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**United Nations Development Programme**
GLOBAL ENVIRONMENT FACILITY**To:** Mr. Avini Vaish
GEF Secretariat**Date:** 25 February 1997**Fax:** 202.522.3240**Pages:** 13**From:** Cathy Maize *CMaize*
RBAP/GEF**Subject:** Cambodia: Climate Change Enabling Activity

Further to your fax of 24/1, the document has been modified to reflect the modifications you indicated. Please find herewith the pages to be replaced in the document. The full electronic file was forwarded by email.

Best Regards.

(pages 8, 11, 12, 13, 14, 17, 18, 19, 21, 22, 23, 25)

cc: Messrs. Asenjo/Hosier
Ms. Noble

UNITED NATIONS DEVELOPMENT PROGRAMME
GLOBAL ENVIRONMENT FACILITY
PROPOSAL FOR REVIEW

Country:	Cambodia
Project Title:	Enabling Cambodia to Prepare its First National Communication in Response to the UNFCCC
GEF Focal Area:	Climate Change
Country Eligibility:	Entry into Force of UNFCCC, March 17, 1996 [x] Eligible under financial mechanism of UNFCCC [x] Eligible under paragraph 9(b) of the Instrument
Date of Ratification:	18 December 1995
Total Project Costs:	US \$ 325,480
GEF Financing:	US \$ 325,480
Country Financing:	In-kind contribution to the project
GEF Implementing Agency:	UNDP
Executing Agency:	Government of Cambodia
Local Counterpart Agencies:	Ministry of the Environment
Estimated Starting Date:	February 1997
Project Duration:	27 months

COUNTRY AND SECTOR BACKGROUND

1. As part of its ongoing effort to rejoin the community of nations, Cambodia ratified the United Nations Framework Convention on Climate Change (FCCC) in late 1995. The Convention entered into force in Cambodia on March 17, 1996. Although Cambodia obviously has more urgent short-term social and environmental priorities than climate change, it is also in a unique position with respect to its vulnerability to climate change, and its ability to integrate climate change considerations into the rebuilding of its legal and policy infrastructure. With respect to its vulnerability to climate change, Cambodia's entire agricultural production system is dependent on the annual flooding and recession of Tonle Sap lake, and is therefore particularly sensitive to potential changes in local climate and monsoon regimes. With its policy and legal systems in a still nascent state following more than two decades of upheaval, Cambodia has an unparalleled opportunity to integrate climate change issues and mitigation into those systems as they develop.

2. As a UNFCCC ratifier, Cambodia is obliged to submit periodic national communications to the UNFCCC Secretariat. For this to occur, there is a pressing need for assistance in developing and sustaining a process by which Cambodia can complete a greenhouse gas inventory, assess its vulnerability to climate change, and develop adaptation and mitigation strategies.

Country Description

3. The most important thing to recognize about Cambodia is its recent history. In the 1970's, the spill-over of the Vietnam war into Cambodia and subsequent seizure of power by the Khmer Rouge brought about the destruction of the country's institutions and the death or exodus of nearly all its educated and skilled citizens. In 1978, the Khmer Rouge were ousted by a Vietnamese invasion, ushering in more than ten years of civil war and unrest. The Vietnamese withdrew in 1989, and in 1991, the Paris Peace Accords allowed the deployment of the United Nations Transit Authority in Cambodia (UNTAC), a large peacekeeping force which monitored the ongoing civil war and helped to resettle Cambodian refugees. UNTAC also oversaw new elections in 1993, resulting in the promulgation of a new constitution and the reestablishment of a constitutional monarchy in Cambodia.

4. As a result of its history over the last 25 years, Cambodia lacks managerial, organizational, technical and even language skills. There are very few trained scientists, including environmental specialists. Cambodia must focus on broad-based capacity building in order to pursue development objectives, environmental or otherwise.

5. Cambodia is bordered by Vietnam in the east and southeast, Laos in the north, Thailand in the north and west, and the Gulf of Thailand to the southwest. Its land area covers 181,035 km², or more than 18 million hectares. Total border length with neighboring countries is 2,572 km, while the coastline is 443 km. Cambodia's topography consists mostly of low, flat plains with mountains in the north and southwest. Because of Cambodia's location within the plains and valley of the Mekong and Chao Phraya rivers,

about 30 percent of the country's land area is wetland. Perhaps the most important geographic feature in Cambodia is the Tonle Sap, or Great Lake, which is part of the Mekong river system and ranges from 3,000 to 25,000 km² in surface area depending on the season. Located in the center of the country, nearly half of Cambodia's population lives in its surrounding provinces.

6. Cambodia has a population of around 9 million and a population growth rate of between 2.5 and 3 percent. It had a per capita GNP of close to US \$200 in 1992. Almost 85% of total employment is in the agricultural sector, which accounts for close to 50% of GDP and almost all export earnings. Social indicators show a low quality of life for many in the rural areas and for the unemployed in the towns and cities. Law and order problems pose a serious socioeconomic problem both in rural and urban areas. Life expectancy at birth is 49 years.

7. Parts of Cambodia's natural environment are still comparatively pristine, but this could rapidly change. Environmental quality is under threat from potential development, consumption, and population growth. There is an urgent need for attention to all key resource management sectors, including sustainable management of renewable natural resources such as forests, land, coastal and marine ecosystems, and the management of mineral resources to provide an investment for the future.

8. Cambodia is rich in natural resources including forests, productive agricultural land, as well as inland and coastal fisheries. A range of agro-ecological conditions make Cambodia suited to a wide range of crops and livestock, and provide it with a great deal of biological diversity. Cambodia has three main physiographic regions: the central flood plain area of the Mekong river and the Tonle Sap lake; the coastal mountain chain in the southwest; and the low undulating plateau in the east. The monsoonal climate is characterized by distinct wet and dry seasons; crops grown during the dry season have to depend almost entirely on irrigation or moisture from receding floods.

9. Cambodia is highly vulnerable to the impacts of climate change. Cambodia's economy is almost entirely dependent on rice, which is in turn dependent on the unique hydrology of Tonle Sap lake, which doubles in size every year with backflow from the downstream Mekong delta, and provides the moisture and fertility needed to grow the country's rice crop. Farmers have adapted to the vagaries of Cambodia's monsoon climate, and could be severely impacted by changes in the timing of wet and dry seasons. Although not possessing a long coastline, much of Cambodia is at low elevation, and large parts of the Mekong river flood plain could be affected by rising sea levels.

10. Although the hydropower potential in the country is enormous, imported petroleum is the mainstay of Cambodia's small electricity system. The electricity sector has the very real potential for explosive growth as generating and transmission systems are repaired and expanded in coming years. The same can be said for Cambodia's still nascent industrial sector, and its transportation sector.

11. Cambodia is currently a small source of GHG emissions. According to the World Resources Report 1996-97 (WRR), land-use change in 1991 accounted for 35 million tons of CO₂ emissions, although these and any other estimates have to be acknowledged as extremely uncertain. WRR estimates that energy and industrial-related emissions accounted for only 462,000 metric tons in the same year, and that methane emissions in 1989 were 1.1 million metric tons per year from a combination of rice and livestock production. Recovery of the country from its recent history, as well as economic development, is likely to dramatically increase land-use and energy related emissions of GHGs over time.

12. Cambodia is poised for potentially dramatic changes in its economy. Approval of most favored nation status by the United States, for example, could lead to large-scale foreign factory investment within just a couple of years. This emphasizes the need to begin incorporating environmental sustainability objectives into Cambodia's development process as early as possible, which will be assisted by the proposed GEF project.

Cambodia's Forestry Sector

13. Cambodia's population has a long tradition of forest utilization. Forests play a significant role in the national economy, and their official contribution to GDP is probably greatly underestimated. Forest resources are used both for energy and for the production of artisanal and industrial forest products. Forests are integral to the livelihoods of rural communities, supplying wood and wood products, as well as non-wood forest products and foods from plants and animals. Wood constitutes up to 90 percent of total energy supply in Cambodia and is the primary fuel source (both directly and indirectly through charcoal) for cooking. Wood is also a primary construction material, particularly in rural areas. Cambodia's forests are also storehouses of biological diversity and are vital to the health of the natural environment and the functioning of Tonle Sap lake.

14. As a result of the civil conflict of the last 20 years, Cambodia's forests have been spared from many of the destructive pressures faced by the forests of neighboring countries. Even today, millions of land mines from Cambodia's civil war in the 1970s remain active throughout the country, and offer a particularly cruel impediment to not only the expansion of cultivation and agricultural development, but to basic harvesting of forestry resource such as timber. De-mining efforts continue but at an agonizingly slow pace. Several hundred Cambodians are killed or maimed each month by landmines left from the civil war.

15. Although relatively protected from large scale exploitation during and after Cambodia's civil war, forests in Cambodia have undergone major changes in the relatively recent past and serious concern has been expressed over the likelihood of their exploitation in the future. Despite escalating exploitative pressures on its forests, Cambodia has virtually no forestry legislation and no national forestry policy. This makes it very difficult to manage the operations of legitimate forest companies and small-scale sawmill operators, and even more difficult to address the problem of illegal logging and illegal sawmill operations. Recently, there has been particular concern about illegal and unmanaged logging along the Thai-Cambodian border, often alleged to be associated with the Khmer Rouge

which still maintains bases in the region, although the Cambodian military has been implicated as well.

16. A Tropical Forestry Action Plan (TFAP) was almost undertaken in Cambodia in 1995, but was foregone in favor of developing a National Forest Policy for Cambodia. This approach was chosen because of the dearth of potential non-governmental participants in a TFAP process, and the concentration of forest sector power in a relatively few institutions including the Cambodian military. Toward the end of developing this National Forest Policy, the Cambodian government implemented a ban on the cutting of fresh timber in January, 1995, followed by a ban four months later on all timber exports. The purpose of these bans was to allow an inventory of forest resources so that a sustainable management plan could be developed. However, the government has continued to offer timber concessions to foreign companies during this period, and there has been considerable evidence of ongoing illegal logging with logs being trucked across the Thai border. Negotiations associated with the National Forest Policy have been very highly secretive, and it is not known what its provisions will be.

17. Given Cambodia's recent history and the state of its forestry policies, estimating the current extent of forestland in Cambodia is difficult. There has been no forest resource inventory since 1969 when forests covered 13.2 million hectares. Data from the Land Use Mapping Office and the Mekong Secretariat suggest that over the last two decades 2 million hectares of forest have been lost (about 100,000 hectares per year), reducing Cambodia's forest cover to about 65 percent of total land area. FAO data based on studies from the mid-1980s to the early 1990s estimate forest cover at 61 to 67 percent of total land area, and cultivated area at 21 to 22 percent.

18. Considerable controversy surrounds these figures, however. The Cambodian Ministry of Agriculture estimated in March 1995 that 40 percent of Cambodia is forested. Estimates from environmental NGOs place the range more around 30 to 35 percent. A primary reason for these discrepancies is that unregulated and illegal logging have dramatically increased the rate of deforestation in Cambodia since the early 1990s. One environmental group estimates that more timber was exported in 1992 than in all years between 1970 and 1991. One sign of the confusion surrounding these forestry statistics is that Ministry of Agriculture documents suggest that 35.6 percent of land area has been conceded to timber companies, which is more than the country's total forest cover as estimated by environmental NGOs.

19. There is currently much concern about the fate of Cambodia's remaining forest cover. The FAO estimates that much of it is unevenly distributed, and that about 25 percent of the country has been deforested because of conversion to agriculture. In addition, the FAO estimates that among existing stands, 528,000 hectares are disturbed (consisting of secondary formations, thickets, shrubs, or fire-induced savannah grasslands). As mentioned above, logging for timber continues largely unchecked. Currently, 34,000 km² of Cambodia's forests are officially protected, with several protected parcels near the Thai border. Given the rate of illegal logging on this border, and the apparent over-

granting of timber concessions, even these protected areas may be in danger of being logged.

20. Cambodia's current forest policy and the future of its forests remain unclear. A great deal of forest cover remains in Cambodia, and wood demand is currently well within the forests' capacity to supply under proper management. Such management is, however, unlikely given current social, economic, and political conditions and the fact that much of Cambodia's timberland is now under the control of armed groups and foreign companies.

Cambodia's Energy Sector

21. Though the bulk of Cambodia's population continues to meet its energy needs with fuelwood, the electricity generation and transportation sectors in Cambodia are growing. These sectors rely primarily on imported petroleum products. In 1993 the country imported a total of 289,000 tons of petroleum products, valued at about US \$20 million. Thirty-five percent of these products were used in electricity generating plants, run by Electricité du Cambodge, a government-owned utility firm. The rest went primarily to private diesel generating units (employed by many consumers to make up for unreliable grid power), and transportation.

22. Power generating facilities in Cambodia suffered extensive damage or neglect during the civil war, severely curtailing electricity generation. Phnom Penh, which has more than 90 percent of the country's installed capacity for electricity generation, is supplied by five power stations with a total capacity of 67 MW, but only about 40 MW is operational. The aging generators at these stations are in poor condition because of inadequate maintenance and lack of spare parts. As a result, power outages are so frequent that economic activities and the provision of essential services such as telecommunication and water treatment have been adversely impacted. Many energy users have therefore installed their own diesel generating units, totaling as much as 100 MW in Phnom Penh.

23. Cambodia's transportation infrastructure was severely damaged by war activities and neglect over the last 25 years. There are still relatively few cars, trucks, and motorcycles in Cambodia; this situation is changing, however, as Cambodia's infrastructure is restored. Of the 289,000 tons of petroleum products imported in 1993, 88,000 tons were gasoline. This demand will grow as the transportation sector expands.

24. The Government's strategy, in the short term, is to ensure a reliable supply of electricity and to rehabilitate and expand existing power stations and electricity distribution systems. It hopes to finance these investments with loans and grants from multilateral and bilateral sources, and from the private sector under a Build-Operate-Transfer (BOT) arrangement. The Government has obtained a total of US \$211.5 million in commitments and pledges for rehabilitation and expansion work from 1993-1998, including a US \$40 million loan from the World Bank.

25. Cambodia's long-term energy strategy is geared towards expanding the country's hydroelectric, oil, and gas potential to keep pace with its growing economy and energy

demand. The government's goal is to maintain a 7 to 8 percent annual growth in GDP; at this rate, however, electricity demand from industrial and household uses is expected to outstrip supply, based on planned (but not fully funded) electricity sector rehabilitation and expansion work. The total demand for electricity is expected to rise from 28.7 MW in 1994 to 134.7 MW by 2000, 60 percent more than the projected supply of 84 MW for that year.

26. Cambodia has several options for expanding its energy supply. Perhaps the greatest untapped energy source is hydroelectric power. Cambodia currently has one hydropower station in operation, rated at 1 MW. The Kirirom Dam, a 10 MW hydroelectric facility constructed in 1968, is expected to come back on-line this year after 26 years of disuse. The WRR, however, estimates Cambodia's known exploitable hydroelectric potential at 83,000 MW. Cambodia's government is seeking international assistance to begin exploiting this potential. Three sites on the Mekong river and one on the Tonle Sap river have already been identified for development. Before development can begin, however, Cambodia must consult other countries who rely on the Mekong for water resources. Hydro development would also entail potentially significant environmental disruption. Disruption in the hydrological regime along the Mekong river, for example, could result in diminished flows at critical times. Also, parts of the existing flood plain could become permanently inundated, reducing the potential rice growing area.

27. Cambodia also has significant unexploited oil and gas potential, mostly at offshore sites. Very tentative estimates suggest an exploitable potential of 1.5 to 3.5 trillion cubic feet of gas, and 30 to 180 million barrels of oil. Initial work in the oil and gas sector since 1991 has concentrated on exploration. International firms have been licensed to conduct oil exploration in three offshore "blocks" designated by the government. No oil and gas prospecting has been allowed in the Tonle Sap area because of environmental concerns. So far, no licenses have been issued for commercial oil and gas development.

Cambodia's Agricultural Sector

28. Agriculture is the most important sector of the Cambodian economy, accounting in 1991 for 47 percent of real GDP and 85 percent of total employment. According to official figures, crops contribute 63 percent to agricultural GDP while livestock, fisheries, and forestry contribute 24 percent, 10 percent, and 3 percent respectively. These figures are only indicative, however, and the relative share of forestry appears to be grossly underestimated. Good opportunities exist in Cambodia for expanding production of rice, rubber, other food and commercial crops, and tree crops (such as sugarpalm, coffee, pepper, cashewnut, and coconut).

29. Cambodia's main objectives for its agricultural sector are to ensure food security at both national and household levels; produce surpluses of rice and other crops for export; expand rubber production to obtain increased foreign exchange earnings; encourage the production of raw materials for local agro-industries; and improve the income and well-being of the rural population. Cambodia's agriculture has much potential and a large

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reserve of under-utilized human and natural resources which could allow it to achieve food security and rural development objectives.

30. Development of the country's resources is hampered by natural and war-inflicted constraints. Natural constraints include generally low soil fertility outside the active flood plain and "red soil" areas, and also limited possibilities for economically viable water and irrigation management. General constraints include social and economic insecurity and the presence of land mines in parts of the country; the very poor state of infrastructure and telecommunications; the confused land tenure situation; the state of infancy of both farmers' and private institutions involved in agriculture; and the absence of any formal system of agricultural credit, except for a few pilot schemes initiated by UNICEF and NGOs. Overall, the Cambodian agriculture sector faces an acute shortage of skills coupled with severe technological limitations.

Environmental Commitments and Policy Framework in Cambodia

31. Cambodia's legal system, including development of a framework of environmental legislation, is still relatively nascent. Cambodia was required to completely rebuild its legal system after 1979, and much of this process only got underway with the elections in 1993. Understandably, the development of environmental legislation has been slow. In addition, the Cambodian government has little capacity to develop a policy or institutional framework for environmental management. Effective implementation of whatever protective and management framework is put into place in the near term will face major implementation problems.

32. Within the government the Ministry of the Environment has considerable responsibility for developing and promulgating environmental policy, although there is considerable overlap over responsibility for cross-cutting policy issues. Other relevant agencies for the environment include the Ministry of Agriculture, Forestry and Fisheries, and the Ministry of Energy and Mines.

33. Despite its obstacles, Cambodia's government is committed to pursuing as responsible an environmental course as it can. Evidence of Cambodia's environmental commitment can be found in the fact that it has ratified the FCCC, notwithstanding the many crushing economic and infrastructural priorities facing the country.

34. Other than its ratification of the UNFCCC, Cambodia has no policy framework targeted specifically at climate change concerns, and none should be anticipated in the immediate future in the absence of the proposed project. In spite of official recognition of the need to address the environmental issues facing Cambodia, including climate change, external assistance from the GEF is required in order to strengthen the institutional and technical capabilities to enable it to fulfill the country's objectives and to produce Cambodia's first national communication. Because nothing has taken place in Cambodia in the climate change arena thus far (see attached capabilities Annex), reinforcement of Cambodia's technical capacity is required in all key areas, including completion of a GHG inventory, carrying out adaptation and mitigation assessments, completing a national

completing a national climate change plan, and preparation and submission of Cambodia's national communication.

Related Activities

35. As stated above, Cambodia has no climate change policy framework. Cambodia does not participate in the U.S., German or UNEP Country Studies Programs. Cambodia is not a party to regional GEF enabling activities including the Asian Least-Cost Greenhouse Gas Abatement Strategies Project (ALGAS), UNITAR's CC:TRAIN Phase II Training Programme, and the Pacific Island Climate Change Assistance Project (PICCAP).

36. The only climate-specific activity engaged in by government representatives has been limited participation in a regional Australian project on the modelling of potential climate change impacts. Through this project a couple of Cambodian representatives have had the opportunity to attend a series of three workshops on impacts modelling.

37. While climate change has not been a specific focus of governmental activity, many activities relevant to Cambodia's future emissions of greenhouse gases are ongoing as Cambodia attempts to rebuild its policy and physical infrastructure throughout the country. These include policy and project activities in the forestry and energy supply sectors. Although not targeted at climate change concerns, and not currently generating the information needed to complete Cambodia's national communication under the UNFCCC, these activities can be drawn upon for purposes of the various activities to be carried out through this project. These past and current efforts include:

- The recently completed UNDP-financed Cambodia Environmental Advisory Team Project (CEAT). The project was completed in 1994, and was conceived of as an emergency measure to ensure that a range of issues relating to sustainable development and environmental quality were integrated into national planning at the earliest possible stages of institutional development. The four main areas of intervention were: 1) environmental education/awareness raising; 2) information management; 3) capacity building of the Ministry of Environment and related Ministries; 4) demonstration projects in rural resource management.

- The Environmental Technical Advisory Programme (ETAP), initiated by UNDP in 1995 as the successor to CEAT. ETAP builds on the foundation established by CEAT by further increasing environmental awareness of the Cambodian population and building Government institutional capacity to address national environmental priorities. Its four main objectives, like CEAT's, are: 1) providing training materials for environmental education to primary and secondary schools and Buddhist institutions, as well as to government agencies; 2) establishing an Integrated Resource Information Center (IRIC) with the capability to gather, analyze, interpret, integrate, and produce resource information for decision-makers; 3) strengthen the institutional capacity and technical capability of the State Secretariat for the

Environment (SSE), other Government ministries, and the provincial SSEs; and 4) plan and implement demonstration projects that result in improvements in wetlands protection and national park management.

Creation of an Integrated Resource Information Center for Cambodia. Part of the ETAP project introduced above, the intent of the IRIC is to develop an integrated resources information system that would provide information of broad interest for several government agencies and various donors. The system consists of two parts: 1) data collection, involving remote sensing and aerial photo interpretation to create spatial data maps; and 2) the development of a Geographic Information System (GIS). The information pulled together by IRIC will have a vital role to play in this project.

Development of a National Environmental Action Plan (NEAP) with World Bank Support. The NEAP process is intended to provide working reports outlining policy options concerning protected areas management, energy sector development, water resources, and other key resource sectors. The project is intended to phase out in late 1996.

Establishment of a Forestry Resources Inventory Process in Cambodia. The project, funded by FAO and UNDP, is intended to strengthen Cambodia's capacity in the field of forestry in both technical and management sectors. The project consists of three main components: 1) technical training at national institutions for both trainers and technicians; 2) mapping of existing forests; and 3) preliminary inventory of priority areas determined by the project. The project commenced at the end of 1995 and should continue for two years.

UNESCO's efforts to study and protect the long-term integrity of the Tonle Sap and its watershed, including the attempt to designate it as a Man and the Biosphere Reserve. UNESCO's efforts in combination with the forest inventory mapping being done by FAO and UNDP are expected to yield a good land-use map (albeit with very limited ground-truthing given the difficulty of doing field work). The watershed totals 1/3 of the country's surface area and includes significant biodiversity resources.

Creation of a National Forestry Policy for Cambodia. Originally conceived of as a Cambodian Tropical Forestry Action Plan, the focus of the project was changed to emphasize the participation of those entities currently wielding significant influence over the forest sector. The process has been slow and has been kept secret, so little is known about what will be put into place as part of this Forest Policy. As previously noted, however, no programs are in place to ensure effective forest management, or effectively control illegal logging in the country.

PROJECT DESCRIPTION

Strategy

38. This project builds Cambodian knowledge and capacity related to implementing the UNFCCC by focusing on issues clearly perceived by the government as environmental and developmental priorities. The strategy revolves around the understanding and management of Cambodia's forest, agricultural, and energy sectors and seeks to promote the incorporation of climate change concerns and objectives into planning and management of these sectors. The project strategy will consist of the following major components:

Training

39. Since this is a capacity and institution building project, training activities are a significant component. The training component will take full advantage of ongoing GEF/UNDP and other initiatives such as the regional PICCAP, ALGAS and SPSLM projects, CC:TRAIN. In addition, regional institutions such as the Asian Institute of Technology in Bangkok, which already works with a number of Cambodian Ministries in training and support capacities, and TERI, which boasts extensive climate change expertise and is already working to support other GEF enabling activities within the region, will be drawn upon for training purposes. Organizations such as the Phnom Penh University, which is currently trying to start up an environmental curriculum, will also be involved in these training activities. Beyond general capacity building efforts associated with the production of Cambodia's national communication, the project will identify key national personnel who would benefit from specialized training in order to be capable of assembling, interpreting, and disseminating data relevant to GHG emissions and mitigation of climate change impacts. Training approaches that will be used include:

In-Service Training: In-service training will include participation of governmental and nongovernmental representatives in national as well as international workshops and seminars organized through this project or carried out under the auspices of other GEF/UNDP projects. Training topics will relate to climate change vulnerability and adaptation, GHG inventory completion, UNFCCC national communications contents and formats, and assessment of GHG mitigation options relevant to the Cambodian context. Language limitations will require more in-country training workshops than would be the case in most other countries, as well as much more extensive translation of climate change training materials into native Khmer language than is normally the case in GEF enabling activities projects.

Technical Expert and Consultancy Training: The project will provide technical experts to conduct studies, carry out analyses, and train national governmental and nongovernmental personnel on specific issues relevant to Cambodia that are not sufficiently covered through in-service training, or which require a more Cambodia-specific focus to be most useful. Consultants will provide technical expertise in areas such as forest GHG

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inventory assessment, and mitigation options in the electricity generation and transport sectors. Such consultants will be drawn from the region as much as possible in order to take significant advantage of already underway parallel efforts.

Institution Building

40. The project will pull together governmental and non-governmental entities currently involved in resource and development planning or management in Cambodia. These organizations do not yet have a history of successful cooperation in the environmental or other arenas, and the work of the Project Coordinator will be key to spurring the success of such cooperation in this case. New institutional frameworks including the Project Steering Committee and the National Technical Committee will be put into place with the explicit goal of utilizing interdisciplinary knowledge bases to address climate change concerns in the short and long terms.

Technical Discourse

41. Linking this project to forest inventory and agricultural management issues is critical. The project will initiate a dialogue at multiple institutional levels to address climate change linkages to the natural resources and agricultural sectors. The project will sponsor national and cooperative seminars and workshops and incorporate climate change related informational requirements into ongoing research efforts such as those being carried out by FAO and UNESCO in the forestry inventory and agricultural sectors.

Network Building

42. It is essential that project participants within Cambodia become tied in to the many climate change related processes underway elsewhere in the Pacific region and elsewhere. Although language barriers will be a limiting factor for several years, it is important to establish at least basic links while they are being forged throughout the region on the subject of climate change. The project will establish close links with parallel ongoing subregional UNDP/GEF projects such as PICCAP and ALGAS. It will build on relevant elements of other UNDP/GEF projects such as in sub-Saharan Africa and the Maghreb states. It will work to take advantage of relevant Country Studies Programs being carried out by the U.S., GTZ, and other agencies. Furthermore, it will build linkages with existing international climate change networks including CC:TRAIN. The project will provide direct Cambodia access to international information networks.

43. In summary, the project strategy will assist Cambodia to fulfill its obligations under the Convention and to effectively participate in the global effort to limit GHG emissions and develop GHG sinks. The project will simultaneously contribute toward national environment and development priorities, while adhering to the specific objectives and criteria of the UNFCCC.

Institutional Framework

44. The project will be executed and implemented using four key actors:
- (a) *Government of Cambodia*
Because of its stated commitments under the UNFCCC, the government of Cambodia will be the executing agency for this project. Government inputs will include modest counterpart support, including allocation of technical experts, communication/office facilities, and secretarial/administrative services.
 - (b) *Project Coordinator and Assistant Coordinator*
A Project Coordinator (PC) will be selected from qualified regional applicants. The PC will be located in Cambodia for an initial period of 12 months, and for six months over the second year of the project. The PC should have proven experience in managing a broad-ranging technical and policy assessment process, and extensive experience in the climate change arena. Experience in Cambodia and some knowledge of the Khmer language will be strongly encouraged. The PC will oversee all project activities, and will work intensively with the Project Steering Committee and the National Technical Committee. The PC's salary will be provided through the project. The PC will have a full-time Assistant Project Coordinator (APC) drawn from within the Ministry of Environment. The PC will work to transfer expertise and management capabilities to the APC over the course of the project, so that the APC will be in a position to assist with future fulfillment of Cambodia's objectives with regard to the UNFCCC.
 - (c) *Project Steering Committee*
The Project Steering Committee (PSC) will be the project policy-making body that works closely with the Project Coordinator to facilitate and implement the overall project. The PSC will oversee project implementation and ensure inter-agency coordination. It will incorporate high-level representation of selected Cambodian government ministries and agencies, including the Ministries of Environment, Agriculture, and Energy and Mines, as well as UNDP. It will also include representatives of key policy-making support programs, including the Cambodian National Environmental Action Plan (NEAP) and the Environmental Technical Advisory Programme. Chairmanship of the PSC will be shared by the Ministry of Environment and the Project Coordinator.
 - (d) *National Technical Committee*
The National Technical Committee (NTC) will consist of a group of individuals that provide for broad-ranging participation across the relevant sectors, including government agencies, academic institutions like the University of Phnom Penh, NGOs, and private sector organizations. Many members of the NTC will have little or no knowledge of climate change

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issues at the outset, and may not be experts in any particular field. Members of the NTC, supported as needed by national and international expertise, will be the focus of the training activities associated with the project, will play a key role in carrying out the activities associated with the project, and will form the basis for Cambodia's future capacity to fulfill its objectives related to the UNFCCC.

IMMEDIATE OBJECTIVES, OUTPUTS AND ACTIVITIES

45. The enabling activities of this project will facilitate the implementation, in accordance with the Convention, of effective response measures by Cambodia. The final output of the project will be presented in the format prescribed by the COP2. The immediate aim of the Cambodia Climate Change Assistance Project is to enable Cambodia to meet its reporting objectives, leading to its national communication as required under Article 12. In this regard, seven specific objectives have been identified:

- To put into place the procedural and infrastructural elements that will form the framework for the rest of project activities.
- To enable Cambodia to fulfil its reporting obligations with regard to the development of an inventory of GHG sources and sinks. The resulting inventory will be able to be updated periodically in accordance with the IPCC methodology. The inventory will encompass both land-use and energy sources and sinks of greenhouse gases including CH₄, N₂O, and CFC emissions.
- To enable Cambodia to fulfil its objectives with regard to the identification of options for mitigating climate change, in both the land-use and energy production sectors.
- To enable Cambodia to identify options with respect to vulnerability to future climate change and sea level rise.
- To enable Cambodia to identify its objectives with for adapting to climate change and sea-level rise.
- To enable Cambodia to fulfil its reporting obligation with respect of a national implementation plan.
- To enable Cambodia to fulfil its reporting obligations with respect to communicating information under Article 12 of the Climate Convention (national communications).

46. The enabling activities of this project will facilitate the implementation, in accordance with the Convention, of effective response measures by Cambodia. The immediate aim of the project is to enable Cambodia to meet its reporting obligation leading to its national communication as required under the Framework Convention on Climate Change, Article 12. The key objectives, outputs and activities are summarized below.

Immediate Objective 1 (Infrastructure Development): To put into place the procedural and infrastructural elements that will form the framework for the rest of project activities.

Activity 1.1.1: Hire a Project Coordinator from within the region. The PC will prepare a detailed work plan for the project and identify the institutions that are capable of implementing different subcomponents of the project.

Activity 1.1.2: Establish a Project Steering Committee. The PSC will be composed of senior representatives of relevant agencies and key support programs such as NEAP and ETAP, and will function as the primary policy-making body for the project with the assistance of the Project Coordinator. During project implementation, the Project Steering Committee will:

- give guidance on, steer and monitor the implementation of the project;
- establish permanent inter-agency links to coordinate climate change related issues and initiatives in the country; and
- ensure and support smooth transition from this enabling activity to the finalization of a national communication and implementation of the national GHG mitigation strategy.

Activity 1.1.3: The Project Steering Committee in consultation with the Project Coordinator will name an Assistant Project Coordinator (APC) from within the Ministry of Environment. The APC will work with the Project Coordinator to finalize a project work plan.

Activity 1.1.4: The PC and APC, in coordination with the Project Steering Committee, will cooperate in assembling a National Technical Committee with as broad-based governmental, academic, NGO, and industry representation as can be achieved given Cambodian nascent institutions in many of these areas.

Activity 1.1.5: The Project Coordinator and Assistant Coordinator will identify and develop links to both national and international sources of information (such as the US Country Studies Program and other bilateral programs, UNEP, IPCC, CC:TRAIN, international research institutes dealing with inventories, other climate change related issues, ongoing "enabling" activities in other recipient countries, etc.). These information sources will be utilized as appropriate to provide background training for the project, undertake the specific tasks of the project, learn from the experiences and ideas of similar kind of projects elsewhere, and avoid duplication of effort. The necessary equipment will be procured and installed to provide ready project

access to e-mail through an available carrier. When and if internet access becomes available in Cambodia, the project will establish such access.

Activity 1.1.6: In carrying out the above activities and establishing the administrative bodies needed for the project, specific attention will be paid to the dissemination of and public access to the available information (as well as to the results of this project) in order to enable a wide participation and involvement of all the interested individuals and organizations both during and after the project. Information dissemination efforts will rely as much as possible on existing information flows that can be taken advantage of by the project, including the grass roots efforts being undertaken by NGOs such as the Japan Volunteer Center, World Vision, and others.

Objective 2 (Inventories): To enable Cambodia to fulfil its reporting obligations with regard to the development of an inventory of greenhouse gas (GHG) sources and sinks.

Output 2.1: Procedures and training needed for compiling a comprehensive national greenhouse gas (GHG) inventory of sources and sinks appropriate for Cambodia, while maintaining as much consistency as possible with internationally-agreed upon methodologies.

Activity 2.1.1 Adapt the IPCC/OECD Greenhouse Gas Emissions Inventory Guidelines to the needs of Cambodia, taking particular advantage as appropriate of efforts through ALGAS to adapt the Guidelines to the particular circumstances of Asian countries in the region. In addition, a particular emphasis will be needed to reflect the importance of the forest sector to Cambodia's inventory activities. Simplification of the reporting format will inevitably be necessary to account for basic holes in Cambodian datasets, and to allow a reasonable estimate of country baselines.

Activity 2.1.2 Adapt and use training materials and modules being developed by CC:TRAIN, ALGAS, PICCAP and other relevant projects.

Activity 2.1.3 Convene Cambodia Workshop to refine inventory procedures and data needs.

Output 2.2: Cambodian GHG inventory in basic accordance with IPCC/OECD Guidelines.

Activity 2.2.1 Identify any external expertise required to complete the identified inventory methodology.

- Activity 2.2.2 Identify modifications to existing initiatives such as forest inventories that would generate valuable data for the GHG inventory effort.
- Activity 2.2.3 Establish an emissions baseline for inventory purposes. For land-use related emissions, Cambodia's Integrated Resource Information Center (IRIC) may be in the best position to estimate 1990 baseline conditions.
- Activity 2.2.4 As prioritized by the PC and NTC, carry out updated land-use information collection, focusing on high priority parts of the country, including areas that have undergone significant land-use change in the 20 years since the last major inventory.
- Activity 2.2.5 Carry out GHG inventory. Although primarily focused on land-use related CO₂ sources and sinks, the inventory will also encompass energy related emissions as well as CH₄, N₂O and CFC emissions.

Objective 3 (Mitigation): To enable Cambodia to identify mitigation options with respect to climate change.

- Output 3.1:* National mitigation options that are appropriate for Cambodia, particularly long-term measures which are cost-effective and environmentally sustainable that can be integrated in Cambodia's developing policy and legal infrastructures.
- Activity 3.1.1 To the extent possible adapt and use CC:TRAIN, PICCAP and ALGAS to identify the mitigation options facing Cambodia.
- Activity 3.1.2 Convene Cambodia mitigation workshop with a significant emphasis on rural, agricultural and other mitigation measures (bioenergy, etc.) of particular benefit to rural populations.
- Activity 3.1.3 Assign mitigation related research and policy analysis tasks to individual NTC members and groups of members based on their particular capabilities. The subjects to be covered will go beyond sectoral interventions such as forestry measures, and will include regulatory and legislative options given the nascent state of Cambodia's environmental laws. Capacity will be built in research institutes and NGOs working in particular sectors relevant to the mitigation assessment.
- Activity 3.1.4 Evaluate Cambodia's GHG inventory to identify potential areas for reduction of sources and enhancement of sinks.
- Activity 3.1.5 Define the range of possible mitigation options within the country.
- Activity 3.1.6 Identify and evaluate least-cost mitigation options for Cambodia, with a likely primary emphasis on the land-use and energy production sectors.

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Particular attention will also be paid to sectors whose GHG emissions may increase significantly over time, including the energy production and transportation sectors.

Activity 3.1.7 Create a Cambodia-specific Manual on Climate Change Project Development. This will provide a useful guide to the development of climate change mitigation project proposals that serve Cambodia's environmental and development priorities, and at the same time satisfy the requirements of climate change project funders. Maximum benefit will be made of similar manual development work in GEF's Maghreb and Sub-Saharan projects; it is anticipated that completion of the Cambodia Manual will require only modest modification of similar efforts currently underway in those projects. The Manual will be distributed to agencies and NGOs with a potential interest in project development.

Objective 4 (Vulnerability): To enable Cambodia to identify its options with respect to its vulnerability to future climate change.

Output 4.1: Procedures for assessing Cambodia's vulnerability to climate change and sea level rise.

Activity 4.1.1 Participate in CC: TRAIN and ALGAS workshops to the extent possible, focusing on vulnerability assessments relevant to Cambodia's ecological and socioeconomic context.

Activity 4.1.2 Adapt available training materials and modules to any unique circumstances facing Cambodia, including importance of forest and Tonle-Sap ecosystems.

Activity 4.1.3 Conduct training of national stakeholders.

Output 4.2: A comprehensive set of Cambodia baseline data to use as reference points for assessing future vulnerability and adaptation options. This baseline data will have to account for the data problems associated with Cambodia's civil war, and will of necessity be incomplete.

Activity 4.2.1 Define the information requirements.

Activity 4.2.2 Collect, evaluate and compile existing national and regional data, including data generated through the ALGAS project.

Activity 4.2.3 Identify data shortcomings.

Output 4.3: Comprehensive assessment of Cambodia's vulnerability to climate and sea-level change.

Activity 4.3.1 Adapt scenarios developed by the ALGAS project for future region-specific changes in climate and sea level and in related environmental, social and economic conditions.

Activity 4.3.2 Additional background research and policy analysis to fill any remaining gaps projects will be assigned to individual NTC members and groups of members based on their particular capabilities. Capacity will be built in academic and NGO institutions to the extent possible. Particular attention will be paid to the potential implications of climate change for Cambodia's fragile agricultural system based on the Tonle Sap lake.

Activity 4.3.3 Conduct a national vulnerability assessment.

Objective 5 (Adaptation): To enable Cambodia to identify measures to be adopted as a response to climate change and hence sea-level rise.

Output 5.1: Procedures for identifying and evaluating adaptation options.

Activity 5.1.1 Participate in CC:TRAIN, ALGAS and PICCAP workshops to the extent possible relating to the development of regionally appropriate procedures for identifying and evaluating adaptation options which are consistent with the IPCC Technical Guidelines.

Activity 5.1.2 Adapt training materials and modules as needed for use in Cambodia.

Activity 5.1.3 Conduct Cambodia stakeholder training.

Output 5.2: National options for adapting to climate change.

Activity 5.2.1 Define the range of options applicable to Cambodia, with a particular emphasis on agricultural and forestry-based options.

Activity 5.2.2 Evaluate and identify least-cost national adaptation options.

Output 5.3: National options for coping with sea-level rise, including the analysis of options within an ICZM framework.

Activity 5.3.1 Participate in CC:TRAIN, ALGAS and PICCAP activities associated with the development of sea-level rise and coastal zone management.

Activity 5.3.2 Define the range of options applicable to Cambodia.

Activity 5.3.3 Evaluate and identify least-cost national options, in the context of an ICZM framework.

Objective 6 (National Implementation Plans): To facilitate Cambodia's fulfillment of its reporting obligations through the development of a national implementation plan.

Output 6.1: Institutional framework and political support

Activity 6.1.1 Convene project institutions (see Objective 1 above)

Activity 6.1.2 Adapt training materials and modules available through CC:TRAIN and other projects. This will require translation of key materials into Khmer.

Activity 6.1.3 Training of national stakeholders through Cambodia workshops to raise national awareness and political support, and to develop guidance on national implementation plans. This effort would be significantly aided through a public awareness program, including perhaps translation of popularized climate change materials into Khmer.

Output 6.2: Nationally-endorsed implementation plan.

Activity 6.2.1 Prepare a Cambodia implementation plan.

Activity 6.2.2 Convene national workshops for presentation to policy and decision makers.

Objective 7 (National Communications): To enable Cambodia to fulfil its reporting obligations with respect to communicating information under Article 12 of the Climate Convention (National Communications).

Output 7.1: Politically-endorsed and supported National Communication.

Activity 7.1.1 Participate in available Regional Workshops to take advantage of emerging guidelines and application procedures.

Activity 7.1.2 Adapt training materials and modules as appropriate for Cambodia's special circumstances.

Activity 7.1.3 Conduct training of relevant Cambodian stakeholders.

Activity 7.1.4 Prepare National Communication.

Activity 7.1.5 Convene Cambodian workshops for presentation to stakeholders as well as policy and decision makers.

Monitoring and Evaluation

47. Monitoring and evaluation procedures for the project will be established to ensure conformance with emerging UNFCCC guidance, and to conform to related projects such as PICCAP. UNDP and executing agency will be responsible for ensuring monitoring and evaluation mechanism. In addition, the Project Coordinator and proposed Project Steering Committee will be charged to maintain close project oversight including periodic technical and programmatic reviews. These reviews will be supported by regularly scheduled project progress reports. The purpose of the review will be to identify in the very early stages of the project the eventual gaps, overlaps and other risks of the successful implementation as well as to identify potential partners and sources of information of which the project could benefit. Every six months the Project Coordinator will prepare a progress report for the PSC that will be formally discussed during the Committee's regular meetings. A final evaluation of the project will be conducted in accordance with UNDP procedures.

48. A post-project evaluation will be undertaken by UNDP in collaboration with the relevant parties not later than one year after the termination of the project, in order to evaluate the extent to which the outputs of the projects are being used as intended.

RATIONALE FOR GEF SUPPORT

49. The project is consistent with the GEF Operational Strategy and GEF Operational Criteria for enabling activities. This project responds to such objectives by implementing an activity needed to enable Cambodia to prepare its first national communication to the Conference of the Parties. This will be accomplished primarily through the development of institutional capacity, training of personnel, information acquisition/dissemination, and dialogue/cooperation between government and non-government sectors. The direct benefit will be establishment of a long-term capability to advance sustainable development by the incorporation of climate change criteria into national decision making processes.

50. In addition to the immediate output of preparing the national communication, the project will build technical capacity and establish an institutional framework to facilitate the implementation and further development of the identified follow-up activities.

51. It is clear that in the absence of GEF financial support, this project is not possible and a valuable opportunity to influence the integration of climate change considerations into Cambodia's national development will have been lost. The activities described in this project brief are required as part of the UNFCCC and would not have been independently undertaken by Cambodia to address development goals.

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SUSTAINABILITY AND PARTICIPATION

52. The Government of Cambodia fully supports the objectives of this project. National development objectives and strategies are well served by the project through activities intended to foster advanced and sustainable resource management in Cambodia. In particular, the project's emphasis on climate change mitigation strategies that are compatible with long-term forest resource management and conservation will help stimulate national long-term support for the services and activities of the project.

53. The project emphasizes long-term capacity building and training that are intended to establish a permanent foundation for UNFCCC compliance. After the project has ended and the first national communication to the Conference of the Parties has been finalized, the Government will take responsibility to regularly update the inventory and prepare further communications in accordance with agreements reached by COP. It is expected that after successful completion of the project, the Project Steering Committee will continue to deal with UNFCCC related matters on a permanent basis.

Consultative and Participatory Processes

54. This proposal has been prepared by UNDP-GEF based on in-country consultations with relevant Ministries, institutions and/or panels of experts including:

- *Government Ministries, Agencies and Departments:* Ministry of the Environment, Ministry of Agriculture, Forestry and Fisheries, Ministry of Industry and Mines.
- *Nongovernmental and International Organizations:* UNDP, UNESCO, FAO, ETAP (Environmental Technical Assistance Program), USAID, JVC (a Japanese funded NGO), NEAP Secretariat (National Environmental Action Plan).

LESSONS LEARNED AND RESPONSE TO TECHNICAL REVIEW

55. Previous technical reviews of enabling activities processes under the UNFCCC have noted the importance of cooperation and networking of a broad range of experts. This leads to an exchange of information that is linked both nationally and internationally, and considerably strengthens the context within which the project is pursued. For this reason, this capacity building project emphasize the development of national expertise through training and the exchange of information.

PROJECT FINANCING AND BUDGET

56. The total GEF cost of this project is \$325,480. As an enabling activity, this project would not take place without the UNFCCC. Therefore, the full costs of the project equal the incremental costs of the project. The GEF contribution will cover the costs outlined below. In addition to this, the Cambodia Government will make limited in-kind contributions including salaries for staff time associated with operation of the Project Steering and National Technical Committees. Other in-kind contributions will include basic communications and office facilities.

57. The most important circumstances facing Cambodia with respect to the budget required to fulfill its objectives are:

- the nascent state of knowledge and capacity in Cambodia on climate change issues generally, and relevant UNFCCC-required outputs specifically, necessitating the utilization of extensive external albeit regional expertise for project coordination, management, and training services;
- the need to build broad-based ownership and capability into Cambodia's climate change response strategy if it is to prove sustainable;
- the need to adapt Cambodia's enabling activities to the unique political and economic circumstances that prevail in the country; and
- the need for extensive translation and language support given the dearth of English or French speakers in the country.

58. These circumstances require stretching the budget available for national enabling activities through the GEF. Several examples have been identified of how this project can cost-effectively build on other efforts underway in the region in order to maximize its own success:

- CC:TRAIN in coordination with the ALGAS project will be building national teams and helping the teams generate political support through awareness-raising and participatory activities aimed at policy-makers. Cambodia will be able to utilize these efforts in advancing its own project agenda. It is anticipated that the project will be able to get access to CC:TRAIN materials and workshops through the United Nations Institute for Training and Research (UNITAR).
- Cambodia will be able to take advantage of training carried out through ALGAS, PICCAP and CC:TRAIN regional workshops on such subjects as vulnerability and adaptation assessment, and compilation of national implementation plans.

59. The following budget reflects the particular circumstances facing Cambodia in carrying out this project, and the opportunities for maximizing its cost-effectiveness through cooperation and collaboration with parallel efforts that will already be underway.

Budget Code	Project component	Implementing Agency	work months (wm)	Total \$	1997 (12 mos)	1998 (12 mos)	1999 (3 mos)
10.00	PROJECT PERSONNEL						
11.01	Project Coordinator	OPS	18	50,400	25,200	19,600	5,600
11.02	Inventory and Vulnerability Consultant	MoE	20	20,000	15,000	5,000	
11.03	Mitigation and Adaptation Consultant	MoE	20	20,000	15,000	5,000	
11.04	Climate Change Plan Consultant	MoE	1	10,000		5,000	5,000
11.05	Climate Change Project Development Consultant	MoE	.5	5,000		3,000	2,000
11.99	Sub-total		59.5	105400	55200	37600	12600
15.00	Expert Official Travel						
15.01	Duty Travel: In-country	MoE		8000	4000	3,000	1000
17.00	National Professionals						
17.01	National Consultants	MoE	10	10000		6,000	4,000
19.00	COMPONENT TOTAL		10	123,400	59,200	46,600	17,600
30.00	TRAINING						
32.01	Group-training workshops/ dissemination of materials	MoE		77500	37500	25000	15000
33.01	In service training (in-country and abroad)	MoE		47500	29500	18000	
39.00	COMPONENT TOTAL			125000	69000	43000	15000
40.00	EQUIPMENT						
45.01	Local procurement (computers and networking)	MoE		25000	15000	5000	
49.00	COMPONENT TOTAL			25000	15000	5000	0
50.00	MISCELLANEOUS COST						
51.00	Operational (including internet costs)	MoE		25000	13000	7000	5000
52.00	Reporting costs	MoE		8000		3000	5000
53.00	Sundry	MoE		9600	3000	3750	2850
54.00	Support costs (3%)			8430	4,776	2,750	2750
59.00	COMPONENT TOTAL			52080	20776	14500	15600
99.99	PROJECT TOTAL			325,480	163,976	109,100	48,200

61. Preparation of national communications by developing countries is to be fully financed by the GEF for the UNFCCC. An incremental cost assessment for this project is therefore not required.

62. In accordance with Article 4 and 12 of the FCCC, each Party to the convention is obligated to fulfill reporting requirements through a national communication. The first Conference of Parties of the FCCC identified "enabling activities" or capacity enhancement to fulfil this requirement as a programme priority. The February 1996 Operational Strategy places high priority to enabling activities of the nature proposed. This project responds to such objectives by implementing an activity needed to enable this country to fulfill its commitments to implement the Convention.

ISSUES, ACTIONS, AND RISKS

63. The project represents an approach to capacity building that emphasizes training, networking, and national dialogue. It is adapted to Cambodia's particular context and technical capabilities. The ultimate criterion of success will be whether a sustainable climate change assessment and reporting process is established, and whether the results of the project are incorporated into Cambodia's broader development goals and policy infrastructures as they develop. The project seeks to establish a long-term institutional framework for Cambodia to attain its objectives.

64. Cambodia does present a particularly challenging context for the implementation of a project such as this one. The virtual absence of technical and environmental policy infrastructure within the country, coupled with almost non-existent knowledge of climate change issues, combine to pose significant implementation barriers to the long-term success of this project. Although a great deal of information about Cambodia's resource base will become available in coming years, and Cambodia's capacity base will be expanded significantly as students return from studying abroad, these expanded resources may or may not be available to assist this project. Capacity constraints will be a key variable facing the Project Coordinator throughout the project's term.

65. The risks associated with implementation of a project such as this one have been explicitly addressed in project design. One risk is that essential personnel and equipment resources may not be sufficient. The project budget provides for sufficient external expertise, equipment, and travel to accomplish the project's aims. There is very little reliance on Cambodian counterpart support for project activities, since such support will necessarily be far more limited than in most countries engaging in enabling activities.

66. Considering the specific outputs required of the project, a crucial element will be close collaboration among the different ministries and departments at the institutional level, as well as collaboration of the project personnel at the individual level with each other and

the project support staff. The Ministry of Environment remains a young agency in a crowded field of governmental agencies, and it would be inappropriate to assume that other Ministries will not share substantially in responsibilities relevant to long-term UNFCCC compliance. At the same time, the difficulties of institutional cooperation in Cambodia have been emphasized by some individuals consulted during preparation of this document. These difficulties have been addressed by emphasizing the leadership and coordination role to be played by the Project Coordinator, and by structuring an important role for outside experts and non-governmental organizations in the Project Steering Committee.

67. The leading role of the Project Coordinator creates a risk of its own, in that use of even a regional but still outside consultant to serve as PC risks that government agencies may not exert ownership of the project or its products. This risk is addressed through the project in several ways. First, the Assistant PC will be drawn from the Ministry of Environment, and will be integrally involved in all project activities. Second, the Project Steering Committee will share project oversight responsibilities with the PC. Third, the role of the PC will lessen after the first year of the project, with more and more of the responsibility for actually completing the different work products being in the hands of the APC and the National Technical Committee.

68. Another possibility in project implementation is that the methods and approaches used will not conform to the international framework for enabling activities being developed under the UNFCCC. To address this risk, the project will employ commonly accepted methodologies and will modify its approach as guidance from the Convention on issues including enabling activities become better defined. Relevant entities including the IPCC and UNEP will be consulted to ensure that the methods and details used in the project are appropriate. In order to avoid redundancy with other ongoing efforts and to promote effective project implementation, the project will also use the results of ongoing or finalized projects like the UNDP/GEF PICCAP and ALGAS projects, the sub-Saharan and Maghreb regional greenhouse gas mitigation projects, CC:TRAIN and related efforts, and relevant Country Study Programs including those of the U.S., the GTZ, and UNEP.

69. The frequent reorganization of governmental agencies and functions that often accompanies the rapid evolution of policy and administrative structures in many developing countries poses a challenge to the long-term institutionalization of Cambodian compliance with UNFCCC requirements. This risk in particular has been addressed through maximizing the likelihood of broad-based ownership of Cambodia's climate change response process by the country's governmental and non-governmental stakeholder communities. This ownership is strongly encouraged through extensive participatory and training activities.

70. The project is structured as a two-year project starting from the hiring and establishment in Phnom Penh of a Project Coordinator. There is a risk that this is an insufficient period of time to carry out the large number of activities associated with the project. The two year timeframe is timed to be able to take maximum advantage of enabling activities taking place in the region and elsewhere during this period. It was concluded that slowing the project down to stretch it over three years might be counter-productive in being able to take maximum advantage of these other efforts and resources.

It might also dilute the momentum established by the Project Coordinator in the first year of the project, and lead to later under-performance. Establishing the Project Coordinator as a full time or close to full time position was an approach taken to maximize Cambodia's ability to complete the project during a two year period. Should extension of the project prove necessary, or should parallel projects move more slowly than anticipated, production of the national communications could be delayed without significant budgetary impact.

PROJECT BUDGET ACCORDING TO GEF ACTIVITY NORMS IN U.S. DOLLARS

	Output (Planning Execution)	Institutional Strengthening	Training	Technical & Admin. Support	Total Cost
<u>Inventory/ Stocktaking:</u>					
Greenhouse gas inventory	38,000	17,000	20,000	2,000	77,000
Vulnerability assessment	20,000	10,000	15,000	2,000	47,000
<u>Identification of Options</u>					
Mitigation op- tions	18,000	8,000	10,000	2,000	38,000
Stage I adapta- tion	18,000	7,000	11,000	2,000	38,000
<u>Preparation of Plan</u>	15,000	5,000	10,000		30,000
<u>Preparation of National Com- munication</u>	10,000	5,000	5,000		20,000
Fixed Project Costs					
Project Manage- ment	29,000	15,000	15,000	2,000	61,000
Monitoring/ Evaluation	14,480				14,480
TOTAL COSTS	162,480	67,000	86,000	10,000	325,480
Percentage of total costs	50%	21%	26%	3%	100%

Capacity Table for Climate Change Enabling Activities in Cambodia

Enabling activity Commitment	Output (Planning, execution, limited re- search)	Capacity building	
		Institu- tional strengthen- ing	Training
<i>Inventories and stocktaking</i>			
▶ emission inventory			
- CO ₂ from energy sources	X	X	X
- CO ₂ from land use change	X	X	X
- CH ₄ from energy sources	X	X	X
- CH ₄ from other sources	X	X	X
- N ₂ O	X	X	X
- other sources and gases	X	X	X
▶ vulnerability assessment			
- agriculture	X	X	X
- forestry	X	X	X
- coastal zone	X	X	X
- water resources	X	X	X
- health impacts	X	X	X
- natural ecosystems	X	X	X
- other impacts	X	X	X

<i>Identification of options to meet the objectives of the convention</i> ▶ mitigation options <ul style="list-style-type: none"> - energy related <ul style="list-style-type: none"> • industry • transport • energy supply • residential - non-energy sources <ul style="list-style-type: none"> • agriculture • forestry • waste management • other - sink enhancement 			
	X	X	X
	X	X	X
	X	X	X
	X	X	X
	X	X	X
	X	X	X
	X	X	X
	X	X	X
	X	X	X
▶ adaptation options (state I)	X	X	X
<i>Preparation of a plan to fulfill commitments</i>	*		
▶ national plan for mitigation	X	X	X
▶ national plan for adaptation	X	X	X
<i>Preparation of a national communication</i>			
▶ inventory	X	X	X
▶ mitigation options	X	X	X
▶ vulnerability and adaptation	X	X	X
▶ other relevant information	X	X	X

l: to be covered in the project;

<i>Identification of options to meet the objectives of the convention</i> ▶ mitigation options <ul style="list-style-type: none"> - energy related <ul style="list-style-type: none"> • industry • transport • energy supply • residential - non-energy sources <ul style="list-style-type: none"> • agriculture • forestry • waste management • other - sink enhancement 			
▶ adaptation options (stage I)	X	X	X
<i>Preparation of a plan to fulfill commitments</i>			
▶ national plan for mitigation	X	X	X
▶ national plan for adaptation	X	X	X
<i>Preparation of a national communication</i>			
▶ inventory	X	X	X
▶ mitigation options	X	X	X
▶ vulnerability and adaptation	X	X	X
▶ other relevant information	X	X	X

l: to be covered in the project;



KINGDOM OF CAMBODIA
NATION-RELIGION-KING

COUNCIL OF MINISTER
Ministry of Environment

Phnom Penh, May 26, 1996

No 872 MoE

Mr. Paul Matthews
UNDP Resident Representative
No.53, Rue Pasteur, Boeng Keng Kang
Chamkarmon, Phnom Penh

Dear Mr. Matthews,

I am pleased to receive your letter attached with Dr. Trexler's CV and mission's draft terms of reference dated May 15, 1996, requesting for Dr. Trexler to undertake a GEF mission for working days on draft project and document of climate change from 3 to 7 June 1996 in Cambodia.

As proposed, I certainly have no objection and looking forward to his fruitful assistance.

During the 5 working days of Dr. Trexler, Please tell me whom he will be working with? Will the counterpart be born from the Ministry of Environment? If so please let me know immediately, so that I can inform my relevant staff to be ready.

Thank you your usual cooperation.

Yours Sincerely, *m*

[Signature]
Dr. Mok Mareth
Minister