

Cover Note

Project Name: Capacity building for Stage II Adaptation to Climate Change in Central America, Mexico and Cuba

Date: 26 September 2001

PIMS No.: 2220

	Work Program Inclusion	Reference/Note
1. Country Ownership		
<ul style="list-style-type: none"> Country Eligibility Country Drivenness 	Clear description of project's fit within: <ul style="list-style-type: none"> National reports/communications to Conventions National or sector development plans 	<ul style="list-style-type: none"> Section A4: National priorities; Annex N: Country reports Section C: Project strategy; Section E: Objectives, outputs, activities, and expected results; also, Section E2: para 60
<ul style="list-style-type: none"> Endorsement 	<ul style="list-style-type: none"> Endorsement by national operational focal point. 	
2. Program & Policy Conformity		
<ul style="list-style-type: none"> Program Designation & Conformity 	<ul style="list-style-type: none"> Describe how project objectives are consistent with Operational Program objectives or operational criteria. 	<ul style="list-style-type: none"> Section A1: United Nations Framework Convention on Climate Change: see criteria for enabling activity in support of national communication
<ul style="list-style-type: none"> Project Design 	Describe: <ul style="list-style-type: none"> sector issues, root causes, threats, barriers, etc., affecting global environment. Project logical framework, including a consistent strategy, goals, objectives, outputs, inputs/activities, measurable performance indicators, risks and assumptions. Detailed description of goals, objectives, outputs, and related assumptions, risks and performance indicators. Brief description of proposed project activities, including an explanation how the activities would result in project outputs Global environmental benefits of the project. Incremental Cost Estimation based on the project logical framework. Describe project outputs (and related activities and costs) that result in <i>global</i> environmental benefits Describe project outputs (and related activities and costs) that result in <i>joint global and</i> 	<ul style="list-style-type: none"> Section B1: Problems to be addressed and the present situation Annex K: Project planning matrix Section E: Objectives, outputs, activities, and expected results; Section F: Risks, sustainability and replicability; Annex K: Project planning matrix (for indicators) Section E: Objectives, outputs, activities, and expected results Section A: United Nations Framework Convention on Climate Change describes the global context Enabling activities are based on full agreed cost Section E: Objectives, outputs, activities, and expected results Section E2: Expected results (para 61) Section F: Risks, sustainability and

	Work Program Inclusion	Reference/Note
	<p><i>national</i> environmental benefits.</p> <ul style="list-style-type: none"> • Describe project outputs (and related activities and costs) that; result in <i>national</i> environmental benefits. • Describe the process used to jointly estimate incremental cost with in-country project partner. • Present the incremental cost estimate. If presented as a range, then a brief explanation of challenges and constraints and how these would be addressed by the time of CEO endorsement. 	<p>replicability; i.e., the framework methods may be used elsewhere due to this demonstration project.</p> <ul style="list-style-type: none"> • Section E: Objectives, outputs, activities, and expected results • Enabling activities are based on full agreed costs. • <i>Ibid</i>
<ul style="list-style-type: none"> • Sustainability (including financial sustainability) 	<ul style="list-style-type: none"> • Describe proposed approach to address factors influencing sustainability, within and/or outside the project to deal with these factors. 	<ul style="list-style-type: none"> • Section F: Risks, sustainability and replicability; Section B3: Stakeholder participation
<ul style="list-style-type: none"> • Replicability 	<ul style="list-style-type: none"> • Describe the proposed approach to replication (for e.g., dissemination of lessons, training workshops, information exchange, national and regional forum, etc) (could be within project description). 	<ul style="list-style-type: none"> • Section F: Risks, sustainability and replicability; Section G: Institutional arrangements
<ul style="list-style-type: none"> • Stakeholder Involvement 	<ul style="list-style-type: none"> • Describe how stakeholders have been involved in project development. • Describe the approach for stakeholder involvement in further project development and implementation. 	<ul style="list-style-type: none"> • Section B3: Stakeholder participation • Section B3: Stakeholder participation; Annex K: Project planning matrix
<ul style="list-style-type: none"> • Monitoring & Evaluation 	<ul style="list-style-type: none"> • Describe how the project design has incorporated lessons from similar projects in the past. • Describe approach for project M&E system, based on the project logical framework, including the following elements: <ul style="list-style-type: none"> • Specification of indicators for objectives and outputs, including intermediate benchmarks, and means of measurement. • Outline organizational arrangement for implementing M&E. • Indicative total cost of M&E. 	<ul style="list-style-type: none"> • Section B1: Problems to be addressed and the present situation; ; Annex N: Country reports • Section H: Monitoring and evaluation • Annex K: Project planning matrix • Section H: Monitoring and evaluation • Section L: Budget (M&E included)
3. Financing		
<ul style="list-style-type: none"> • Financing Plan 	<ul style="list-style-type: none"> • Estimate total project cost. • Estimate contribution by financing partners. • Propose type of financing instrument. 	<ul style="list-style-type: none"> • See Project summary • Section L: Budget; Section I: Project financing
<ul style="list-style-type: none"> • Implementing Agency Fees 	<ul style="list-style-type: none"> • Propose IA fee. 	
<ul style="list-style-type: none"> • Cost-effectiveness 	<ul style="list-style-type: none"> • Estimate cost effectiveness, if feasible. • Describe alternate project approaches considered and discarded. 	

	Work Program Inclusion	Reference/Note
4. Institutional Coordination & Support		
IA Coordination and Support • Core commitments & Linkages	Describe how the proposed project is located within the IA's: • Country/regional/global/sector programs. • GEF activities with potential influence on the proposed project (design and implementation).	• Section G: Institutional arrangements, with GEF representation on advisory committee
• Consultation, Coordination and Collaboration between IAs, and IAs and EAs, if appropriate.	• Describe how the proposed project relates to activities of other IAs (and 4 RDBs) in the country/region. • Describe planned/agreed coordination, collaboration between IAs in project implementation.	
5. Response to Reviews		
Council	Respond to Council Comments at pipeline entry.	
Convention Secretariat	Respond to comments from Convention Secretariats.	
GEF Secretariat	Respond to comments from GEFSEC on draft project brief.	
Other IAs and 4 RDBs	Respond to comments from other IAs, 4RDBs on draft project brief.	
STAP	Respond to comments by STAP at work program inclusion	
Review by expert from STAP Roster	Respond to review by expert from STAP roster.	Sections N and O.

PROJECT BRIEF

1. IDENTIFIERS:

PROJECT NUMBER

PIMS # 2220

PROJECT NAME

Regional: Capacity Building for Stage II Adaptation to Climate Change in Central America, Mexico and Cuba

DURATION

3 years

GEF IMPLEMENTING AGENCY

United Nations Development Programme

EXECUTING AGENCY

Centro del Agua del Tropic Humedo para America Latina y el Caribe Water Center for the Humid Tropics of Latin America and the Caribbean

REQUESTING COUNTRY

Regional

ELIGIBILITY

Non-Annex I Parties

GEF FOCAL AREA

Climate Change

GEF PROGRAMME FRAMEWORK Enabling Activity

2. SUMMARY:

Central America, Mexico and Cuba will serve as the pilot region for elaborating and applying an *Adaptation Policy Framework* for preparing adaptation strategies, policies and measures. The application of this framework will demonstrate how policy for adaptation can be integrated into national sustainable development for at least three human systems: water resources, agriculture and human health. This demonstration project will build upon the Stage I vulnerability and adaptation assessments of the Initial National Communications of the eight participating countries of the region and will prepare them to move onto Stage III Adaptation. As other countries meet the conditions for participation, they can adapt the framework initially developed for this region, thereby engaging in their own regionally-focused initiative. The outputs of the full project will also contribute to the Second National Communications to the United Nations Framework Convention on Climate Change.

3. COSTS AND FINANCING: (US\$)

GEF: Project	3.016
PDF	0.298
Subtotal GEF	3.314

CO-FINANCING:

CATHALAC in kind	0.105
Government in kind	1.280
Swiss Government	0.200
SUBTOTAL CO-FINANCING	1.585

TOTAL PROJECT COST:	4.900
Of which: Cash	0.200
In-kind	1.385

4. OPERATIONAL FOCAL POINT ENDORSEMENTS:

Cuba: Jorge L. Fernandez, GEF Operational Focal Point, Ministerio de Ciencia, Tecnologia Y Medio Ambiente – October 22, 2001

El Salvador: Ana Maria Majano, Minister, Ministerio de Medio Ambiente Y Recursos Naturales – October 1, 2001

Guatemala: Juan Carlos Godoy, Viceministro, Ministerio de Ambiente Y Recursos Naturales – September 21, 2001

Honduras: Ing. Xiomara Gomez de, GEF Operational Focal Point, Secretaria de Recursos Naturales y Ambiente – September 24, 2001

México: Ricardo Ochoa, GEF Operational Focal Point, Dirección General de Credito Publico – October 5, 2001

Nicaragua: Garcia A .Cantarero, GEF Operational Focal Point, Ministerio del Ambiente Y Los Recursos Naturales – September 27, 2001

Panama: Ing. Ricardo Anguizola, Administrador General, Autoridad Nacional del Ambiente –September 21, 2001

5. IA CONTACTS:

Bo Lim, UNDP New York, bo.lim@undp.org

Richard Hosier, UNDP New York, richard.hosier@undp.org

A. Project Context

A1. The United Nations Framework Convention on Climate Change

1. Many countries have now carried out vulnerability and adaptation assessments under Stage I Adaptation within their Initial National Communications. However, it is recognised that further national capacity building is needed to prepare for Stage II Adaptation (Box 1). This pilot project will enable eight countries to prepare for Stage II Adaptation in the context of non-Annex I National Communications, as envisaged by Articles 4.1 (b) (d) (e) of the United Nations Framework Convention (UNFCCC) and of the UNFCCC Decision 2/CP.4 of the Conference of the Parties (COP). This project will create linkages from Stage I to Stage III Adaptation under the UNFCCC process.

Box 1. Initial Guidance from the Conference of the Parties on Adaptation (Decision 11/CP.1)

Stage I: "Planning, which includes studies of possible impacts of climate change to identify particularly vulnerable countries or regions, and policy options for adaptation and appropriate capacity building".

Stage II: "Measures, including further capacity building which may be taken to prepare for adaptation as envisaged in Article 4.1(e)".

Stage III: "Measures to facilitate adequate adaptation, including insurance and other adaptation measures as envisaged by Articles 4.1(b) and 4.4".

A2. Regional context

2. The countries in this regional proposal span the Mesoamerica region and Cuba. The eight countries are: *Costa Rica, Cuba, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama*. Located around the Inter-Tropical Convergence Zone, the region experiences tropical rainy and dry seasons, due to the variations in the trade wind intensity and tropical convergence activity. The economic activities of the eight participating countries are already perturbed by abrupt seasonal and annual changes in precipitation and temperature, associated mainly with the inter-annual reoccurrence of the El Niño or La Niña events¹. The Initial National Communications of the countries and country reports (Annex P) confirm that climate change could exacerbate health problems and decrease crop yields, and other impacts.
3. The region is exposed to a variety of climate risks and extreme events, such as droughts and floods. Recent examples of climate extremes, such as Hurricane Mitch, illustrate this point. More than 15,000 lives were lost in Honduras, Nicaragua and El Salvador, with significant impact on all human systems. Conservative estimates place the regional cost of damages from Mitch at around US\$8.5 billion, which is higher than the combined gross annual domestic product of Honduras and Nicaragua, the two countries hardest hit by Hurricane Mitch; setting back development in the region by a decade or more².

¹ Intergovernmental Panel on Climate Change, *Climate Change 2001, Impacts, Adaptation, and Vulnerability* (2001). The IPCC adopted formal criteria for judging uncertainty.

² Janet N. Abramovitz, "Averting Unnatural Disasters" in "State of the World", Chapter 7 pp. 123-142, 2001 2001, Worldwatch Institute, Linda Starke, editor, Norton and Co. New York 2001

4. Long-term climate change is likely to occur in the region, and this may increase the frequency and magnitude of climate extremes³, such as Mitch. Superimposed upon these current climate risks are additional environmental stresses caused by changes in socio-economic conditions. As in many other developing countries, the human systems in this region are highly sensitive to changes in water supply and demand, land use, land-use practices, and demographic shifts. From the sustainable development perspective, the socio-economic dimensions of climate change are probably as important as the biophysical climatic factors. However, vulnerability and adaptation assessments in Initial National Communications have focused primarily on the biophysical impacts⁴.
5. There is now a growing recognition among countries that a different approach to adaptation assessment is necessary for integrating climate change issues into national development⁵. As input to the next generation of vulnerability and adaptation assessments for National Communications, an examination of relevant policies and measures, and the linkages between climate vulnerability⁶, socio-economic conditions, and sustainable development patterns, are now required.
6. Given this new focus, human systems have been chosen as the central theme for the vulnerability and adaptation assessments here. Human systems refer to any system in which human society plays a major role, as applied in the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)⁷.
7. This proposal builds upon the vulnerability and adaptation assessments that have been carried out by each country in their Initial National Communications. These assessments addressed a range of human systems⁸ (Annex P) and have been used for prioritising systems for Stage II Adaptation (Section A4).

A3. Institutional framework

8. As part of the National Communication process, the participating countries have established a myriad of institutional and legal frameworks for climate change. All climate change teams in the region are partially or wholly funded by government. Costa Rica, Guatemala, Honduras, Nicaragua, and Panama receive some government funding, while Cuba, El Salvador and Mexico are fully financed by their respective governments.
9. The institutional framework in each country is as follows:
 - *Costa Rica* coordinates vulnerability and adaptation issues through the Meteorological Institute.
 - *Cuba* has established the National Climate Change Group to bring together all the relevant governmental and non-governmental institutions. The Group is led by the Climate Centre under the Institute of Meteorology of the Ministry of Science Technology and Environment.

³ Intergovernmental Panel on Climate Change, *Climate Change 2001, Impacts, Adaptation, and Vulnerability* (2001).

⁴ United Nations Framework Convention on Climate Change, *Preliminary Report of the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention* (FCCC/SBI/2001/8)(July, 2001).

⁵ Intergovernmental Panel on Climate Change, *Climate Change 2001, Impacts, Adaptation, and Vulnerability* (2001).

⁶ As distinct from vulnerability driven by non-climate factors, such as economic and social development.

⁷ Agriculture, political parties, technologies, economies are all examples of human systems. Intergovernmental Panel on Climate Change, *Climate Change 2001, Impacts, Adaptation, and Vulnerability* (2001).

⁸ For instance, water resources, agriculture, coastal zones, land use, forestry, human settlements, and human health.

- *El Salvador* has created the Climate Change Unit under the Ministry of Environment. The unit in El Salvador hosts a vulnerability and adaptation programme that includes all relevant governmental and non-governmental institutions.
- *Guatemala* has the Climate Change Office within the Ministry of Natural Resources and the Environment, which is in charge of the follow up of the climate change activities in Guatemala, including those dealing with vulnerability and adaptation
- *Honduras* addresses vulnerability and adaptation issues from the Secretariat of Natural Resources and the Environment, as the national focal point for the UNFCCC, in close coordination with other governmental entities, and with the academic and professional sectors.
- *Mexico* also has a consolidated policy and technical arrangement. The National Institute of Ecology/Environment and Natural Resources Secretary/Semarnat is in charge of research, and the policy making is carried out by the Underministry of Planning and Environmental Policy and the Unit that Coordinates International Affairs/ Semarnat.
- *Nicaragua* has the Climate Change Office and the National Commission on Climate Change under the Ministry of Environment and Natural Resources.
- *Panama* has created the National Program on Climate Change (NPCC) attached to the National Environmental Authority (ANAM), as the national focal point for the UNFCCC. The NPCC has a vulnerability and adaptation subprogram that provides the technical and political institutional framework, with Centro del Agua del Tropico Humedo para America Latina y el Caribe (CATHALAC) as the executing agency.

A4. National priorities

10. As new information has become available, the selection of priority systems has been a dynamic process throughout the formulation of the National Communications. Countries from Mesoamerica and Cuba (Panama City, 19-22 March 2001) previously agreed that “human settlements” was a central issue for the region. Since high population density exists near coastal zones and in areas prone to climate risks, human settlements are severely vulnerable to climate change.
11. Through further consultations with countries, it transpired that many other systems (e.g., water, agriculture and food security, coastal zones, forests, human settlements and fisheries) are priorities. In order to accommodate a wider range of national priorities, the scope of the assessments has been expanded to incorporate socio-economic analyses of human systems. This variety of systems identifies the need for an integrated systems approach.
12. Although the priority systems will be further elaborated under the full project, three national priority systems were identified during the workshops and country visits: *water resources*, *agriculture*, and *human health*, as summarized in Table 1. Vulnerability in human health is highly dependent on economic parameters – the level and distribution of income and wealth, for example. Here, more than the others, issues of sustainable and equitable development will be important.

Table 1: National priority systems identified for Stage II Adaptation identified during workshops and country visits (preliminary)

Countries	National Priority Systems		
	1	2	3
Costa Rica	Water Resources	Agriculture	Human Health
Cuba (*)	Agriculture	Water Resources	Human Health
El Salvador	Agriculture**	Coastal Zones	Water Resources
Guatemala	Human Health	Water Resources	Agriculture
Honduras	Water Resources	Land Use & Forests	Human Health
Mexico	Water Resources	Agriculture	Forests
Nicaragua	Human Health	Water Resources	Agriculture
Panama	Water Resources	Human Health	Agriculture

* Due to logistical problems, a country visit to Cuba was not possible in the available timeframe; ** Including food security

A5. Country ownership

13. *Country eligibility.* The participating countries have all ratified the UNFCCC and are eligible for GEF funding for enabling activities through the financial mechanism of the convention. The countries in this project have either submitted their National Communication, or are in an advanced stage of their studies. Table 2 shows the actual and expected submission dates of the National Communications. Submission of the Initial National Communications is a prerequisite for participation in this project.

Table 2: Submission of Initial National Communications to the UNFCCC

Countries	Initial National Communications	
	Actual submission date	Expected submission date
Cuba		September 2001
Costa Rica	18 November 2000	
El Salvador	10 April 2000	
Mexico	9 December 1997*	
Guatemala		November 2001
Honduras	15 December 2000	
Nicaragua	8 July 2001	
Panama	20 July 2001	

* Mexico submitted its Second National Communication in July 2001

14. *Country driven-ness.* The countries of the region have endorsed the project development facility (PDF) project and participated actively during project development. Prior to the PDF, the following workshops and meetings were held to discuss the project:
- *Thematic Workshop on Vulnerability and Adaptation Assessment* (Mexico City, 8-10 September, 1999). The countries met for the first time to brainstorm about adaptation at a workshop organized by the National Communications Support Programme (NCSP).
 - *Regional Exchange Workshop on non-Annex I National Communications* (NCSP, Panama City, 24-26 June, 2000).

- *Country consultations* (Panama City, 23 March, 2001)⁹. These consultations were sponsored by the Government of Panama and CATHALAC.
15. Under the PDF, three workshops were held to formulate the project, including consultations with national climate change teams and relevant stakeholders.
- A global workshop on *Developing an Adaptation Policy Framework* (St. Adele, Montreal, Canada, 11-14 June, 2001). The purpose of this workshop was to review the *Adaptation Policy Framework*, the methodology for this project. It was organised by United Nations Development Programme-Global Environment Facility (UNDP-GEF), hosted by Environment Canada and held in association with a UNFCCC workshop on *Methodologies on Climate Change Impact and Adaptation*¹⁰ (Annex Q). The majority of the 45 participants from about 30 countries strongly supported the new approach and suggested refinements for its effective implementation.
 - A preparatory workshop (Panama City, 23-26 July 2001).
 - A regional workshop. This workshop was attended by national experts and climate change coordinators from the eight countries, resource persons, and observers from the UNDP Regional Bureau, and the Government of Switzerland (Panama City, 21-23 August, 2001).
16. In addition to these regional workshops, a task group comprising of six experts from El Salvador, Guatemala, Panama, and others, was formed to draft the initial proposal. The terms of reference for the task group members were prepared by the NCSP, and modified before endorsement by the national coordinators of the enabling activities. National teams were invited to propose suitable candidates to be interviewed for the task group. This proposal has largely been prepared by this task group, with technical support from the NCSP and IPCC experts. While this process has been time consuming and lengthy, the resulting proposal has much broader national and regional ownership than would be the case had it been prepared by international consultants only.

A6. Prior and on-going assistance

17. *GEF funding*. This proposal builds on a number of previous GEF-funded activities, as listed below:
- *Enabling activities*. All participating countries, except Mexico, have received GEF funding through UNDP for preparing parts of their Initial National Communications. A portion of this GEF funding was allocated to Stage I Adaptation assessments. Some countries (e.g., El Salvador, Panama, Honduras and Nicaragua) have received additional support from the GEF for: technology transfer, systematic observation networks and emission factors for national greenhouse inventories. None of the countries have received GEF support for their Second National Communications.
 - *National Communications Support Programme*. The 2-year programme was set up, with \$1.8M GEF funding, to assist non-Annex I Parties to complete their National Communications by providing technical assistance in inventories, mitigation and adaptation assessments.

⁹ Held back-to-back with the *Inter-regional Workshop of UNFCCC Consultative Group of Experts on non-Annex I National Communications* in Panama City, 19-22 March 2001.

¹⁰ United Nations Framework Convention on Climate Change, FCCC/SBSTA/2001/INF.4, www.unfccc.int (July, 2001)

- *CC:TRAIN*. This capacity building programme was implemented by UNITAR with the aim of assisting developing countries to implement the UNFCCC. Cuba participated in this program and received assistance with US\$120,425 for capacity building and training activities.
- *Assessments of Impacts of and Adaptation to Climate Change in Multiple Regions and Sectors (AIACC)(UNEP)*. This global project (GEF US \$7.5 Million) will fund about 20 research projects through a competitive process. To date, about 60 project concepts have been shortlisted for funding, including four multi-country proposals from Mesoamerica and Cuba. Should any of the four proposals from the region be selected, the NCSP/UNDP will work with the executing agency of the AIACC (START) project to ensure complementarity between GEF activities. Many members of the technical advisory groups of the AIACC and this project are the same.
- *Capacity Building for Observing Systems for Climate Change (UNDP)*. The aim of this global project is to improve global observing climate systems (GCOS) in developing countries, as requested by the Conference of the Parties to the UNFCCC. The project will launch a series of workshops to develop national capacity to participate in global observing systems. This project is complementary to the one proposed here and specific linkages between will be identified when the projects begin. Since UNDP is the implementing agency for the projects, the synergies will be easier to identify.

18. *Bilateral or other funding*. This project will be strongly linked to, and build upon previous, and on-going activities in the region.

- *United States Country Studies Program*. In 1995-1996, six Central American countries (Costa Rica, Nicaragua, Guatemala, Honduras, Panama, and El Salvador) participated in a regional climate change project funded by the US Country Studies Program. Using climate scenarios with average changes in precipitation and temperature, the Central American Climate Change project focused on vulnerability and adaptation assessments for the coastal zones, agriculture, and water resources sectors. In 1994-1996, Mexico carried out a country study, which included climate change impacts for: agriculture, water resources, forests, human settlements, energy and industry, drought and desertification, and coastal zones.
- *Support in the implementation of the UNFCCC and the Kyoto Protocol*. Between 1998 and 2000, the Environmental Program of Nicaragua-Finland (PANIF) carried out this project. Vulnerability and adaptation studies in the agriculture, forest and human health sector were supported with a total budget of US \$40,000.
- *Trade Convergence Climate Complex project under the Collaborative Research Network Program of the Inter-American Institute (IAI) for Global Change Research, 1999-2003*. Colombia, Costa Rica, Cuba, Ecuador, Jamaica, Mexico, Panama, Venezuela, and the USA are participating in a multi-objective study of climate variability for impact mitigation in the Trade Convergence Climate Complex, financed by the IAI, with a contribution on the order of US \$1,000,000. The grant recipient/executing agency is CATHALAC.

- *UNDP/ERD/CEPREDENAC¹¹ Regional Program for Risk Management.* This programme focuses its efforts to mainstream risk management into development as an essential component of sustainable human development. It aims to strengthen capacities at all levels for managing and reducing disaster risk, and to ensure that risk considerations are factored into all development programmes and processes. This programme is under the UNDP Strategic Framework for Disaster Reduction in Central America. The total budget for this programme is US \$480,000.
- *Country Case Studies on Climate Change Impacts and Adaptation Assessments in Cuba.* In 1997-1999, UNEP carried out a project in Cuba with US\$186,000, with co-financing from the Governments of Denmark and Switzerland.

18. Table 3 summarizes both multilateral and bilateral funding received by countries for their vulnerability and adaptation studies.

Table 3: Prior and on-going assistance provided to countries for vulnerability and adaptation studies (US \$)

Countries	GEF Enabling Activities Phase I and II		Others
	Total	V&A	
Cuba	153,500	2,500	185,000 (UNEP); CC:TRAIN
Costa Rica	450,000	0	US-CSP, 250,000 (Netherlands)
El Salvador	320,000**	82,162	US-CSP
Mexico	580,000	0	US-CSP
Guatemala	326,000***	80,000	US-CSP
Honduras	325,000**	65,000	US-CSP
Nicaragua	299,100**	15,000	US-CSP, 40,000 (PANIF)
Panama	298,700**	50,000	US-CSP

** Totals do not include funds received for Phase II enabling activities; *** Guatemala has submitted a GEF proposal for a Phase II enabling activity (US 100,000) but has not yet received the funding.

B. Project justification

B1. Problem(s) to be addressed and the present situation

19. The Initial National Communications for the region clearly show that knowledge on current and future vulnerability is inadequate for helping the countries to prepare for Stage II Adaptation to climate change (Annex P). Further capacity building is needed to develop adaptation strategies, policies and measures to reduce future vulnerability.
20. An underlying weakness of these national reports is that risks associated with climate change, in relation to extremes and variability, have not been assessed. The point is that climate variability and extremes are part of long-term climate change, and to which countries are particularly vulnerable. Furthermore, no assessments were made of the adaptive capacity of communities and countries to deal with climate risks.

¹¹ CEPREDENAC, Centre for the Coordination of Natural Disaster Prevention in Central America

21. Previous studies were mainly impact assessments based on climate scenarios. These assessments emphasized bio-physical systems¹², with less consideration of the impacts in the human dimensions on water needs, settlements, health, food, etc. Climate scenarios specify changes in means in temperature and precipitation, instead of also assessing changes in extremes, in relation to the climate variability part of climate change. Hence, for adaptation assessment, the use of climate scenarios can be limiting unless they are used to explore sensitivities.
22. Partly as a result of the methods used, the national reports often present an *ad-hoc* list of possible adaptations without evaluating and prioritising them. For all countries, a strategic adaptation framework of policy interventions has yet to be developed in the national context of deteriorating social, environmental and economic circumstances. A key problem that governments are facing is the harmonization and integration of adaptation to climate change within the normal business of sustainable economic development¹³.
23. Many of the potential measures for reducing vulnerability to climate change are needed in the development process. For this project, vulnerability is given as a function of climate change and variation to which a system is exposed, its sensitivity and adaptive capacity. To address the current lack of knowledge on current and future vulnerabilities, this project will assess all determinants of vulnerability, including the adaptive capacity of the priority systems.
24. Improving abilities to cope with current variability will provide short-term benefits against sustainable development criteria and increase adaptive capacity with respect to longer-term climate change. This approach is fundamental for linking adaptations to current climate with longer-term climate change.
25. Recognizing the complex linkages among the human and biophysical systems, the region has recognised the need to address the following issues in their Stage II Adaptation assessments; *understanding climate extremes, socio-economic conditions and vulnerability, adaptation strategies, and stakeholder engagement* – their motivation, resources, constraints and conflicts.
26. Central questions to be addressed include:
 - Who is at risk? To what? Where?
 - What are pathways of future development?
 - How does adaptation to climate change enhance sustainable development?
27. In several countries, risk assessment approaches are routinely used for managing uncertainty in planning. Robust adaptation responses will need to use risk assessment approaches and to account explicitly with changes in the frequency and/or severity of extreme weather events. Identifying critical risk and/or impact thresholds for systems in the face of climate variability can be the basis for highlighting both exposure and sensitivity; and their identification is the first step in focusing attention on the necessary building blocks of capacity to cope and ultimately to adapt.
28. A variety of adaptation strategies can be developed over different planning horizons and spatial scales¹⁴ to meet the differing needs of countries for financial, technical and policy instruments. Their varying needs underline the importance of elaborating a portfolio of adaptation strategies, policies, and measures to support appropriate policy interventions. Such strategies, particularly

¹² For instance, in hydrology, forests, agricultural yields, biodiversity.

¹³ See *Preliminary Report of the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention* (FCCC/SBI/2001/8)(July, 2001).

¹⁴ Measures can apply to short, medium, and long-term and be at the micro or macro scales.

through improved adaptive capacity, will contribute to minimise climate risks, and where possible, to benefit from any opportunities. Box 2 highlights some of the key constraints to the adoption of adaptation options as perceived by countries.

B2. Expected end-of-project situation

29. Building upon existing knowledge and filling in the gaps of Initial National Communications, eight Stage II Adaptation assessments will have been carried out by the end of the project. The assessments will cover a range of priority systems and will be relevant in a national development context.
30. The project will have contributed to the development objective (ultimate goal) through the strengthening of systemic, institutional and individual capacity of stakeholders to reduce vulnerability and to adapt to the impacts of climate change and risks. The project will also have strengthened stakeholder capacities to prepare policies and measures for Stage III Adaptation. Where spontaneous adaptation measures are identified, the project will facilitate their acceptance.

Box 2. Current constraints to adaptation, identified through problem analysis

Adaptive capacity: The countries have severe limitations in their adaptive capacity to reduce their vulnerability to climate change, including extreme events. As demonstrated by recent climate experiences, the capacity for managing climate risks, including seasonal forecasting, early warning systems, disaster preparedness, mitigation and relief, needs to be improved for the region as a whole. In most farming systems, adaptation has not been implemented to account for inter-annual or inter-seasonal variations in current climate. Experience suggests that adaptive capacity of the vulnerable populations is inadequate for overcoming barriers and for adopting policies and measures, even if relevant information was available.

Planning and programmes. At the national and regional level, many plans and programmes do not address climate variability, and may inadvertently increase the climate vulnerability. Although some countries have environmental legislation, the lack of their enforcement may increase climate vulnerability. In addition, many public sectors in the region are undergoing widespread privatisation and decentralization. In some countries, vulnerable populations may make policy and planning decisions without having the resources to implement them. Within the national political agenda, development strategies generally do not address climate vulnerabilities, nor consider adaptation responses. This policy context has significant implications for targeting the right type of stakeholders and to ensure that the policies and measures identified can be adopted.

Social, economic and environmental conditions. The deterioration of social, economic and environmental conditions increases the risks associated with climate variability and change. Given that a significant proportion of the population lives in places of high risk, loss of human lives, housing, and other infrastructure, is common. Climatic disasters can produce, in a few days, loss of years of economic development and of gains in the quality of life, and have resulted in a growing demand for international grants and loans for emergencies and long-term reconstruction. The effects of climate change on national economies and official development assistance have not been considered in most vulnerability assessments.

Source: Ligia Castro, this project (August, 2001)

31. The eight countries will have a better understanding of their current and future vulnerability, and will have developed a set of proposed adaptation strategies to reduce both their current

vulnerability, as well as the potential risks of extreme events due to climate change. It is anticipated that adaptation strategies will:

- *be oriented towards increasing the coping range for climate variability*, for instance, by incorporating climate risks into disaster management and preparedness, including forecasting and early warning systems. These measures will focus on strengthening the on-going planning process and sensitising stakeholders to opportunities for autonomous and planned adaptations.
- *re-orient existing policies in the private and public sectors to adaptation*, including both reactive and anticipatory measures, such as risk management strategies to better cope with climate risks in a number of areas; settlement patterns, building design, water supply and demand, coastal zones, cropping /tillage practices, etc.
- *evaluate adaptation technologies and technology transfer* through ideas for demonstration projects; *institutional and regulatory adaptation* aimed at making development more sustainable by building adaptation considerations into development projects; *institutional and human capacity building*, including research, education and awareness.

B3. Stakeholder participation

32. Serving both to meet the capacity building and adaptation goals of the project, stakeholders will be engaged in the project through several mechanisms. Effective mechanisms for engaging stakeholders include; participatory processes, information dissemination, consultations, surveys, workshops to exchange and validate information, and co-operative actions. Stakeholder participation is considered as an integral part of the capacity building process.
33. The project will engage stakeholders in response to two concerns. First, adaptation planning requires stakeholder participation of those involved in adapting to climate change. Second, an analysis of the most vulnerable groups is crucial for understanding adaptation processes. The first activity in this project involves a detailed analysis of the stakeholders based on socio and environmental, and other criteria. Analysis of the determinants of the adaptive capacity of stakeholders will also minimize the project risks discussed in Section F. Related to equity, effective adaptation is likely to vary considerably among different populations exposed to climate change. The contribution of stakeholders to this project is summarised in Box 3.
34. The approach will assure that stakeholders, including the vulnerable and usually poor populations, are able to implement their own adaptation strategies to address climate change for a given system. Their active participation throughout the project will assure that the capacities that will be created, or enhanced, are those needed to decrease climate impacts and damages on the affected populations and to take advantage of the opportunities within each system.
35. This stakeholder approach is innovative in its application to adaptation projects. It is considered as fundamental, since adaptation is a long-term process; not a one-time solution for a given problem. Hence, the stakeholder approach is treated as the highest priority in this project. Project activities have been designed to engage explicitly key stakeholders, with adequate resources allocated for this purpose.

36. The focus of this project is also consistent with the UNFCCC, and its statement of common, but differentiated responsibility in the context of adaptation to climate vulnerability and change. The integration of equity considerations in adaptation policies and measures requires a long-term perspective for building adaptive capacity. Furthermore, attention is thereby expanded beyond the simple considerations of technological transfers from developed to developing countries.
37. Key stakeholders will be involved in all steps of this project¹⁵. For this purpose, the term ‘key stakeholders’ is used to mean individuals, groups, or institutions that have an interest or stake, or could be potentially affected by the outcome of the project. The primary stakeholders are the most affected and vulnerable populations to climate risks for a specified human system in each country. They are the direct beneficiaries of the project. The secondary stakeholders¹⁶ are those who are able to influence the success, or failure, of the project.

Box 3. Contribution of Stakeholders to an Adaptation Project

- *Stakeholders have current and past experience* of vulnerability and adaptation to climate variability and extremes. Their knowledge can help researchers develop a better understanding of the biophysical and socio-economic linkages.
- *Stakeholders have a frame of reference* to place adaptation in an economic, cultural, and experiential context. Since adaptation requires a change in behaviour in response to anticipated or experienced stimuli, this frame of reference is needed for identifying feasible options.
- *Stakeholder behaviour and perception of risk* (climatic and related) is vital to the assessment process. Merely making lists of possible adaptations without reference to this experience will not be successful. Stakeholder behaviour needs to be brought into the assessment process.
- *Stakeholders often have local, historical and traditional knowledge* not available to the research community

Source: UNDP-GEF Workshop for Developing an Adaptation Policy Framework, St Adele, Montreal, Canada, 11-13 June, 2001

38. By involving key stakeholders, the following issues will be addressed as a matter of course: a) recognizing common or divergent interests among stakeholders; b) reconciling existing or potential conflicts among stakeholders; c) incorporating stakeholders’ knowledge and perceptions into the project design; d) evaluating the legal and political mandates and resources of key stakeholders for influencing the project outcomes; e) assessing the ability of stakeholders to implement adaptations in terms of social, political, and financial leverage.
39. At the beginning of the project, criteria will be defined to identify the key stakeholders for a given system¹⁷, and participatory and consultative mechanisms will be established to engage them. Methods for stakeholder identification, analysis and participation have been developed in a variety of context and this experience will be brought to bear on the issues of climate change adaptation.

¹⁵ See Figure 1, *UNDP-GEF Workshop for Developing an Adaptation Policy Framework*, St Adele, Montreal, Canada, 11-13 June, 2001

¹⁶ Other stakeholders may include international bodies: development banks, development agencies, trade organisations.

¹⁷ See Activity 1.1.2 in Section E.

40. Stakeholders can identify constraints for implementing policies and measures. An understanding of these constraints will help to identify the risks and opportunities for the adoption of strategies, policies and measures – final outputs of this project.
41. Constraints include: a) inefficiency and lack of transparency in the public sector; b) lack of flexibility in policy options, due to the external and national debt; c) existence of regional and national problems, be they commercial, civil, political and/or ethnical in nature; d) reduction of the public sector in many of its traditional functions, such as, education, public health, public works, energy, communications, retirement regime, social security, financial system, etc., due to privatisation; e) decentralization of certain public administration duties towards local governments, without the necessary allocation of resources; and f) absence or little support to scientific research and technological development, along with the lack of access to technological innovation, particularly on global change issues.
42. Stakeholder groups will vary according to the system, such as: a) water resources, b) agriculture and food security, c) human health, and d) coastal zones. Key stakeholders may include: small farmers and fishermen, as well as cooperatives of local producers; communities affected by floods and/or frequent and severe droughts; irrigation associations; centres of hydro-meteorological forecasting, technological development, research and disasters prevention; forest and fishing local offices; health and education local services; local water supply offices; environmental non-governmental organisations (NGOs) and local development promoting organizations; municipalities; national or regional universities and research centres; political parties and civil servants from key sectoral governmental entities (e.g., agriculture, environment, education, health, public works, energy, financing, economy, public security, etc.).
43. Once the key stakeholder groups have been identified, their roles will be defined to provide coordinated actions during the whole project cycle. Key steps in the project cycle include the prioritisation of human systems and identification of suitable adaptation policies and measures. Stakeholders will also participate in monitoring and evaluation activities at two levels. First, the project's performance will be monitored and evaluated using participatory mechanisms and tools, as described in the Monitoring and Evaluation Section of this document. Second, stakeholders will monitor and evaluate changes in the country's adaptive capacity in the selected priority sectors beyond the lifetime of the project.
44. In order to assure that stakeholder roles are effective, appropriate capacities should be created or strengthened through, *inter alia*, the establishment of a genuine culture of monitoring and evaluation in the participating countries; the development of a monitoring and evaluation system for the adoption of adaptation, including indicators; the development of an information system; and the training of key stakeholders in project monitoring and evaluation techniques. Strengthening the capacity of national experts to monitor changes in adaptation capacities and the effectiveness of policies and measures is a key element of the project.

C. Project strategies

45. The goal is to advance understanding of future vulnerability in the region and to build capacity for appropriate strategies, policies and measures for adapting human systems to the impacts of climate change, including risks associated with variability and extremes.
46. The strategy is based on the elaboration and application of an *Adaptation Policy Framework*, a major benefit for other regions. This framework was initiated by the NCSP to assist non-Annex I

Parties develop Stage II Adaptation in response to a growing need, as reported in several of UNFCCC¹⁸ and NCSP reports¹⁹.

47. The framework will build upon the results of conventional impact studies and will heavily draw upon the experiential knowledge of countries in regard to adaptation to climate variation. It will provide a methodology for preparing the next generation of vulnerability and adaptation studies for potential inclusion into Second National Communications of non-Annex I Parties. Key innovations of the framework are listed in Box 4.
48. The NCSP will further elaborate the *Adaptation Policy Framework*. A suite of methods and supporting technical papers will be identified to implement each component of the framework and project activity. A key feature of the framework is that it places equal emphasis on technical assessments and social processes. The concern is to identify or develop innovative methods that are relevant to developing country conditions and to find more effective ways of improving the interface between biophysical models with softer qualitative models of social system and human behaviour.
49. Researchers and users of the framework will be engaged in an interactive dialogue throughout its elaboration and application to ensure that the framework is relevant to the countries' needs and that it can be replicated in other regions. The technical advisory committee for the framework will also provide technical oversight of project outputs to ensure the linkages between the national project activities and framework development. (See Section G.)

Box 4. Key innovations of the UNDP-GEF *Adaptation Policy Framework*

- Greater attention to *current* climate vulnerability and adaptation as a departure point for the baseline analysis;
- Explicit inclusion of adaptation to *climate variability* and extreme events, as well as longer-term average *climate change**;
- Development, testing and application of an analytical framework for strengthening *adaptive capacity* to assess vulnerability and to prepare for adaptation;
- Specific examination of *current development activities*, especially those activities that increase vulnerability to climate variability and change, or which are maladaptive**;
- Integration of adaptive strategies, policies and measures into development plans and activities.

*The framework recognizes that systems change over time, and that current experiences need to be adjusted accordingly; **A maladaptive action is one that is contrary to adaptation; it refers to actions that tend to increase vulnerability to climate change. A maladaptive action is often adopted because it solves an immediate and urgent problem.

50. There will also be an element of exchanging common lessons beyond the region, as other countries confront the same set of tasks using a common framework, and by crafting its application to their particular circumstances. As other countries move onto Stage II Adaptation,

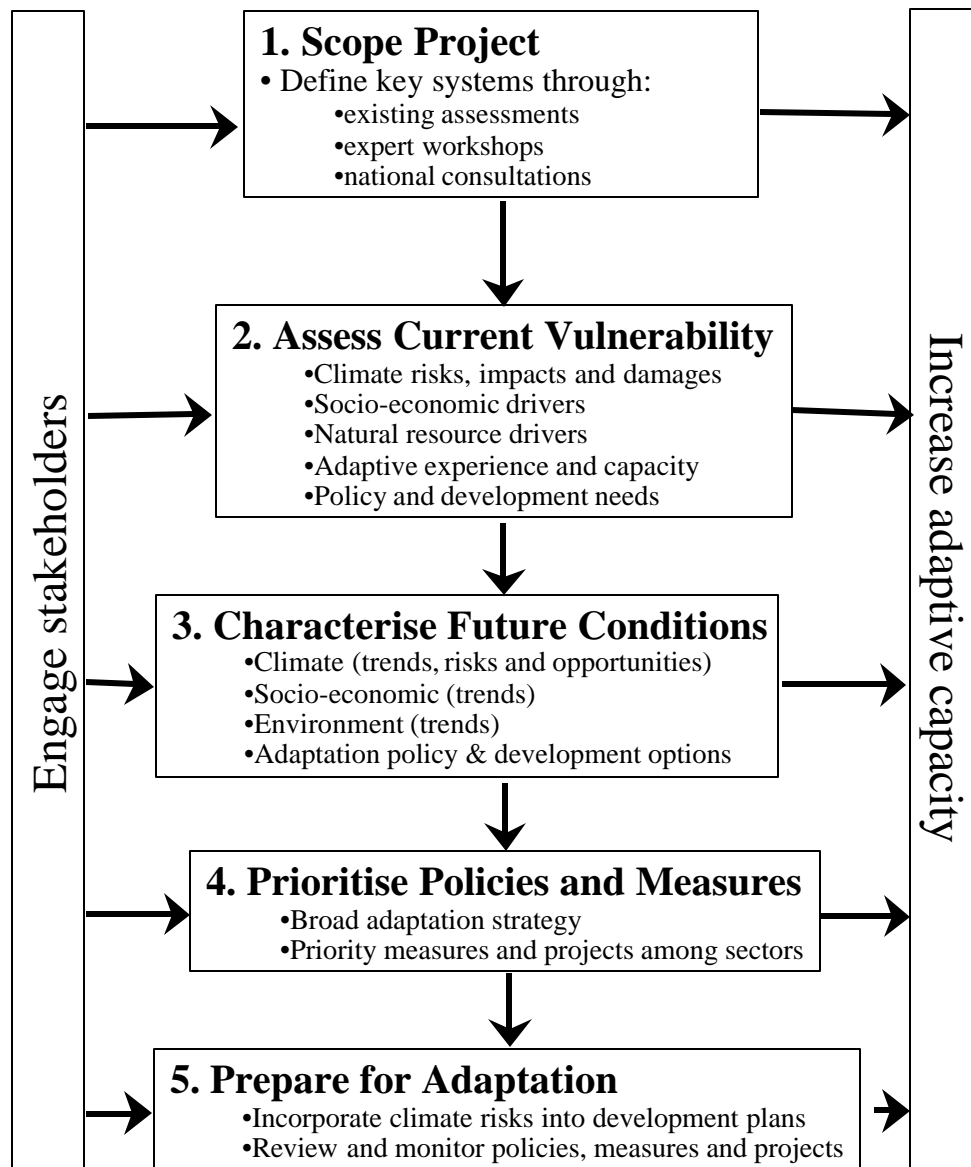
¹⁸ See *Preliminary Report of the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention* (FCCC/SBI/2001/8)(July, 2001); *Report of the Inter-regional Workshop of the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention* (FCCC/SBI/2001/INF.1)(June, 2001).

¹⁹ See NCSP thematic workshop reports on vulnerability and adaptation in 6 sub-regions (1999, 2000), www.undp.org/cc/workshop1.htm

they can adapt and apply the framework, thereby engaging in their own regionally-focused initiative.

51. To aid project formulation, the *Adaptation Policy Framework* is presented in 5 steps (Figure 1). It is designed to identify adaptations for a given system at any level of scale (local, national, regional). The framework recognizes that local-scale interventions should be consistent with and inform national-scale policies. The framework also assumes that systems change over time, and that vulnerabilities and adaptation to current experiences will not necessarily be the same in the future. During elaboration of the framework, special consideration will be given to these issues by:
 - Identifying multiple interventions from the local to the national scale;
 - Exploring the linkages between these interventions at different spatial and temporal scales;
 - Elaborating how varying levels of current vulnerability will characterise different human systems in the future;
 - Specifically examining how local-scale interventions can best influence national policy and formulation.
52. Figure 1 shows how these processes, engaging stakeholders and improving adaptive capacity underpin the framework. The stakeholders are involved at every step of the analysis (Steps 1 to 5) and adaptive capacity is improved as an output of each step.

Figure 1: The Adaptation Policy Framework for Capacity Building for Stage II Adaptation



53. The 5 steps of the framework can be further divided into two categories. The first category (Steps 1 to 3) involves: assessment of the current and future vulnerability; and consideration of technical, socio-economic and policy conditions. The national assessments will place more emphasis on addressing the gaps identified in their Initial National Communications. For instance, most countries did not assess current or future climate risks, damages, and adaptive capacity nor evaluate their experience with responding to current climate risks. The second category of steps involves policy formulation (Steps 4 to 5); that is, identification of strategies and specific instruments to incorporate adaptation into sustainable development patterns. A more detailed description of these activities can be found in Section E.

54. Under a regional umbrella, countries will carry out national assessments following the framework, but according to their own needs and for their priority system(s). The use of a common framework will ensure consistency among national studies, but it will also encourage each country to implement the studies in its own way. This flexibility is necessary to cater adaptation to local needs. The knowledge gained through the project for these systems will be shared among countries so that each will benefit from pilot studies in other countries.
55. The regional ownership of the project will be driven by a sense of a common identity since the participating countries share many cultural aspects, such as language. While there are differences in adaptive capacities among countries in the region, the countries with more capacity will be able to help strengthen capacity in other countries under a regional framework, emphasizing the added-value of a regional project. A number of regional activities, such as training and information exchange, will be shared among countries where common needs are identified. In effect, this strategy constitutes a decentralisation of the NCSP training activities to the region. Priority is also given to the quality control of project outputs through peer review at the regional and international level.
56. The project will emphasize ‘learning by doing’ to improve adaptive capacity of institutions, government, private sector and civil society. In doing so, the project will identify innovative adaptation policies, strategies and measures, to cope with climate change in critical systems of each of the eight countries participating in the project.

D. Development Objective

57. *To Adapt Human Systems to Climate Change.* The project aims to strengthen the adaptive capacity of human systems to reduce vulnerability to the impacts of climate change, including climate variability, risks and extreme events for priority systems throughout the Central America, Mexico and Cuba Region.

E. Immediate Objectives, Outputs, and Activities, Expected Results

58. Two immediate objectives will contribute to the development objective. *Immediate objective number one* aims to strengthen adaptive capacity for assessing vulnerability and adaptation, including the influence of climate variability and extreme events. This objective is mainly concerned with technical, social and economic analysis of systems. *Immediate objective number two* aims to reinforce national capacity to adapt. This objective mainly involves adaptation evaluation, prioritisation, and review of implementation.

E1. Immediate Objective, Outputs, and Activities

Immediate objective 1: To strengthen systemic, institutional and individual capacity of stakeholders to further assess vulnerability and adaptation to the impacts of climate change, including climate variability, risks and extreme events, in priority systems at the regional, national and local level.

Output 1.1: Assessment of vulnerability to current climate variations for a priority system in each country.

A more systematic evaluation of the priority systems is required. Although climate change teams have already selected priority system(s), a more rigorous evaluation is needed as a basis for discussion with key stakeholders. Scoping exercises, based on social, environmental and economic criteria, will give a higher weighting to the human dimensions of adaptation. Further national consultations will be required to identify the key stakeholder groups and to establish mechanisms for engaging them, as well as defining their roles. This analysis will also highlight the socio-economic and policy constraints under which stakeholders will operate. Identifying these constraints at the beginning of the project will help the national teams to develop realistic strategies and policies for implementation. A peer-review mechanism will also be established from the beginning (Activities 1.1.1 to 1.1.4)

Assessment of vulnerability to current climate variations include; damage from recent climate events, associated risks, natural resource management, and identification of adaptation measures in place. This analysis differs from the initial round of vulnerability assessments by explicitly including adaptation from the beginning of the analysis. The information for this output will be compiled from existing data, reports, plans and programmes. In some cases, new information may be needed. A critical step will be the synthesis of the different components of the analysis to derive the risk profiles, both nationally and regionally. (Activities 1.1.5 to 1.1.10)

This output corresponds to Steps 1 and 2 of the *Adaptation Policy Framework*.

National activities:

- 1.1.1 Define the priority and scope of the system, based on social, environmental and economic criteria
- 1.1.2 Identify key stakeholders, taking into account their roles, exposure to climate risks, and adaptive capacity to cope with current climate, and the relevance of project outputs to them
- 1.1.3 Establish a strategy and mechanisms for engaging key stakeholders throughout the project
- 1.1.4 Establish a peer-review mechanism, including stakeholders
- 1.1.5 Assess current climate risks, impacts and damages for the selected priority system, based on current experiences and existing/additional studies, taking careful note of variability in the current climate and associated extreme events
- 1.1.6 Assess current environmental vulnerabilities and natural resources management for the selected priority system, based on experiences and existing/additional studies
- 1.1.7 Assess current socio-economic conditions for the selected priority system, based on existing development, programs and projects
- 1.1.8 Identify autonomous adaptation measures already in place with stakeholders
- 1.1.9 Integrate assessments from Activities 1.1.5 to 1.1.8 to identify current risk profiles and opportunities
- 1.1.10 Prepare, peer review, publish, and translate national assessment

Output 1.2: Assessment of vulnerability to future climate for a priority system in each country.

An assessment of future vulnerability and identification of potential adaptation measures will be carried out to characterise future conditions. This analysis is an extension of current vulnerability under future conditions using a suite of methods including, but not limited to, climate and socio-economic scenarios. Recognizing that adaptation involves both additional measures and reinforcement of existing ones, the timeframe of the projections will correspond to the short (<5 years), medium (5-10 years) and long-term (>10 years). These policy timeframes will provide a step towards reducing long-term climate risks and to expand the coping range under future climate. Risk patterns will be prepared to facilitate policy decisions. Similarly, these patterns will be derived for short and medium term by taking account of current variability; and the long-term by superimposing current variability onto climate futures. (Activities 1.2.1 to 1.2.7.)

This output corresponds to Step 3 of the *Adaptation Policy Framework*.

National activities:

- 1.2.1 Assess future climate risks, impacts and damages for the selected priority system, based on current experiences, and existing/additional studies
- 1.2.2 Assess future environmental trends for the selected priority system, based on current experiences, and existing/additional studies
- 1.2.3 Assess future socio-economic conditions for the selected priority system, based on existing development, programs and projects
- 1.2.4 Identify potentially new adaptation measures for minimizing risk to future climate change, taking into account other trends such as population, economy and environment
- 1.2.5 Integrate assessments from Activities 1.2.1 to 1.2.4 to identify changes in risk patterns and opportunities, identifying links between sectors, vulnerable groups, and stakeholder responses
- 1.2.6 Prepare, peer review, publish, and translate national assessment

Output 1.3: Improved knowledge of current and future vulnerability shared and disseminated widely.

Adaptation assessment will be re-enforced through the provision of technical assistance, education and training, regional and international linkages, and public information and awareness. Significant project resources will be allocated to regional training activities and implementation of a communication strategy. At the national level, immediate objective one will be achieved through dissemination of the results to the stakeholders, in particular for raising public awareness to the risks and opportunities of climate change. Care will be taken to communicate with stakeholders in terms of information that they will find relevant and credible. At the regional level, a communication strategy will be developed based on Outputs 1.1. and 1.2 and disseminated through the regional institution. The NCSP will elaborate the framework methods and disseminate information to other regions. (Activities 1.3.1 to 1.3.7.)

This output corresponds to Steps 2 and 3 of the *Adaptation Policy Framework*.

Regional activities:

- 1.3.1 Provide technical assistance for national climate change teams to achieve Output 1.1 and 1.2, through thematic (2) and regional (2) workshops
- 1.3.2 Elaborate and disseminate framework methods

- 1.3.3 Implement a regional communication strategy²⁰, including a regional web page to disseminate project findings and results
- 1.3.4 Prepare, peer review, publish, and translate 2 integrated regional reports from Activities 1.1.10 and 1.2.6
- 1.3.5 Communicate results to stakeholders
- 1.3.6 Identify regional initiative(s) to promote linkages with existing regional and international vulnerability and adaptation research programs
- 1.3.7 Identify regional initiative(s) to promote post-graduate programs on vulnerability and adaptation and climate-change related matters in the region on an on-going basis

National activities:

- 1.3.8 Establish a communication strategy, with input from stakeholders based on their interests and motivation
- 1.3.9 Communicate results of the assessments to the key stakeholders, including the public
- 1.3.10 Carry out consultations and awareness raising activities with stakeholders

Immediate objective 2: To strengthen systemic, institutional and individual capacity of stakeholders to develop strategies and to implement policies and measures to prepare for adaptation at the regional, national and local level.

Output 2.1: Adaptation strategy identified, with innovative policies and measures evaluated and prioritised for each priority system.

This output should identify specific policies and measures for adaptation in a system for a broad strategic framework. The strategy will be tailored to stakeholders, e.g., governments, farmers, water users, planners. The strategy will include the evaluation of barriers and opportunities for implementation of adaptation, and identify the capacity that exists to implement future adaptation on the basis of current adaptation experience (baseline). Adaptations will also be specific to stakeholder groups in many circumstances.

Evaluation and prioritisation of policies and measures will take account of development priorities, existing policies to manage the system under investigation, the degree of climate risk, the location, extent and reversibility of the damage, etc. The goal of the evaluation would be to modify current policies, suggest new directions, bring beneficial autonomous adaptations into planning, discourage harmful autonomous adaptations, etc.

Characterization of the adaptive capacity to implement policies and measures is key. Indicators will be developed to monitor and evaluate the effectiveness of adaptation strategies, policies and measures. Stakeholders will provide input for determining appropriate criteria and capacity indicators. This analysis will identify how adaptation can expand the coping range to future climate. This expansion can be done through measures to increase general resilience to future variability and change, or can be designed to reduce the exposure to specific risks. (Activities 2.1.1 to 2.1.7).

This output corresponds to Step 4 of the *Adaptation Policy Framework*.

National activities:

- 2.1.1 Identify adaptation strategy for selected priority system

²⁰ Training will also be provided by the UNDP to the regional centre on the rules and regulations of UNDP-GEF projects.

- 2.1.2 Evaluate and prioritise policies and measures related to the adaptation strategy, taking into account those identified under Activities 1.1.8 and 1.2.4
- 2.1.3 Evaluate and prioritise strengths, weaknesses, opportunities and threats for implementation of policies and measures to adapt to climate change in selected priority systems
- 2.1.4 Develop indicators/criteria²¹ to assess effectiveness of adaptation policies and measures in selected priority systems with the involvement of key stakeholders and by using capacity indicators as suggested in the logframe matrix (Annex K) and elsewhere
- 2.1.5 Characterize the adaptive capacity of selected systems to implement existing policies and measures, using indicators/criteria from Activity 2.1.4
- 2.1.6 Characterize the additional adaptive capacity required of selected systems to implement future policies and measures, based on the stakeholder analysis from Activity 1.1.2 and using indicators/criteria from Activity 2.1.4
- 2.1.7 Prepare, peer review, publish, and translate national strategy

Output 2.2: National plan developed to prepare for and to incorporate adaptation into development.

Through stakeholder involvement, the national plans will be developed to outline how policies and measures for different planning horizons over the short-term, medium-term and long-term can be implemented. By reviewing strengths, weaknesses, opportunities and threats in implementing adaptation, this activity could also identify important gaps and could be used as a concrete step towards the next steps for implementing adaptation measures. Questions include: How easy, practical, feasible is it to implement such measures? What are the strengths and weaknesses? Opportunities and threats? How can the results of the study be replicated elsewhere in the country? For which other systems? How did the stakeholder approach work? This output will also include the design of an innovative adaptation monitoring system for measuring the progress of adaptation in follow-up activities. The national plan will be published as part of the Second National Communication. The national project co-ordinator for climate change will integrate the adaptation plan into the National Communication along with other studies, using the existing national government approval process. This final step is expected to be straightforward since this project will be linked to the national institutional framework for the National Communication (Activities 2.2.1 to 2.2.5.)

This output corresponds to Step 5 of the *Adaptation Policy Framework*.

National activities:

- 2.2.1 Review strengths, weaknesses, opportunities and threats related to opportunities for incorporating adaptation into development patterns
- 2.2.2 Develop national plan and mechanisms for its implementation. The plan will include concrete steps for stakeholders to overcome barriers to and to take advantages of the opportunities to incorporate into relevant programmes.
- 2.2.3 Validate and agree national plan with key stakeholders
- 2.2.4 Design a monitoring and evaluation system for adaptation, with input from key stakeholders, based on improved indicators for measuring progress of policies and measures (Annex K)
- 2.2.5 Prepare, peer review, publish, and translate national plan as part of the National Communications. This plan should also provide detailed proposals to implement adaptation.

²¹ For example, cost-effectiveness, environmental impact, synergies with multilateral environmental agreements

Output 2.3: Improved knowledge of national plan for adaptation shared and disseminated widely.

Technical assistance, regional and international linkages, education and training, and public participation are essential elements for policy development, and to increase the adoption potential of adaptation measures.

This output corresponds to Steps 4 and 5 of the *Adaptation Policy Framework*. (Activities 2.3.1 to 2.3.6.)

Regional activities:

- 2.3.1 Provide technical assistance for national climate change teams to achieve Output 2.1 and 2.2, through thematic (2) and regional workshops (1)
- 2.3.2 Elaborate and disseminate *Adaptation Policy Framework*
- 2.3.3 Implement a regional communication strategy, including a regional web page to disseminate project findings and results
- 2.3.4 Prepare, peer review, publish, and translate 1 regional report
- 2.3.5 Establish regional initiative(s) to promote linkages with existing regional and international climate policy programs
- 2.3.6 Establish regional initiative(s) to promote post-graduate programs on adaptation policy on an on-going basis

National activities:

- 2.3.7 Establish a communication strategy, with input from stakeholders based on their interests and motivation. This strategy should address how funds will be attracted to implement adaptation.
- 2.3.8 Communicate results of the assessments to the key stakeholders, including the public
- 2.3.9 Carry out consultations and awareness raising activities with stakeholders

E2. Expected Results

- 59. The results of this project must be seen essentially as capacity building process, meaning:
- 60. *Full project completed* to demonstrate how innovative adaptation policy can be formulated for a range of systems at the national level through regional cooperation. The results of the pilot project will facilitate replication through the transfer of experience to other countries and regions. The project will advance understanding of adaptation under the UNFCCC process.
- 61. *Eight national plans for adaptation prepared*, where the key stakeholders, involved fully during the development of the project, will commit to the implementation of the adaptation policies identified by the project. The plan should be endorsed in each country by, *inter alia*, affected vulnerable populations, political parties, experts, academia, associations, cooperatives, local agencies, small farmers, private firms, local NGOs, municipalities, representatives of the relevant ministries.
 - *National capacity created and/or increased to assess vulnerability and adaptation to present and future climate, and climate variability, and for developing and implementing adaptation strategies, policies, and measures in the context of national and regional development.*

- *National capacity created and/or increased to reduce climate risks and impacts* by incorporating climate variability and extremes events as a step towards the reduction of vulnerability to long-term climate change. Technical capacity increased to evaluate vulnerability and identify adaptation options will open possibilities for developing new activities and opportunities in the region.
 - *Pilot or demonstration projects* will be proposed to show how adaptation planning and assessment can be translated into real benefits following the staged approach endorsed by the COP in its Decision 11/CP.1. These pilot proposals will ensure that the project is orientated towards longer-term goal of implementing adaptation.
 - *Knowledge improved of the linkages between vulnerability and climate change* within socio-economic activities and development policies. Integration of adaptation into sectoral plans and aggregated policies will introduce a new approach to socio-economic development patterns.
 - *Public awareness of climate risks increased*, and the opportunities and need for the adoption of the adaptation plan.
62. *The UNDP-GEF Adaptation Policy Framework elaborated and applied*, including wide dissemination of the framework, methodologies and tools, and the project results within the region and elsewhere. Monitoring systems for measuring progress in the application of adaptation policies and measures, and adaptive capacity of stakeholders developed as a part of the methodology.
63. *New and expanded modes of cooperation identified* at the regional level on an institutionalised basis; existing national and regional institutions strengthened that are relevant to climate change programmes on adaptation at the national and local levels, and joint actions identified in regional co-operation for adaptation.

F. Risks, Sustainability and Replicability

64. *Risks.* At the development objective level, risks to the successful completion of the project in each country include uncertainties in assuring continuous support by national governments due to administration turnover during the project period. The involvement of local-affected populations, key stakeholders and political parties, as well as the establishment of appropriate mechanisms to conduct a participatory process from the very beginning of the project, will help to minimize the risk of failure.
65. At the immediate objective level, project risks are linked to the success or failure in the creation or strengthening of national capacities that are fundamental to the appropriate development of the various activities. For instance, risks are associated with the adoption potential of the policies and measures identified by the affected vulnerable populations. In this regard, a number of project activities are designed to minimize risk by:
- Analysing determinants of adaptive capacity of key stakeholder groups.
 - Targeting stakeholder who need to act urgently and convince them of the merits of doing so. Developing adaptation policies and measures consistent with social, economic, and political objectives, and the development context of the countries.

66. *Sustainability.* The project can contribute to sustainable development of the region if adaptation is integrated into development patterns and if adaptation policies and measures become institutionalized nationally. This step requires that the governments commit to including adaptation in the relevant sectoral programs and activities. (Activities 2.2.1, 2.2.2, 2.2.3)
67. Sustainability is enhanced by the strong emphasis on regional and international cooperation, exchange, interlinkages and networking. Through these efforts, individual as well as institutional capacities will have been created and strengthened in national institutions. Through the iterative, participatory process of the project, ownership within the countries will also be fortified. Evidence for such regional momentum within the participating countries is already significantly visible since the First National Communication process begun. (Activities 1.3.6, 2.3.5)
68. Capacity building in adaptation is a continuous process. It is therefore necessary to create an on-going network for information exchange and dissemination that continues after the project has formally ended. Continuous training, education and post-graduate programs within the framework of cooperative international or regional agreements, in collaboration with the private sector, universities, research centres and NGOs after the project has finished will further enhance the sustainability of the project. Identifying and propagating the types of information that decision makers will find credible is essential. (Activities 1.3.7, 2.3.6)
69. A national plan and agreement with the relevant vulnerable populations, political parties, experts, small farmers, cooperatives, associations, academia, private firms, municipalities, relevant ministries, and NGOs shall be prepared in each country. This agreement will highlight the risks, impacts and damages of climate variability and change, the importance of implementing adaptation measures and the linkages to sustainable development. The agreement should also address national commitment for the implementation of the adaptation policies developed and proposed by the project. (Activity 2.2.3)
70. Sustainability of the project will also be achieved if the project succeeds in attracting donors or other financing institutions to implement adaptation activities developed by the project. (Activity 2.3.7)
71. *Replicability.* The countries of Central America, Mexico and Cuba will form the pilot region to develop and test the Adaptation Policy Framework for prioritised human systems within this project. To promote replicability of the project in other vulnerable regions of the world, the applied methodologies, achievements and project results will be widely disseminated by the corresponding agencies and the national climate change coordinators in international conferences, workshops and through publications. With regard to international dissemination of project results, it is important that all six official languages of the UN are used to guarantee that the information is reaching a maximum number of readers.
72. The diversity of the pilot region in terms of geographical, physical, socio-economic and cultural factors will most likely lead to the development of a flexible *Adaptation Policy Framework*. Other regions of the world will then be able to take this elaborated framework and refine it according to their needs and requirements. It is expected that up to six other regions in the world can participate in similar projects. In this way, the achievements of the completed project and the strategies of adaptation will contribute to the programming of the Second National Communications.

G. Institutional Arrangements

73. The UNDP will serve as the GEF implementing agency to strengthen and develop linkages with other relevant projects. It will support the executing agency in managing administrative and accountancy issues related to the project implementation. Opportunities to collaborate with the UNDP-GEF Small Grants Programme will be identified as appropriate, in order to involve the stakeholders at the community level and to ensure that the project is relevant to individuals who are most vulnerable to the impacts of climate change. Linkages will be made to the other UNDP-GEF initiatives, such as the Global Climate Observing Systems. The UNDP Human Development Index and inputs to the Rio plus 10 process will be identified as appropriate.
74. To reflect UNDP regulations (see paragraph 90) and the specific nature of the project, UNDP country offices of the participating countries will:
- Be fully accountable for the efficient administration and management of the project at all stages of monitoring, evaluation and reporting;
 - Facilitate communication with corporate UNDP-GEF; and
 - Ensure a holistic approach to vulnerability and adaptation with risk management.
75. The CATHALAC will be the Executing Agency for the project. CATHALAC has ten years' of experience within the climate research and policy development arena. At the regional workshop in Panama (21-24 August, 2001), all eight countries agreed that CATHALAC was a suitable regional centre of excellence, which services all the participating countries. Financial and technical cooperation by CATHALAC Air-Sea-Land Interactions and Human Dimensions Program are under development. By strengthening the capacity of CATHALAC as a regional centre, the scientific, technical, social and economic dimensions of the project will be fully addressed. Furthermore, both regional and country ownership and sustainability will be ensured.
76. A Regional Project Implementing (RPI) unit will be established in CATHALAC to ensure effective coordination and management of project activities, including the day-to-day administration. As agreed in regional workshop in Panama (21-24 August, 2001), project funds will be targeted to the technical work. Staff at the RPI will therefore be limited to a Regional Project Manager and an assistant. A number of experts may eventually provide technical support to the RPI to implement the project activities on a needs' basis. Areas of expertise may include: environmental management, climate change, planning and policy development; an Information Systems Coordinator/GIS specialist.
77. Each country will nominate a National Implementation Liaison (NIL) to facilitate project implementation at the national level. The NILs will oversee the execution of national activities, be responsible for technical and methodological issues, carry out any reporting functions required for monitoring and evaluation of the project, co-ordinate with government institutions, universities, NGOs, and other relevant stakeholders, which are to be identified at the beginning of the project. They will be responsible for sub-contracting national experts to carry out project activities and quality control of technical material. The RPI and the NILs will be located in existing regional and national institutions, as to strengthen those institutions and to create effective information networks. During project execution, the functions of the RPI and the NILs will be progressively integrated into the regular programs of their respective host institutions to ensure sustainability.
78. Project implementation arrangements between the RPI and the NILs will be standard Technical Cooperation Agreements between CATHALAC and the agencies of participating the countries. The agreements will state responsibilities of each Party, and describe the products and services to be provided under the agreement.

79. A Technical Advisory Committee (TAC) will be established to provide technical advice to support project implementation and to elaborate the Adaptation Policy Framework. This committee will be jointly co-ordinated by the NCSP and the Project Secretariat, and will consist of about 8-10 regional²² and international experts. Representatives from appropriate regional and international bodies (e.g. IPCC, IAI, UNDP/CEPRENAC/ERD programme) may participate, as needed. The NCSP, which is currently housed at UNDP, will effectively continue to provide implementation support to the countries of the region and to help disseminate the framework to other regions, as appropriate.
80. Given the complexity of the project, the TAC will play a central role, including:
- Technical supervision of project activities to ensure that outputs are completed on time;
 - Review project scope and activities during implementation, and streamline them, if needed;
 - Monitor and evaluate the technical quality of the project outputs;
 - Ensure that the stakeholders involved are those who are vulnerable and/or are making decisions in socio-economic sectors or resource management (see paragraph 69);
 - Advise on the technical training needed for the personnel carrying out the activities;
 - Advise on the technical qualifications of the terms of references for key personnel and experts;
 - Facilitate the integration of the project outputs into ongoing plans and development programmes;
 - Advising other regions in the replication of this demonstrative project.
81. A Project Advisory Committee (PAC) will be established to provide policy guidance, review the workplan and implementation progress, and evaluate project outcomes. The PAC will include GEF and UNFCCC Secretariats, UNDP-GEF, UNDP country offices, Executing Agency, the NIL from each of the 8 participating countries, and representatives of the TAC to ensure linkages between science and policy. Representatives from appropriate regional and international bodies (e.g. United Nations Environment Programme, World Bank, World Meteorological Organisation, Global Climate Observing System), the regional/local NGO communities, and donors, will be invited to participate to discuss particular issues, as appropriate. The UNEP and World Bank representatives will provide the linkages to other Stage II Adaptation projects, including the projects in the Caribbean such as 'Integrated Watershed and Coastal Zone Management in the Caribbean and 'Mainstreaming Adaptation to Climate Change'. The implementing agencies have been consulted in the formulation of the Adaptation Policy Framework during the PDF process, and will continue to be involved through the PAC. In addition, the World Bank is setting up a consultation mechanism in which UNDP will participate. CATHALAC will provide the Secretariat to the PAC. Two representatives from different participating countries will serve as Chairman and Deputy Chairman of this committee. The composition of the PAC and TAC will be decided during the start-up of the project.

H. Monitoring, Evaluation and Dissemination

82. This project distinguishes between Monitoring and Evaluation (M&E) for project and technical performance. Project performance relates to the outputs. Technical performance relates to indicators for evaluating the effectiveness of adaptation policies and measures, including changes

in adaptive capacity, both during and after project implementation. As described in Section B3, it is envisioned that stakeholder capacity to monitor and evaluate changes in adaptive capacity would eventually be created. The TAC and the NCSP will monitor for technical performance.

83. This section refers mainly to M&E for project performance. The PAC will meet on a quarterly basis to review the performance of the project. These meetings shall take place by teleconference, or during regional exchange workshops. The Regional Project Manager may convene 1-2 additional teleconferences during the start-up phase of the project, if required.
84. Each NIL will prepare a progress report, based on performance/outcome indicators (see preliminary indicators in Annex K), a workplan and a financial report on a quarterly basis and submit these to the UNDP and Regional Project Manager in a timely manner. The Executing Agency will provide a technical review of the reports to the Regional Project Manager. Disbursement of the subsequent instalment of funds will be subject to the final approval of the national reports by the Regional Project Manager.
85. The Regional Project Manager will circulate a synthesis of the national progress reports, and a quarterly progress report and revised workplan for regional activities to the PAC prior to the quarterly meeting. The minutes of the Regional PAC meetings and the progress reports will be disseminated to the TAC for information.
86. International and regional consultants who are recruited under the project to provide technical assistance will be subject to the approval of the TAC and the NCSP, and will report to them, as specified in their Terms of Reference.
87. The project will be subject to an annual tripartite review. The PAC will decide on the representation of the Government at the tripartite reviews depending on the institutional framework for climate change of the country involved. The Regional Project Manager shall submit Annual Programme/Project Reports (APR) for the tripartite review meeting. Additional performance reports may be requested, as necessary, during the project.
88. A Project Terminal Report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the Executing Agency at least four months prior to the terminal tripartite review.
89. An external, independent evaluation of the project will be conducted at the close of the project, based on performance/outcome indicators.
90. The UNDP/NCSP will report on the project performance to the Global Environment Facility at the annual PIR.
91. Financial auditing will be carried out according to UNDP rules and regulations.
92. The Executing Agency's and the UNDP's extensive experience in monitoring regional projects will be drawn upon to ensure that project activities and outputs are monitored and properly documented. The planning matrix of the project (Annex K) includes indicators to assist in the monitoring and external evaluation. Such indicators will allow, by means of established verification, the implementation of a final evaluation of the project.

93. The promotion of linkages to regional and international climate policy and research programmes and educational institutes under the project will guarantee wide dissemination of both results and lessons learned, as they are substantiated. The project will make every effort to disseminate national experiences so that they can be learned from quickly.
94. A number of national and regional documents are being produced under the project. These will be disseminated widely to key stakeholders within the region to and to relevant international bodies (see Section E). Awareness-raising activities identified under the project will directly contribute to these efforts. Any results of the project that could be beneficial to other developing countries will be disseminated building on the NCSP network that is already in place. The TAC will also be expected to contribute to the dissemination of project results at scientific meetings and conferences.

I. Project Financing

95. The cost of this project has been estimated at US\$ 4,900,285 in total, of which the GEF is asked to contribute costs of US\$ 3,314,685 million (including PDF of 298,470).
96. The Executing Agency is providing \$US 105,000 as in-kind support. The source of this funding is the *Trade Convergence Climate Complex* project under the Collaborative Research Network Program of the IAI for Global Change Research, 1999-2003.
97. The Swiss Government is co-financing this project through its contribution of US\$200,000 for the elaboration of the *Adaptation Policy Framework*.
98. An activity budget, reflecting these contributions, along with in-kind contributions from participating governments, can be found in Annex L. Approximately 25% of the total GEF budget is allocated to regional activities with an emphasis on technical assistance and peer review of project results.

J. Legal Context

99. This project shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the United Nations Development Programme and the Governments of Costa Rica, Cuba, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama. The following types of revisions may be made to this project document with the signature of the UNDP/GEF Executive Coordinator:
- (a) Revisions in, or addition of, any of the annexes of the project document (with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a precondition for UNDP assistance);
 - (b) Revisions which do not involve significant changes in the immediate objectives, outputs or activities of a project, but are caused by rearrangement of inputs agreed to or by cost increases due to inflation; and
 - (c) 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.

ANNEXES

- K. Project planning matrix**
- L. Budget, by output**
- M. Preliminary workplan, by output**
- N. Comments from STAP reviewer**
- O. Response to STAP review**

K. PROJECT PLANNING MATRIX

Project Strategy	Indicator	Verifier/ Source of Verification	Risks and Assumptions
<p>Goal: <i>To adapt human systems to climate change.</i></p> <p>The project aims to strengthen the adaptive capacity of human systems to reduce vulnerability to the impacts of climate change, including climate variability, risks and extreme events for priority systems throughout the Central American, Mexico and Cuba Region.</p>	<p>Comprehensive responses and reactions to actual and potential climate change impacts in the targeted priority systems improved in 10 years' time.</p> <p>Vulnerability to the impacts of climate change lowered in 10 years' time compared to baseline year 2001 in the following systems:</p> <p><i>Agriculture:</i> Food production has not declined due to climate change impacts.</p> <p><i>Hydrology:</i> Damages and human deaths due to flooding within selected systems will decrease.</p> <p><i>Water resources:</i> Water resources are sufficient to meet population needs.</p> <p><i>Human Health:</i> Climate-related illnesses have not increased.</p>	<p>Post-project studies on vulnerability and adaptation to climate change.</p> <p>National Human Development reports.</p> <p>UNDP Human Development reports.</p> <p>National Agenda 21 reports.</p> <p>Official Statistics on damages and losses due to climate events.</p> <p>Official Statistics on agriculture yields.</p> <p>FAO statistics or special reports on agriculture yields.</p> <p>WHO statistics or special reports on public health.</p>	<p>Stakeholders provide adequate support for project implementation, including monitoring and evaluation of adaptation beyond the lifetime of the project.</p> <p>Changes in government will not affect implementation and further systematic monitoring of project.</p> <p>Regional or sectoral policies will not generate additional negative impacts in selected systems.</p>
<p>Immediate Objective 1</p> <p>To strengthen systemic, institutional and individual capacity of stakeholders to further assess vulnerability and adaptation to the impacts of climate change, including climate variability, risks and extreme events, in priority systems at the regional, national and local level.</p>	<p><i>Individual capacity:</i> Number of national/regional experts trained and familiar with vulnerability increased by X % over 3 years in each participating country.</p> <p><i>Institutional capacity:</i> Timeliness and quality of service delivered by key institutions in the selected priority sectors has increased by X % by the end of the project. Reputation of key institutions amongst</p>	<p>Thematic inquiry of key actors.</p> <p>Survey indicating satisfaction of clients.</p> <p>Survey amongst clients indicating level of reputation.</p>	

Project Strategy	Indicator	Verifier/ Source of Verification	Risks and Assumptions
	clients improved by X% by the end of the project. <i>Systemic level:</i> The ability of the country to enforce policies in the selected priority sectors has increased by X% by the end of the project. Enforcement ability could be measured by a change in the number of cases prosecuted.		
Immediate Objective 2 To strengthen systemic, institutional and individual capacity of stakeholders to develop strategies and to implement policies and measures to prepare for adaptation at the regional, national and local level.	<i>Institutional capacity:</i> Selected key organisations, including the regional centre, have and use a strategy to implement policies and measures for adaptation by the end of the project. Selected key organisations have embedded planning and monitoring processes for adaptation by the end of the project.	Thematic inquiry of key actors.	Local communities, especially in the most vulnerable areas, will support measures to reduce risks and adapt. Co-ordination of all relevant stakeholders will be achieved.
Output 1.1 Assessment of vulnerability to current climate for a priority system in each country.	8 national assessments and 1 regional report that comprehensively evaluate current impacts and adaptive capacity completed by 4 th quarter and peer – reviewed by international experts.	8 national assessments. 1 regional report.	
Output 1.2 Assessment of vulnerability to future climate for a priority system in each country.	8 national assessments and 1 regional report that comprehensively evaluate future impacts and adaptive capacity completed by 4 th quarter and peer – reviewed by international experts.	8 national studies. 1 regional report.	
Output 1.3 Improved knowledge of current and future vulnerability shared and disseminated widely.	2 regional training workshops and 2 regional integration workshops held by 6 th quarter. Number of climate change adaptation courses and projects increased in the educational sector.	4 regional workshop reports. Records from universities and other educational centres on new courses offered on climate change issues.	

Project Strategy	Indicator	Verifier/ Source of Verification	Risks and Assumptions
<p>Output 2.1 Adaptation strategy identified, with innovative policies and measures evaluated and prioritised for each priority system.</p>	<p>Adaptation strategy evaluated in 8 countries and for region by 10th quarter and peer – reviewed by international experts.</p>	<p>8 national matrices containing a characterisation of strategies for human systems, effectiveness, barriers, opportunities and actors.</p> <p>Regional matrix containing a characterisation of strategies for human systems, effectiveness, barriers, opportunities and actors.</p>	
<p>Output 2.2 National plan developed to prepare for and to incorporate adaptation into development.</p>	<p>8 National Actions Plans validated by key stakeholders and presented in 10th or 11th quarter.</p> <p>Climate change factored into development and planning decisions.</p> <p>Integrated set of regional policies and measures presented in 11th or 12th quarter and peer – reviewed by international experts.</p>	<p>National documents.</p> <p>Regional documents.</p> <p>Report from regional validation workshop.</p>	
<p>Output 2.3 Improved knowledge of national plan for adaptation shared and disseminated widely.</p>	<p>2 regional training workshops and 1 regional integration workshop held in final 18 months.</p>	<p>3 reports of regional workshops.</p>	

L. Budget, by output

Project Outputs	GEF	Gov't in-kind contributions	Other	Total
1.1 Assessment of vulnerability to current climate for a priority system in each country.	436,000	188,838		624,838
1.2 Assessment of vulnerability to future climate for a priority system in each country.	545,000	235,110		780,110
1.3 Improved knowledge of current and future vulnerability shared and disseminated widely.	546,680	278,855 55,000 (CATHALAC)	100,000 (Swiss Government)	925,535
2.1 Adaptation strategy identified, with innovative policies and measures evaluated and prioritised for each priority system.	490,500	211,349		701,849
2.2 National plan developed to prepare for adaptation and to incorporate adaptation into development.	490,500	211,349		701,849
2.3 Improved knowledge of national plan shared and disseminated widely.	507,535	210,099 50,000 (CATHALAC)	100,000 (Swiss Government)	867,634
PDF	298,470			298,470
Total funding request	3,314,685	1,385,600	200,000	4,900,285

M. PRELIMINARY WORKPLAN, BY OUTPUT

A. Outputs	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Immediate Objective 1												
Output 1.1: Assessment of vulnerability to current climate for a priority system in each country.		■	■	■	■							
Output 1.2: Assessment of vulnerability to future climate for a priority system in each country.				■	■	■	■					
Output 1.3: Improved knowledge of current and future vulnerability shared and disseminated widely		■	■	■	■	■	■	■	■	■	■	■
Immediate Objective 1												
Output 2.1: Adaptation strategies identified, with innovative policies and measures evaluated and prioritised for each priority system				■	■	■	■	■	■	■		
Output 2.2: National plan developed to prepare for and to incorporate adaptation into development.				■	■	■	■	■	■	■	■	■
Output 2.3: Improved knowledge of national plan shared and disseminated widely					■	■	■	■	■	■	■	■
B. Workshops												
Reg. Exch. (start up)	■											
Training on output 1.1		■										
Training on output 1.2				■								
Regional exchange on outputs 1.1, 1.2 and 2.1					■							
Training on output 2.1							■					
Training on output 2.2									■			
Reg. Exch. (Project finalisation)											■	

N. Comments from STAP reviewer

UNITED NATIONS DEVELOPMENT PROGRAMME
GLOBAL ENVIRONMENT FACILITY
Barry Smit
University of Guelph, Canada
STAP Review of the Project
“Capacity Building for Stage II Adaptation to Climate Change
in Central America, Mexico and Cuba”

Overall

This is a very strong project, comprehensively addressing the UNFCCC/GEF goal of building capacity to adapt to climate change in non-Annex 1 countries. It addresses important needs in the region. It is scientifically and technically sound. It is replicable and sustainable. It effectively engages stakeholders and demonstrates commitments by the participating countries. It links to other programmes. It is very well designed to enhance the capacity of countries in the region to assess their vulnerability to climate change and to prepare for adaptation.

Regional Context

The regional rationale and justification for this project are clearly demonstrated. Firstly, the countries in the region are definitely vulnerable to climate change, especially to the risks associated with the frequency and magnitude of extreme climatic conditions (as documented in IPCC, TAR, 2001). This vulnerability is also related to the prevailing socio-economic conditions and limited adaptive capacity of countries in the region.

Secondly, the project brief points out that, notwithstanding past work on impact and vulnerability assessment, the regional knowledge base is inadequate for proceeding effectively with adaptation initiatives. The Project Justification (backed up by the detailed Country Reports in Appendix P) notes the needs for inclusion of extreme conditions, for assessment of implications for socio-economic systems, for consideration of adaptation measures in light of current risks and on-going development decisions, and for effective stakeholder engagement. The project addresses all of these needs substantively.

Scientific and Technical Soundness

The proposed approach is rigorous, comprehensive and practical. The strategy, based upon the UNDP-GEF Adaptation Policy Framework (APF), is consistent with the latest scientific developments in the vulnerability and adaptation fields, as summarized in the IPCC (2001) and elsewhere. The APF itself is innovative in its attention to current vulnerability and adaptation to climate conditions, including extremes, as a reality check and departure point for strengthening adaptive capacity to climate change. The APF is also at the cutting edge in its aim to integrate adaptation policies and measures into development plans and on-going management systems. This is not science for science's sake, but a project designed to efficiently and effectively address current and future vulnerabilities.

While the approach is scientifically strong, it is also feasible in non-Annex 1 countries. By building on existing knowledge, by engaging stakeholders throughout, and by allowing flexibility for national priorities within the APF, the project is well designed for successful completion in the region. The Strategy is particularly impressive in its engagement of country institutions and stakeholders, thereby promoting capacity building.

Replicability of the Project

One of the explicit aims of this project is to apply the APF in the region as a pilot case. Certainly, the APF, and the various objectives and outputs associated with the steps of the APF, provide a logical, sequential and implementable structure that could readily be applied in other regions, and provide comparable results. Yet the project strategy (and the APF) also contains sufficient flexibility to ensure national priorities and circumstances are addressed, and national stakeholders have an important role in the process.

The framework has already attracted the attention of countries and regional organizations elsewhere. The appeal reflects its logical structure and its flexibility for particular applications, as well as its relevance to current and near-term hazards and its consistency with broader development initiatives. The framework is likely to be employed elsewhere as countries move towards Stage II Adaptation and prepare their National Communications under the UNFCCC process.

Sustainability of the Process

This is a fundamental feature and strength of the project. Rather than “import” a model or technology or process that may have limited relevance to the countries in the region, and hence soon be abandoned, the project systematically and substantively:

- involves local stakeholders
- relates to national priorities
- has ensured country ownership
- is connected to regional and national institutions
- has links with other programmes
- builds on existing knowledge
- builds capacity

Together, these features of the project provide a very strong basis for expecting that the process will be maintained as part of national decision making in the region. These items are considered in more detail below.

Involvement of Stakeholders

The non-trivial and on-going engagement of stakeholders is an essential feature of the proposal, indicated in the APF and explicitly noted in the earliest activities (1.1.2) and subsequently. This employment of stakeholders to help identify and characterize vulnerabilities, adaptation options, their connection with management decisions and development planning, and effective dissemination methods greatly enhances prospects for project success and sustainability.

Country Ownership and Institutions

The countries have endorsed the PDF and participated actively in the project development. They have already completed initial impact and vulnerability studies upon which this project will build. They have already identified key systems in each country to provide foci for the application of the ADF.

The countries have also identified and funded institutions to co-ordinate or contribute to the project, thus demonstrating both commitment to the initiative and initial capacity upon which to build.

Linkages to Other Programmes

One of the distinctive features of the project is the recognition that adaptation policies and measures are unlikely to be implemented (and, if implemented, very unlikely to be effective) if pursued in isolation of other resource management decisions and development plans in the countries and key sectors (water resources, agriculture and food, human health, coastal zones, land use and forests). Thus, as described in Output 2.1, the evaluation of adaptation options “will take account of development priorities, existing policies to manage the system under investigation...” This is an innovative feature of programs to encourage adaptation.

Capacity Building

The project features outlined above cumulatively contribute to the overall goal of enhancing the capacity of countries to better adapt to climate change risks. The project does not propose some kind of naïve “quick fix”. Rather it recognizes the activities needed to generate local capacity and skill, in particular, the well-structured involvement of “real” Stakeholders, the employment of regional and national institutions, and the integration of adaptation measures and policies into on-going national programmes.

Project Risks

Those risks identified in the Brief are comprehensive and reasonable, the assessments of their severity are fair, and the project features to minimize the risks are thorough and more than satisfactory. These include:

- ◆ Risks to continued support by national governments and sustainability because of political turnover. These risks are minimized by the involvement of other stakeholders and by regional and international institutional support.
- ◆ Risks associated with non-adoption of adaptation by vulnerable populations. These are minimized by having the vulnerable populations represented as stakeholders, and by ensuring that adaptation measures are integrated into decision-making disseminate the experience and results and to maintain internal flexibility in the APF.

Additional Items to Consider:

- ◆ **Project Scope and Time Frame:**

The broad framework, as summarized in the steps of the APF, is logical and straightforward. In addition, the Objectives, Outputs and Activities are consistent with the steps of the APF. However, in aggregate the activities represent a large number of tasks, some quite complicated (even if only for a few priority sectors in each country). The magnitude of this project should not be under-estimated, as some of these tasks could take on “lives of their own” and will need to be well managed. The 3 year time frame is a minimum.

- ◆

- ◆ **Project Management**

The description of the Institutional Arrangements for the project (Section G) are thorough and appropriate. The management staff at the Regional Project Implementing (RPI) unit and the National Implementation Liaison (NIL) units are crucial, and selection and appropriate training of these personnel will need to be given high priority.

- ◆ **Stakeholder Selection and Maintenance**

Among the distinctive strengths of the project are the recognition that adaptation decisions are usually made by managers in sectors (agriculture, water resources, human health, etc.) and the well-considered activities to engage stakeholders. Nonetheless, there remains a risk that “stakeholders” may be chosen from known agencies or established contacts, rather than people actually vulnerable to climate and/or making decisions in socio-economic sectors or resource

management. This risk is minimized so long as the project implementation is able to be true to the principles outlined in paragraph 69, which essentially defines relevant stakeholders.

◆ **Integrating Adaptation in Sectoral Programs**

This is one of the innovative features of the project, consistent with recent scholarship and experience, and essential for sustainability and maintenance of adaptive capacity. This “mainstreaming” of adaptation initiatives, as it is sometimes called, may well be a difficult task, given the numerous demands in political and resource management decision making. However, it would be difficult to imagine a more comprehensive program of activities than incorporated in this project to achieve this integration. Almost all of the steps, including selection of priority sectors and stakeholders, evaluation of current and future vulnerabilities, assessment of adaptation prospects relative to existing policies, development of national plans, and information dissemination, are geared towards facilitating this integration into ongoing programs and development plans.

Conclusion

This is an extremely well-crafted project, particularly given the innovativeness of the approach. The proposal has benefited from a very full consultation process. This is the type of program many non-Annex 1 countries have been pushing for, and in some cases initiating on their own. The replicability of the framework will see other countries and regions applying this approach to enhance their adaptive capacity.

I strongly recommend that this project be supported.

O. Response to STAP review

To address the reviewer's comments, the following paragraph (80) has been added to clarify the role of the technical advisory committee.

'Given the complexity of the project, the TAC will play a central role, including:

- Technical supervision of project activities to ensure that outputs are completed on time;
- Review project scope and activities during implementation, and streamline them, if needed;
- Monitor and evaluate the technical quality of the project outputs;
- Ensure that the stakeholders involved are those who are vulnerable and/or are making decisions in socio-economic sectors or resource management (see paragraph 69);
- Advise on the technical training needed for the personnel carrying out the activities;
- Advise on the technical qualifications of the terms of references for key personnel and experts;
- Facilitate the integration of the project outputs into ongoing plans and development programmes;
- Advising other regions in the replication of this demonstrative project.'

SUPPLEMENTARY INFORMATION

K. Country reports: summaries

L. Workshop reports: a) UNDP-GEF Workshop for developing an Adaptation Policy Framework for Climate Change, and b) UNFCCC Workshop on methodologies on climate change impact and adaptation

M. Adaptation Policy Framework

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N. COUNTRY REPORTS: SUMMARIES

The following tables provide a brief overview of the main issues reported by countries on Stage I vulnerability and assessments studies for their Initial National Communications. These summaries were prepared by regional consultants in close consultation with the national project co-ordinators. Information was gathered through the review of different sources, including National Communications and vulnerability and adaptation sectoral studies, as well as through interviews with different stakeholders and the project co-ordinators.

The following points should be kept in mind when reading the country summaries:

- Under “Statement on Vulnerability”, the sectoral studies conducted by countries were scenario-based, looking at average conditions only. Thus the studies did not address climate variability or climate extremes, to which countries of the region are particularly vulnerable.
- The sectoral studies addressed biophysical systems (e.g. hydrology, water resources, agriculture, forests, human health), but did not assess fully the impacts in the human dimensions. Similarly, the studies did not look at the capacity of countries to adapt to climate risks.

COSTA RICA	
1. National priorities	1. Water Resources; 2. Agriculture; 3. Human Health
2. Statement on vulnerability	<p><i>Current knowledge about vulnerability of key sectors from previous assessments</i></p> <ul style="list-style-type: none"> • <i>Agriculture</i>: Studies include baselines and projections of vulnerability for rice, potatoes, beans, and coffee. Impacts of El Niño on agricultural production were assessed. • <i>Water Resources</i>: Two different models were used to analyse changes in river flows. A study assessed damages of flooding in urban areas. • <i>Coastal Zones</i>: A study determined potential sea level rise for the country's coastal line. • <i>Land-use Change and Forests</i>: Potential impacts on biodiversity as a result of changes in forest cover were determined. <p><i>Future vulnerability</i> As the studies are scenario based, projections for the future were carried out.</p>
3. Statement on policy/socio-economic environment	<p><i>Current environment/socio-economic and policy conditions</i> The National Communication includes environmental legislation and national/international agreements necessary to reduce future environmental vulnerability.</p> <p><i>Future conditions</i> No documented information is available.</p>
4. Barriers to implementation of adaptation policies and measures	<ul style="list-style-type: none"> • Climate change has not yet been institutionalised. The climate change team has been assigned to other functions and has limited capacity to continue to be actively involved in this work. • Decision-makers do not consider vulnerability and adaptation as a national priority. • National scientific community has not had an active role, their publications are not known in the country, neither used to address vulnerability and adaptation issues. • The topic is not included in study programs.
5. Needs for adapting to climate change	<ul style="list-style-type: none"> • Strengthen observation system and forecast • Define methodological guidelines for studies of current and future vulnerability • Standardise Geographical Information Systems tools, software, and integrated models
6. Nat. Comm. submission	November 2000
7. Sources of information	<ul style="list-style-type: none"> • First National Communication. Costa Rica, 2000 • General aspects on floods in Costa Rica by Region; Johnny Solano Quintero, 16 November 2000, National Meteorological Institute, Ministry of Environment • Evaluation of areas with flood risks, an analysis of the metropolitan area; Johnny Solano Quintero, 8 June 2001, National Meteorological Institute, Ministry of Environment • Comparative Assessment of Agricultural Uses of ENSO-Based Climate Forecasts in Argentina, Costa Rica and Mexico; IAI Initial Science Program (ISP) III Project, Co-ordinated by Dr. James W. Jones, University of Florida, Main
8. People interviewed	Eladio Zarate, Director, Meteorological Institute; Roberto Villalobos, Climate Change Co-ordinator; Ana Rita Chacon, Climate Change Program

CUBA	
1. National priorities	1. Agriculture; 2. Water Resources; 3. Human Health
2. Statement on vulnerability	<p><i>Current knowledge about vulnerability of key sectors from previous assessments</i> Using a scenario based methodology, the impacts on the following sectors were assessed.</p> <ul style="list-style-type: none"> • <i>Coastal Zones and Marine Resources:</i> Temperature increase and sea level rise were two main variables adopted to characterise impacts. Expert judgement was used. • <i>Water Resources:</i> Studies addressed impacts on hydrological variables and on water quality. Special attention was paid to saline intrusion in coastal zones. • <i>Agriculture and Forestry:</i> Impacts were assessed for agriculture yield, crop production, biomass, plagues and diseases, forests and forestry. Using biophysical crop models in combination with climate model outputs, yield of the following crops was assessed: beans, soya beans, yucca, rice, sugar cane, corn, and sorghum. • <i>Human Settlements and Land Use:</i> Impact assessments were based on settlement patterns, migrations, urbanisation, land use and local economic development. Approximately 185 human settlements are highly vulnerable to climate change (more than 50% located along the coasts.) About 3.5% of the country, mostly grasslands, forest and mangrove, would be affected by sea level rise. • <i>Human Health:</i> Six diseases were assessed; acute respiratory infections, bronchial asthma, virus hepatitis, meningitis, chickenpox, and diarrhea. Climate variability was taken into consideration. All but bronchial asthma would be affected by climate change. <p><i>Future vulnerability</i> Impact assessments were projected on the basis of future climate scenarios for different periods (10 to 100 years). Neither climate variability nor extreme events was considered.</p>
3. Statement on policy/socio-economic environment	<p><i>Current environment/socio-economic and policy conditions</i> Many adaptation options are already in place in the relevant legislation and in the context of national strategies for natural resources protection and conservation. National policies have facilitated the incorporation and implementation of sectoral measures, as well as the involvement of many institutions in the adaptation process.</p> <p><i>Future conditions</i> Measures were suggested for a general adaptation strategy. Problems to be addressed and some recommendations to increase public awareness are identified.</p>
4. Barriers to implementation of adaptation policies and measures	<ul style="list-style-type: none"> • Technological and financial limitations
5. Needs for adapting to climate change	<ul style="list-style-type: none"> • Strengthen national climate observation systems • Develop socio-economic scenarios • Improve and expand actual climate forecasting systems and climate monitoring service • Integrate climate change impact and adaptation assessment • Strengthen climate change awareness through the educational system and increased dissemination of climate change issues
6. Nat. Comm. submission	September 2001
7. Sources of information	<ul style="list-style-type: none"> • Draft First National Communication. Cuba, 2001 • Vulnerability and adaptation assessment study. Cuba, 2000
8. People interviewed	Abel Centella, National Communication Co-ordinator; Tomás Gutiérrez, General Director; and Eduardo Planos, expert, Meteorology Institute

EL SALVADOR	
1. National priorities	1. Agriculture and Food Security; 2. Coastal Zones; 3. Hydrology and Water Resources
2. Statement on vulnerability	<p><i>Current knowledge about vulnerability of key sectors from previous assessments</i></p> <ul style="list-style-type: none"> • <i>Agriculture and Food Security:</i> Climate change impact assessment for food security was carried out (baseline period 1989-99). It focussed on the three main crops in El Salvador (corn, beans, and rice), and addressed production, yields, food availability, export-import trends, income/employment ratio, and poverty and food security. Under climate change conditions, losses due to productivity changes were estimated, and the gap between food supply and demand was calculated. • <i>Coastal Zone:</i> Impacts assessment for agriculture in coastal areas was carried (baseline period 1960-90). Area prone to damage was identified, Issues addressed include socio-economic aspects, structure of agricultural activities, fisheries, environmental degradation, and climate variability. The study estimated losses in crops due to droughts and flooding. Human deaths, capital and land losses, reduction in employment, and infrastructure damage are likely under a sea level rise. Environmental degradation and losses in natural ecosystems also expected. • <i>Hydrology and Water Resources:</i> Under the National Communication, no vulnerability study in the water resources sector was addressed. However, an example of an adaptation project was included which, <i>inter alia</i>, aims to establish a real time-hydrological model to forecast floods and prevent flooding damages. Within the US-CSP¹, a small-scale study was done on two middle-sized watersheds on hydrology and water resources. This study simulates the effects of changes in temperature and precipitation on the mean monthly and annual runoff in selected catchments, using the CLIRUN3 model which reproduces the hydrological cycle through the hydrologic balance among the runoff, precipitation and evapotranspiration. However, more studies need to be done in this field. <p>In light of the new methodological approaches, development policy-oriented², more V&A studies are required in priority human systems, focusing on affected vulnerable populations.</p> <p><i>Future vulnerability</i> Climate change vulnerability and adaptation assessments included baseline and future scenarios for both climate and socio-economic conditions for different sectors. However, in those studies climate variability and extremes were not assessed. It was a climate scenarios-driven approach³, which only specified changes in average conditions for mean temperature and rainfall.</p>
3. Statement on policy/socio-economic environment	<p><i>Current environment/socio-economic and policy conditions</i> Present and future socio-economic conditions were addressed. Social, economic, population and land use indicators were defined and analysed within the V&A sectoral assessments.</p> <ul style="list-style-type: none"> • <i>Agriculture and Food Security:</i> A list of adaptation policies and measures was suggested, based on both food security and the coastal zone V&A assessments. • <i>Coastal Zones:</i> A list of adaptation policies and measures was proposed for agricultural and livestock activities, as well as fisheries. • <i>Water Resources:</i> Adaptation options for the Lempa river basin, shared by Guatemala, El Salvador and Honduras, are being proposed and implemented through a USAID-supported project. An early warning and forecasting system is being established, including remote sense technologies, training, hydrological modelling, watershed management plan, local GIS development, and strengthening of the hydrometeorological stations network. <p><i>Future conditions</i> Future socio-economic conditions were assessed based on current trends of demographic, social, economic, environmental and legal-institutional key indicators. These socio-economic trends were an important input for all V&A studies included in the NC.</p>

¹ United States Country Studies Programme.

² Adaptation Policy Framework (APF) or IPCC-TAR.

³ MAGICC-SCENGEN model.

EL SALVADOR	
4. Barriers to implementing of adaptation policies and measures	No documented information on this issue is available.
5. Needs for adapting to climate change	<p>A national study was elaborated to preliminary identify priority actions to create national capacities to address climate change impacts. The main results were as follows:</p> <ul style="list-style-type: none"> • Establish a national climate observing system • Enhance education, training and public awareness on climate change issues • Develop and implement adaptation strategies, policies and measures • Participate in co-operative research programmes on V&A issues, at the international and regional levels
6. Nat. Comm. submission	April, 2000
7. Sources of information	<ul style="list-style-type: none"> • First National Communication on Climate Change, El Salvador, April 2000 • Análisis de la Vulnerabilidad de los Recursos Hídricos de El Salvador ante el Cambio Climático. US-CSP, 1995 • Evaluación de los Impactos del Cambio Climático en el Sector Agropecuario de la Zona Costera de El Salvador. GEF-Enabling Activities, 1998 • Climatología Actual de El Salvador. GEF-Enabling Activities, 1998 • Escenarios con Cambio Climático para El Salvador. GEF-Enabling Activities, 1998 • Escenarios socioeconomicos para El Salvador. GEF-Enabling Activities, 1998 • Líneas Prioritarias de Acción para la Creación de Capacidades Nacionales para la Definición y Ejecución de una Estrategia de Adaptación al Cambio Climático en El Salvador. GEF-Enabling Activities Phase II 2001
8. People interviewed	Marta Yvette Aguilar, First National Communication Co-ordinator; Climate Change Unit Head (Ministry of Environment and Natural Resources) and national focal point on climate change

GUATEMALA	
1. National priorities	1. Human Health; 2. Water Resources; 3. Agriculture
2. Statement on vulnerability	<p><i>Current knowledge about vulnerability of sectors selected</i></p> <ul style="list-style-type: none"> • <i>Human Health:</i> Human settlements show high vulnerability to climate extreme events as well as to climate variability such as floods and drought. There is a strong relationship between water borne diseases (malaria, dengue) and climate variation. • <i>Water Resources:</i> Vulnerability studies were carried out using the concept of aridity indicator to express the availability of the resource. • <i>Agriculture:</i> Studies focused on the impacts on maize, beans, and rice in the main production areas of the country. <p><i>Future vulnerability</i></p> <ul style="list-style-type: none"> • Future vulnerability was studied using baseline scenarios (1960-90 period) and future scenarios (up to year 2100). • <i>Human Health:</i> The study assessed the impacts of climate change in diarrhea, respiratory infections, and malaria for the south-western coast of the country. The results show a high increase in the number of people affected by diarrhea (more than 100%). Respiratory infections and malaria show an increase in the number of people affected and a seasonal variation in the number of cases. • <i>Water Resources:</i> Water resources are highly vulnerable to climate change. The study assessed the impacts in run off. The results show a dramatic decrease in the amount of water in the basins, from -5% in some cases (Gulf of Mexico and Caribbean watersheds) up to -70% (in the Pacific watershed). • <i>Agriculture:</i> This sector is one of the most vulnerable to future climate change. A significant decrease is shown in the production of maize (from -1% up to -16%), beans (up to -66%) and rice (-27%) in different areas of the country.
3. Statement on policy/socio-economic environment	<p><i>Current environment/socio-economic and policy conditions</i></p> <p>The Social Matrix presents a conceptual framework for government actions to promote development in Guatemala.</p> <p><i>Future conditions</i></p> <p>The country's future socio-economic conditions, including demographic variables, were analysed for 2020, using three scenarios (optimistic, pessimistic and business-as-usual). The behaviour of variables such as GDP, quality of public health coverage, education levels, average income and population growth rate, varied according to the choice of scenario. Future environmental scenarios were developed as a part of the study on vulnerability of forest to climate change. In accordance with climate scenarios, 3 cases (optimistic, pessimistic and business-as-usual) were analysed, each one with different outcomes for forest conservation, development and coverage.</p>
4. Barriers to implementation of adaptation policies and measures	<ul style="list-style-type: none"> • Lack of trained personnel in climate change and its impact in the human systems • Weak institutional co-ordination
5. Needs for adapting to climate change	The National Communication and the vulnerability impact studies show that the country is affected by climate change and extreme events.
6. Nat. Comm. submission	Draft to be presented in November 2001
7. Sources of information	<ul style="list-style-type: none"> • Social Matrix. Guatemala, 2001 • Climate Scenarios to Year 2100. Guatemala, 2000 • Studies on vulnerability of human health, water resources, and basic grain production (2000) and forests (2001) to climate change. Guatemala • Socio-economic Scenarios for Year 2020. Guatemala, 2000
8. People interviewed	Carlos Caceres, Minister; Juan Carlos Godoy, Vice Minister; and Carlos Mansilla, Director Climate Change, Ministry of Environment and Natural Resources (MARN)

HONDURAS	
1. National priorities	1. Water Resources; 2. Land-use Change and Forestry; 3. Human Health
2. Statement on vulnerability	<p><i>Current knowledge about vulnerability of sectors selected</i> The First National Communication highlights how vulnerable the country is to climate change and to extreme events. It also includes an analysis of the impacts of Hurricane Mitch in the country.</p> <ul style="list-style-type: none"> • <i>Water Resources:</i> In October 1998, Hurricane Mitch severely affected watersheds and the quality and quantity of water. The main impacts of Mitch were floods and avalanches. • <i>Land-use Change and Forestry:</i> Satellites of the United States Geological Survey (USGS) show severe impacts in forest resources (natural forests, plantations, managed forest, protected areas) and biodiversity. • <i>Human Health:</i> More than 12000 people died due to Hurricane Mitch. There was a significant increase in water-related illnesses. <p><i>Future vulnerability</i> Using 1960-90 as baseline, Honduras evaluated future vulnerability and identified adaptation options for forests, agriculture, biodiversity, water resources and coastal zones.</p> <ul style="list-style-type: none"> • <i>Water Resources:</i> Severe floods and droughts are expected under future climate scenarios, which would affect the quantity and quality of water for human consumption, agriculture activities and energy production. • <i>Land-use Change and Forestry:</i> Honduras identified a series of adaptation measures, such as improving institutional arrangements, adaptation of the legal framework, developing technology transfers activities, environmental education, and adaptation of forest policies for sustainable development.
3. Statement on policy/socio-economic environment	<p><i>Current environment/socio-economic and policy conditions</i> Currently, Honduras is facing a severe drought in the Atlantic region, which is jeopardising basic grain production. National and international media news reports famine in some areas and a lack of food security. The country has not yet recovered from Mitch and is now facing another climate extreme event that menaces food production and water availability and quality.</p> <p><i>Future conditions</i> No documented information is available.</p>
4. Barriers to implementation of adaptation policies and measures	<ul style="list-style-type: none"> • Work planned on short time periods, lack of action plans, long time periods involved, and poor monitoring activities • Resistance to changes in people and institutions • Low educational and cultural levels, and technical personnel with little training • Lack of funds to implement measures
5. Needs for adapting to climate change	The NC shows that the country is affected by climate change and extreme climate events. The current drought and loss in food production are good examples of climate impacts. The State of the Environment, SERNA, provides information on the current economic and environmental situation of the country.
6. Nat. Comm. submission	November 2000
7. Sources of information	<ul style="list-style-type: none"> • Gathered Information, Honduras, July/August 2001 • First National Communication, Honduras, November 2000 • State of the Environment, SERNA, Honduras, 2001
8. People interviewed	Mirna Marín, Director; Víctor Guadrón, Deputy Director; and Mirza Castro, Environmental Expert, Climate Change Unit, SERNA Carolina Alduvin, Environmental Analyst; Angel Escoto, Water Resources Expert; Marco Antonio Flores, Energy Expert; Douglas Manzanares and Rafael Bonilla, Health Experts

MEXICO	
1. National priorities	1. Water Resources; 2. Agriculture; 3. Forests
2. Statement on vulnerability	<p><i>Current knowledge about vulnerability of key sectors from previous assessments</i> Vulnerability studies for the First National Communication were carried out for Agriculture, Human Settlements, Coastal Areas, Desertification, Forest Ecosystems, and Energy and Industries. Current vulnerability due to precipitation deficit and availability of water is extremely severe in 3.6% of the territory, very severe in 33.2%, severe in 24% and not severe 6.3%. Projections of these values show a considerable increase in vulnerability. As a follow up to the First National Communication more detailed assessments for the agriculture sector were carried out. Scarcity of water and impacts of El Niño were assessed.</p> <p><i>Future vulnerability</i> Most of the country is not suitable, under current conditions of vulnerability, for maize production, the main food of Mexicans. Losses are reported due to a lack of favourable climatic conditions. Economic limitations to restructure agriculture activities also increase the vulnerability of the sector. This situation is expected to worsen under climate change. Studies were carried out on weather forecast for agricultural activities and ENSO impacts in Mexico. The importance of wetlands as an alternative solution to scarcity of water was addressed.</p>
3. Statement on policy/socio-economic environment	<p><i>Current environment/socio-economic and policy conditions</i> Vulnerability is a national priority. The 1st and 2nd National Communications describe important advances on policies and environmental legislation that contribute to the decrease of vulnerability. Linkages between Biodiversity and Climatic Change Conventions already exist. Linkages with the Desertification Convention are foreseen. Climate change topics are already included in graduate courses.</p> <p><i>Future conditions</i> No documented information is available.</p>
4. Barriers to implementation of adaptation policies and measures	<ul style="list-style-type: none"> • Current socio-economic deterioration • Lack of financing for studies • Limited publications on the topic
5. Needs for adapting to climate change	<ul style="list-style-type: none"> • Incorporate the topic in primary and secondary education programs as well as in some graduate courses. • Preserve and improve climate prediction systems • Improve interdisciplinary approaches and strengthen relationships among institutions • Sensitise decision-makers, managers and social media • Incorporate the design of adaptation strategies into the national planning processes • Encourage NGOs participation in the process • Improve the regional integration in vulnerability studies, training and formulation of policies and adaptation measures
6. Nat. Comm. Submission	December 1997
7. Sources of information	<ul style="list-style-type: none"> • First and Second National Communications. Mexico, 1997 and 2001 • Wetlands: A key element of the answer to crisis of water; Bulletin The Wetland of Mexico • Experiences in predicting climate for agricultural activities in the state of Tlaxcala. Magaña R. V. O., T. Morales A., J. L. Pérez, C. Conde, S. Orozco F., J. Lezama G., J. A. Vázquez C. and M. Hernández • ENSO impacts in Mexico (1999), Centre of Atmospheric Sciences, UNAM
8. People interviewed	Adrián Fernández, General Director, Urban, Regional and Global Contamination Research; Julia Martínez, Research Director of Climatic Change Issues; and Cecilia Conde, Researcher at the Centre of Atmospheric Sciences, UNAM

NICARAGUA	
1. National priorities	1. Human Health; 2. Water Resources; 3. Agriculture
2. Statement on vulnerability	<p><i>Current knowledge about vulnerability of sectors selected</i></p> <ul style="list-style-type: none"> • <i>Human Health:</i> Human settlement classification and geophysical risks (earthquakes and volcanism) are usually carried without taking into account climate aspects. In Nicaragua there is a strong relationship between malaria and climate. • <i>Water Resources:</i> The concept of shortage indicator was used to measure water supply. The Pacific Coast is the most vulnerable region. • <i>Agriculture:</i> Studies focused on analysing the impacts on the production of maize and rice in the nor-central region of the country. <p><i>Future vulnerability</i></p> <p>Future vulnerability was studied using baseline scenarios (1960-90 period) and future scenarios (up to year 2100).</p> <ul style="list-style-type: none"> • <i>Human Health:</i> Impacts of climate change on malaria was studied for the northern departments of the country. • <i>Water Resources:</i> Water resources of Nicaragua are very vulnerable to the impacts of climate change. Studies were carried out for run off and underground water. • <i>Agriculture:</i> This sector is one of the most vulnerable to climate change. Maize, soya and bean show a decrease in production, oscillating between -12% to -59% in different areas of the country.
3. Statement on policy/socio-economic environment	<p><i>Current environment/socio-economic and policy conditions</i></p> <p>The Environmental Plan of Nicaragua presents an environmental conceptual framework, which includes specific actions for selected sectors, for the central and local governments and the civil society.</p> <p><i>Future conditions</i></p> <p>The future socio-economic scenarios up to year 2100 were prepared using variables such as population, energy demand, water demand, health conditions and GDP.</p>
4. Barriers to implementation of adaptation policies and measures	<ul style="list-style-type: none"> • Poor knowledge of the relationships between climate change/variability and climate-related illnesses • Lack of incentives and regulations to promote the concept of environmental services in the water sector • Inadequate legal framework to define water resource management • Lack of policies and mechanisms to promote the transformation of agriculture production units into sustainable and efficient systems.
5. Needs for adapting to climate change	The NC and the impact study show that climate change and extreme events affect the country. The current impacts of climate are affecting human health, water resources, and agriculture national production, especially basic grains (maize, soya, and beans.)
6. Nat. Comm. submission	March 2001
7. Sources of information	<ul style="list-style-type: none"> • Nicaragua: Country Visit Gathered Information (August, 2001) • First National Communication on Climate Change. Nicaragua, March 2001 • Impacts of the Climatic Change. January 2001 • Nicaragua's Environmental Plan. June 2001
8. People interviewed	Mario Torres; Director; Freddy Picado, National Co-ordinator; and Bernardo Torres, Technical Assistant, Climate Change Unit, MARENA Mauricio Rosales, General Director of Meteorology, INETER; Oscar Cruz, Water Resources Expert; Cristóbal Molina, Agronomy Expert ; Luisa Amanda Campos, MD, Ministry of Health

PANAMA	
1. National priorities	1. Water Resources; 2. Human Health; 3. Agriculture
2. Statement on vulnerability	<p><i>Current knowledge about vulnerability of sectors selected</i></p> <ul style="list-style-type: none"> • <i>Agriculture</i>: Areas with deficit of water were identified. The most vulnerable area is the Dry Arc of Azuero, where crop losses and crop yields due to the 1997-98 El Niño were determined. • <i>Human Health</i>: Areas of high vulnerability were delimited by using historical analysis of anthropogenic activities that have caused a bio-dynamic unbalance. The evolution of risk factors, which are prone to be reinforced by extreme events of climate variability and change, was assessed. Economic costs of impacts on influenza and diarrhea were quantified. • <i>Water Resources</i>: Current impact and future vulnerability of the three most vulnerable basins were assessed. The parameters to define vulnerability of water resources were domestic consumption, livestock activities and navigation through the canal. • <i>Forestry Ecosystems</i>: Holdridge Life Zones suggest reduction in forest diversity due to anthropogenic interventions. • <i>Coastal Zones</i>: Eight coastal zones were assessed. Integrated coastal zones management practices may help reduce land loss due to inadequate land use. <p><i>Future Vulnerability</i> For each of the above sector, projections for the future were modelled.</p>
3. Statement on policy/socio-economic environment	<p><i>Current environment/socio-economic and policy conditions</i> The NC contains references to the environmental legislation, programs and environmental projects in course. Although they are not fully implemented, they contribute to the decrease of future vulnerability to current environmental conditions.</p> <p><i>Future conditions</i> No documented information is available.</p>
4. Barriers to implementation of adaptation policies and measures	<ul style="list-style-type: none"> • Limited public awareness on vulnerability and adaptation issues • Scarce availability of publications in Spanish on vulnerability and adaptation to climatic change and variability • Weak co-ordination of institutions in charge of hydrometeorological observation systems • Dispersed and poorly maintained stations • Lack of support from decision-makers to the implementation of adaptation measures proposed in the NC
5. Needs for adapting to climate change	<ul style="list-style-type: none"> • Incorporate topic of vulnerability and adaptation to climatic change and variability to the formal and informal educational systems • Improve the observation system and meteorological forecast • Strengthen interdisciplinary teams • Sensitise the media on climate change issues • Seek consensus among managers, policy makers, NGOs, academia, and researchers on providing a high priority to climate change issues at the national level
6. Nat. Comm. submission	July 2001
7. Sources of information	<ul style="list-style-type: none"> • First National Communication. Panama, 2001 • Diagnosis of rural aqueducts 2000, Ministry of Health • Climatic forecast for the portfolio of agricultural insurance, 2000 and 2001, Ministry of Agricultural Development
8. People interviewed	Gonzalo Menendez, Sub-Administrator, National Environmental Authority, Emilio Sempris, Coordinator National Programme on Climate Change; René López, V&A Coordinator, National Programme on Climate Change; Hernán Luque, Director of Health Policy, Ministry of Health; Raul Gutierrez, National Environmental Authority; Marilyn Dieguez, University of Panama; and Jackeline Ulloa, Ministry of Health

Q. WORKSHOP REPORTS

UNDP-GEF Workshop for Developing an Adaptation Policy Framework for Climate Change

(St. Adele, Montreal, Canada, June 11-14, 2001)

Summary

The workshop, hosted by Environment Canada, reviewed a draft UNDP-GEF *Adaptation Policy Framework* and considered next steps in its development. The workshop was held in association with a United Nations Framework Convention on Climate Change workshop on *Methodologies on Climate Change Impact and Adaptation*⁴. The 45 participants from 30 countries reached a general consensus on the new approach upon incorporation of a number of suggested changes. The workshop also reviewed the next steps that would be required to make the framework more applied, yet flexible enough to allow for a wider variety of national circumstances and capacities.

Background

For developing countries, a key difficulty in vulnerability and adaptation assessments has been the integration of adaptation into sustainable development plans, and linking longer-term climate change to current problems caused by climate variability. Most National Communications completed to date have been more successful in the analysis of impacts than in their treatment of adaptation options, which has rarely gone beyond the preparation of lists of possible measures.

In response to countries' requests, the National Communications Support Programme (NCSP) initiated a project to develop an *Adaptation Policy Framework*. This framework may be used as a basis for building capacity to design studies for prioritising adaptation policies and measures in the context of national sustainable development.

Key Innovations of the Adaptation Policy Framework

The framework builds upon methods used in vulnerability and adaptation studies over the last decade and more, including the 1994 *IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations*. Key innovations of the framework are that it is based on recent experiences in coping with climate variability and extremes, and assesses the effectiveness of adaptation to recent climate experiences. In other words, the framework is firmly grounded in present climate risks, and helps to build adaptation policy and to plan incrementally upon current practice to respond to risks induced by climate change. The framework also helps in the evaluation of adaptations and in the selection of the most effective measures for reducing vulnerability.

Outcomes of the Workshop

Five steps for developing the framework were identified (see Figure 1):

1. Scope the project
2. Engage stakeholders
3. Assess current vulnerability
4. Characterise future conditions
5. Prioritise policy and practice

⁴ See summary on page 22

The majority of participants recommend continuing the support to the NCSP for operationalising the framework, which was considered an appropriate and effective approach to help countries address adaptation to climate change.

The workshop also recommended refining the draft framework document through:

- A summary for policymakers (3 pages)
- A complete report (20-25 pages)
- Supporting material and methods (see Annex I)

The current draft of the framework (May, 2001) will be revised according to the review comments and discussions at this workshop. The final version of the framework will be published by the Seventh Conference of the Parties and translated into Spanish and French.

Next Steps

It is planned to further develop and test the framework within the context of a regional GEF Stage II adaptation project involving Central America, Mexico and Cuba; drawing from this experience, the framework may also be simultaneously applied in various geographic regions and then modified based on the experience learned. The workshop especially drew attention to the need to involve stakeholders in a meaningful way in project development and implementation, and to ensure that sufficient interaction with policy makers took place such that the project could contribute effectively to adaptive capacity building.

A workplan for developing the revised framework, particularly the supporting materials and methods, will be circulated to potential donors. Potential collaborators, such as the Food and Agriculture (FAO), World Meteorological Organisation (WMO) and the World Health Organisation (WHO), that have expressed an interest will likely participate in this effort.

For further information, contact

Bo Lim

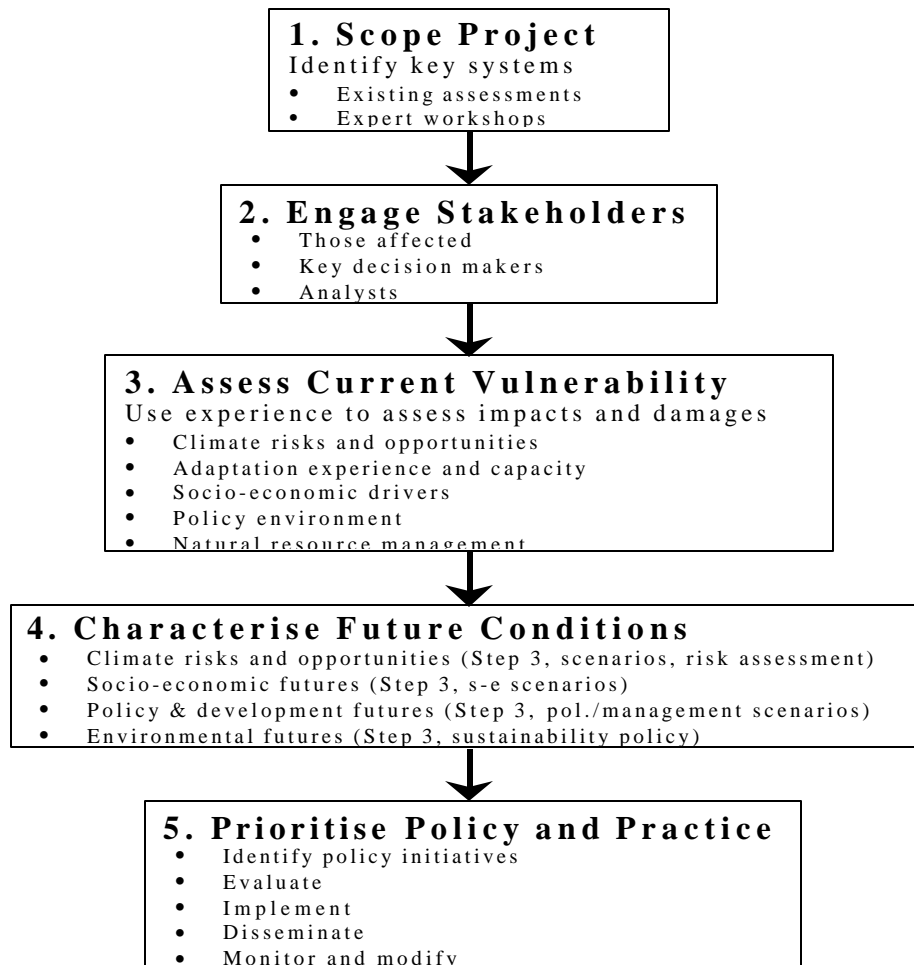
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Figure 1. Adaptation Policy Framework



Note: In Step I, the key systems (sectors) are those applied in the IPCC TAR

Annex I: Proposal for developing an Adaptation Policy Framework

Supporting papers will be developed to describe a) subject and source materials that illustrate the 5 main steps of the framework, and b) methods, organised into three tiers of differing complexity. A proposal for development of these supporting materials and methods will be circulated to both potential donors and collaborators.

The project proposal will be based on the following outline:

1. Project Scoping
2. Stakeholder Engagement
3. Characterising Present and Future Climate Risks
4. Natural Resource Management and Sustainability
5. Adaptation Experience
6. Adaptation Capacity, Coping Range and Thresholds (Understanding the System)
7. Current and Future Policy Context
8. Socio-economic Drivers and Development Futures
9. Prioritising Policy and Practice

UNFCCC Workshop on Methodologies on Climate Change Impact and Adaptation
(St. Adele, Montreal, Canada, June 11-14, 2001)

The following relevant excerpts were taken from the document FCCC/SBSTA/2001/INF.4, Subsidiary Body For Scientific And Technological Advice, Fourteenth session, Bonn, 16-27 July 2001, Item 3 (b) of the provisional agenda, *Reports On Inter-Sessional Activities, Methods And Tools To Assess Climate Change Impact And Adaptation*.

“The UNFCCC workshop on methodologies on climate change impact and adaptation was held at Sainte Adèle, Canada, from 11 to 14 June 2001. Forty-three experts in the field of vulnerability and adaptation from Parties and international organizations participated in the workshop. Participants included experts from the UNFCCC roster of experts, the experts involved in preparation of the IPCC TAR, and/or directly involved in preparation of national communications. The workshop was held in cooperation with a United Nations Development Programme – Global Environment Facility (UNDP – GEF) workshop on an adaptation policy framework and in cooperation with Environment Canada.

Current experience in applying the methodologies and associated emerging needs of developing countries

“With regard to the application of current impact and adaptation assessment methodologies, participants noted that many studies have been undertaken, but only a few have focused on adaptation policies or activities. Resources and time have been directed towards the assessment of first-order biophysical impacts, with less attention given to socio-economic impacts and adaptations. Participants noted, however, that capacity has been built in developing countries to assess the impacts of climate change and, to a limited extent, to evaluate potential adaptive responses.

Participants stressed that there is a need to extend the standard, climate scenario-driven approach for assessing climate change impact and adaptation options. In order to ensure that adaptation policies are operationalised, this approach should shift towards more practical policy-oriented approaches.

Participants acknowledged a need to show the connection between long-term climate change and changes in variability and extreme events in order to understand risks to society. It was suggested that the use of analogues based on previous experiences is an effective means to engage policy makers and to build support for adaptation policies. Participants also emphasized that in order to improve impact, adaptation and vulnerability studies and the utility of methodologies, the stakeholders should be involved at every stage of the assessment. Assessments should address issues most relevant to the stakeholders.

Participants noted that the methodologies chosen for impact and adaptation analyses depend on the policy context in which they are to be applied. Two examples were cited, that is, national communications under the UNFCCC and national planning decisions and policy processes.

The participants suggested that an effort should be made to reconcile international and national processes, so that impact, vulnerability and adaptation assessments can meet the needs of the decision-making process. It was stressed that most stakeholders and policy decision-makers have little interest in longer-term climate change conditions and impacts (e.g., impacts of changed temperature in 2050). As a result, impact and adaptation studies under the domain of the

UNFCCC do not generally lead to adaptation actions. However, stakeholders and policy makers are interested in immediate climate variations and extremes, which have a more significant and visible impact.

The participants stressed that in developing countries there is a need for further studies to incorporate traditional and local knowledge and to be integrated into national sustainable development processes. At the workshop, such studies were referenced as “second generation” vulnerability and adaptation assessments. The participants felt there was a need to have flexibility in choosing methods for conducting such assessments. Participants stressed that for most countries, particularly Parties not included in Annex I to the Convention (non-Annex I countries), methods must be practical, appropriate, feasible, easy to implement and inexpensive. They should not require data which is not available or would require considerable time and excessive resources to compile.”

Workshop conclusions

“The workshop participants concluded that there is a need:

- a) To ensure that national vulnerability and adaptation assessments focus on policy options, are oriented towards national planning, processes and decisions, incorporate traditional knowledge and are integrated into national sustainable development programmes (see para. 21);
- b) To modify approaches to impact, vulnerability, and adaptation assessments and promote the evolution of methods to better address risks associated with variability and extreme events;
- c) To involve key stakeholders in national impacts, vulnerability and adaptations assessment in order to ensure that relevant aspects of the climate change issue are taken into account;
- d) To compare vulnerabilities and adaptation to previous and current experience in adapting to climate variability and extremes, and ensure that methods are practical, appropriate, feasible, easy to implement and that they use data which are readily available; and
- e) To build national capacity for developing, identifying and applying the most appropriate methods based on national circumstances and, where needed, establish national climate change technical teams to this end.

Participants further concluded that, in relation to the improvement of methodologies and the dissemination of information about them, there is a need:

- a) To promote interaction between end-users and developers of methodologies;
- b) To ensure that the evolution of methodologies takes on board the experience acquired in socio-economic and environmental disciplines;
- c) To coordinate the development of methods and encourage testing at the regional level when feasible;
- d) To apply different methods within one country to determine the variance and/or uncertainty of the results;
- e) To improve data quality, including meteorological data, and promote observation systems;
- f) To improve the dissemination of information on methods, and improve the exchange of information in an interactive manner,
- g) To disseminate information on methods and tools to assess climate change impact, vulnerability and adaptations in accordance with the needs and priorities of stakeholders/users;
- h) To supplement the information for dissemination with an evaluation of the methods based on experience gained from their application.

The participants suggested that:

- a) The conclusions of this workshop be considered and taken into account in further activities on adaptation under the UNFCCC;
- b) As part of any future activities, information should be collected and disseminated that facilitates the preparation of “second generation” vulnerability, impact and adaptation assessments; and
- c) Activities on methodologies for impact assessment and adaptation carried out in the UNFCCC framework be coordinated with related activities in other international organizations.”