



**United Nations Environment Programme**

برنامج الأمم المتحدة للبيئة • 联合国环境规划署  
PROGRAMME DES NATIONS UNIES POUR L'ENVIRONNEMENT • PROGRAMA DE LAS NACIONES UNIDAS PARA EL MEDIO AMBIENTE  
ПРОГРАММА ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ ПО ОКРУЖАЮЩЕЙ СРЕДЕ

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**TELEFAX TRANSMISSION**

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<b>Date:</b>	11 January 1999		

*Wait for Avani*

*15/1*

Dear Avani,

Attached please find the UNEP proposal entitled "Bangladesh: Enabling Activities for the Preparation of Initial National Communications Related to the UN Framework Convention on Climate Change," for your kind consideration.

The Ministry of Environment and Forests, and UNEP has prepared the proposal, in consultation with a NGO partner, Bangladesh Centre for Advanced Studies. The proposed budget has been arrived at after fully taking into account the work completed through other projects in the country. The Government of Bangladesh, being one of the most vulnerable countries to changes in climate, considers this problem vital to its future development and plans to submit its initial national communications within a period of 18 months from the date the funds are received.

The project is endorsed by the Secretary of the Ministry of Environment and Forests, whose letter is annexed to the proposal. Your early recommendation for CEO's approval of the project will be appreciated.

Regards.

Table 3: Budget for Bangladesh Enabling Activities Project

Enabling Activity Commitment	Planning and execution (US\$)	Capacity Building				Total Cost (US\$)
		Data Gathering and Research (US\$)	Institutional Strengthening (US\$)	Training and Education (US\$)	Technical & Admin. Support (US\$)	
<b>2. Greenhouse Gas Inventories</b>		22,000	8,000	3,000	2,000	35,000
<b>3. General Description of Steps</b>		58,000	32,000	34,000	6,000	130,000
(a) Programs related to sustainable development, research, public awareness, etc.		4,000	3,500	3,000	500	11,000
(b) Policy Options for Monitoring Systems and Response Strategies for Impacts.		22,500	10,000	10,500	2,000	45,000
(c) Policy Frameworks for Implementing Adaptation Measures and Response Strategies.		16,500	9,000	11,500	2,000	39,000
(d) Building Capacity to integrate Climate concerns into Planning		5,500	2,000	2,000	500	10,000
(e) Programs to address climate change, adverse impacts, including abatement, sink enhancement		9,500	7,500	7,000	1,000	25,000
<b>4. Other Information</b>		2000	1000	1500	500	5000
(a) Material relevant for Global Emission Trends		1,000	500	750	250	2,500
(b) Financial, Technological Needs and Constraints		1,000	500	750	250	2,500
<b>5. Compilation and Production of Initial National Communication</b>						20,000
<b>Project Management</b>						48,000
<b>Monitoring/Evaluation</b>						8,000
<b>Total</b>						246,000
<b>% of Total</b>	48%		24%	23%	5%	19,500
<b>UNEP Coordination (8%)</b>						265,500
<b>Total</b>						265,500

**COUNTRY:** **BANGLADESH**

**PROJECT TITLE:** *Bangladesh: Preparation of initial national communication in response to the UN Framework Convention on Climate Change (UNFCCC)*

**GEF Focal Area:** Climate Change

**Country Eligibility:** Ratified UNFCCC on 15 April 1994

**GEF Financing:** US\$255,000

**Government Counterpart Funding:** US\$50,000

**GEF Implementing Agency:** UNEP

**Executing agency:** Ministry of Environment and Forests (MOEF)

**Collaborating Agency:** Department of Environment

**GEF Operational Focal Point** **Secretary, MOEF**

**UNFCCC Focal Point** **MOEF**

**Estimated Starting Date:** January 1999

**Project Duration:** 18 months

Table 2: Standard Activity Matrix for Climate Change Enabling Activities in Bangladesh

ENABLING ACTIVITY COMMITMENT	TYPE OF ACTIVITY			
	Planning /Execution	Capacity Building		
		Data Gathering & Research	Institutional Strengthening	Training & Education
1. National Circumstances	X	NA	NA	NA
2. Greenhouse Gas Inventories				
• All Energy Sources	ALGAS/USCSP(X)	ALGAS/USCSP(X)	(X)	ALGAS (X)
• Industrial Processes	" "	" "	(X)	" "
• Agricultural Processes	" "	" "	(X)	" "
• Land Use Change & Forestry	" "	" "	(X)	" "
• Other(s)	(X)	(X)	(X)	(X)
3. General Description of Steps				
(a) Sustainable Development, Research & Public awareness	(X)	(X)	(X)	(X)
(b) Assessment of Impacts				
• Coastal Processes	USCSP/Dutch (X)	USCSP/Dutch (X)	(X)	(X)
• Agriculture	" "	" "	(X)	(X)
• Fisheries	(X)	(X)	(X)	(X)
• Forestry	(X)	(X)	(X)	(X)
• Natural Ecosystems	(X)	(X)	(X)	(X)
• Other Impacts	(X)	(X)	(X)	(X)
(c) Stage I Adaptation Options	(X)	(X)	(X)	(X)
(d) Integration of Climate Concerns into Planning	(X)	NA	(X)	(X)
(e) Identification of Abatement Programs				
• Energy Related	ALGAS (X)	ALGAS (X)	ALGAS (X)	ALGAS (X)
• Industry	(X)	(X)	(X)	(X)
• Agriculture	(X)	(X)	(X)	(X)
• Land Use Change & Forestry	ALGAS (X)	ALGAS (X)	ALGAS (X)	ALGAS (X)
• Other(s)	(X)	(X)	(X)	(X)
4. Other Information				
(a) Materials Relevant for Global Emission Trends	(X)	(X)	(X)	(X)
(b) Financial and Technological Needs and Constraints	(X)	(X)	(X)	(X)
5. Compilation of National Communications				
	(X)	NA	(X)	(X)

## Background

### *Geographic*

1. The People's Republic of Bangladesh covers an area of 147,570 sq. km. It straddles the Tropic of Cancer. Indian territory wholly encloses it, except for a short southeastern frontier with Myanmar and a southern, deltaic coast fronting the Bay of Bengal. The capital of Bangladesh is Dhaka.

### *Climate*

2. The climate of Bangladesh is tropical and is dominated by the seasonally reversing monsoons. There is no real cool season. In the capital, Dhaka, for example, the average January temperature is 19° C, and the average July temperature 29°C. The summer, if it can be called such, is remarkably equable: the average monthly temperature is 29°C from May right through to September. The winter is dry and crops (in the absence of irrigation or of water-holding depressions, where winter rice can be grown) have to depend upon on moisture remaining in the soil from the monsoons.

3. There are pre-monsoon rains in April and May, but it is the south-west monsoon that brings heavy rain in earnest: 75% of Dhaka's annual average total of 1880 mm falls between June and September. Bangladesh has, in fact, a typical humid tropical violence from time to time, for example when a tropical cyclone, charged with energy and with water vapour and accompanied by high winds, sweeps in and devastates low-lying areas in the coastal parts of the delta. Such 'extreme natural events' tend also to bring high seas and flooding with salt water, so that there is damage to the soil as well as severe loss of life and of crops.

### *Land use patterns*

4. Most of Bangladesh consists of an alluvial plain, largely made up of the still-growing, annually-flooded Ganges-Brahmaputra delta, together with a tongue of similar wet plain running up the Surma river between the Assam plateau and the Lushai hills.

5. For the most part, Bangladesh, is deltaic, and its rural people have evolved a remarkable semi-aquatic life style adapted to deep flooding in the monsoon: for instance, by constructing earthen plinths 4 m or more high to raise their houses above flood-level (or so they hope) and by sowing varieties of rice that will grow in deep water.

6. Much of Bangladesh has relatively fertile soils, many of them benefiting from renewal by flooding. There is considerable local variation: for example, areas of sandy soils on the one hand, and swamp soils on the other (alluvium varying with the rivers that brought it), in addition to Barind and the Madhupur jungle tract. The Chittagong hills have poor skeletal soils.

### *Social*

7. Bangladesh had an estimated population of 120 million at mid-1995, an average density of 816.1 sq. km. Apart from territories comprising less than 1,200 sq. km in area, Bangladesh is the most densely populated country in the world, despite its overwhelmingly rural and agricultural nature. Available evidence suggests that the emphasis placed on the issue of population growth by the Government has begun to produce some results. The average annual rise in the population declined from 2.6% in 1965-80 to 2.3% in 1980-90. The population growth is currently about 2% per year and is projected to decrease further, to around 1.8% by 2000.

Table 1. Proposed Work Schedule for Bangladesh

ACTIVITY	1	2	3	4	5	6	7	8	9	PM	M&E
T											
I											
M											
E											
I											
N											
M											
O											
N											
T											
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NB: Some activities are expected to run concurrently as indicated.

PM is Project Management.

M&E is Evaluation and Monitoring.

### *Economic*

8. Bangladesh is one of the poorest countries in the world with a per capita GDP at US\$ 274 in 1996/97. Consequently aid remains extremely important to the economy. However, the Bangladesh economy has continued to grow strongly despite a decline in overall investment rates. Gross domestic output (GDP) increased by 5.7% in the fiscal year 1996/97, which was higher than the target rate of 5.5% and was also greater than the 4.7% achieved in the previous fiscal year. As a result of low investment, the rate of industrial growth declined in 1996/97, although the level of growth remained healthy.

9. The overall GDP growth rate in 1996/97 was maintained only by a strong performance in the agricultural sector together with expansion in the services sector. Long-term agricultural growth has been constrained by the ecological vulnerabilities of the country and by the difficulties of organising large-scale waterworks.

### *Energy*

10. Bangladesh has one of the lowest per capita commercial energy consumption rates in the world at 56 Kgoe/yr (1990). As a result, Bangladesh's energy sector contributes a small amount of GHGs to the global environment. In future however, this scenario may change considerably. A large population situated in one of the fastest growing regions of the world will inevitably increase its energy consumption several-fold in the next two and a half decades. The situation is exacerbated by the fact that energy utilisation efficiency is extremely low both in the supply and demand sides. From the point of view of carbon dioxide emission there are however the following redeeming features:

- Over 60% of the energy presently comes from biomass;
- Over 60% of the commercial energy comes from natural gas;
- The single largest user of energy (other than power generation) is the fertiliser industry which utilises natural gas and state-of-the-art technology.

11. The energy sector is a high priority area of the government because industrial production and commercial activity is being severely hampered due to the chronic shortage of electricity and natural gas. The highest priority is on power generation and the shortfall is being met through Independent Oil Companies (IOC). The other energy sector priorities are, rural electrification, which is undoubtedly a moral obligation of the government and the introduction of CNG as a transport fuel, which arises out of the need to reduce oil import.

12. The supply and prices of all fuels are governed mainly by social and equity considerations and not by market forces alone. Thus some fuels are subsidised while others are taxed.

### *Industry*

13. Although expanding rapidly, Bangladesh has a relatively small manufacturing sector, which consists of a few large-scale enterprises and numerous small-scale and cottage industries. In 1995-96 the industrial sector accounted for an estimated 17.5% of GDP, while the manufacturing sector alone accounted for 9.6%. Approximately 70% of manufacturing output is contributed by large-scale industries where jute industries represent the core. Small-scale industries include weaving, engineering workshops, bamboo-working.

14. In 1991 the Government enunciated the National Industrial Policy, which is now under review targeting for a more vigorous expansion of the private sector, as well a drive for increased efficiency in public-sector enterprises.

### Monitoring and evaluation

97. The Project Co-ordinator will provide a monthly progress report to the MOEF, which will share it with NCC and UNEP. If possible, these reports may be compiled into an electronic newsletter that will be distributed to all participating institutions. These reports will enable MOEF and its supporting institutions to evaluate the implementation of the project on an ongoing basis and identify difficulties and shortcomings at an early stage. They will be reviewed by the NCC for their quality and standard, comprehensiveness, and conformity to the proposed terms of reference and dates of completion.

98. The NCC will meet on a quarterly basis to review project implementation and provide scientific, technical, policy and strategic guidance. The minutes of these meetings will be shared with all participating institutions. The NCC will guide the MOEF on reports and make recommendation to the MOEF, which, in turn, will provide quarterly progress reports and quarterly financial reports to UNEP based on UNEP's standard format.

99. UNEP will provide its established monitoring and evaluation guidelines and assessment procedures, which will be applied to evaluate the progress of the project during mid-term and after its completion.



### *Agriculture*

15. Agriculture contributed about 32% of GDP in 1996-97, and around 87% of the population live in rural areas. The climate allows for three crops per year. Recent agricultural growth has been based on the increase in area under the third crop and the substitution of traditional varieties by high-yielding varieties.

16. The country is practically self-sufficient in the major cereal, rice, but still needs to import wheat amounting to about 3%-4% of total foodgrain requirements. The average annual growth rate in agricultural output was a vigorous 3% during 1986-90, but thereafter the rate of growth decelerated, averaging less than 0.5% per year over the period 1990-95.

17. The land-ownership pattern is characterised by considerable inequality in landholding and also by a high degree of fragmentation of individual farms. One-half of the rural population is effectively landless. The average farm size is small, about 0.8 ha, with over 70% of all farms classified as small (below 1 ha) and only 5% as large (above 3 ha). It is estimated that currently only 32% of the net cultivated area is under irrigation, although a recent survey suggests that this could be expanded to around 60% of the cultivable area. Such an expansion could result in almost doubling of food grain production in Bangladesh.

18. More than 80% of the land is allocated to rice, and overall cereal crop production accounts for around 75% of total income from the agricultural sector. The contribution of rain-fed rice crops has fallen from 80% to 67% by 1985-88 whereas contribution made by the third irrigated rice crop has increased from 16% to 26% in the same period.

### *Environmental*

19. Bangladesh is likely to be one of the worst affected countries due to a rise in sea levels owing to global warming. One of the most serious recurrent problems in Bangladesh has been the natural disasters, such as cyclones and floods. The two most serious natural disasters in recent years have been the cyclone in 1991, which exceeded in intensity even the 1970 cyclone, and the monsoon floods of September 1988. Famine was avoided by the prompt action of the Government, but, nevertheless, the adverse impact on the economy was substantial. Further flooding occurred in December 1988 and January 1989.

20. The coastal area of Bangladesh comprises the complex delta of the Ganges, Brahmaputra and Meghna river systems. Combined discharge of the three mighty rivers, which exceeds 100,000 cu.sec. during flood season, flows into the Bay of Bengal through the Meghna estuary but the entire coastal belt is criss-crossed by an interlaced network of rivers and channels. A large volume of sediment load, estimated to be between 1.5 to 2.4 billion tons annually, passes through the river systems which strongly influences the coastal morphology. The sediment, being subjected to coastal dynamical processes generated mainly by river flow, strong tides, wind, cyclone and storm surges lead to a continuous process of accretion and erosion.

21. The above also creates high level of salinity, especially in the western part of the coastal area, restricting the use of river water for agriculture purposes in the dry season. The advancement of the saline front in the Khulna region has been a matter of alarm and concern. The Gorai river is the only source of fresh water supply in the area, but due to a reduction in the flow of the Ganges, the flow of Gorai has become almost zero during the dry months. This has increased the salinity in the south-west many folds. For example, near Khulna town salinity increased from 500 micromhos in 1968 to 17,000 micromhos, a jump by 34 times.

further training and capacity building for the project team members are still needed so that they can carry out the task in a sustainable manner.

88. This budget has been realistically estimated by the MOEF, the designated executing agency of the project, with the guidance of UNEP, and thoroughly reviewed by other relevant ministries of the Government before it is fully endorsed by the national GEF Operational Focal Point.

89. As a country "*with low-lying coastal areas*" - Article 4.8 (b) and "*with areas prone to natural disasters*" - Article 4.8 (d), Bangladesh deserves special consideration under Article 4, paragraph 8 of the Convention, including necessary actions related to funding, insurance and the transfer of technology, to meet its specific needs and concerns arising from the adverse effects of climate change and/or the impact of the implementation of response measures.

90. The contribution of the Government of Bangladesh, which will amount to US\$50,000 over the period of the project, will include salaries for technical experts, technicians and other supporting staff, vehicles for field trips and their maintenance, basic communication and office facilities, library and information facilities, insurance, and others.

#### **Rationale for GEF support**

91. This is a standard enabling activity proposal that will assist Bangladesh to fulfil its reporting requirements under the UNFCCC. As GEF is the international entity entrusted to operate the financial mechanism for the UNFCCC on an interim basis, the proposed activities are eligible for GEF funding.

#### **Sustainability and participation**

92. The Government of Bangladesh is fully committed to the implementation of the UNFCCC, and hence the goals and objectives of this project. The strengthening of scientific, technical and institutional capacities of Bangladesh in various aspects of the proposed activities, as well as the leading role taken by the MOEF to execute the project would enable the country to fulfil its obligations and commitments to the UNFCCC on a sustainable basis. Indeed, the whole project management structure is designed in such a way that full participation by local experts in all aspects of activities are ensured, so that further activities in the future are sustainable.

93. On the completion of this project, Bangladesh will have a considerably improved capacity through which to fulfil its commitments under the UNFCCC, and to respond to the challenges and opportunities presented by fulfilling its commitments under the UNFCCC.

#### **Issues and risks**

94. **Issues:** Successful implement of the project will require close co-ordination and consultation between the MOEF, NCC and the PMT are essential. The MOEF and NCC will consult all relevant stakeholders, including NGOs and research organisations through appropriate venues (e.g. meetings and workshops).

95. **Risks:** The potential risks that may mask the objectives and goals of the project are:

- (a) Longer time period than expected for the collection and analysis of the data and the preparation of the national communication.
- (b) Inadequate consultations among various stakeholders.
- (c) Lack of involvement of major policy and decision-makers in the formulation of final strategy.

96. Necessary action will be undertaken to avoid all the risks mentioned above.

## National environmental policy

22. Bangladesh has adopted a National Environment Policy (1992), formulated a National Conservation Strategy in 1990 (NCS), enacted the Environment Conservation Act (ECA), 1995, promulgated Environmental Conservation Regulation, 1997. It followed this by formulated a National Environmental Management Action Plan (NEMAP), through a broad based participatory process which is in the process of being implemented in phases and formed the National Commission for Sustainable Development (1994), as a follow up to UNCED. Thus the policy and legal regime for sustainable development administration is emerging in the country.

23. The Government formed the National Climate Committee (NCC) involving representatives from relevant ministries, NGOs and private sector organisations. The NCC will provide guidance to all climate change activities and it will evaluate projects related to climate change.

## Past and ongoing activities on climate change

24. Bangladesh has participated in the following major studies on Climate Change :

(a) *US Country Study Program (USCSP)* -- This was the first climate change study in Bangladesh that was implemented from 1994 to 1996. Its objectives were to enhance the capabilities of the country to conduct GHG inventory, assess its vulnerabilities to climate change, and evaluate the options available to it to mitigate and adapt to climate change. The final report for this project was submitted to the Country Studies Management Team in June of 1996. The main results of this project were:

- A preliminary GHG emission inventories following top down approach for the year 1990. A main limitation of this study was the lack of appropriate emission factor data necessary for emissions calculations.
- Vulnerability assessment was done in limited sectors covering water, coastal resources and agriculture sector partially. Moreover, only transplanted Aman crop was examined and very few sites studied. Therefore, the results of this study are considered only as preliminary and not sufficient for policy development since it is missing the crucial sectors, such as, coastal areas, forests, freshwater management, health etc. This project will include vulnerability assessment and adaptation responses on the three major river basins, namely, the Ganges, the Brahmaputra and the Meghna.

(b) *"Asia Least-Cost Greenhouse Gas Abatement Strategy" (ALGAS) Project* -- Bangladesh is one of the 12 participating countries in this UNDP/GEF/ADB project, which started in 1995. The overall objective of the ALGAS Project was to carry out bottom-up approach for verification of the GHG inventory done under the USCSP and corrected/updated figures on industrial sector and on land use change and forestry. The data was based on 1990, similar to USCSP. ALGAS is a regional project that focused, in particular, on the energy sector of Bangladesh. It was completed by the end 1997, and the final draft reports are being reviewed. The main results of this project are: (i) Updated GHG Inventory for 1990; and (ii) Least-cost mitigation strategies for energy and forestry sector without a detailed socio-economic analysis. This project will also fill in the gaps by focusing on mitigation options analysis on agriculture and other sectors.

(c) The Government of the Netherlands provided limited financial support for assessment of sectoral and overall vulnerability of Bangladesh to climate change & sea level change, through the Bangladesh Centre for Advanced Studies.

25. This project will build on the results of the above studies.

### Appropriate sequencing

79. The above project activities will be undertaken in appropriate sequence based on good practice. Established guidelines will be followed, while established tools and methodologies will be used.

### Activity matrix

80. The activity matrix that indicates the areas needed to be covered by this proposal is shown in Table 2. The proposed activities have been discussed with UNEP after all past and ongoing activities related to climate change have been critically reviewed and assessed by UNEP. It has been ensured that there will be no duplication of effort for this project with the past and on-going activities.

### Training

81. Some training for the PMT in various aspects of Activities 2 to 9 is likely to be necessary, as there will be new members joining the teams under the guidance of the existing experts. In addition, training for planners, policy and decision-makers in Activity 6 (see para. 63) will also be required.

82. All training activities, including national workshops and participation of regional and international workshops organised or to be organised by UNEP, UNDP or other international agencies for their ongoing enabling activities programmes, will be co-ordinated by the MOEF. In particular, the country will participate in the regional workshops organised by the *UNDP-UNEP National Communications Support Programme*.

83. Training materials from the past and on-going activities may be obtained from various regional and international sources, such as IPCC, UNITAR (CC:TRAIN), etc. Lessons can also be learned from other on-going enabling activity programmes in the region implemented by UNEP and UNDP.

84. UNEP, with its extensive experience in training in enabling activities, will be consulted on all aspects of training, such as the workshop agenda, the trainers, etc. Technical assistance will be provided where necessary.

### National level support

85. This project enjoys a very high level and a wide range of national support. Ministry of Environment and Forests (MOEF) will execute it under the guidance of the NCC, which will have broad representation from the relevant ministries and government agencies and NGOs. This proposal is fully endorsed by the GEF Operational Focal Point (see attached letter).

86. The UNDP office in Dhaka will be fully informed of all activities. It has an important role to play during the implementation of the project. It may provide any support for the project as appropriate. This may include any possible logistic support. In addition, it will be invited to actively participate in all technical and policy workshops related to the project, so that it can provide useful inputs and contributions within the context of sustainable development.

### Project financing and budget

87. As the proposed activities are standard enabling activities as defined by the *GEF Operational Guidelines*, so the incremental cost for undertaking these activities are also full cost. The requested GEF funding of US\$255,000 (this includes US\$19,500 for UNEP Co-ordination cost) reflects the current real needs and concerns of the country in order to fulfilling its commitments for the preparation of its initial national communication. Despite some past and ongoing activities,

## Project objectives

26. Article 12.5 of the UNFCCC requires non-Annex 1 Parties (except those least-developed countries) to make their initial national communications "*within three years of the entry into force of the Convention for that Party, or of the availability of financial resources...*". The Government of Bangladesh is fully committed to the implementation of the UNFCCC, and hence, it intends to prepare and submit its initial national communication 18 months after the approval of the requested funding for this project. This national communication will highlight priority areas for sustainable development.

27. As Bangladesh has already undertaken some enabling activities relevant to the implementation of the UNFCCC, hence the main objective of this proposal is to enable the country to update the previous results, fill in gaps, and enhance its scientific and technical capacity. This will enable the country to fulfil its commitments and obligations as required by Articles 4.1 and 12.1 of the UNFCCC, especially the preparation and the reporting of its initial national communication as required by Article 12.1 (a), (b) and (c) of the Convention.

## Project description

28. This proposal follows the "*GEF Operational Guidelines for Expedited Financing of Initial Communication from Non-Annex 1 Parties (February 1997)*". It consists of nine clearly defined activities, each of which is briefly described as follows:

### **Activity 1: Establishment of the Project Management and National Study Teams**

29. Based on the existing scientific and technical expertise from the past and ongoing projects, a Project Management Team (PMT) will be established under the auspices of the Ministry of Environment and Forests (MOEF) in consultation with other governmental departments, as well as NGOs. A National Climate Committee (NCC) exists to provide guidance to the PMT.

30. The PMT will comprise four technical working groups: GHG Inventory, Mitigation Options, Vulnerability/Impacts Assessment and Adaptation, and National Communication. Each group will include a number of experts from key relevant sectors including government agencies, academic institutions, NGOs, and private sector as needed.

31. The PMT will be co-ordinated by a National Project Co-ordinator (NPC), to be designated by the MOEF to co-ordinate the day-to-day project activities. The NPC will co-ordinate the project execution among the different branches of the government and NGOs. The NPC and the leader of each working group, will form the PMT, which will be supported by a secretary. The PMT will have adequate and appropriate computer and telecommunication facilities, including Internet.

32. A total of **US\$ 48,000** is requested for the Project Management, which will include the 18 months salary for the NPC and a secretary, as well as expenses for computer, fax machine, and communications as necessary.

### **Major output:**

33. The major output of this proposed activity will be the designation of NPC and the establishment of the PMT, which will be fully committed to the successful implementation of the project.

### **Activity 2: GHG inventory**

34. Following the COP2 guidelines, the GHG inventory will mainly focus on CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O in (a) all energy sources; (b) industrial processes; (c) agricultural processes; (d) land use change and forestry; and (e) other sources, while data for other GHG may be collected where available.

**Activity 9: Preparation of national communication**

72. Based on the outputs of Activities 2 to 8 as described above, the initial national communication will be compiled, edited and prepared. This task will be co-ordinated by the National Communication Group. It will involve all members of the PMT and NST, each of which will prepare the relevant sections/chapters for the initial national communication.

73. NCC will review the draft national communication. Based on this review, a revised version will be produced. A workshop, with the participation of NCC, PMT, TET, key stakeholders and policy and decision makers, private sector and NGOs, will then be organised to review this revised draft national communication before it is finalised and submitted to the UNFCCC Secretariat. The national communication will be submitted in English language including an electronic version.

74. A total of **US\$20,000** is requested to cover the above activities.

**Major output:**

75. The major output of this proposed activity will be a comprehensive initial National Communication to be submitted to the UNFCCC Secretariat.

**Institutional framework, project implementation and co-ordination**

76. The project will be executed and implemented using the key national institution:

(a) *Ministry of Environment and Forests (MOEF)*— MOEF is designated by the government as the lead agency for climate change issues in the country with Department of Environment as its technical arm. These two agencies will be responsible for execution and implementation of the project.

(b) *National Climate Committee (NCC)* -- The NCC will be a policy making body that will be charged with oversight and advising project execution. Membership of the committee will be drawn from the following governmental, non-governmental, and academic organisations. This will specifically include the Ministry of Environment and Forests (MOEF), Ministry of Energy and Mineral Resources, Ministry of Industry, Ministry of Local Government, Rural Development and Co-operatives, Ministry of Land, Ministry of Social Welfare and Women's Affairs, Ministry of Disaster Management and Relief and Ministry of Agriculture, Ministry of Planning, Bangladesh Institute of Development Studies (BIDS) and relevant Non Government institutions.

77. The National Project Co-ordinator (NPC) will co-ordinate the day-to-day project execution activities. The NPC will be supported by the PMT, which will include experts from key relevant sectors including government agencies, academic institutions, NGOs, and private sector as needed. The PMT will enable project management to maintain contact with relevant constituencies and be a technical advisory body to the NPC.

**Proposed work schedule**

78. The proposed timetable for commencement and completion of all activities described above is given in Table 1. The detailed work plans for each activity will be developed by the Project Co-ordinator in full consultation with the MOEF and NCC soon after the approval of the project, with the guidance and assistance of UNEP, which will be consulted throughout the period of the project implementation.

35. This activity will build on the results of the USCSP and ALGAS. In particular, it will focus on the following:

- (a) A comprehensive GHG inventory for the sources and sinks for the year 1994 based on the latest version of IPCC Guidelines.
- (b) An effective computerised database system will be established so that data can be stored and updated regularly and efficiently. Training for maintaining this database system will be provided.
- (c) Improvement of local emission factors -- Earlier studies show that one of the main problems was the lack of appropriate emission factors, and hence default IPCC values were used in the forestry, land use change (grassland conversion), agriculture, and waste estimates. Some work is needed in this area to provide more realistic estimates for sources and sinks of GHG.
- (d) Capacity building, which include training and institutional strengthening in GHG Inventory, is still needed
- (e) End of activity review workshop -- At the end of the GHG inventory, a workshop will be held to review and present the results to national policy and decision-makers.

36. A total of **US\$ 35,000** is requested to cover the above activities.

37. This component will be undertaken by the GHG Inventory Group, which will draw from the available expertise especially from the previous and ongoing studies.

38. This activity will be co-ordinated with the regional efforts whenever and wherever possible, such as CC:TRAIN and *UNDP-UNEP National Communications Support Programme*.

**Major outputs:**

39. The major outputs of this proposed activity will be:

- (a) A critically reviewed and comprehensive GHG inventory based on the 1994 data, so that it can be used as a basis for the selection of mitigation options.
- (b) Identification of shortcomings and gaps of the IPCC Guidelines in relation to the local conditions.
- (c) Measurement and assessment of the need for new emission factors for specific activities.
- (d) Recommendations on areas of targeted research to improve future inventories and to suggest revisions to the existing IPCC GHG inventory methodology.
- (e) A computerised database system for regular and efficient updating and management of the inventory.
- (f) Strengthening of the inventory study team, drawing from the past and currently available expertise.
- (g) Workshop report, which will include major papers presented at the workshop.

public, NGOs, educational organisations, and other stakeholder groups. Public access to information on climate change and its effects will be promoted.

64. CC:INFO/Web will also be used as a tool to enhance national and international information flow. A CC Web site will be established in co-ordination with the CC:INFO/Web initiative. Materials produced by the IUC/UNEP and UNITAR CC:TRAIN will be used where appropriate. However, there is a need to translate these materials into Bangla language in order for wider dissemination of information.

65. A total of **US\$11,000** is requested to cover the above activities.

66. The Government of Bangladesh regards the implementation of Article 6 of the UNFCCC to be one of the top priority areas in fulfilling the objectives of the UNFCCC. Thus, vigorous effort will be made to undertake this activity during the project cycle and beyond.

### ***Major outputs***

67. The major outputs of this proposed activity will include:

- (a) Information packages, video aids and relevant publications in English and Bangla languages.
- (b) Enhanced public awareness in villages and towns identified as vulnerable to climate change.

### ***Activity 8: Provision of other information***

68. In accordance with the COP2 Guidelines, this project will also provide any other information relevant to the achievement of the objective of the UNFCCC.

69. For example, it will provide information on its specific needs and concerns arising from the adverse effects of climate change and/or the impact of the implementation of response measures, including the information on national technological needs related to measures to facilitate adequate adaptation to climate change. This will include information on relevant financial and technological needs relating to the assessment of national, regional and/or sub-regional vulnerability to climate change. It may also include, where appropriate, information related to data-gathering systems to measure climate change effects in the country or to strengthen such systems, and identification of a near-term research and development agenda to understand sensitivity to climate change.

70. It will also identify and describe the special technical and financial needs associated with proposed projects and response measures under Article 4. This will include specific technologies, materials, equipment, techniques or practices that would be needed to implement such projects, along with, if possible, an estimate of all incremental costs, for the projects.

71. If feasible, it will also provide material or data, relevant for calculation of global GHG emission trend. In addition, it may describe the financial and technological needs and constraints associated with the communication of information. In particular, and following the evolving recommendations of the Conference of the Parties through its subsidiary bodies, the description may cover needs and constraints associated with the further improvement of national communications, including reduction of the margin of uncertainty in emission and removal variables through appropriate institutional and capacity-building.



**Activity 3: Programs to address climate change and its adverse impacts, including abatement and sink enhancement**

40. Based on the results of the updated GHG inventory, this project will identify, analyse, assess and update a range of potential mitigation options so that a national strategy and plan for viable measures to abate the increase in GHG emissions and to enhance removals by sinks.

41. As mentioned in para. 24 (b), earlier studies by ALGAS focussed mainly on energy and forestry sectors, while other sectors such as agriculture, fisheries and land use changes have been neglected. This activity will fill this gap by analysing the least-cost mitigation options for these sectors and their impacts on national sustainable development. The GHG mitigation strategies in different economic sectors will be integrated into national sustainable development strategy and plan.

42. The Mitigation Options Group, drawing from available expertise especially from the previous and ongoing studies will undertake the proposed activity. The capacity for this group to undertake the task will be strengthened and enhanced. Useful lessons will be learned from ALGAS study and UNEP/UCCEE's "Economics of GHG Limitations - Phase I: Methodological Framework for Climate Change Mitigation Assessment".

43. A workshop will be conducted for key stakeholders and policy and decision-makers to review the options and strategies at the end of the study.

44. A total of **US\$ 25,000** is requested to cover the above activities.

**Major outputs:**

45. The major outputs of the proposed activity will be:

- (a) Identification and assessment of least-cost mitigation options based upon detailed socio-economic analysis.
- (b) Recommendations on reducing the number and intensity of emissions from various sources and the enhancement of sinks.
- (c) Preparation of the first national mitigation strategy for the national communication.
- (d) Workshop report, which will include major papers presented at the workshop.

**Activity 4: Policy options for monitoring systems and response strategies for impacts**

46. This is one of the two most important activities for Bangladesh which is highly vulnerable to natural disasters, and likely to increase this burden in view of the impending climate change. This project will identify and develop policy options for adequate monitoring systems and response strategies for climate change impact assessment. However, these policy options will be based on comprehensive analysis of vulnerability and impacts assessment, using the *UNEP Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies*, which is based on *IPCC Technical Guidelines*. Existing monitoring systems will be strengthened where necessary. Thus, a comprehensive vulnerability and impacts assessment will be undertaken on terrestrial ecosystems (these will include agriculture, forestry, land-use change, water resources, human health, pests and disease, socio-economic aspects and infrastructure) using the 1994 data.

47. This activity will build on the results of the USCSP, which had only partially examined agriculture, coastal resources, water resources & the aspects of salinity intrusion due to limited resources and time. This activity will first make appropriate adjustments to climate change

the economy. So far very limited assessment and analysis of adaptation options has been undertaken in Bangladesh. Thus, this activity will be one of the major focuses of this project.

55. Based on this study, policy frameworks will be developed for implementing adaptation measures and response strategies in the context of coastal zone management, disaster preparedness, agriculture, fisheries, and forestry, with a view to integrating climate change impact information, as appropriate, into planning and decision-making processes.

56. The Vulnerability Assessment and Adaptation Group, the capacity of which to undertake this task will be strengthened and enhanced where necessary, will undertake this activity.

57. A workshop will be conducted for key stakeholders and policy-makers to review the adaptation options and strategies and the policy frameworks for their implementation at the end of the study. This workshop will be held back to back with that in Activity 4.

58. A total of **US\$ 39,000** is requested to cover the above activities.

**Major outputs:**

59. The major outputs of the proposed activity will be:

- (a) Identification and assessment of adaptation (stage 1) options.
- (b) Policy frameworks for implementing adaptation measures and response strategies.
- (c) Workshop report, which will include major papers presented at the workshop.

**Activity 6. Building capacity to integrate climate change concerns into planning**

60. In the context of undertaking national communication, there is a need to build or strengthen the national capacity to integrate climate change concerns into medium and long-term planning. This may include education and training on climate change for national development planners, as well as for policy and decision-makers from all relevant ministries and government agencies. For example, appropriate techniques such as integrated assessment may be introduced to these people so that it can be learned and used as a useful tool for proper policy and decision making in the planning process. This activity will be planned by the PMT.

**Major output:**

61. Enhanced capacity of the national development planners and policy and decision-makers to integrate climate change concerns into planning.

**Activity 7: Programs related to sustainable development, research, public awareness, etc**

62. This project will identify and develop programmes in climate change which are related to sustainable development, research and systematic observation, education and public awareness, training, etc.

63. For example, Activities 2 to 6 will contain elements in research and systematic observation, education and training. In addition, the successful implementation of the UNFCCC in Bangladesh relies also on wide public participation. Thus, it is proposed to develop a cost-effective public awareness programme so that campaigns can be undertaken throughout the project cycle when and where possible and that these campaigns can reach all levels in villages and towns identified as the most vulnerable to climate change. Both public and private media (television radio and newspapers) will be used to assist in creating public awareness. In addition, the results of Activities 2 to 6 will be disseminated to all policy and decision-makers, planners, the general

scenarios, vulnerability and impact assessment methodologies based on previous work, and then focus on the following areas:

- Three major River basins: Ganges, Brahmaputra and Meghna
- Freshwater and problem of salinity
- Coastal zones and marine resources
- Human health
- Human settlements and land use change
- Forests and biodiversity
- Fisheries
- Socio-economic impact assessment

48. A total of **US\$ 45,000** is requested to cover the above activities.

49. A workshop will be held for various stakeholders as well as policy and decision-makers to review and publicise the results at the end of the study.

50. A Vulnerability/Impacts Assessment and Adaptation Group, drawing from the existing expertise, will be formed within the PMT to undertake this task. The capacity for this group to undertake the task will be strengthened and enhanced.

51. Lessons will be drawn from the methodology developed by UNEP's "*Country Case Studies on Climate Change Impacts and Adaptation Assessments (Phase I)*".

52. Based on this study, policy options will be identified and developed for the response strategies. This will include policies on land degradation and control that are relevant to climate change, including coastal zone management, agricultural practices and priorities, forestry initiatives, water resource priorities, and other relevant natural resource management issues.

**Major outputs:**

53. The major outputs of the proposed activity will be:

- (a) Important baseline data required for the assessment of climate change vulnerability/impacts and adaptation options.
- (b) A comprehensive vulnerability/assessment for various sectors and regions based on established procedures.
- (c) Policy options for adequate monitoring systems and response strategies for climate change impacts on terrestrial and marine ecosystems.
- (d) Workshop report, which will include major papers presented at the workshop.

**Activity 5: Policy frameworks for implementing adaptation measures and response strategies**

54. This is the second most important sector for the country. The reliable identification of adaptation measures must be based on a prior analysis of vulnerability to potential impacts. Thus, based on the results of the vulnerability and impacts assessment for various sectors in Activity 4, this project will identify, analyse, assess and evaluate a range of potential adaptation (stage 1) options. This will enable a national strategy for the viable measures that can be developed, formulated and implemented in order to minimise the impacts of climate change on