

Country: Bahrain

Project Title: *Bahrain: Enabling Activities for the preparation of initial national communication related to the UN Framework Convention on Climate Change (UNFCCC)*

GEF Focal Area: Climate Change

Country Eligibility: Ratified UNFCCC on 28 December 1994

GEF Financing: US\$335,000

Government Counterpart Funding: US\$ 110,000

GEF Implementing Agency: UNEP

Executing Agency: Bahrain Environmental Affairs,
Ministry of Housing, Municipalities and Environment
Bahrain

Collaboration Agencies: Relevant ministries, industrial firms and NGOs

Estimated Starting Date: July 1997

Project Duration: 2 Years

Background

1. The State of Bahrain is an archipelago covers a total area of 695 km² and lies at the entrance of the Gulf of Salwa between Saudi Arabia's Hausa Province and the Qatar Peninsula. The group includes six principal islands - Bahrain (which accounts for nearly 85% of the total area of the State), Muharraq, Sitrah, Umm al-Nassan, Jidda and Nabi Salih - as well as 30 minor islands including the Muhammadiyah and the Huwar group. The greatest distance N to S is 48 km and that E to W 19 km. The total length of the coastline is about 300 km.
2. Bahrain has a population of 577,000, of which Bahrainis represent about 63% (with a growth rate of 2.91%), divided equally between males and females. A remarkable increase in the population has been noticed since 1971 when it was approximately half of the current population. The average age of the Bahrainis population is 18 and over. Therefore, Bahrain is classified as a young community. Those age between 15-44 represent 51% of the total population whereas the older people (65 years and over) represent 2.3% only. The vast majority of the population either live on the coast or are not very far from it. The people of Bahrain are inextricably linked to the coast and the marine environment.
3. The capital, Manama, has a population of 155,594 (1995). It is on the northeast tip of Bahrain and linked by a causeway with the neighboring town and island of Muharraq, the second largest town with a population of 85,000. The other urban centers are Rifa, Isa (a town south of Manama) and Awali (the headquarters of the Bahrain National Oil Company).
4. Bahrain is located in an extensive zone of aridity. It is a low lying island, with a maximum elevation of 134 m. The limestone bedrock is covered with varying depths of sand which supports little vegetation other than a few tough desert plants. Most of the smaller islands are flat and sandy. There has been a considerable reclamation of land from the sea.
5. Bahrain is blessed with a number of freshwater springs or artesian wells. These springs are most numerous along the northern coast of Bahrain Island and they make permanent cultivation possible on that part of the land.
6. The Bahrain climate is fairly typical of that of the Arabian Gulf. It has hot summers (temperatures in July could reach 44°C) with high humidity and cool winters (temperatures in December ranging between 10°C to 20°C) with sparse rainfall. Annual average rainfall is only 76 mm. A dry, southwestern wind, known locally as the Qaws, periodically raises dust storms.
7. There is no forest in Bahrain. However, vegetation exist in a large part of the island, with over 200 species of flora so far identified, although the southern areas are certainly less well covered than the others. The northern and western coastal areas are heavily cultivated with date palm plantations and have been so for thousands of years. The vegetation of non-irrigated areas is made up of typical desert plants.
8. There are also many fauna species in Bahrain, including 13 terrestrial mammal species, 26 avian species (though 265 migrating species of birds have been recorded), 21 butterfly species, several species of gazelles, Arabian bustard, Dalmatian pelican, Arabian wolf, Syrian wild ass, Arabian leopard, etc.
9. Bahrain's coastline consists of mangrove swamp, seagrass meadows, coral reefs, low sand islands, rocky shore, submarine freshwater springs, lagoons and numerous intertidal and shallow embayments. Its marine environment contains 88 algae species. Green turtles are evidently caught, though the numbers involved are not known. In addition, a study has suggested that the State of Bahrain supports the major Gulf's population of the sea cows and dugongs.

Economic development

10. Prior to the discovery of oil in the early 1930s, the Bahrain economy depended on agriculture, pearling industry and regional trading. Upon the discovery of oil, the life in Bahrain has witnessed a variety of changes until the beginning of the 1970s, the time when Bahrain became an independent state. Since then, the socio-economic structure was occurring on a rapid pace. Bahrain has a free-market economy in which the private sector is dominant.

11. Due to the fluctuating oil prices, the low production of oil in Bahrain compared to other Gulf countries and the steady decrease in its production, the Bahrain Government recognized that it would be unwise to rely only on the oil revenue. Accordingly, it launched a scheme to diversity the sources of national income by encouraging industrialization, industrial investment and upgrading other sources of income.

Agriculture

12. Barely 10% of the total land area is regarded as cultivable and only 6,070 ha are actually cultivated. Bahrain's major crop was, until recently, the date, the industry of which employed over 4,000 people. The main crops now are vegetables and lucerne. Production was too insignificant to be indexed, and agriculture's contribution to GDP is estimated to be less than 1%.

13. Although Bahrain is less arid than other countries in the region, it is becoming more and more dry as a result of the encroachment of the desert, sandy soils, and erratic rainfall. With the discovery of oil and the development of the energy and industrial sectors, the agricultural sector has been neglected. The decline is also reflected in the rising food imports which now constitute over 14% of all imports.

14. A few herds of cattle supply the milk needs of Bahrain, but live cattle, goats, and sheep are imported for meat.

15. Shrimp catches in the Gulf have been growing in recent years, and annual exports of shrimp have averaged \$3 million. The local fishing industry has, however, declined; only a handful of fishing dhows remain in use. The annual catch in 1992 was about 8,000 tons.

Industry

16. Bahrain's traditional industries, such as pearling, dhow building, and fishing, are being increasingly displaced by a modern industrial sector. A variety of industries has been attracted to the country by a liberal investment policy and cheap natural gas.

17. The largest industries outside the commercial and service sectors are: the oil refinery, natural gas production, aluminum smelter, iron and steel plant, petrochemicals, water desalination and ship repairing. In addition, there is a group of medium and small size industries which are diversified and involved in production of a wide range of products such as plastics, concrete blocks, food and beverages, textile weaving apparel and leather industries, wood products, air conditioners, fabricated metal products, machinery and equipment, etc. Some small service industries aimed at the Eastern province of Saudi Arabia have developed following the completion of the causeway between the two countries.

Energy

18. Oil and gas are the energy sources in Bahrain. The annual production of crude oil was 14,875 thousand US barrels in 1993, while the gas production was 346,047 million cu. ft. || revised

19. There are four major gas-fired thermal power plants in Bahrain: Sitra, Manama, Muharaq and Riffa, with a total generated power of 990 MW. Riffa power plant produces 71% of this needed power. Sitra power/water station produces 126 MW and supplies more than 60% of Bahrain total supply of desalinated water. The plant is designed on a dual purpose operation basis. Manama power plant produces 125 MW.

20. Electric power production in 1993 was 4244.7 million kWh, with an annual per capita consumption of 3,909 kWh. The total electricity consumed by various sectors was 3779.3 million kWh in 1993. Of this, 55.9% was consumed by households, 27.3% by commerce, 16.2% by industries and 0.6% by agriculture.

Environmental policy and legislation

21. Bahrain has ratified the following regional treaties and international conventions:

- Inter-Governmental Maritime Consultative Organization (IMCO) (acceded in 1977).
- Kuwait Regional Convention for the Cooperation on the Protection of the Marine Environment from Pollution - Kuwait (ratified in 1979).
- Protocol Concerning Regional Cooperation in Combating Pollution by Oil and other Harmful Substances in case of Emergency - Kuwait (ratified in 1979).
- UN Convention on the Law of the Sea (signed in 1982).
- International Convention for the Prevention of Pollution of the Sea by Oil - Geneva (signed in 1985).
- Protocol for the Protection of the Marine Environment against Pollution from Land-based Sources - Kuwait (ratified in 1990).
- Protocol Concerning Marine Pollution Resulting from Exploration and Exploitation of the Continental Shelf - Kuwait (ratified in 1990).
- Vienna Convention on the Protection of the Ozone Layer (acceded in 1990).
- Montreal Protocol on Substances that Deplete the Ozone Layer (acceded in 1990) and its London Amendment (acceded in 1992).
- UN Framework Convention on Climate Change (ratified in 1994)
- Convention On Biological Diversity (ratified in 1996)
- Basel Convention on Transboundary Movement of Hazardous Wastes (ratified in 1992)

22. The Legislative Decree No. 3 of 1975 with respect to Public Health was one of the early comprehensive environmental legislations. This entrusts the Ministry of Health to protect public health through controls of housing, sewage, water resources, sanitation, waste and industrial pollution.

23. In 1980, an Environmental Protection Committee (EPC) was formed under the Amiri Decree No. 7. The EPC, chaired by the Minister of Health, was assigned responsibilities to deal with environmental issues, including the development and implementation of the environmental legislation, such as air and water quality standards, air emission and liquid

effluent discharge regulation, pollution control strategy, control of toxic, hazardous and domestic waste disposal, and usage of toxic and hazardous waste compounds.

24. The Legislative Decree No. 21 of 1996 With Respect to the Environment is the most important piece of environmental legislation developed in Bahrain. It creates a new Environmental Body (the Environmental Affairs at the Ministry of Housing, Municipalities and Environment) to deal with environment. The Environmental Affairs consists of the Directorate of Environmental Assessment and Planning and the Directorate of Environmental Control headed by a Director General. However, currently each Directorate has a limited number of staff members. Clearly, capacity building in environmental management in Bahrain is urgently needed.

25. In addition, there are a number of legislative decrees that protect Bahrain's natural environment (e.g., Legislative Decree No. 21 of 1983 with respect to Palm Tree Protection; Legislative Decree No. 2 of 1995 with respect to Wildlife Protection, etc.).

26. The Bahrain Government was represented by the EPC in UNCED held in Rio de Janeiro, Brazil in 1992. As a follow up measure, the EPC has formed an Agenda 21 national steering committee of 21 members from different sectors to study and formulate a plan of action to implement the related chapters of Agenda 21.

Past and on-going activities on climate change

27. Bahrain signed the UNFCCC in June 1992 and ratified it in December 1994. It has participated in COP1 but not COP2 of the UNFCCC. It does not have any enabling activities related to the implementation of the UNFCCC.

28. For the purpose of air pollution management and control strategies, Bahrain has established four automatic air quality monitoring stations, three of which are fixed stations (Manama, Askar and Zallaq) which have been operating since August 1993, while one station is mobile (currently located in Ra's Abu Jarjur) which has been functioning since 1986. These stations monitor sulphur dioxide, oxides of nitrogen (NO and NO₂), methane, carbon monoxide, hydrocarbon, surface ozone, hydrogen sulphide, fluoride and inhalable particulates. In addition, wind speed and direction, temperature, humidity and solar radiation are also measured. Recorded data at each station are transmitted via modems to a central computer system.

29. All air quality monitoring stations are maintained by Bahrain Environmental Affairs.

Project Objectives

30. 17. 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 Bahrain is fully committed to the implementation of the UNFCCC, and hence, it intends to prepare and submit its initial national communication within two years after the approval of the funding for this proposal.

31. Thus, the main objective of this proposal is to enable the country to fulfil its commitments and obligations as required by Articles 4.1 and 12.1 of the Convention, especially the preparation and the reporting of its initial national communication as required by Article 12.1 (a), (b) and (c) of the UNFCCC based on the recommended COP2 guidelines and format for non-Annex 1 Parties.

Project Description

32. 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

33. Based on the existing scientific and technical expertise, a Project Management Team (PMT) and a National Study Team (NST) will be established under the auspices of the Bahrain Environmental Affairs of the Ministry of Housing, Municipalities and Environment in consultation with other relevant governmental departments and private sector, including NGOs.

34. The NST will comprise four core groups: GHG Inventory, Vulnerability/Impacts Assessment, Mitigation and Adaptation Options/Plans and National Communication. Each core group is composed of a number of experts drawing from public and private sectors. The NST will be coordinated by a Project Coordinator, who will be designated by the Bahrain Environmental Affairs to coordinate the day-to-day project activities. The Project Coordinator, together with the leader of each core group, will form the PMT, which is supported by a secretary. The PMT will have adequate and appropriate computer and telecommunication facility.

Major outputs:

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

- (a) Establishment of the PMT and NST.

Activity 2: GHG inventories:

36. Following the new COP2 guidelines, the GHG inventories will mainly focus on CO₂, CH₄ and N₂O in (a) all energy sources; (b) industrial processes; (c) agricultural processes; (d) land use change, and (e) other sources, while data for other GHG may be collected where available.

37. As the first step, all existing data will be critically reviewed and the data gaps will be identified. The GHG inventory will be based on the latest version of IPCC Guidelines and using the 1994 data. This component will be undertaken by the GHG Inventory Group, which will draw from the available expertise from both the public and private sectors.

38. A data collection and management system will be set up so that both the data and the GHG inventories can be updated regularly and efficiently.

39. This activity will be coordinated with the regional efforts whenever and wherever possible, such as CC:TRAIN (Phase II).

40. At the end of the GHG inventories, a workshop will be held to review and present their results to national policy and decision makers.

Major outputs:

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

- (a) A comprehensive GHG inventory based on the 1994 data, so that it can be used as a basis for the selection of mitigation technology options.

- (b) Identification of shortcomings and gaps of the IPCC Guidelines in relation to the local conditions.
- (c) A description of any original research needed to develop and/or apply 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 database system for regular updating and management of the inventory. || revised
- (f) Strengthening of the inventory study team, drawing from the expertise of both public and private sectors.
- (g) Workshop report.

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

42. Based on the results of the GHG inventories, this project will identify, analyze and assess a range of potential mitigation options so that a national strategy and plan for the viable measures to abate the increase in GHG emissions and, to the extent possible, enhancement of removals by sinks (e.g. active promotion of trees planting programme appropriate to the local condition) can be developed and formulated. || revised

43. Appropriate computer models will be used to assess various mitigation options.

44. The proposed activity will be undertaken by the Mitigation Options Group, drawing from the available expertise from both public and private sectors. The capacity for this group to undertake the task will be built, strengthened or enhanced where necessary.

45. A workshop will be conducted for key stakeholders (see para. 69) and policy and decision makers to review the options and strategies at the end of the study.

Major outputs:

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

- (a) Identification of mitigation options.
- (b) Recommendations on reducing the number and intensity of emissions from various sources and the enhancement of sinks through trees planting programme. || revised
- (c) Preparation of the first national mitigation strategy for the national communication.
- (d) Workshop report.

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

47. This project will identify and develop policy options for adequate monitoring systems and response strategies for climate change impacts assessment. However, these policy options will be based on the quantitative analysis of vulnerability and impacts assessment, using the *IPCC Technical Guidelines*. Thus, a comprehensive vulnerability and impacts assessment will be undertaken on terrestrial and marine ecosystems (these include agriculture, coastal zone, water resources, human health, natural ecosystems, and other aspects such as socio-economics) using

the 1994 data. Special attention will be paid to the impacts of climate change to Bahrain's coastal zone and water resources given its vulnerability to sea level rise as a result of climate change.

48. A Vulnerability/Impacts Assessment and Adaptation Group, drawing from the available expertise of both public and private sectors, will be formed within the NST to undertake this task. The capacity for this group to undertake the task will be strengthened and enhanced where necessary. In addition, institutional strengthening on this aspect will be addressed in this project.

49. Lessons will be learned from the methodology as developed by UNEP's "Country Case Studies on Climate Change Impacts and Adaptation Assessments (Phase I)". In view of the lack of data in this area, it is expected that some original research will be needed.

50. Based on this study, policy options will be identified and developed for the response strategies.

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

Major outputs:

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

- (a) Important baseline data required for assessing climate change vulnerability and adaptation options.
- (b) A comprehensive vulnerability assessment for various sectors 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.

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

53. Based on the results of the vulnerability and impacts assessment for various sectors, this proposal will identify, analyze and assess a range of potential adaptation (stage I) options so that a national strategy for the viable measures can be developed and formulated, so as to minimize the impacts of climate change on the economy.

54. 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, and fisheries, with a view to integrating climate change impact information, as appropriate, into planning processes.

55. The capacity for the Vulnerability/Impacts Assessment and Adaptation Group to undertake this task will be strengthened and enhanced where necessary.

56. A workshop will be conducted for key stakeholders and policy-makers to review the options and strategies and the policy frameworks for their implementation at the end of the study.

Major outputs:

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

- (a) Identification of adaptation (stage 1) options.
- (b) Policy frameworks for implementing adaptation measures and response strategies.
- (c) Workshop report.

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

58. 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.

Major Output:

59. 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

60. Great attention has been given by the Bahrain Government to the importance of environmental research and environmental education. In addition, there are specialized public awareness programmes targeting at the public and decision-making levels, raising their awareness on national, regional and international environmental issues and encouraging their participation wherever possible. These programmes include but not restricted to painting/drawing competitions among students, stage shows, lectures in schools, TV interviews, scientific field trips, etc.

61. On the basis of the existing programmes, 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.

62. For example, Activities 2 to 6 will contain elements in research and systematic observation, education and training. In addition, it is proposed to develop a cost-effective public awareness programme so that public awareness campaigns can be undertaken throughout the project cycle when and where possible. Both public and private media (television radio and newspapers) will be used to assist in creating public awareness. CC:INFO/Web will be used as a tool to enhance national and international information flow. A CC Web site will be established in coordination with the CC:INFO/Web initiative. Materials produced by the IUC/UNEP and UNITAR CC:TRAIN will be used where appropriate. || revised

Major outputs

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

- (a) Information packages, video aids, relevant publications, etc.
- (b) Enhanced public awareness at all levels and in all districts of the country.

Activity 8: Provision of other information

64. This project will also provide any other information relevant to the achievement of the objective of the UNFCCC. It will identify the technical and financial needs associated with proposed projects and response measures under Article 4. 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 9: Preparation of national communication

65. The initial national communication as required under Article 12 of the UNFCCC will be prepared and submitted to the UNFCCC Secretariat. It will include the outputs of Activities 2 to 8 as described above.

66. This task will be coordinated by the National Communication Group. It will involve all members of the PMT and NST, each of which will prepare the relevant sections of the initial national communication.

67. The draft national communication will be reviewed by a respected technical institution. Based on this review, a revised version will be produced. A meeting will then be organized for key stakeholders and policy and decision makers to review this revised draft national communication before it is finalized and submitted to the UNFCCC Secretariat.

Major Output:

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

Project management and coordination

69. This project will be executed by the Bahrain Environmental Affairs of the Ministry of Housing, Municipalities and Environment. A National Climate Change Committee (NCCC) will be formed to guide the implementation of this project and to provide overall policy advice. This Committee will be chaired by the Director General of the Bahrain Environmental Affairs and it will be composed of senior level representatives of various relevant ministries and institutions, and private sector, including NGOs (see paragraph 77).

70. A Project Coordinator will be appointed by the Bahrain Environmental Affairs to coordinate the day-to-day activities of the project. The group leader of each core group in the NST will be a member of the PMT. The project management and coordination structure is shown in Figure 1.

Proposed work schedule

71. The proposed timetable for commencement and completion of all activities described above is given in Table 1. Detailed work plans for each activity will be developed by the Project Coordinator in consultation with the NCCC and with the assistance of UNEP, which will be consulted throughout the period of the project implementation.

Appropriate sequencing

72. 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. Lessons learned from the past and on-going projects, including UNEP's "Country Case Studies on Sources and Sinks of Greenhouse Gases", UNEP/UCCEE's "Economics of GHG Limitations - Phase I: Methodological Framework for Climate Change Mitigation Assessment", and UNEP's "Country Case Studies on Climate Change Impacts and Adaptation Assessments (Phase I)", will be useful for the implementation of the project.

Activity matrix

73. Bahrain has not undertaken any enabling activities before. The activity matrix which indicates the areas needed to be covered by this proposal are shown in Table 2.

Training

74. All training activities including national workshops and participation of regional workshops to be organized by UNEP, UNDP or other international agencies for their on-going enabling activities programmes, will be coordinated by the PMT. The request for participation in the UNITAR CC: TRAIN programme as an observer will be explored.

75. 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 activities programmes in the region implemented by UNEP or UNDP.

76. 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

77. This project enjoys a very high level and a wide range of national support. It will be executed under the guidance of the NCCC. Also, it will be participated by a number of relevant ministries and NGOs, including the Ministry of Transportation, Ministry of Oil and Industry, Ministry of Electricity and Water, Ministry of Works and Agriculture, Ministry of Health, Ministry of Finance and National Economy, Bahrain Centre for Study and Research and Bahrain University and Arabian Gulf University, etc.

Project financing and budget

78. As the proposed activities are standard enabling activities as defined by the Operational Guidelines, so the incremental cost for undertaking these activities are also full cost. The requested GEF funding of US\$335,000 (including US\$25,000 for UNEP Coordination) reflects the fact that the country has not undertaken any enabling activities before, as well as the comparative high project management and personnel cost in the country (a significant proportion of which will be absorbed by the government). This budget has been realistically estimated by staff members of the Bahrain Environment Affairs under the guidance of UNEP. It has been reviewed and fully endorsed by the Director General of Bahrain Environmental Affairs, who is also the designated GEF focal point of the country (letter attached).

revised

79. The Senior Programme Officer (Climate Change) of the GEF Coordination Office, UNEP, visited the country in March 1997 to provide guidance on the formulation of the proposed budget, and to critically assess the availability of any relevant data, as well as the availability

of existing resources for the implementation of this project. In view of the present lack of human resources for climate change activities in Bahrain, UNEP is fully convinced that the requested funding is most appropriate and most essential for the successful implementation of the project over the next two months. This will allow Bahrain to gradually build up a scientific and technical team which can undertake climate change activities in the future in a sustainable manner.

80. As a country "*with many small islands*" (Article 4.8(a)) and "*low-lying coastal areas*" (Article 4.8(b)), "*with arid ... areas*" (Article 4.8 (c)), "*with areas prone to natural disasters*" (Article 4.8 (d)), "*with areas liable to drought and desertification*" (Article 4.8 (e)), "*with areas with fragile ecosystems...*" (Article 4.8 (g)), Bahrain 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.

81. The contribution of the Government of Bahrain, which will amount to US\$100,000 over the period of the project, will include salaries for technicians and other supporting staff, vehicles for field trips and their maintenance, office rentals, insurance and others.

Institutional framework and project implementation

82. As shown in the project management structure (Figure 1), this project will be executed by the Bahrain Environmental Affairs of the Ministry of Housing, Municipalities and Environment. In order to involve a wide range of stakeholders and to maximize the outputs of the proposed activities, appropriate experts from relevant ministries and institutions (e.g., local universities) are expected to participate in the project (see paragraph 77).

83. This project will seek to strengthen the existing institutional framework for project management where necessary.

84. As the GEF implementing agency for the project, UNEP will play a technical support and advisory role through its Atmosphere Unit with the support of the Regional Office for West Asia based in Bahrain and the UNEP Collaborating Centre on Energy and Environment (UCCEE) based in Denmark, so as to ensure that the project is successfully implemented.

Rationale for GEF support

85. This is a standard enabling activities proposal which will assist Bahrain to fulfill its reporting requirements under the UNFCCC. As GEF is the international entity entrusted to operate the financial mechanism for the UNFCCC on the interim basis, the proposed activities are eligible for GEF funding.

Sustainability and participation

86. The Government of Bahrain 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 Bahrain in various aspects of the proposed activities, as well as the leading role taken by the Bahrain Environmental Affairs to execute the project would enable the country to fulfill 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.

the project. Also, the Bahrain Environmental Affairs needs to consult with all relevant stakeholders in both public and private sectors, including NGOs and research organizations.

88. **Risks:** The potential risks which 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.
89. Necessary action will be undertaken to avoid all the risks mentioned above coming to fruition.

Monitoring and evaluation

90. The Project Coordinator will provide a monthly progress report to the Director of Environmental Assessment and Planning of the Bahrain Environmental Affairs, which will share it with UNEP. If possible, these reports may be compiled into an electronic newsletter that will be distributed to all participating institutions. These reports will enable the Bahrain Environmental Affairs and its supporting organs 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 NCCC for their quality and standard, comprehensiveness, and conformity to the proposed terms of reference and dates of completion.

91. The NCCC 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 NCCC will make recommendation to the Bahrain Environmental Affairs, which, in turn, will provide six-monthly progress reports and quarterly financial reports to UNEP based on UNEP's standard format.

92. 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.

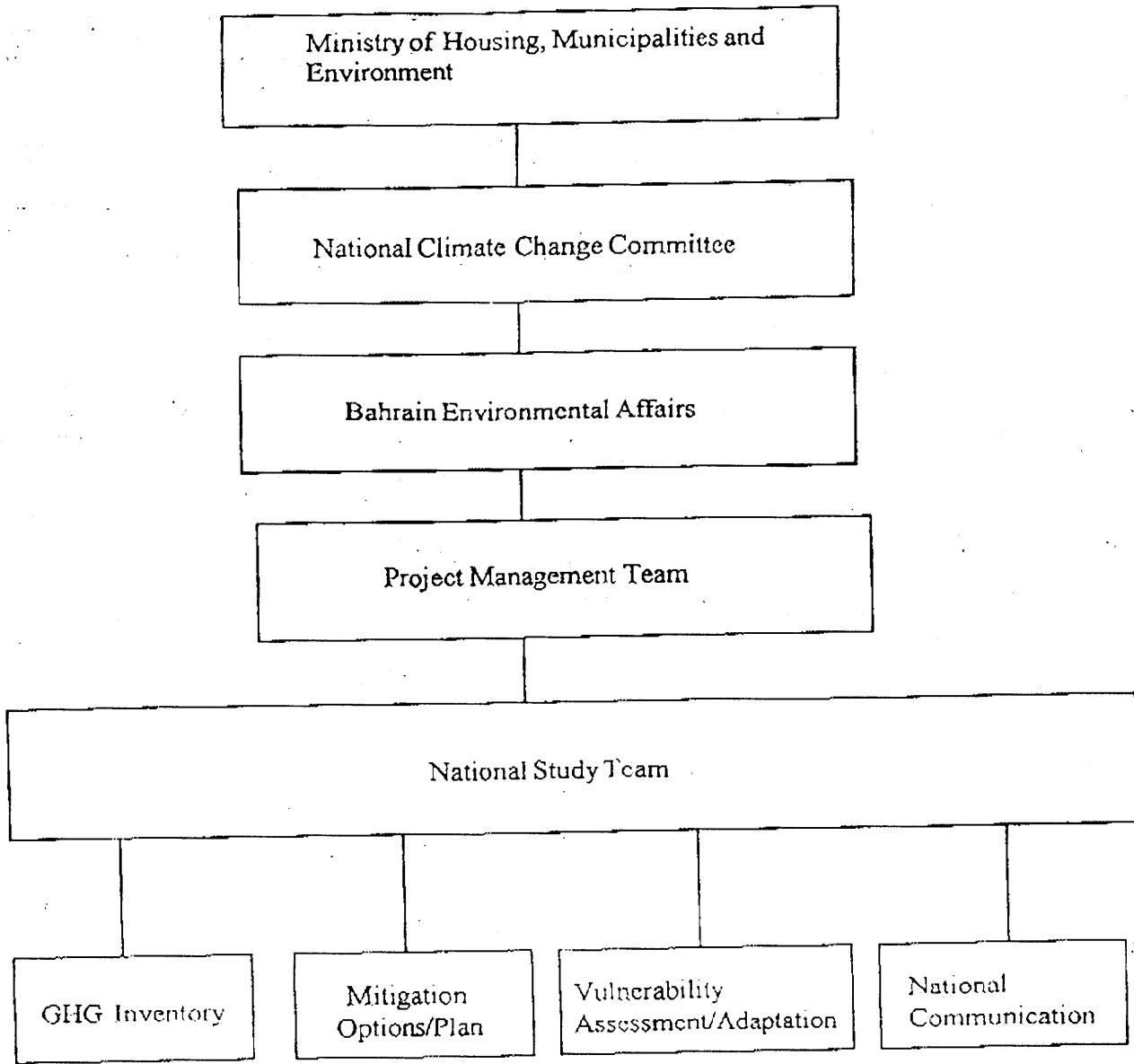


Figure 1. Project management structure

TABLE 1. PROPOSED WORK SCHEDULE

ACTIVITY	1	2	3	4	5	6	7	8	9	PM	M&E	
T I M E I N M O N T H S	1	██	██			██	██	██		██		
	2	██	██			██	██	██		██		
	3		██			██	██	██		██	██	
	4		██			██	██	██		██		
	5		██		██		██	██	██		██	
	6		██		██		██	██	██		██	██
	7		██		██		██	██	██		██	
	8		██		██		██	██	██		██	
	9		██		██		██	██	██		██	██
	10		██	██	██	██	██	██	██		██	
	11			██	██	██	██	██	██		██	
	12			██	██	██	██	██	██		██	██
	13			██	██	██	██	██	██		██	
	14			██	██	██	██	██	██		██	
	15				██	██	██	██	██		██	██
	16					██	██	██	██		██	
	17					██	██	██	██		██	
	18					██	██	██	██		██	██
	19					██	██	██	██	██	██	
	20						██	██	██	██	██	
	21							██	██	██	██	██
	22							██	██	██	██	
	23							██	██	██	██	
	24							██	██	██	██	██

NB: Some activities are expected to run concurrently as indicated.

PM is Project Management.

M&E is Evaluation and Monitoring.

Table 2: Enabling Activities required for Initial National Communications (Bahrain)

Enabling Activity	Planning and execution	Capacity Building		
		Data Gathering and Research*	Institutional Strengthening	Training & Education
<u>1. National Circumstances</u>	x	x	N/A	N/A
<u>2. Greenhouse Gas Inventories</u> (See Table A2 as completed)	x	x	x	x
1. -All Energy Sources	x	x	x	x
2. -Industrial Processes	x	x	x	x
3. -Agricultural Processes	x	x	x	x
4. -Land use Change & Forestry	x	x	x	x
5. -Other Sources	x	x	x	x
<u>3. General Description of Steps taken or envisaged to implement the Convention</u>				
(a) Program related to sustainable development, research, public awareness, etc	x	x	x	x
(b) Policy Options for Monitoring Systems and Response Strategies for Impacts	x	x	x	x
(c) Policy Frameworks for Implementing Adaptation Measures and Response Strategies	x	x	x	x
(d) Building Capacity to integrate climate change concerns into planning	x	N/A	x	x
(e) Programs to address climate change and its adverse impacts, including abatement and sink enhancement.	x	x	x	x
<u>4. Other Information</u>				
(a) Calculation of Emission Trends	x	x	x	x
(b) Financial and Technological Needs and Constraints for				
- Projects for Financing	x	x	x	x
- National Communications	x	x	x	x
- Vulnerability Assessment and Adaptation	x	x	x	x
<u>5. Compilation and Production of the Initial National Communication</u>	x	N/A	N/A	N/A

* In the context of communication-related enabling activities.

Table 3: Project Budget for Enabling Activities for Bahrain

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\$)	
2. Greenhouse Gas Inventories	22,750	19,500	16,250	6,500	65,000	
3. General Description of Steps	47,250	40,500	33,750	13,500	135,000	
(a) Programs related to sustainable development, research, public awareness, etc.	1,750	1,500	1,250	500	5,000	
(b) Policy Options for Monitoring Systems and Response Strategies for Impacts	15,750	13,500	11,250	4,500	45,000	
(c) Policy Frameworks for Implementing Adaptation Measures and Response Strategies	14,000	12,000	10,000	4,000	40,000	
(d) Building Capacity to integrate Climate concerns into Planning	1,750	1,500	1,250	500	5,000	
(e) Programs to address climate change, adverse impacts, including abatement, sink enhancements	14,000	12,000	10,000	4,000	40,000	
4. Other Information	4,500	2,500	2,000	1,000	10,000	
(a) Material relevant for Global Emission Trends	2,250	1,250	1,000	500	5,000	
(b) Financial, Technological Needs and Constraints	2,250	1,250	1,000	500	5,000	
5. Compilation and Production of Initial National Communication	7,000	6,000	5,000	2,800	20,000	
Project Management					70,000*	
Monitoring/Evaluation					10,000	
Total	81,500	68,500	57,000	23,800	310,000	
8% of Total	35%	30%	25%	10%		
(UNEP Coordination (8%))					25,000	
				Total	335,000	

* Project management cost is estimated to be US\$80,000 due to high in-country cost, but US\$10,000 will be contributed from the government due to the recommended ceiling of US\$70,000 by the GEF Operational Guidelines.

(97/1925)

FAX 11

STATE OF BAHRAIN
MINISTRY OF HOUSING, MUNICIPALITIES
& ENVIRONMENT



دولة البحرين
وزارة الاسكان والبلديات
والبيئة

1047/97

البيئة
ENVIRONMENT

41-6

Ref: EAP/23/97/2/MAH
Date: 17 June, 1997

17 JUN 1997

Mr. Ahmed Djoghlaif
Executive Coordinator
GEF Unit - UNEP
Nairobi - Kenya

RECEIVED	
SECTION	REQUIRED
MD <input checked="" type="checkbox"/>	YES <input type="checkbox"/>
18 JUN 1997	
BY	ASL AD
WORK COMPLETED	NO YES
OFFICE	0064 232082 <input checked="" type="checkbox"/>
FILE IN	

"Bahrain Enabling Activities for the Implementation of the UNFCCC"

Dear Mr. Djoghlaif,

The Environmental Affairs, Environmental Assessment and Planning Directorate has reviewed the document on the above subject which was developed by us with kind assistance by Dr. Pak Sum Low of your office. I am very pleased to inform you that I fully endorse and support the project.

As a country with arid areas, liable to desertification and with fragile ecosystem, Bahrain deserves special consideration under the UNFCCC. We would be most grateful if the project can be approved by the GEF.

Please be assured that our government is fully committed to fulfilling its obligations to the UNFCCC.

Thank you for your support and cooperation.

Best regards

Khalid Fakhro
Director General,
Environmental Affairs

UNEP	
Regional Office for West Asia	
RECEIVED	
Action: HSB	MG
17 JUN 1997	
Completed	
action required	
no action required	<input type="checkbox"/>
File 2	File 3