compile and analyze information on financial and technical resources or other in-kind contributions made available by Micronesia for the preparation of SNC												
6.3. Compile and analyze information on financial resources and technical support provided by GEF, Annex II Parties, bilateral/multilateral institutions, for activities related to climate change												
6.4. Prepare project proposals on adaptation and mitigation for funding												
6.5. Prepare proposals for pilot demonstration projects on adaptation focusing on barriers and ways to overcome these barriers												
6.6. Compile and assess information on technology and local												

Outputs/Activities	Year 1				Year 2				Year 3			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
know-how development needs												
<b>7. Preparation and submission of the NC</b>												
7.1. Compile a draft national communication and circulate it for comments												
7.2. Hold a national workshop 5 to consider and endorse the draft SNC												
7.3. Finalize and submit SNC												

## **Appendix C: TERMS of REFERENCE**

### **PROJECT MANAGEMENT**

#### **National Climate Change Country Team (NCCCT)**

The National Climate Change Committee (NCCCT) will be responsible for supervising project execution. This will include evaluating project outputs to ensure that project activities are being carried out in a timely manner and to acceptable levels of quality, and reviewing the status and needs of country throughout project implementation. The NCCCT will provide a policy and technical platform for the project and in that context it will have the following duties.

#### **I. Duties and Responsibilities**

The NCCCT responsibilities will include the following:

- Ensuring that national climate change policies and programmes are consistent with national development priorities and objectives;
- Ensuring that all relevant stakeholders in the country are kept informed and consulted on the development of climate change issues and policies;
- Lay down policies defining the functions, responsibilities and delegation of powers for the local implementing agency and the Sustainable Development Unit within Department of Economic Affairs;
- Overseeing national policies on climate change and of the implementation of the UNFCCC at a national level;
- Coordinate and manage the overall project activities and the budget;
- Facilitate coordination of project activities across institutions;
- Review the project activities, and their adherence to the work plan set forth in the project document;
- Review and comment on each year's proposed work plan and budget;
- Take decisions on the issues brought to its notice by UNDP and other cooperating institutions, and provide advice regarding efficient and timely execution of the project;
- Initiate remedial action to remove impediments in the progress of project activities that were not envisaged earlier;
- Developing negotiating positions and strategies for the Government of Micronesia for meetings of the COP of the UNFCCC;
- Monitoring and reviewing the progress of the project against its stated outputs, including progress reports prepared by the NCCC;
- Reviewing and approving the project work plan;
- Reviewing and approving the monitoring and evaluation timetable;
- Making modifications, as necessary, to the number and scope of workshops being organized under the project;
- Providing strong political support and overall policy advice for the development and realization of the project;
- Assisting in mobilizing available data and expertise;
- Endorsing the detailed work plan, produced thematic reports, Final SNC Report and Action Plans;

- Proposing to the Government to adopt the SNC for submission to the UNFCCC Secretariat.

## **National Climate Change Coordinator (NCCC)**

### **I. Project background information**

Micronesia completed its first national communication and submitted it to the secretariat of the UNFCCC during the third Conference of the Parties (December 1997) and its addendum during the fifth Conference of the Parties (November 1999). The preparation of the first national communication was supported through a US Country Studies Program and its addendum through a Pacific Island Climate Change Assistance Programme (PICCAP). PICCAP was a GEF-funded enabling activity for the preparation of the first national communications of 10 Pacific Island countries.

Under a USCSP and PICCAP programmes countries were required to establish appropriate institutional arrangements to implement the various activities/tasks in the preparation of the national communication. In Micronesia, the head of the Sustainable Development Unit within the Department of Economic Affairs (DEA) assumed the role of a National Coordinator of Climate Change. The NCCC worked closely with the NCCCT to implement the project in collaboration with the regional PICCAP programme.

The project for preparation of the Second National Communication on climate change is a logical continual step towards further implementation of the UNFCCC at national level. Its main objective is to prepare a comprehensive report on the climate change related issues. The analysis conducted within the INC will be updated and upgraded/extended, which will result in preparation of a comprehensive national report. Furthermore, it will work towards ensuring that climate change issues are not considered as separate to national and local environmental concerns by integrating objectives into national and local strategic planning processes.

Duration of the project is 36 months.

### **II. Scope of the assignment**

The NCCC will manage the project on a day-to-day basis and is accountable to the executing agency (DEA) for the planning, management, quality control, timeliness and effectiveness of the activities carried out, as well as for the use of funds. The NCCC will ensure the regular monitoring and feedback from activities already under implementation.

The NCCC will be located within the Sustainable Development Unit (SDU) within the Department of Economic Affairs. The NCCC will work closely with the UNFCCC focal point, UNDP Programme Officer for Environment and the National Climate Change Country Team.

### **III. Duties and Responsibilities**

The National Climate Change Coordinator (NCCC) will have the following duties:

- Prepare a detailed work plan and budget;
- Prepare and submit to UNDP and the DEA, regular progress and financial reports;



- Coordinate and oversee the preparation of the outputs of the SNC;
- Ensure effective communication and adequate information flow with the relevant authorities, institutions and government departments in close collaboration with the NCCCT;
- Ensure appropriate stakeholder participation in the project implementation and coordinate the work of all stakeholders under the guidance of the DEA and NCCCT and in consultation with the UNDP office;
- Ensure that information is available to the NCCCT about all Government, private and public sector activities, which impact on capacity development;
- Maintain and establish additional links with other related national and international programs and other Enabling Activities such as NCSA, NBSAP, PIREP and other national projects;
- Prepare the Terms of Reference for consultants and experts and ensure their timely hiring;
- Guide the work of consultants and experts and oversee compliance with agreed work plan and timely completion of tasks;
- Organize and coordinate the procurement of services and goods under the project;
- Coordinate, manage and monitor the implementation of the Project activities/tasks undertaken by the various thematic working groups, local experts; consultants, sub-contractors and co-operating partners;
- Assume overall responsibility for the proper handling of logistics related to all project workshops and events;
- Manage the Project finance, oversee overall resource allocation and where relevant submit proposals for budget revisions with the help of the UNDP officer;
- Undertake any other actions related to the Project as requested by the DEA and UNDP.
- Serve as secretary to the NCCCT.

#### **IV. Qualifications and skills**

- Advanced university degree in the fields related to climate change and environmental management
- Minimum of 5 years of working experience in the area relevant to the project;
- Substantial involvement in the preparation of the national GHG inventory, vulnerability and adaptation assessment and the preparation of first national communication
- Demonstrated ability in managing projects, and in liaising and cooperating with all project stakeholders including government officials, scientific institutions, NGOs and private sector;
- Familiarity with international organizations operations and structure;
- Substantial experience in Government and in interdepartmental procedures
- Familiarity with international negotiations and processes under the UNFCCC
- Fluent written and oral communication in one of the Micronesian languages and English
- Strong communications and interpersonal skills
- Excellent computer knowledge (MS Office, Internet)
- Micronesian citizenship

## **THEMATIC WORKING GROUPS**

### **A. THEMATIC WORKING GROUP ON GHG INVENTORY**

#### **I. Scope of Work**

The Thematic Working Group on National GHG Inventory will be formed to carry out the inventory of GHG emissions in Micronesia. The group will consist of experts from relevant ministries, institutions and agencies of government and non-government organizations. The group will ensure that specific tasks relating to the national GHG inventory is carried out in a timely manner and will ensure efficient coordination of outputs of consultants and national institutions. The activities undertaken by the national institutions will contribute to strengthening institutional arrangements for compiling, archiving, updating and managing GHG inventories.

#### **II. Duties and Responsibilities**

Particular duties may be as follows:

- Undertake national GHG inventories for the year 2000, according to the guidelines for the preparation of National Communications (17/CP.8)
- Participate in the training workshop on the use of IPCC guidelines, and GPG including one for the LULUCF;
- Include information on the other non-direct GHGs such HFCs, PFCs and SF<sub>6</sub> as well as CO, Nox, SO<sub>x</sub> and NMVoCs;
- Revise the input data, taking into consideration data gaps and areas needing improvement identified in the stocktaking exercise
- Collect/gather available activity data from national sources to fill inventory data gaps
- Identify and develop methods for overcoming inventory data gaps if there is no available data Identify barriers to obtaining existing data for key sources and propose solutions
- Archive relevant data for the project duration
- Calculate emissions for the year 2000 for all sectors
- Describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including information on the role of the institutions involved
- Utilize the deliverables under the regional project,
- Organize (in cooperation with the NCCC) workshop for presentation and discussion on the results obtained from the GHG Inventory

#### **III. Qualifications and Skills**

The institutions and/ or expert individuals contracted for undertaking project activities should meet the following minimum criteria:

- Sound and broadly-recognized scientific expertise on climate research in Micronesia
- Prior experience in inventory preparation, through involvement in the First National Communication

- Highly qualified scientists working in the fields of emission factor development or data collection methods
- Familiarity with the UNFCCC and IPCC technical guidelines

**vi. Expected output:**

National GHG Inventory, in accordance with the UNFCCC guidelines. The report should include information on other non- direct GHGs: HFCs, PFCs and SF<sub>6</sub> as well as CO, NO<sub>x</sub>, SO<sub>x</sub>.

**B. THEMATIC WORKING GROUP ON VULNERABILITY ASSESSMENT AND ADAPTATION**

**I. Scope of Work**

The TWG on V&A will consist of teams that have been established for CLIMAP project in Micronesia. The group will ensure implementation of specific activities outlined below, as well as coordination of the outputs of other consultants engaged outside the institution. The activities undertaken by the national institutions will also strengthen institutional arrangements for systematic climate observation, data management and control, processing and updating of meteorological and hydrological services data.

**II. Duties and Responsibilities**

Particular duties may be as follows:

- Participate in the training workshop on V&A methods and tools available for V&A assessment work;
- Revise the scenarios for climate change, applying the most recent version of MAGICC-SCENGEN;
- Analyze the climate changes for the period 1961-2000 for existing stations of the following parameters: temperature, precipitation, wind, cloudiness and sunshine hours,
- Identify the data needs, availability and suitability, and establish datasets baselines of the assessment.
- Analyze the existing climate data and parameters, by months and years
- Prepare climate maps using GIS technology
- Review the vulnerability assessment of the following sectors: agriculture, water resources, natural ecosystems, forestry, and human health, including identification of vulnerable areas that are most critical
- Describe links between climate, and socio-economic baseline conditions of the country in the most vulnerable sectors
- Based on the output of the vulnerability assessment, evaluate the feasibility of available adaptation measures to meet their specific needs and concerns arising from the adverse effects from the climate change
- Prepare a national adaptation action plan to implement those measures being of highest priority including clear distinction of responsibilities among the relevant stakeholders, timeframe for fulfillment/implementation of the recommended measures, financial means for implementation of the measures, and identification of possible barriers and risks.

- Liaise and consult with the TWG on Technology Transfer and Research and Systematic Observation on issues relating to technology needs assessment and climatic conditions of Micronesia;
- Organize (in cooperation with the NCCC) a workshop to present the results from V&A
- Prepare comprehensive report on Vulnerability assessment and national adaptation Action plan;
- Prepare a chapter on “Programmes containing measures to facilitate adequate adaptation to climate change,” in accordance with the UNFCCC guidelines.

### **III. Qualifications and Skills**

The institutions and experts contracted for undertaking project activities should meet the following minimum criteria:

- Sound and broadly-recognized scientific expertise on climate research in Micronesia
- Prior experience in vulnerability assessment and adaptation process, through involvement in the First National Communication
- Highly qualified scientists working in the fields of climate observation and vulnerability analysis in the specific sectors
- Familiarity with the UNFCCC, IPCC methodology, MAGICC/SCENGEN and other methods

### **IV. Expected output:**

Completed report on vulnerability assessment and adaptation strategy for the following sectors: agriculture, water resources, natural ecosystems, forestry and human health.

## **C. THEMATIC WORKING GROUP ON MITIGATION**

### **I. Scope of Work**

The thematic Working Group on Mitigation will be responsible for carrying out GHG mitigation analyses and identifying mitigation options for Micronesia. It will ensure timely and effective implementation of specific activities outlined below, as well as coordination with the outputs of other consultants engaged outside the institution.

### **II. Duties and Responsibilities**

- Based on the results from the GHG Inventory and future development plans, particularly in the energy and land use change and forestry sectors, develop a baseline and mitigation scenarios to abate the increase of GHG emissions
- Consider the main national economic and social development trends in the analysis, including expected GHG emissions in energy, agriculture, land-use change and forestry and waste management
- Extend the analysis on the side of energy consumption, including energy consumption in the industry (for heating, for technological processes), in the public sector and in the residential sector;
- Revise the measures contained in the INC according to the latest economic development, including quantitative measures in all sectors;

- Identify, formulate and prioritize programmes containing measures to mitigate climate change within the framework of sustainable development
- Finalize the GHG mitigation analysis using the selected tools and additional background information in order to finalize the cost-benefit analysis of the different measures, develop a series of mitigation scenarios to abate the increase of the GHG emissions
- Liaise and consult with the TWG on GHG Inventory and the TWG on Technology Transfer and Research and Systematic Observation on matters relating to GHG inventories and on technology needs for mitigation;
- Formulate a final national action plan to abate the GHG Emissions including information cost analysis, assessment of technology options for the different mitigation options in various sectors, institutional capacity-building needs to sustain mitigation work, and the related legal and institutional frameworks;
- Organize (in cooperation with the NCCC) a workshop to present the results of the GHG Mitigation and draft national action plan
- Prepare final report on GHG mitigation and national action plan, including comments from the stakeholders

### **III. Qualifications and skills**

The institutions contracted for undertaking project activities should meet the following minimum criteria:

- Sound and broadly-recognized scientific expertise on climate research in Micronesia
- Experience in preparing scenarios for GHG mitigation through involvement in the First National Communication
- Qualified scientists working in the related areas: Energy, Agriculture, Land Use Change and Forestry, Waste
- Familiarity with the UNFCCC, software modeling tools such as LEAP, ENPEP, WASP, GACMO, etc.

### **IV. Expected output:**

A Completed GHG Mitigation report and National action plan for effective response to the GHG emissions.

The proposed activities will be undertaken in appropriate sequence so as to maximize the synergies between each component of the proposed activities, as well as the efficiency and cost-effectiveness for the implementation throughout the project cycle. Some proposed that are not related to each other, such as GHG inventory and vulnerability assessment, will be undertaken in parallel, as indicated in Table 5.

Good practices in project implementation, such as the efficient use of financial and human resources, the engagement of qualified local and regional consultants, public participation throughout the project cycle, will be adopted where appropriate. Established guidelines will be followed, while established tools and methodologies will be used.

## **D. THEMATIC WORKING GROUP ON TECHNOLOGY TRANSFER AND RESEARCH AND SYSTEMATIC OBSERVATION**

### **I. Scope of Work**

The thematic Working Group on Technology Transfer and Research and Systematic Observation will be responsible for carrying out technology needs assessment for mitigation and adaptation; and for assessing the needs and priorities for research and systematic observation in Micronesia. The group will ensure timely and effective implementation of specific activities outlined below, as well as coordination with the outputs of other consultants engaged outside the institution.

### **II. Duties and Responsibilities**

- Participate in a training workshop on the technology needs assessment and the use of the UNFCCC guidelines on research and systematic observation;
- Carry out technology needs assessment for Micronesia
- Undertake an assessment of the needs and priorities for research and systematic observation in close collaboration with Pacific Islands – Global Climate Observing System initiatives;
- Prepare an analysis of the climatic conditions of various stations in Micronesia;
- Liaise closely and consult with the TWGs on GHG inventory, Vulnerability and Adaptation, and Mitigation on issues of relevance, especially on climate data, technologies and capacity-building.
- Provide substantive input to the work of TWGs on Vulnerability and Adaptation and Mitigation
- Formulate an action plan for technology needs for mitigation and adaptation including assessment of technology options in various sectors, institutional capacity-building needs, related legal and institutional frameworks;
- Organize (in cooperation with the NCCC) a workshop to present the results of the technology needs assessment and research and systematic observation
- Prepare final report on technology transfer issues and research and systematic observation, including comments from the stakeholders

### **III. Qualifications and Skills**

The institutions and or expert individuals contracted for undertaking project activities should meet the following minimum criteria:

- Sound and broadly-recognized scientific expertise on various technologies and climate research in Micronesia;
- Experience in preparing a report on technology, research and systematic observation through involvement in the First National Communication
- Qualified scientists working on issues relating to climate, weather, meteorology and hydrological services;
- Familiarity with the methodologies for technology needs assessment and the UNFCCC guidelines.

#### IV. Expected output:

A completed technology needs assessment for Micronesia and a final report on Research and systematic observation including emerging needs and priorities.

### **E. THEMATIC WORKING GROUP ON EDUCATION, TRAINING AND PUBLIC AWARENESS, INFORMATION AND NETWORKING AND CAPACITY-BUILDING**

#### I. Scope of work

The TWG on ETPA, INFNET and CBT will be responsible for compiling information on the needs and priorities for ETPA, INFNET and CB. The group will examine ways to promote climate change education, training and public awareness building on the work already done on this issue during PICCAP Phase II activities. The group will ensure timely and effective implementation of specific activities outlined below, as well as coordination with the outputs of other consultants engaged outside the institution.

#### II. Duties and responsibilities

- Compile and analyze information on activities/tasks relating to the implementation of the New Delhi work program on Article 6 of the Convention;
- Compile and analyze information on activities/tasks relating to the implementation of the Capacity-building framework of the UNFCCC;
- Identify the needs and priorities for climate change education, training and public awareness and capacity-building as they relate to GHG inventory, vulnerability and adaptation assessment, mitigation, technology transfer, research and systematic observation and other emerging priorities;
- Liaise and consult with the various TWG under SNC project and the task team on National Capacity Self Assessment;
- Prepare a draft National plan for implementation of Article 6 of the Convention and the UNFCCC capacity building framework;
- Identify technology needs for information and networking;
- Conduct a workshop (in collaboration with NCCC) on ways to promote climate change education, training and public awareness;
- Prepare a chapter on: (i) Education, Training and Public Awareness, (ii) Information and Networking, (iii) capacity-building for inclusion in the compilation of the SNC.

### **F. THEMATIC WORKING ON NATIONAL CIRCUMSTANCES AND INTEGRATION INTO NATIONAL COMMUNICATION**

#### I. Scope of work

The TWG will be responsible for drafting the Second National Communication with input from the various thematic working groups. The group will ensure that all information pertaining to the SNC is compiled and disseminated for review and comment in a timely manner.

## II. Duties and responsibilities

- Compile the SNC in accordance with the UNFCCC guidelines based on information and or reports provided by the various TWGs;
- Liaise and consult with the various TWGS on issues relating to their respective competencies;
- Promote the integration of climate change concerns and issues into various TWG reports;
- Identify and highlight evolving needs and priorities relating to the preparation of second national communication and the implementation of the Convention;
- Prepare a final draft of the SNC including a 10-page executive summary and technical annexes (if any);
- Conduct a national workshop in collaboration with NCCT and the TWGs on the SNC
- Prepare final draft of SNC, print and submit to the UNFCCC secretariat and disseminate through CD-ROMs and a dedicated site on the DEA website.

## SCOPE OF AUDIT

### Scope of Work

The scope of the audit should be sufficiently clear to properly define what is expected of the auditor but not in any way restrict the audit procedures or techniques the auditor may wish to use to form an opinion. It should specify at least the following:

- A definition of the entity or the portion of an entity that is subject to audit. (This will normally be the project office whether located within a government department or in a separate location.)
- That the audit will be carried out in accordance with either ISA2 or INTOSAI3 auditing standards.
- That the audit period is 1 January to 31 December of the year 20XX.
- That the scope of the audit is limited to the executing agency expenditures, which are defined as including (1) all disbursements listed in the quarterly financial reports submitted by the executing agency and (2) the direct payments processed by UNDP at the request of the executing agency.
- That the auditor will verify the mathematical accuracy of the CDR by ensuring that the expenditures described in the supporting documentation (the quarterly financial reports, the list of direct payments processed by UNDP at the request of the government, the list of disbursements made by UNDP as part of support services, and the UN agency expenditure statement) are reconciled to the expenditures, by disbursing source, in the CDR.
- That the auditor will state in the audit report the CDR expenditures excluded from the scope of the audit because they were made by UNDP as part of support services and the total expenditures excluded because they were made by a UN agency.
- That the auditor will state in the audit report if the audit was not in conformity with any of the above and indicate the alternative standards or procedures followed.

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<sup>2</sup> International Standards of Auditing (ISA) published by the International Auditing Practices Committee of the International Federation of Accountants

<sup>3</sup> International Organization of Supreme Audit Institutions



## The Audit Report

The TOR should clearly indicate the expected content of the auditor's opinion. (Refer to Annex 2 for a sample Audit Report.) This would include at least the following:

- That it is a special purpose report and its intended use.
- The audit standards that were applied (INTOSAI standards, ISAs, or national standards that comply with one of these in all material respects).
- The period covered by the opinion.
- The scope restriction for those expenditures that are the responsibility of UNDP (as part of support services) or a UN agency.
- Whether the CDR presents fairly the expenditures for the project and that the funds were utilized for the purposes described in the project document and work plans.

This section should also indicate the due date for submission of a draft audit report and the signed audit report to the executing agency, as well as the due date for the submission of the signed audit report to UNDP.

## Management Letter

The TOR should specify that the auditor would submit a management letter at the completion of the audit. Guidance should be provided regarding the topics/issues to be covered in the management letter. At a minimum, the following topics/issues should be included:

- A general review of project progress and timeliness in relation to progress milestones and the planned completion date, both of which should be stated in the project document. This is not intended to address whether there has been compliance with specific covenants relating to specific performance criteria or outputs. However general compliance with broad covenants such as implementing the project with economy and efficiency might be commented upon but not with the legal force of an audit opinion.
- An assessment of the project's internal control system with equal emphasis on (i) the effectiveness of the system in providing the project management with useful and timely information for the proper management of the project and (ii) the general effectiveness of the internal control system in protecting the assets and resources of the project.
- A description of any specific internal control weaknesses noted in the financial management of the project and the audit procedures followed to address or compensate for the weaknesses. Recommendations to resolve/eliminate the internal control weaknesses noted should be included.
- Comments as to whether recommendations made in the management letter for the previous audit were implemented or, if not, the implementation status.

More detailed guidance for each of the above general categories is provided below.

## Review of project progress

As part of the general review of project progress, specific steps could include the following:

- Review annual and quarterly work plans, quarterly financial reports, and requests for direct payments and assess in terms of their timeliness and their compliance with the project document and the UNDP Programming Manual (6.5.3 and 6.5.4).
- Review the Annual Project Reports prepared by the executing agency and assess in terms of compliance with UNDP guidelines and whether the executing agency met its responsibilities for monitoring described in the project document and work plans.
- Review whether the decisions and/or recommendations of the above activities have been followed through by the executing agency.
- Review the pace of project progress and comment on the causes for delays.
- Comment on whether implementation services of the UN Agency(s) were provided in line with project document and the work plan.

#### Assessment of internal control

The auditor is expected to conduct a general assessment of internal controls according to established internal control standards. An example of established internal control standards is available from the Organization of Supreme Audit Institutions (INTOSAI). The INTOSAI standards are intended for use by government managers to use as a framework to establish effective internal control structures. For further information, the INTOSAI Guidelines for Internal Control Standards can be found on the INTOSAI Web site [www.intosai.org](http://www.intosai.org). An overview of the standards can be found in the UNDP Contact tool (Chapter 6).

In addition to the above general assessment, additional specific steps could include the following:

- Review expenditures made by the executing agency and assess whether they are in accordance with project document, work plans and budgets; and are in compliance with the UNDP Programming Manual (6.4).
- Review the process for procurement/contracting activities and assess whether it was transparent and competitive.
- Review the use, control and disposal of non-expendable equipment and assess whether it is in compliance with the UNDP Programming Manual (6.4.5); and also whether the equipment procured met the identified needs and whether its use was in line with intended purposes.
- Review the process for recruiting project personnel and consultants and assess whether it was transparent and competitive.
- Review the executing agency accounting records and assess their adequacy for maintaining accurate and complete records of receipts and disbursements of cash; and for supporting the preparation of the quarterly financial report.
- Review the records of requests for direct payments and ensure that they were signed by authorized government officials.

#### Recommendations for improvement

- Recommendations should be directed to a specific entity so there is no confusion regarding who is responsible for implementation. The response of the entity should be included in the management letter, immediately following the recommendation.

- Also, the auditor may wish to comment on “good practices” (if any) that were developed by the executing agency that should be shared with other project personnel.

#### Available Facilities and Right of Access

- There should be a description of the nature and the location of all records belonging to the project. This list should specify those records kept at the executing agency's headquarters and those that are located at other offices.
- The TOR should state that the auditor would have full and complete access at any time to all records and documents (including books of account, legal agreements, minutes of committee meetings, bank records, invoices and contracts etc.) and all employees of the entity. The auditor should be advised that he/she has a right of access to banks, consultants, contractors and other persons or firms engaged by the project management. If an auditor may not have unrestricted access to any records, person or location during the course of the audit, this restriction should be clearly defined, with reasons, in the TOR.

## **Generic terms of reference for scoping and implementing the V&A component of the National Communication**

These generic terms of reference for the preparation of the V&A studies identify the basic set of activities that the V&A expert/consultant will be responsible for under the supervision of the National Communication's Coordinator. It is important to note that these generic terms of reference do not intend to limit the work of the expert but to guide countries on the general profile of the V&A expert and on the activities generally expected to be carried out.

### **Profile of the V&A expert/consultant**

The V&A expert should be very knowledgeable and with hands-on experiences on V&A issues, have a solid understanding of the gaps and needs for developing/improving vulnerability assessments, and have technical expertise in the formulation of adaptation options. The V&A expert should be able to scope technical studies in the V&A area and design an implementation strategy to carry out the different V&A activities within the framework of the NC. He/She should also have a solid understanding of the institutional arrangements and resources required to carry out the V&A work.

Although the NC project document already provides the framework for the V&A studies, the expert should be able to advise on any adjustments if needed, both at the organizational and technical levels, for a successful implementation of the V&A studies.

### **Activities**

In general, the V&A expert/consultant should be responsible for ensuring that the following set of activities is carried out. Emphasis on different activities will depend on the scope of the work already described in the NC project document and/or on the specific activities the V&A expert would be assigned to.

### **Policy and institutional issues**

1. Identify the key policy issues the V&A study of the SNC project aims to address, e.g.,
  - a. to scope the scale of risks associated with projected climate change;
  - b. to aid in the identification of priorities for adaptation;
  - c. to support the development of a national adaptation strategy.
2. Identify the expected output of the V&A study of the SNC project on the basis of the project document, e.g.,
  - a. impacts assessment at the sectoral level for the given priorities identified in the project document;
  - b. a national adaptation strategy, including policies, programs and projects.
3. Develop a clear strategy to link the V&A outputs to national development planning. This would include, among others:
  - a. assessment of institutional arrangements/stakeholders engagement required to facilitate linking the outcome of the V&A studies to sectoral or national planning;
  - b. framework for assessing how the above linkage can be monitored and measured in the short and long terms, for instance through the development of practical indicators.

## **Technical issues**

### ***Scope of the V&A study***

4. Elaborate on the scope (geographic, thematic, sectoral coverage, time horizon) of the V&A study, e.g.,
  - a. designing a strategy to build on but advance what was done within INC, and while applicable, NAPA project;
  - b. elaborating on the scope of studies to address sectors/regions not covered by INC, sectors/regions identified as sensitive/vulnerable to climate change, as per the NC project proposal;
  - c. preparing a detailed workplan for each of the study to be carried out, including a strategy to involve the relevant stakeholders, timeline, etc.;
  - d. designing a strategy, as applicable, to link the V&A studies with previous and ongoing related projects/activities (e.g., land degradation, biodiversity, international waters.)

### ***Methodological framework***

5. Elaborate on the overall methodological framework for the V&A study as per the project document and in consultation with the project coordinator. In doing so, the V&A expert should ensure that:
  - a. The proposed methodological framework is the most appropriate given the policy questions to be addressed, the characteristics of the study (e.g., sectoral focus, spatial and temporal scales, stakeholders involved, and data requirement, etc.), and data availability;
  - b. In-country expertise required for such a methodological framework is available. If needed, the V&A expert should develop a strategy to address technical capacity gaps. For instance, by exploring the possibility of applying another framework in which more in-country expertise exists, or by designing a training/technical backstopping strategy, etc.

### ***Scenarios development***

6. Identify the types of scenarios required to conduct the V&A assessment, e.g., climate, socio-economic, sea level, adaptive capacity, technology, land-use land-cover.
7. Identify the temporal and spatial resolution needed for these scenarios (e.g., national, sub-national, watershed, community, farm level, multi-decadal average, annual, monthly, daily, mean conditions, extreme events, etc.). In doing so, the expert should justify the choices.
8. Develop the strategies for developing such scenarios, e.g., model-based, expert judgment, etc.

In the preparation of the scenarios development strategy, the expert should assess the feasibility of the scenario needs and the methods for developing these scenarios, given the characteristics of the studies, and data availability. For instance, the expert would be expected to advice on alternative options to running regional climate models or

other resource intensive and time consuming exercises. The V&A expert would also assess whether there is enough in-country expertise to develop such scenarios and/or identify options to address the needs for additional expertise.

***Sectoral assessment (to be considered by each of the sectors to be covered in the V&A study)***

9. Elaborate on the methods and tools, as per the project document, chosen to undertake sectoral assessments, e.g., numerical models, elicitation of expert views, stakeholder consultations, focus groups, etc. In doing so, the expert will advise on any adjustments needed to the options identified in the project document.
10. Provide justifications for the selection of the methods/tools considering the research questions, characteristics of the study, and requirements of data and technical expertise of these methods/tools.
11. Assess in-country expertise required to apply the selected methods/tools and prepare training/technical backstopping strategy as required.
12. Develop a strategy to integrate findings from sectoral assessment, as needed. For instance, by applying an integrated model, synthesizing sectoral information, etc.

**Technical assistance needs**

13. Develop a technical backstopping/training strategy to strengthen the national capacity needed to carry out the different V&A studies, This would include details on the type of support needed (training courses on particular methodological frameworks/tools, guidance material, technical documents and good practice) and the, timeline for such support.

## Appendix D: Endorsement Letters

SIGNATURE PAGE

Country: MICRONESIA

UNDAF Outcome(s)/Indicator(s):

Increased National Commitment to meet obligations under global environmental conventions

Expected Outcome(s)/Indicator (s):

Enhanced Government capacity and commitment to meet its obligations under global conventions

(CP outcomes linked to the SRF/MYFF goal and service line)

Expected Output(s)/Indicator(s):

Environmental considerations integrated into national development policies, strategies, programmes and projects

(CP outcomes linked to the SRF/MYFF goal and service line)

Implementing partner:

Department of Economic Affairs

Other Partners:

UNDP

Programme Period: 2005-2008  
 Programme Component: Energy and Environment for Sustainable Development  
 Project Title: ENABLING ACTIVITIES FOR THE PREPARATION OF MICRONESIA'S SECOND NATIONAL COMMUNICATION TO THE UNFCCC  
 Project ID:  
 Project Duration: 3 years  
 Management Arrangement: NEX

Budget	US\$ 343,500
General Management Support Fee	
Preparation phase	US\$ 15,000
Total budget:	US\$ 343,500
Allocated resources:	
• Government (in kind)	US\$ 25,000
• Regular	_____
• Other:	
○ Donor	_____
○ Donor	_____
○ Donor	_____
• In kind contributions	_____
Unfunded budget:	_____

Agreed by (Government): \_\_\_\_\_

Agreed by (Implementing partner/Executing agency):

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Agreed by (UNDP):