

**UNITED NATIONS ENVIRONMENT PROGRAMME  
SUB-PROJECT IDENTIFICATION**

**SECTION I: SUB-PROJECT IDENTIFICATION**

- 1.1 **Title of Sub-Programme:** Climate Change – Enabling Activities
- 1.2 **Title of Project:** **Viet Nam:** Preparation of Second National Communication under the UN Framework Convention on Climate Change (UNFCCC)
- Project Number**
- 1.3 Sub-Project Number: IMIS: GFL-2328-2724-4929  
PMS: GF/2010-04-86
- Main Project Number: IMIS: GFL-2328-2724-4769  
PMS: GF-2010-04-06
- 1.4 **Geographical Scope:** Viet Nam
- 1.5 **Implementation:**  
 GEF Implementing Agency: United Nations Environment Programme (UNEP)  
 Project Executing Agency: International Cooperation department,  
 Ministry of Natural Resources and Environment of Viet Nam  
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- 1.6 **Duration:** 36 months  
 Commencing: June 2006  
 Completion: May 2009
- 1.7 **Cost of Project:** (Expressed in US Dollars)

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>Total</b>	<b>%</b>
Cost to GEF Trust Fund	79,700	167,300	118,300	39,700	405,000	83.5
Govt. in-kind contribution	5,000	24,000	22,000	9,000	60,000	12.4
UNESCAP in-kind contribution	7,000	5,000	5,000	3,000	20,000	4.1
<b>Total Cost</b>	<b>91,700</b>	<b>196,300</b>	<b>145,300</b>	<b>51,700</b>	<b>485,000</b>	<b>100</b>

**1.8 Project Summary**

The main objective of this project is to enable Viet Nam to fulfil its commitments and obligations as required by Articles 4.1 and 12.1 of the Convention by preparing and reporting its Second National Communication (SNC) based on the recommended guidelines adopted at COP 8 (decision 17/CP.8) in 2002 and the format recommended by the *Operational Procedures for the Expedited Financing of National Communications from non-Annex I Parties* provided by the GEF in 2003. Through the process, Viet Nam will further build its institutional, scientific, technical, informational and human capacity at all levels as highlighted in Decision 2/CP.7 of the COP 7 so as to facilitate the country's effective implementation of the Convention in a sustainable manner.

Signature  
For the Government of Viet Nam

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Mr. Nguyen Khac Hieu,  
Deputy Director General,  
International Cooperation Department,  
Ministry of Natural Resources and  
Environment of Viet Nam

Date: \_\_\_\_\_

Signature  
For UNEP

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David Hastie  
Chief, Budget and Financial Management  
Service-UNON

Date: \_\_\_\_\_

## SECTION II: BACKGROUND AND PROJECT CONTRIBUTION TO OVERALL SUBPROGRAMME IMPLEMENTATION

### Background

#### Geography

1. Viet Nam (8°27-23°23 N and 102°08-109°30 E ) is located in Southeast Asia, sharing a land border with China, Laos and Cambodia. It's land area is 330,990 km<sup>2</sup>, stretching 1,650 km from north to south, 600 km at its widest and a mere 50 km at its narrowest. It consists of more than one million km<sup>2</sup> of water surface, with 3,260 km of coastline, two offshore archipelagoes Hoang Sa (Da Nang City) and Truong Sa (Khanh Hoa Province) and about 3,000 small islands with total area of more than 1600 km<sup>2</sup>. Three quarters of the land is mountainous and hills with the elevation mostly from 100 to 1000 m, while the rest consists of rich plains, the rice bowls of Viet Nam, where most of its people live.

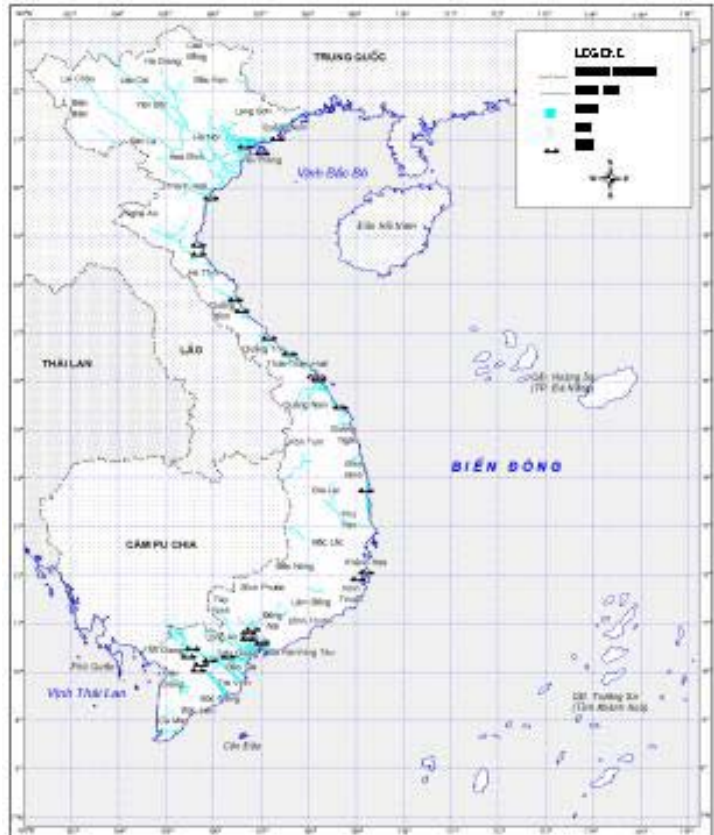


Figure 1. Map of Viet Nam

2. Viet Nam is divided into 7 regions according to topography: (i) Northern mountain region of the North; (ii) Red River delta; (iii) Northern Central coast; (iv) Southern Central coast; (v) Central highland; (vi) North-Eastern of the South; and (vii) Mekong River delta (Viet Nam Statistical Yearbook 1994).

3. The thinly populated central highlands, form the physical barrier between Viet Nam and Laos. These areas are populated by a vast number of ethnic tribes who, in many cases, have preserved their cultural traditions and languages. The North is separated by high mountain chains from China with the highest peak of Phan Si Pan rising to 3,143 m. It is where Hanoi, the capital, as well as the political and cultural centre of Viet Nam, is located.

4. The plains concentrate in the downstream of two largest and most important big rivers, the Red River<sup>1</sup> and Mekong River<sup>2</sup>. The river network in Viet Nam is rather dense with 2,860

<sup>1</sup> The Red River is originated from Yunnan (China) with a length of 1,140 km, and basin area of 61,627 km<sup>2</sup>; its section passing Viet Nam has 500 km length and basin area of 21,787 km<sup>2</sup>. The water is red all year round (hence the name) because of 80 million m<sup>3</sup> of alluvial carried by the river per year.

<sup>2</sup> The Mekong River is one of the 10 largest rivers in the world. It is originated from Tibet (China) passing Myanmar, Laos, Thailand and Cambodia, and then entering into Viet Nam. It has a total length of 4,220 km, with a basin area of 4,900 km<sup>2</sup>, which carries one billion tonnes of alluvium per year.

rivers, with an average density of 0.6 km/km<sup>2</sup>. Only 15 main river basins are of economic significance: Bang Giang and Ky Cung river basins, Nam Ron river basin, Tien Yen river basin, Red and Thai Binh river basins, Ma and Chu river basins, Muc river basin, Ca river basin, Gianh and Huong river basins, Thu Bon river basin, Tra Khuc and Con river basins, Ba river basin, Sperok river basin, Cai Luy river basin, Dong Nai river basin, and Cuu Long river basin (where Mekong River is flowing).

### *Climate*

5. Viet Nam possesses a monsoon tropical climate with plentiful heat and humidity, but the differentiation of climate between the regions is rather clear due to its lengthy territory stretching on many latitudes and diversified topography.
6. Annual mean temperature in different regions ranges from 18°C to 29°C. Monthly mean of the coldest month is about 13°C–20°C in the northern mountainous part and from 20 to 28°C in the southern parts. The summer temperature varies from 25°C to 30°C.
7. Annual rainfall varies in different regions, ranging from 600 mm to 5,000 mm. About 80-90% of rainfall concentrates in rainy season. The number of rainy days in the year also vary in regions and ranges from 60 to 200. In several regions, floods and inundation occur during rainy season, but in dry season, drought is often recorded. The rainfall distribution is uneven during the year. Average annual humidity is 80-85%. The total amount of annual solar radiation is 95–175 Kcal/cm<sup>2</sup>.

### *Population*

8. The population of Viet Nam was 82.03 million in 2004, with a growth rate of 1.4%. Women account for 50.85%. The urban population accounts for about 26.3% (2004).

### *Agriculture*

9. Viet Nam is predominantly an agricultural country, with 74% of its population are involved in agriculture. The arable land is 7.3 million hectares, about 22.2% of the total land area of the country. Versatile and various climates of the regions create a variety of vegetation and domestic animals (originated in the temperate area, sub-tropical and tropical areas). Drought in the dry season, flood and storm in the rainy season, affected regularly to agricultural production.
  10. Viet Nam has 13 main soil groups in which the red-yellow soil occupies 15.8 million hectares, while the alluvium soil, the grey soil, the alum and salted soil cover 2.93, 2.48, 2.14 and 0.99 million hectares, respectively (data from the National Institute for Agriculture Planning and Projection).
  11. Viet Nam's agricultural economy is based on food crops, industrial crops and livestock husbandry. The ratio of agricultural production in the total economy has gradually been declining with the growth of the economy. The average annual growth rate of gross agriculture production for 1995-2000 is 4.4%. Within the agricultural sector, the ratio of cultivation sub-sector and the animal husbandry was 79% and 18% respectively for many years. However, since 2000, these figures have changed to 78% and 19% respectively. The increase in animal husbandry share in gross agricultural output value under the condition of
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continuous growth of absolute value in cultivation is of great significance.

### ***Forestry***

12. Initially, Viet Nam was richly endowed with high-quality forest, covering virtually the whole country. These are typically tropical rainforests rich in flora and fauna with high biomass and biodiversity values. However, by 1943 the forest cover had been reduced to only 14.3 million ha, or 43% of the national land territory. Subsequently, the total forest decreased very rapidly, especially during the war and the period of 1976-1985. Long wars have destroyed several forest ecosystems. In addition, thousands of hectares of the forests are degraded annually.
13. Currently, forests in Viet Nam are still under great pressures from: (i) deforestation contributed by inefficient logging and timber production technology; (ii) illegal logging; (iii) slash and burns practices; (iv) high competitiveness of agricultural production over forestry have caused forest areas to shrink and forest quality to degrade; and (v) forest fires that have devastated thousands of hectares every year. Forest loss and degradation are major reasons for land impoverishment and desertification, creating a wide range of negative impacts and challenges for economic development, the society and its environment, such as causing more serious flooding and drought, creating difficulties in forest product supply, reducing arable land, and finally worsening unemployment and rural poverty.
14. Since 1990s, policies and measures<sup>3</sup> for forest protection and afforestation have brought about positive results. Forest coverage has increased from 27% in 1991 to 33.2% in 2000 (Viet Nam Agenda 21), and to 36.1% in 2004 (MARD, 2004). The Government has developed strategy to stabilize forest reserves, including 3 million ha of special use forests, which cover forests managed for biodiversity conservation and protected for other purposes, 6 million ha of protective forests and 10 million ha of production forests. However, among the production forests, currently only 9% are classified as rich forests (with the timber volume of 150 m<sup>3</sup>/ha) and 33% as medium forests (with the timber volume of 80-150 m<sup>3</sup>/ha).
15. The forest sector's 5-year plan (2006-2010), which is in line with the Comprehensive Poverty Reduction Growth Strategy (CPRGS) and the new National Forest Strategy, focuses on achieving goals of economic growth, environmental sustainability, improvement of social conditions, including poverty reduction and improvement of forest sector management. It contributes to the MARD 5-year plan (5YP) and National Socio-Economic Development Plan (NSEDPP).

### ***Biodiversity***

16. Viet Nam is among the 10 countries with the highest biodiversity in the world, as reflected in the variety of fauna and flora, multiple endemic species and those new to the world, including big animals discovered recently, and the diversity of typical landscapes and ecosystems.
17. Since 1958 over 60 legal documents have been issued by the Government for the protection of

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<sup>3</sup> Major national programmes for afforestation, reforestation, and improved forest management have included Programmes 327, 556, and 661. In 1993, the Government started the Programme 327, "*Regreening Open Land and Barren Hills*," for the period 1993-2000, with the objective to afforest barren land and open treeless hills throughout Viet Nam. In 1995, a revised programme, called Programme 556, was adopted. In 1998, National Assembly agreed to adopt the ambitious 5 Million Hectare Reforestation Programme (5MHRP) for the period of 1998-2010, which is estimated to cost about US\$ 2.5 billion. The main objectives of the 5MHRP are as follows: (i) Establishing and restoring 2 M ha of protection forests and 3 M ha of production forests to increase the forest cover to 43% by 2010, to ensure environmental protection requirements; (ii) Ensuring the forest products supply for development (every year 15 M m<sup>3</sup> of timber and 20 M m<sup>3</sup> of fuel wood), thereby reducing the pressure on natural forests; and (iii) Implementing efforts for poverty alleviation, hunger eradication and development of rural mountainous areas, by creating forestry-related employment for 2 M people, and increasing the income of people living in forest areas.

biodiversity. Despite this effort, biodiversity in Viet Nam has been experiencing degradation and shrinkage because of (i) the reduction and disappearance of habitats due to deforestation, conversion of land-use methods, massive exploitation of animals, forest fires, earthquakes, storms and epidemics; (ii) over-exploitation of plant resources due to population growth and poverty; (iii) environmental pollution that is destroying a number of terrestrial, aquatic and underground ecosystems; (iv) biological contamination due to uncontrolled import of exotic species posing negative impacts on indigenous species (Viet Nam Agenda 21). In view of these, the Government has adopted an *Action Plan for Biodiversity Protection* on 22 December 1995 that provides guidelines on biodiversity protection at all levels and sectors, especially the sensitive and endangered ecosystems. The *Action Plan* also aims to promote and identify the utilization value of all components of biodiversity based on long-term natural resource development so as to serve the country's socio-economic objectives. Further improvement on policies and legislation related to biodiversity conservation is needed.

## ***Energy***

18. Viet Nam has diversified energy resources. Ongoing exploration has led to several coal, oil and gas discoveries in recent years. Crude oil exploitation has increased from 2.7 million tonnes in 1990 to 20.3 million tonnes in 2004 with the average annual growth rate of 15.5%, while natural gas exploitation reached approximately 4.67 billion m<sup>3</sup> in 2004. Viet Nam has the potential to become regional oil, natural gas<sup>4</sup> and coal<sup>5</sup> supplier. The total primary commercial energy exploitation has increased from 8.6 MTOE in 1990 to 43.6 MTOE in 2004.
19. In the primary energy production structure of Viet Nam in 2004, oil accounted for 46.5%, coal 34.5%, hydropower 9.4% and gas 9.6%. In 2004, Viet Nam had a total electric generating capacity of 11.2 Giga watts (GW) and generated 46 billion kWh, of which 38.3% was hydropower. Taking into account the economic and environmental factors, the hydropower potential that could be exploited till 2020 is 10,595 MW, with an expected output of 51.8 billion kWh.
20. However, much of Viet Nam's large population in rural areas relies heavily on non-commercial biomass energy sources such as wood, agricultural residues, and rice husks, accounting for up to 60% of total energy consumption mainly for fuel. Although Viet Nam's per capital commercial energy consumption ranks among the lowest in Asia, rapid commercial sector growth, population migration to major cities, and improved living standards have all contributed to a growing demand for electricity. In order to meet this demand, the energy sector has developed many big projects in coal, oil, gas, and electricity sub-sectors.
21. Efficiency of energy use in the economy and household sectors are still low, while energy intensity for GDP is higher than other countries in the region. Studies indicate that energy

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<sup>4</sup> Viet Nam has proven gas reserves of 6.8 trillion cubic feet (Tcf), but is expected to contain up to 10 Tcf. Viet Nam's natural gas production and consumption are rising, with further increases expected as additional fields come on-stream. Natural gas is currently produced entirely for domestic consumption. The Cuu Long basin, a source of associated gas from oil production, is the largest Vietnamese natural gas production area.

<sup>5</sup> Viet Nam contains coal reserves estimated at 3.6 billion tons, the majority of which is anthracite. Production has increased dramatically, with over 14 Mt in 2002, 11 Mt more than that in the previous year. Coal is exported primarily to Japan and China, followed by Thailand, the European Union, Mexico and Brazil. Vinacoal hopes to produce 30 Mt of coal in 2005, exporting at least 11 Mt. Clean coal production has increased from 4.5 million tons in 1990 to 25.05 million tons in 2004 with the average annual growth rate of 22.7%.

saving potential is large. Enabling environment for the implementation of energy efficiency is being created (e.g., Decree No 02/2003/ND-CP dated 03 September 2003 on “*Efficiency and energy saving use*”). The country’s programme on energy saving and efficiency for the period of 2006-2015 has been prepared by the Ministry of Industry and other relevant ministries and submitted to the Government. The targets of the programme include enhancement of public awareness, promotion of energy conservation and energy efficiency.

### ***Water Resources***

22. Viet Nam has plentiful sources of surface water and underground water. However, the rainfall is unevenly distributed according to seasons and regions, causing floods in rainy seasons and drought in dry season in many places.
23. Geographical locations of mountains create great potential in hydro-electricity, and water storage on one hand but increased risks of flood and land erosion on the other hand. Underground water resources can be exploited for residential water supply on medium and large sized scale in some regions.
24. Viet Nam shares international water resources, such as Mekong River, with neighbouring countries.
25. There are policies, laws, programmes and projects on the protection and utilization of water resources, but there are still shortcomings in water resources management, including (i) the lack of long-term strategies on national and regional scales; (ii) water resources have not been managed according to basin system; (iii) provision on the protection, utilization and management of water resources have been insufficient or fragmentary, including suitable management instruments on water quality standards and the limits for underground water utilization for each region; and (iv) low investment for irrigation works resulting in imperfect works.

### ***Industry***

26. In recent years, the growth rate of industry has increased from 10 to 15%. Industrial activities consist of mining and quarrying; manufacturing and production and distribution of electricity, gas and water. The growth rate of industry has always been higher than GDP. The industrial output value in 2004 was worth VND 354,030 billion (1994 price). The Main industries still maintained their outputs and high growth rates: coal, 16%; crude oil, 15%, natural gas, 114%; etc. Despite the high growth rate, the industry is still not developed, with obsolete industrial equipment and high-energy consumption per unit of product.
27. Efforts are being made to (i) support investment, renovate and upgrade the technology in existing establishments, especially the small and medium industrial establishments, with diverse trades and crafts, with a view to improving productivity, quality, efficiency and environmental protection; (ii) modernize production sectors in stages, and firstly develop the sectors that have competitive advantages, win over the domestic market and vigorously promote export, such as processed agricultural, fishery and forestry products, textiles, leather, shoes, electronics and information technology products, certain machinery and consumer products. Some selected heavy industry facilities, such as oil and gas, metallurgy, manufactures, basic chemicals, fertilizer, construction material, etc., as well as some hi-tech industries in industrial parks and export processing zones, especially the information, telecommunication, electronic and automation technologies, are also being developed.

## ***Economy and Social Conditions***

28. From 1990 to 2004, the gross domestic product (GDP) of Viet Nam had nearly tripled, increased by 7.5% per year on the average (it was 7.3% for 2001-2004 period). The average GDP per capita in 2004 was about 560 US\$. The 2004 GDP at current prices by economic sectors are: agriculture, forestry and fishing, 21.76%; industry and construction, 40.09%; and services, 38.15%. Industry grew at 11% per year (it was 10.3% for the last 5 years). The value of services has been growing by about 7% per year on the average. Agriculture has maintained its annual growth rate of 4.06% (3.6% for the last 5 years) in spite of many difficulties in terms of natural disasters.
29. In the five-year-plan 2001-2005, Viet Nam has set as the primary objectives of this period the restoration of a rapid and sustainable economic growth and improvement of the quality of development in order to stabilize and improve the living standards of the people to accelerate the process of restructuring the economy towards industrialization and modernization. Viet Nam has made all efforts on achieving the following targets: double the GDP of 1995 in 2005; maintain average annual GDP growth rate of 7.5% for the period 2001-2005; increase annual agricultural, forestry and fishery output by 4.8%, annual industrial output by 13%, and annual service revenue by 7.5%.
30. Remarkable achievements in social performance have been observed. The international economic relations, especially in international trade and FDI, have continuously expanded. The physical and spiritual living conditions of the population have improved, and the political and social status has been stable. .

## **Environmental Policy and Sustainable Development**

31. Viet Nam National Assembly approved the Environmental Protection Law in 1993 and its amendments in 2005. In 2000, Viet Nam developed the National Environmental Protection Strategy for the period of 2001-2010, which aims to continuously protect and improve environment in order to raise the living standard and health of the people, and to ensure sustainable development of the country.
32. The *National Strategy for Environmental Protection, 2001-2010*, formulated by MOSTE and submitted to the Government for approval in 2000, sets out a series of strategic objectives, in terms of pollution prevention, rational and sustainable resource use, and environmental quality improvement, for specific areas of concern. These include coastal and marine ecosystems; freshwater ecosystems, wetlands and groundwater; land and mineral resources; biological diversity; urban and industrial areas; rural ecosystems; and natural and cultural heritage.
33. *The Strategic Orientation for Sustainable Development in Viet Nam* was published in August 2004 “in order to sustainably develop the country on the basis of close, reasonable and harmonious coordination of economic and social development and environmental protection” (see Viet Nam Agenda 21, Article 1). This document has highlighted a number of priority areas in natural resource utilization, environmental protection and pollution control for sustainable development, as follows:
  - Prevention of land deterioration, effective and sustainable utilization of land resources;
  - Water environment protection and sustainable utilization of water resources;
  - Appropriate exploitation and thrifty and sustainable utilization of mineral resources;
  - Protection of marine, coastal and island environments and promotion of marine resources;
  - Forest protection and development;



- Air pollution reduction in industrial and urban areas;
  - Solid waste and toxic waste management;
  - Biodiversity conservation;
  - Implement measures for mitigating climate change, limiting its negative impacts, preventing and controlling natural disasters.
34. Each of the above areas has listed priority activities in the following areas: institutional perspective, economic perspective, science and technology perspectives and awareness raising.
35. The socio-economic development strategy 2001-2010 confirms Viet Nam's perspective of development as "*rapid growth accompanied by effective and sustainable development and economic growth in parallel with advancement, social equality and environmental protection*". In 2005, MONRE published the *Five-Year Plan 2006-2010 for Natural Resources and Environment Sector*, which emphasizes sustainable development and "*environment protection will be given the same level of attention as other socio-economic development issues*".
36. On 17 October 2005, the Prime Minister has issued a *Directive on the implementation of Kyoto Protocol (KP) to the United Nations Framework Convention on Climate Change (UNFCCC)*, which instructs various ministries and government agencies, as well as provincial/municipal People's Committee, to effectively implement the Clean Development Mechanism (CDM) of the Kyoto Protocol. This is probably one of the first of its kind in the Asia-Pacific region.
37. Apart from the UNFCCC, Viet Nam has signed, acceded or ratified, among others, the following international and regional environmental agreements:
- Vienna Convention for the Protection of the Ozone Layer (1985) (acceded in January 1994) and its Montreal Protocol on Substances that Deplete the Ozone Layer (acceded in January 1994)
  - Convention on Biological Diversity (CBD) (ratified 16 November 1994) and Biodiversity Protocol (acceded on 21 January 2004)
  - United Nations Convention to Combat Desertification (UNCCD) (acceded on 25 August 1998)
  - Convention on wetlands of international importance especially as waterfowl habitat (Ramsar) 1971 (Ramsar Convention) (signed 20 September 1989)
  - Convention of International Trade in Endangered Species of Wild Fauna and Flora (acceded on 20 January 1994);
  - The Convention for the Protection of the World Culture and Natural Heritage (1972) (signed on 2 February 1989); Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (acceded 13 March 1995)
  - Stockholm Convention on Persistent Organic Pollutants (ratified on 22 July 2002);
  - United Nations Convention on the Law of the Sea (signed on 25 July 1994)
  - ASEAN Agreement on Transboundary Haze Pollution (ratified on 24 March 2003) (the Agreement entered into force on 25 November 2003).

### ***Project objectives***

38. The main objective of this proposal is to enable Viet Nam to fulfil its commitments and obligations as required by Articles 4.1 and 12.1 of the Convention by preparing and reporting its Second National Communication (SNC) based on the recommended guidelines adopted at COP 8 (decision 17/CP.8) in 2002 and the format recommended by the *Operational Procedures for the Expedited Financing of National Communications from non-Annex I Parties* provided by the GEF in 2003. Through the process, Viet Nam will further build its institutional, scientific, technical, informational and human capacity as highlighted in Decision 2/CP.7 at all levels, so as to facilitate the country's effective implementation of the Convention in a sustainable manner.

### **Stocktaking and stakeholders consultation**

39. In accordance with the recommendation of the GEF *Operational Procedures for the Expedited Financing of National Communications from non-Annex I Parties* (GEF, 2003), and in order to better prepare the project proposal for the preparation of Second National Communication, a national workshop for stocktaking and stakeholders consultation was organized by MONRE on 18-19 January 2006. About 70 people, including former key members of the INC project team and other stakeholders from relevant ministries<sup>6</sup>, private sector and non-governmental organizations (NGOs), participated in the workshop. The Regional Adviser on Environment and Sustainable Development of United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) served as a resource person for the workshop. He gave a presentation on COP 8 Guidelines for the preparation of national communications from non-Annex I Parties to the UNFCCC and responded to many questions raised during and after his presentation.
40. During the first day of the workshop, the local experts comprehensively reviewed the major results and outcomes of the INC project and the Phase II project for measures for capacity-building in priority areas, as well as other existing climate change activities. They highlighted specific issues, problems, constraints, gaps and further needs in GHG inventory; mitigation options analysis; vulnerability and adaptation (V&A) assessment; technology transfer and capacity development; research and systematic observation; and education, training and public awareness, and proposed further activities for the SNC.
41. During the second day of the workshop, three working groups, each with about 10 experts, were formed to further discuss the details of the proposed activities for the SNC, and the estimated cost for each proposed activity, based on the COP 8 Guidelines and the *Operational Procedures for the Expedited Financing of National Communications from non-Annex I Parties* (GEF, 2003). The results of the discussions were then presented by the group leaders and reviewed by all participants in the plenary. A Summary Report on the workshop is attached as Annex 2.
42. After the workshop, each of the national expert groups met with the Regional Adviser of UNESCAP respectively, and further discussed all the proposed activities for the SNC and the estimated cost for each of the proposed activities, taking into consideration the indicative cost

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<sup>6</sup> These include representatives from Ministry of Foreign Affairs; Ministry of Finance; Ministry of Planning and Investment; Ministry of Industry; Ministry of Agriculture and Rural Development; Ministry of Science and Technology; National Hydro-meteorological Service; Water Resources Management Department; Viet Nam Chamber of Commerce and Industry; Viet Nam Academy of Science and Technology; Viet Nam Union of Science and Technology Associations; Hanoi University of Technology, Ministry of Education and Training; Research Centre for Climate Change and Sustainable Development; Research Centre for Energy and Environment; Centre for Nature Preservation Assistance and Community Development; Viet Nam Steel Cooperation; UNDP, Netherlands Red Cross in Viet Nam; Hong Kong Oxfam; Voice of Viet Nam; Documentary Film Agency; among others.

limit as recommended by the *Operational Procedures for the Expedited Financing of National Communications from non-Annex I Parties*. The inputs from the national expert groups have formed the basis for the preparation of this project proposal.

43. The matrix that was used to assist in stocktaking of activities financed under the GEF enabling activities and other efforts is attached as Table 1. The cells marked with “x” simply means that some activities had been undertaken under the INC, the Phase II project and other past and existing activities, but new and additional activities are still needed. Blank cells mean that no activities have been undertaken so far.

#### **Linkages with other climate change and environmental activities**

44. The proposed project will build on the past and existing activities on climate change. It will be ensured that there will be no duplication of past and existing activities.
45. As climate change is a sustainable development issue that links to all socio-economic and environmental issues, this proposed project will complement other environmental activities, especially those undertaken under the Montreal Protocol on Substances that Deplete the Ozone Layer, the CBD and the UNCCD.

#### **Project activities, outputs and indicators**

46. This proposal is formulated in accordance to the Guidelines adopted at COP 8 (Decision 17/CP.8) in 2002 and the *GEF Operational Procedures for the Expedited Financing of National Communications from non-Annex I Parties* (GEF, 2003). It consists of 10 clearly defined components, each of which is briefly described as follows. Each component first highlights the previous activities, identifies the major gaps, and then proposes new activities to be undertaken within the framework of the project with an indicative cost, as well as expected major outputs and indicators of achievement. These are based on the results of the Stocktaking and Stakeholders Consultation Workshop, as well as the comprehensive discussion of the national expert groups under the guidance of the Regional Adviser of UNESCAP soon after the workshop.

#### ***Component 1: Institutional framework for project implementation***

47. A Project Management Team (PMT) and a National Study Team (NST) will be reconstituted under the auspices of MONRE in consultation with other relevant ministries, private sector and NGOs. The existing National Climate Change Steering Committee (NCCSC) will provide guidance to the PMT.
48. The NST will comprise five Working Groups dealing with (i) GHG Inventory; (ii) Mitigation Options & Technology Transfer; (iii) Vulnerability and Adaptation (V&A) Assessment; (iv) Research and Systematic Observation; and (v) Education, Training and Public Awareness. Each working group is composed of a number of experts drawing from both public and private sectors, including NGOs. The NST will be coordinated by a Project Coordinator, who will be designated by the MONRE to coordinate the day-to-day project activities. The Project Coordinator, together with the leader of each Working Group, will form the PMT, which will be administratively supported by a secretary. The PMT and each Working Group will have adequate and appropriate computer and telecommunication facility, including Internet, to enable them to efficiently and effectively undertake their activities.
49. The institutional framework for the proposed project is shown in Figure 2. The project will be

executed by MONRE, with the support of various related ministries as well as private sector, local communities and NGOs. The NCCSC will report to MONRE, which, in turn, will ensure that the recommendations of the project are to be integrated into the overall national development planning process.

50. A total of **US\$75,000** is requested from the GEF for project management for three years (see Table 3). This includes the salaries for the Project Coordinator and a secretary.

### **Major output and indicator**

51. The major output and indicator of this Component will be the successful establishment of the institutional arrangement for the implementation of the proposed project, including the reconstitution of the PMT and NST, which, with appropriate resources, will be fully committed to the successful implementation of the project.

### **Component 2: National GHG Inventory**

52. GHG inventory is an important component of national communication, as it forms the basis for mitigation measures. A reliable and accurate GHG inventory would also be very useful for the formulation of any projects for further bilateral and multilateral funding, including those under the Clean Development Mechanism (CDM) of the Kyoto Protocol, so that appropriate baseline for emission reduction can be derived.

#### **Previous activities**

53. In the INC, Viet Nam has undertaken a national GHG Inventory for direct greenhouse gases carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), and indirect greenhouse gases nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO) and non-methane volatile organic compound (NMVOC), as well as sulphur dioxide (SO<sub>2</sub>) for the base year 1994 in five source categories, namely: *Energy, Industrial Processes, Agriculture, Land-Use Changes and Forestry* and *Waste* (only CH<sub>4</sub> and N<sub>2</sub>O are considered) using the *IPCC 1996 Revised Guidelines for National Greenhouse Gas Inventories*. Based on this inventory, projections of national GHG emissions to the year 2020 have been made, and the options for mitigation of GHG emissions have been identified for the energy, land-use change and forestry, and agriculture sectors.
54. In 2002, MONRE provided funding for updating the GHG inventory data to the year 1998 using the *IPCC 1996 Revised Guidelines for National Greenhouse Gas Inventories*, covering the same five source categories as those reported in the INC. One significant improvement in this inventory was that country-specific rather than default emission factors were used for estimating the emission of methane from flooded rice fields.
55. Based on the 1998 GHG data, the largest emission source was agriculture with 46.3 Tg CO<sub>2</sub> equivalent, representing 42% of the total emission. This was followed by the energy sector, with 43.5 Tg CO<sub>2</sub> equivalent or 40% of the total emission; industrial processes, with 5.6 Tg CO<sub>2</sub> equivalent or 5% of the total emission; and waste, with 2.6 Tg CO<sub>2</sub> equivalent or 2% of the total emission. It is found that the total emission in 1998 (128 Tg CO<sub>2</sub> equivalent) was 20% higher than that in 1994 (103 Tg CO<sub>2</sub> equivalent), in which the emission from the energy sector had increased by 1.5 times.
56. The areas of coverage in GHG inventory for this proposed project are indicated in Tables 2a and 2 b.

#### **Gaps**

57. The major gaps are:

- (i) CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O, NO<sub>x</sub>, CO, NMVOC and SO<sub>x</sub> data in the five source categories need to be updated and extended based on the COP 8 Guidelines;
- (ii) Existing GHG database needs to be updated and improved to make it user-friendly;
- (iii) Inventory was not as extensive and comprehensive due to the lack of data or poor data quality in certain source categories (e.g., not all industries and industrial processes were considered; data quality in agriculture and forestry sectors are not as good as those in fuel combustion sector);
- (iv) The previous emissions from energy consumption in different sectors were calculated using the reference approach only and there is a need for the sectoral or bottom-up approach for emission estimation;
- (v) The role of savannas and abandonment lands in CO<sub>2</sub> uptake needs to be studied;
- (vi) Activity data for solvent and other product use sector have not been collected, and hence the emission from this sector was not estimated;
- (vii) Lack of country-specific emission factors (e.g., coal, gas, mining, soils, biomass, etc.);
- (viii) The uncertainties for sources and sinks were not estimated;
- (ix) User-friendly software for GHG emission projection is needed;
- (x) Capacity-building in IPCC methodologies for GHG Inventory, including the application of good practice guidance and uncertainty management, is still very much needed.

### **Proposed activities**

58. Based on the previous GHG inventories for 1994 and 1998, a national inventory for CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, CO, NO<sub>x</sub>, NMVOC and SO<sub>2</sub> will be undertaken for the year **2000** in five source categories: "*Energy*" (i.e., fuel combustion, energy industries; transport; commercial, residential; solid fuels), "*Industrial Processes*", "*Agriculture*" (i.e., enteric fermentation from domestic livestock; manure management; rice cultivation, agricultural soils and field burning of agricultural residues), "*Land-Use Changes and Forestry*" (i.e., changes in forest and other woody biomass stock; forest and grassland conversion; abandonment of managed lands) and "*Waste*" (i.e., solid waste disposal on land; wastewater handling; human sewage), using the *IPCC 1996 Revised Guidelines for National Greenhouse Gas Inventories*.<sup>7</sup> Emissions of methane and nitrous oxide from international bunkers and aviation will also be estimated for the year 2000. In addition, some attempt will be made to estimate the GHG emissions from slash and burn, especially in rural areas where such practice seems to be widespread. Both the reference and the sectoral (bottom-up) approach will be used to estimate CO<sub>2</sub> fuel combustion emissions as recommended by the Guidelines.

59. The activity data of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF<sub>6</sub>), which are controlled by the Kyoto Protocol, will also be collected for the same base year where available.

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<sup>7</sup> 2006 IPCC Guidelines for National Greenhouse Gas Inventories will be used when it becomes available in 2006.

60. Appropriate national or regional emission/sink factors will be used to estimate GHG emissions/sinks where available, so as to reduce the uncertainties and enhancing the data quality. Quality assurance and quality control (QA/QC) procedures based on the *IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gases Inventories* will be adopted to ensure data reliability. The reduction of uncertainties in the national GHG inventory will allow the re-assessment of the mitigation options proposed in the INC.
61. While the database for CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, NO<sub>x</sub>, CO, NMVOC and SO<sub>2</sub> of the INC project will be updated, a new database for HFCs, PFCs, SF<sub>6</sub> (where available) will be established. An efficient and user-friendly database system, together with a user manual, will be developed for archiving, updating and maintaining the data.
62. Tables 2 (a) and 2 (b) as provided by the COP 8 Guidelines will be used for reporting the national GHG inventory. The cells marked with “X” in the tables means that some activities had been undertaken under the INC and other projects, but new and additional activities are still needed. Blank cells mean that no activities have been undertaken so far.
63. This activity will be coordinated with any regional efforts whenever and wherever possible.
64. A review workshop will be held during mid-term and at the end of the proposed activities to assess progress. Policy makers and other stakeholders will be invited to participate in the workshop, so as to enhance their awareness on the importance of GHG inventory, which should be taken into consideration in national development planning. If possible, a long-term programme on the improvement of future GHG inventories will be developed.
65. The above activities will be undertaken by the GHG Inventory Group members, who will have opportunities to strengthen their technical capacity on the application of IPCC methodology, including data collection, analysis and management. They would also have opportunities to participate in the subregional, regional and international training workshops, so as to share experiences and lessons learned with other countries. In addition, training workshop on *IPCC Good Practice Guidance and Uncertainty Management in National GHG Inventories* will be organized for the Group members.
66. In view of the fact that some expertise and experiences have been gained in the INC and other projects, a total of **US\$60,000** is requested to undertake the above proposed activities, including the costs for capacity-building, equipment, survey and transportation, over the 3-year project cycle (Table 3).

### **Major outputs and indicators**

67. The major outputs and indicators of this Component will be:
  - (i) Reconstitution of the GHG inventory team based on the INC project;
  - (ii) Updated and improved inventory data for CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, CO, NO<sub>x</sub>, NMVOC and SO<sub>2</sub>, and new inventory data for HFCs, PFCs and SF<sub>6</sub> for the year 2000, and these data will be used as a basis for assessment and selection of mitigation options;
  - (iii) Improved emission/sink factors in various sources/sinks where possible;
  - (iv) An updated, improved and user-friendly GHG inventory database and user manual;

- (v) An updated GHG inventory report, including technical annexes that detail the inventory procedures and calculations;
- (vi) Further identification of shortcomings and gaps of the IPCC Guidelines in relation to the local conditions;
- (vii) A description of further research needed to develop and/or apply new emission factors for specific activities;
- (viii) Recommendations on areas of targeted research to improve future inventories and to suggest revisions to the existing IPCC GHG inventory methodology;
- (ix) Strengthened human, scientific, technical and institutional capacity;
- (x) The reports of the review workshops, including major papers presented;
- (xi) Possible publications in scientific journals.

***Component 3: Programmes Containing Measures to Facilitate an Adequate Adaptation to Climate Change, including Preparation of National Adaptation Plan***

***Previous activities***

72. In the INC, vulnerability assessment was undertaken for water resources, agriculture, coastal zone, forestry, energy and transport, fishery, and human health using the outputs of the CSIRO Mark 2 global climate model based on the global GHG emission scenarios (IS92a and IS92b) for Southeast Asia. Only temperature and rainfall scenarios (assuming air temperature would rise from 1.5°C to 2.5°C and rainfall would vary from -5% to 10%) for the years 2010, 2050 and 2070 were considered for various ecological zones (i.e., Northern Mountainous and Midland; Red River delta; Northern Central coast; Southern Central coast; Central Highland; and Southern Viet Nam). In order to assess the impacts of climate change on coastal zones, the scenario of sea-level rise of 1 m by 2100 was used<sup>8</sup>.
73. Based on the above scenarios, the vulnerability and the potential impacts on the above-mentioned socio-economic sectors in various ecological zones were assessed, and adaptation measures were identified. However, this V&A assessemnt was largely qualitative, and hence the results should only be regarded as preliminary.
74. Apart from the INC project, a number of other studies, projects and activities on climate change impacts and related issues, including those related to disasters preparedness in a number of provinces and villages in Central Viet Nam where it is more prone to climate-related disasters, have been undertaken by various agencies and groups. These include:
- (i) *Disaster Preparedness concerned to Climate Change* (a pilot project) -- This project, funded by the Government of the Netherlands and implemented by Viet Nam Red Cross Society, produces information materials on climate change and natural disasters, raise awareness amongst decision makers in five provinces (i.e., Nghe An, Ha Tinh, Quang Binh, Ninh Thuan and Binh Thuan) in Central Viet Nam; builds capacity of the Viet Nam Red Cross on climate-related disaster preparedness, and organizes public campaign on disaster preparedness;

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<sup>8</sup> A 1-m sea-level rise would inundate over 40,000km<sup>2</sup>, amounting to 12.2% of the land surface, and affect 17.1 million people, or 23% of the entire population (UNDP, 2006).

- (ii) *Capacity-building for adaptation to climate change (CACC) from 2002-2005* -- This project, funded by CIDA and implemented by CECI Viet Nam in Quang Dien and Phu Vang Districts in Thua Thien-Hue Province in Central Viet Nam. It aimed to support local communities to design and implement participatory adaptation strategies to mitigate the negative impacts of extreme climate events, which are increasing in frequency and magnitude due to climate change. The project team employed a bottom-up/top-down strategy, whereby villagers and local institutions enhanced their capacity through capacity-building activities and were responsible for the implementation of their own risk reduction activities. The project strategy consisted of initial studies in Phu Vang and Quang Dien Districts in Thua Thien-Hue Province, followed by training activities in the local areas including training of trainers. The local people were then responsible for making a safer village and/or safer production plan from which they could base proposals for sub-projects and additional training activities. Successful proposals were awarded co-sponsorship through the Community Adaptation Fund (CAF). For more details, please see: <http://www.cecivietnam.com/CACC/index.htm>
  - (iii) The Viet Nam-Netherlands Integrated Coastal Zone Management (VNICZM) Project -- The first phase of this project (2000-2003), funded by the Government of Netherlands and implemented by MONRE through its Viet Nam Environment Protection Agency (VEPA), aimed at establishing a longer-term ICZM Programme by focusing on advising in the planning and development of the coastal zone, its communities and its resources in a sustainable way. The project provided the forum for interaction between ministries and provincial authorities via workshops, seminars, scientific meetings and consultative sessions. Emphasis was on strengthening MoNRE-[VEPA](#) in Hanoi and the DONRE's of [Nam Dinh](#) (north), [Thua Thien-Hue](#) (central) and [Ba Ria-Vung Tau](#) (south). Tools and methodologies were developed and training in ICZM was given in Vietnam, Manila and the Netherlands. The Guidelines for Strategy and Action Planning for ICZM, including databases and GIS tools, facilitate the launch and sustainability for such ICZM Programme in Viet Nam's 30 coastal provinces. Currently (2003-2005) the VNICZM Project finds itself in a Bridging Phase, which, among other things, will strengthen institutional ICZM frameworks at provincial level, introduces ICZM at coastal district level and sets up the first national ICZM strategy document for approval by the National Steering Committee. For more details, please see: [http://www.nea.gov.vn/projects/Halan/English/VNICZM\\_HomePage.html](http://www.nea.gov.vn/projects/Halan/English/VNICZM_HomePage.html)
  - (iv) Seven other projects relating to disaster mitigation and management, including formulation of strategies and actions for future disaster mitigation and management, have also been implemented in Central Viet Nam where it is most vulnerable to climate-related disasters. These projects are funded by various international agencies (e.g., UNDP and the World Bank) and donors (DANIDA, the Governments of the Netherlands and Luxemburg, etc.) (see Danida, 2005).
75. Viet Nam also participated in a regional project entitled *Southeast Asia Regional Vulnerability to Changing Water Resource and Extreme Hydrological Events due to Climate Change*, funded by the START Secretariat and implemented by the Southeast Asia START Regional Centre in Bangkok, Thailand. This project will use high-resolution climate and hydrological scenarios as the basis for assessing vulnerability of social and economic sectors in the Mekong river basin to changing water regimes due to climate and land cover changes (see [http://www.aiaccproject.org/aiacc\\_studies/aiacc\\_studies.html](http://www.aiaccproject.org/aiacc_studies/aiacc_studies.html)).
76. Under the Government-Donor Partnership on Environment, which is called International Support Group on Environment (ISGE) that is led by MONRE, a working group is being established to mobilize a wide range of national agencies and interested international partners to work with MONRE and MARD (the Chair of the Central Committee for Flood and Storm Control or



CCFSC) to identify how Viet Nam can build its adaptive capacity to climate change as part of the implementation of the UNFCCC.

### ***Gaps***

77. The major gaps are:

- (i) Lack of comprehensive quantitative V&A assessment for key socio-economic sectors based on established methodologies, and hence the adaptation options derived earlier are only qualitative;
- (ii) Previous V&A assessment was only preliminary, and it was not conducted in a holistic and integrated manner;
- (iii) Lack of realistic data for assessing climate change vulnerability, including data for cost-effective analysis of various adaptation options and adaptation technologies;
- (iv) Lack of a national strategy for adaptation to climate change and its related disaster risk reduction, including prevention, preparedness and management;
- (v) Lack of local expertise in the field of V&A assessment and integrated assessment (including integrated assessment modelling);
- (vi) Lack of assessment of the impacts of climate variability and extreme weather events on key socio-economic sectors;
- (vii) Capacity building is urgently needed in V&A assessment, including training on relevant methodologies.

### ***Proposed activities***

78. Based on previous assessment and other existing studies, the following activities are proposed:

- (i) Relevant global and/or regional circulation models<sup>9</sup> may be used to generate climate change scenarios for the region that includes Viet Nam. Detailed climate scenarios for Viet Nam up to the year 2100 based on "downscaling" of the outputs provided by these models will be developed to assess the vulnerability of the key socio-economic sectors to climate change;
- (ii) A comprehensive integrated vulnerability assessment for key socio-economic sectors, such as water resources (including underground water); agriculture and food security; land use change and forestry; industry; coastal zone and reefs; fisheries; ecosystems (biodiversity, vegetation, wetlands); human health; transportation; public health; and public infrastructure, among others. Integrated Assessment Modelling (IAM) may be used to assess the impacts of climate change in Viet Nam in a holistic and integrated manner where possible. The WEAP model, which is an

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<sup>9</sup> For example, MAGICC-SCENGEN - a user-friendly interactive software suites that allow users to investigate future climate change and its uncertainties at both the global-mean and regional levels may be used. MAGICC carries through calculations at the global-mean level using the same upwelling-diffusion climate model that has been and is employed by the IPCC. The latest version gives the same global-mean warming and sea-level rise results as published in the IPCC Third Assessment Report (TAR). SCENGEN uses these results, together with results from a set of coupled Atmosphere/Ocean General Circulation Models (AOGCMs) and a detailed baseline climatology, to produce spatially-detailed information regarding future changes in temperature and precipitation, changes in their variability, and a range of other statistics.

integrated Water Evaluation and Planning System, may be used to simulate water demands and supplies. Based on these quantitative analyses, appropriate cost-effective adaptation options and measures will be assessed. The impacts of climate change on national development strategies, plans and programmes will be evaluated. Appropriate policy framework will be developed, and options will be identified for response strategies;

- (iii) Assessment of the effects of climate variability, as well as the impacts of increased probability of extreme weather events (flood, drought, typhoon) associated with climate change on the key socio-economic sectors;
- (iv) Assessment of the effects of ENSO on the climate of Viet Nam, especially on such factors as temperature, rainfall, tropical cyclone and monsoon; as well as the relation between the phases of ENSO with extreme climate of Viet Nam, such as flood and drought;
- (v) Prediction of climate using ENSO information and disseminate the knowledge on ENSO to the general public;
- (vi) Development and construction of vulnerability maps for key socio-economic sectors and in key areas which are most vulnerable under various climatic scenarios;
- (vii) Development, evaluation and prioritization of adaptation measures based on vulnerability assessment on key socio-economic sectors;
- (viii) Assessment of the impacts of climate change on oceanographic processes and ocean productivity;
- (ix) Assessment of the reef systems and associated resources for better management of reef resources which are the main sources of protein for Viet Nam (food security);

79. The above activities will be coordinated with other national efforts funded by other international agencies and donors, as well as with any regional efforts as appropriate. For example, UNDP is developing a GEF project proposal on *Viet Nam - Implementing long-term adaptation measures that increase the resilience of national development sectors to the impacts of climate change* for 2007-2017, which would complement this project.

80. Based on the above assessment, a draft *Policy Framework for Implementing Adaptation Measures* for key socio-economic sectors will be developed. The *Policy Framework* will include: (i) the review of both analysis of measures and technologies for minimizing damages and for mitigating negative impacts of climate change; (ii) the identification of cost-effective adaptation measures for climate change and related extreme events; (iii) the development of interactive mechanism between key socio-economic sectors, and their sub-sectors, as well as between public and private sectors on climate change impacts and adaptation; (iv) the development of special information materials (e.g., maps, diagrams, decision matrices) for policy makers; (v) a list of top priority measures recommended for inclusion in sustainable development strategy; (vi) analysis of barriers and necessary actions for integration of adaptation measures in the mid-term and long-term national development plans, including climate-related disaster risk reduction.

81. At the end of the assessment, a workshop will be held to review the results and the draft *Policy Framework for Implementing Adaptation Measures*. Policy makers and other stakeholders will be invited to participate in the workshop, so as to enhance their awareness on the climate change impacts and various adaptation options, which should be mainstreamed into national development planning.

82. The V&A Group will undertake the above tasks. Available methodologies<sup>10</sup> that may be able to reflect the national situation will be used to undertake the assessment. The application of integrated assessment methodology, such as IAM, which is an important tool for assessing impacts and adaptation options for climate change at the global, regional and national levels, will be explored. This will also include the development of integrated vulnerability indices for key socio-economic sectors where possible.
83. Capacity building for the V&A Group on the application of various assessment methodologies, including data collection, analysis and management, will be needed. This may include the participation of the V&A Group members in the subregional, regional and international training workshops, so as to share experiences and lessons learned with other countries.
84. At the end of the proposed activities, further gaps, constraints and research needs, as well as related financial, technical, institutional and capacity building needs will be identified and highlighted.
85. A total of **US\$140,000** is requested to undertake the above proposed activities, including the costs for capacity building, equipment and transportation, over the 3-year project cycle (Table 3). This is very modest in view of the scope and extent of the proposed activities.

### **Major outputs and indicators**

86. The major outputs and indicators of this Component will be:
- (i) Climate change scenarios for Viet Nam and important baseline data for key socio-economic sectors required for assessing the vulnerability of Viet Nam to climate change and its adaptation options;
  - (ii) A comprehensive quantitative V&A assessment for key socio-economic sectors based on established methodologies, including integrated assessment modelling, and cost-effective adaptation options and adaptation technologies;
  - (iii) Targeted research on climate variability, climate change, tropical storms, drought and precipitation trends and their relation with El Niño;
  - (iv) Integrated vulnerability indices and maps for key socio-economic sectors;
  - (v) Policy options for adequate adaptation and response strategies for climate change impacts on key socio-economic sectors, including a draft *Policy Framework for Implementing Adaptation Measures*;
  - (vi) Strengthened and enhanced human, scientific, technical and institutional capacity;
  - (vii) The review workshop report, including major papers presented.

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<sup>10</sup> These include the *IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations* (Carter *et al.*, 1994); the *UNEP Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies* (Feenstra *et al.*, 1998); the *International Handbook on Vulnerability and Adaptation Assessments* (Benioff *et al.*, 1996); *Developing Socio-Economic Scenarios for Vulnerability and Adaptation Assessments; Methodologies and Tools to Evaluate Strategies for Adaptation to Climate Change* (UNFCCC, 2000; see [www.unfccc.int/issues/meth\\_tools.html](http://www.unfccc.int/issues/meth_tools.html)); the *MAGICC/SCENGEN Climate Scenario Generator: Version 2.4, Technical Manual* (Wigley *et al.*, 2000); and the *Compendium of Decision Tools to Evaluate Strategies for Adaptation to Climate Change* (May, 1999), and other regional methodologies where appropriate,

***Component 4: Programmes Containing Measures to Mitigate Climate Change, including Preparation of National Policy Framework for GHG Emission Reduction and Enhancement of Sinks***

***Previous activities***

87. GHG mitigation options have been identified in the INC for the energy, land use and land-use change and forestry (LULUCF) and agriculture sectors. In the energy sector, Energy Flow Optimization Model (EFOM) was used to estimate the cost of GHG mitigation and the emission reduction amount. Nine mitigation options were identified, and the total GHG emission reduction potential was estimated as 283.8 Mt of CO<sub>2</sub> eq. for the period 1994-2020, or 11 Mt CO<sub>2</sub> eq. per year. To realize this estimated potential, the INC has proposed to integrate GHG mitigation measures into the national energy development programme. A portfolio of GHG mitigation projects have been listed in the INC.
88. In LULUCF sector, COMAP (Comprehensive Mitigation Analysis Process) model was used to identify six mitigation options. The total reduction potential (sink) for the period 1994-2020 was estimated as 3,221.6 Mt of CO<sub>2</sub> eq. To realize this estimated potential, INC has proposed to integrate GHG mitigation measures into the forestry development strategy.
89. In agriculture sector, three mitigation options have been identified. The total reduction potential for the period 1994-2020 was estimated as 140.3 Mt of CO<sub>2</sub> eq. To realize this identified potential, INC has proposed the integration of GHG mitigation measures into the agricultural development plan.
90. A National Strategy Study (NSS) on CDM, undertaken from 2001 to 2004 and funded by Australia through the World Bank, has further identified various mitigation options in the energy, LULUCF and agriculture sectors for the period 2000-2020.

91. The Phase II project on measures for capacity building in priority areas funded by the GEF has assessed the technology needs in the energy, LULUCF and agriculture sectors, and identified various mitigation measures for the sub-sectors<sup>11</sup> within each of the above sectors.

### Gaps

92. The major gaps are:

- (i) Updated and improved cost-effective mitigation options assessment for CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, CO, NO<sub>x</sub>, NMVOC and SO<sub>x</sub>, and new assessment of mitigation options for HFCs, PFCs and SF<sub>6</sub> for the year 2000, including appropriate mitigation technologies;
- (ii) Lack of analytical models for agricultural sector and the need for improved models for energy sector;
- (iii) The need for promotion of legal and economic instruments for mitigation measures,
- (iv) Lack of a national strategy for GHG mitigation;
- (v) Limited technical capacity in quantitative mitigation options analysis, including application of relevant methodologies.

### *Proposed activities*

93. The Mitigation Options & Technology Transfer (MOTT) Group will build on the earlier work of the INC project by quantitatively assessing and evaluating the most realistic, practical and cost-effective mitigation options<sup>12</sup> in Viet Nam based on the updated and improved GHG inventory data. Relevant analytical tools and methodologies<sup>13</sup> will be used to undertake the analysis.

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<sup>11</sup> The mitigation options in the energy sector are focused on energy efficiency and conservation; fuel switching; renewable energy application; and fugitive emission sealing. In LULUCF, the focuses are on reforestation, afforestation, forest protection and deforestation prevention. In agriculture sector, the focuses are on water management of rice fields; animal feed processing; and biogas and crop residues utilization.

<sup>12</sup> In particular, the priority mitigation options in the energy sector will be focusing on energy efficiency and energy conservation in thermal power generation; renewable energy development and utilization; fuel switching; transmission losses reduction; transportation; associated gas recovery and utilization. In the industrial sector, the priority mitigation options will be focusing on small and medium-size industries; construction materials (including cement, brick, glass, ceramic, etc.); textile and paper; food industries (including café, tea, rice husk, bagasse, ethanol); steel and metallurgy; and commercial. In the agriculture sector, the main focus will be on husbandary (animal feed stock); residues utilization and treatment; farming techniques (water management). In the forestry sector, the priority focuses will be on coastal afforestation and protection; reforestation in degraded lands; forest fires prevention, and natural regeneration. In the urban liquid/solid waste, the main focus will be on landfills; waste for energy; waste for fertilizer; waste reprocessing; and municipal liquid waste treatment. In the transportation sector, the main focus will be on fuel switching; public transport development; exhausted gas control; transportation optimization planning and biofuel (ethanol and biodiesel).

<sup>13</sup> These include (a) *Technologies, Policies and Measures for Mitigating Climate Change (IPCC Technical Paper I)*; (b) *Greenhouse Gas Mitigation Assessment: A Guidebook by the U.S. Country Studies Programme*; and (c) *Climate Change 2001: Mitigation* (Contribution of Working Group III to the Third Assessment Report of the IPCC).

94. Appropriate economic mathematical models may be identified and used for assessing the various cost-effective mitigation options. These may include macro-economic models, such as MARKAL (MARKet ALlocation) - a partial equilibrium bottom-up energy system technology optimization model, and EFOM (Energy Flow Optimization Model), which was used in the INC project for the energy sector. Further improvement or research on the above-mentioned methodologies based on the local conditions and situations may be needed. In addition, LEAP (Long-range Energy Alternatives Planning)<sup>14</sup> model may also be used for assessing least-cost mitigation options.
95. Based on the mitigation options analysis, a draft *National Policy Framework for GHG Emission Reduction and Enhancement of Sinks* for key socio-economic sectors will be developed. This *Policy Framework* will highlight the barriers for adopting cleaner technologies, as well as for promoting cleaner production and consumption. Both legal (e.g., law and legislation) and economic (e.g., tax incentives) instruments may be necessary for promoting mitigation measures. A list of environmentally friendly mitigation technologies, including renewable energy technologies, will be identified and assessed. Appropriate mitigation projects will also be identified for bilateral and multilateral funding, including those under the CDM of the Kyoto Protocol.
96. The growing private sector in Viet Nam can play an important role in GHG emission reduction. Mechanisms will be explored to promote the participation of private sector in mitigation measures, perhaps through public-private partnership.
97. At the end of the proposed activities, a workshop will be held to review the results and the draft *National Policy Framework for GHG Emission Reduction and Enhancement of Sinks*. Policy makers and other stakeholders will be invited to participate in the workshop, so as to enhance their awareness on the importance of GHG emission reduction, which should be mainstreamed into national development planning.
98. Capacity-building for the MOTT Group members on the application of the relevant methodologies, including data collection, analysis and management, will be needed. It may include the participation of the team members in the subregional, regional and international training workshops, so as to share experiences and lessons learned with other countries. Training workshop on the application of macro-economic models and relevant energy models will be organized with the assistance of both national and, where appropriate, regional or international consultants. In particular, the expertise of the UNEP Risoe Centre on Energy, Climate and Sustainable Development (URC) based in Denmark will be tapped in this area.
99. In addition, capacity-building is needed for the MOTT Group members to identify, assess, develop, monitor and evaluate mitigation projects for bilateral and multilateral funding, including the opportunities that are available under the CDM of the Kyoto Protocol.
100. At the end of the proposed activities, further gaps, constraints and research needs, as well as related financial, technical, institutional and capacity-building needs will be identified and highlighted.
101. A total of **US\$42,000** is requested to undertake the proposed activities, including capacity-building, equipment and transportation costs, for three years (Table 3). This is very modest in view of the scope and extent of the proposed activities.

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<sup>14</sup> In particular, LEAP 2000 has many features that may make it ideal for least-cost mitigation analysis and hence for GHG mitigation action plan. For example, it is capable of detailed analysis and tracking of all costs associated with a GHG mitigation action plan, including capital, operating and maintenance, and fuel costs, and any indirect costs such as taxes associated with emissions. It can also track the externality co-benefits arising from the avoided emissions of criteria pollutants.

## Major outputs and indicators

102. The major outputs and indicators of this Component will be:

- (i) Important baseline data for key socio-economic sectors required for assessing GHG mitigation options;
- (ii) A comprehensive quantitative mitigation options assessment for key socio-economic sectors based on established methodologies, including cost-effective mitigation options and environmentally friendly mitigation technologies;
- (iii) A draft *National Policy Framework for GHG Emission Reduction and Enhancement of Sinks*, including appropriate legal and economic instruments, and development of public-private partnership for mitigation measures;
- (iv) Strengthened human, scientific, technical and institutional capacity;
- (v) The review workshop report, including major papers presented.

*Component 5: Development and Transfer of Environmentally Sound Technologies (ESTs)*

### Previous activities

103. The GEF project on *Viet Nam: Expedited financing for measures for capacity building in priority areas (Phase II)* has focused on the identification and assessment of technology needs for GHG emission reduction and climate change adaptation in Viet Nam. It has identified various barriers<sup>15</sup> for technology transfer, and assessed the technology needs in the energy, LULUCF and agriculture sectors.

### Gaps

104. The major gaps are:

- (i) Lack of user-friendly database on ESTs, including endogenous technologies;
- (ii) Lack of human and institutional capacity in assessing, evaluating and verifying ESTs;
- (iii) Further identification of barriers to the transfer and adoption of ESTs
- (iv) Removal of barriers to the transfer and adoption of ESTs;

### *Proposed activities*

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<sup>15</sup> For example, in energy-related GHG reduction technological options, the barriers include (i) absence of GHG concerns in project consideration of energy planners and policy makers; (ii) high investment needed for new and modern energy technologies; (iii) absence of a national coherent programme and policies for renewable energy development.

105. Agenda 21 defines “*Environmentally sound technologies*” (ESTs) as technologies that “*protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residual wastes in a more acceptable manner than the technologies for which they were substitutes*”. Thus, ESTs encompass technologies that have the potential for significantly improved environmental performance relative to other technologies. ESTs are the focus of the CDM projects under the Kyoto Protocol.

106. The MOTT Group will undertake the following activities:

- a) A comprehensive review, analysis and assessment of the country-specific technological requirements and opportunities of their use, transfer and introduction in key socio-economic sectors, as well as their social, economic and environmental impacts;
- b) Assessment of existing endogenous ESTs so that they could be promoted or further developed;
- c) The barriers to the adoption of ESTs in Viet Nam will be further identified, with a view to facilitating their removal. Special attention will be paid on the following barriers:
  - Access to and dissemination of information on ESTs;
  - Institutional development for technological change;
  - Enabling environment (including legal and economic instruments);
  - Appropriateness of technology to the local condition, Including socio-economic, environmental and cultural consideration;
  - Adaptive capacity; and
  - Financial and partnership arrangement.
- d) Based on the mitigation and adaptation technologies that have been identified in Components 3 and 4 above, have been a database for ESTs, and their potential for development and transfer to Viet Nam, will be established. To this end, it is proposed to adopt the EST information system (ESTIS) that has been developed by UNEP’s International Environmental Technology Centre (IETC) based in Osaka, Japan (see: <http://www.entis.net>). Capacity-building for the ESTs Group members will be needed to learn how to use this system, and a national system may then be developed based on ESTIS as appropriate. Other regional and international technology information databases will be assessed and adopted where appropriate. Indeed, a study of technology information networking with relevant regional and international organizations will be an important activity for this proposed project.
- e) Establishment of national information clearing house on ESTs through Internet and other appropriate means with regional and global networks;
- f) Mainstreaming ESTs into national science and technology policy;
- g) Preparation of a draft *Action Plan Framework* for the transfer and adoption of ESTs;

107. It is necessary to build or strengthen the human, scientific, technical and institutional capacity for identifying, assessing, designing, developing, monitoring, evaluating and hosting technological projects, including targeted research projects, for bilateral and multilateral funding. Training workshops on UNEP IETC’s ESTIS will be needed with the support of UNEP IETC. The MOTT Group members may participate in relevant subregional, regional and international training workshops and conferences to share experiences and lessons learned, as appropriate.



108. At the end of the proposed activities, a workshop will be held to review the results and outcomes, which will serve as important inputs for both the *Policy Framework for Implementing Adaptation Measures* and the *National Policy Framework for GHG Emission Reduction and Enhancement of Sinks*.
109. At the end of the proposed activities, further gaps, constraints and research needs, as well as related financial, technical, institutional and capacity building needs will be identified and highlighted.
110. A total of **US\$5,000** is requested to undertake the proposed activities, including capacity-building and other relevant expenses over the 3-year project cycle (Table 3). This is very modest indeed in view of the scope and extent of the proposed activities.

### **Major outputs and indicators**

111. The major outputs and indicators of this Component will be:

- (i) A comprehensive updated report on technology needs assessment;
- (ii) A user-friendly database for ESTs based on ESTIS developed by UNEP IETC;
- (iii) A list of emission reduction projects based on ESTs for bilateral and multilateral funding, including those for CDM under the Kyoto Protocol;
- (iv) Important inputs for both the *Policy Framework for Implementing Adaptation Measures* and the *National Policy Framework for GHG Emission Reduction and Enhancement of Sinks*.
- (v) Establishment of national information clearing house for ESTs;
- (vi) Technology information networks for knowledge management;
- (vii) Mainstreaming of ESTs into the national science and technology policy;
- (viii) Draft *Action Plan Framework* for the transfer and adoption of ESTs;
- (ix) Strengthened human, scientific, technical and institutional capacity;
- (x) The review workshop report, including major papers presented.

### ***Component 6: Research and Systematic Observation***

#### *Previous activities*

112. Meteorological observations and monitoring system in Viet Nam have been set up since the end of 19<sup>th</sup> century. After more than 100 years of establishment and development, the current meteorological station network consists of 168 meteorological surface stations and hundreds of other specialized stations<sup>16</sup>. The National Hydro-Meteorological Service (NHMS) under MONRE is responsible for their management and development. It also provides information on

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<sup>16</sup> These include 122 synoptic stations, 46 climate stations, 13 radiation stations, 25 stations included in the Global Telecommunication System (GTS), 396 rain-gauge sites and 232 hydrological stations (including 88 automatic stations and 100 stations in tidal areas).

hydro-meteorological and marine forecasts for natural disaster prevention and preparedness, as well as for social and economic activities.

113. The data collected from the hydro-meteorological station network are processed, archived and studied to monitor the changes, variations and trends of climate characteristics, such as tropical cyclone, cold surge, temperature, rainfall and sea level in the whole country. The research into climate change in Viet Nam based on the last 50 years of observation has come to the following conclusions:

- Monthly mean temperature has increased in the past decades with the rate from 0.07–0.15°C per decade;
- There are large variations in rainfall without clear trends;
- Sea level rises from 2.5 cm to 3.0 cm per decade;
- The trajectory of typhoons was moving southward and the typhoon season was shifting to later months of the year.

114. Some research on climate variability and ENSO have also been undertaken by scientists in the country. For example, the Center for Environment Research Education and Development (CERED)<sup>17</sup> based in Hanoi is currently involved in a number of research projects on environmental change, including a multi-institutional global change study in the Red River Delta involving Dutch and Vietnamese scientists and supported by the Netherlands Foundation for Advancement of Tropical Research. It is also undertaking studies of the El Niño-Southern Oscillation (ENSO) phenomenon and, as part of an international research programme, has recently completed a review of understanding of and responses to the ENSO phenomenon in Viet Nam sponsored by UNEP.

### ***Gaps***

115. The major gaps are:

- (i) Climate data quality needs to be further enhanced;
- (ii) Lack of analysis of existing hydrological and meteorological data by local expertise;
- (iii) No forecast of ENSO events in Viet Nam;
- (iv) Inadequate human and institutional capacity in climate data monitoring and analysis.

### ***Proposed activities***

116. The Research and Systematic Observation (RSO) Group will report on all ongoing research and systematic observation activities related to climate change, including the research undertaken by other technical expert groups in this proposed project, especially the V&A assessment, as well

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<sup>17</sup> CERED hosts the secretariat of the Indochina Global Change Network (please see: <http://www.cru.uea.ac.uk/tiempo/floor0/briefing/igcn/igcn.htm>)

as mitigation options and ESTs assessment. The Group members may also undertake some research in collaboration with the V&A group where appropriate. In particular, the following issues need attention:

- (a) Improvement of hydrological, meteorological and environmental data collection, processing, archiving, analytical and service system;
  - (b) Enhancement of data sources (in terms of quantity, quality and timeliness) for hydrological and meteorological forecasts and early warnings;
  - (c) Management of climate database with GIS technology, and construction of climate map based on data in standard periods (e.g., 1961–1990, 1971–2000, or 1961-2000);
  - (d) Trend analysis in existing temperature and rainfall data;
  - (e) Strengthening of existing early warning systems for ENSO, typhoons and drought;
  - (f) The effect of ENSO on summer monsoon in Viet Nam;
  - (g) Trend analysis in frequency of extreme climate events in relation to climate change, including research on the impacts of ENSO on climate fluctuation and frequency of extreme climate anomalies in the region;
  - (h) Assessment of the amount of rainfall in Viet Nam associated with typhoons using satellite techniques;
  - (i) Participation in and contribution to the activities and programmes, as appropriate, of regional and global research networks and observing systems;
  - (j) Climate information networking with relevant regional and international organizations;
  - (k) Improvement of forecast capabilities and telecommunication facilities;
  - (l) Interpretation of satellite and radar images and familiarization with new observation equipment and technologies;
  - (m) Preparation of a draft *National Strategy for Research and Systematic Observation and Early Warning Systems*, with special focus on ENSO, tropical storms and drought, so as to provide technical and policy guidance for a more sustainable programme. Further gaps and constraints, as well as related financial, technical, institutional and capacity-building needs will be identified and highlighted in this *National Strategy*.
117. The capacity of the RSO Group members will be strengthened where necessary, including the participation in sub-regional/regional/international workshops to share experiences and lessons learned, as appropriate.
118. At the end of the proposed activities, a workshop will be held to review the results and outcomes, including the draft *National Strategy for Research and Systematic Observation and Early Warning Systems*, with the participation of all stakeholders from both public and private sectors, including NGOs, communities and civil societies.
119. A total of **US\$10,000** is requested to undertake the proposed activities, including the costs for capacity building and other appropriate expenses over the 3-year project cycle (Table 3). This is very modest in view of the scope and extent of the proposed activities.

## Major outputs and indicators

120. The major outputs and indicators of this Component will be:

- (i) Improved climate database;
- (ii) Specific research relating to ENSO, tropical storms and drought;
- (iii) Early warning systems for ENSO, tropical storms and drought established;
- (iv) Participation in and contribution to the regional programmes;
- (v) Climate information networks with regional and international organizations;
- (vi) *Draft National Strategy for Research and Systematic Observation and Early Warning Systems;*
- (vii) Strengthened human, scientific, technical and institutional capacity;
- (viii) The review workshop report, including major papers presented.

## Component 7: Education, Training and Public Awareness

### *Previous activities*

121. Article 6 (a) of the UNFCCC requires the Parties to, among others, “*promote and facilitate at the national and, as appropriate, subregional and regional levels, and in accordance with national laws and regulations, and within their respective capacities*”: (i) “*The development of implementation of educational and public awareness programmes on climate change and its effects*”; (ii) “*Public access to information on climate change and its effects*”; (iii) “*Public participation in addressing climate change and its effects and developing adequate responses*”; and (iv) “*Training of scientific, technical and managerial personnel.*”
122. The INC has reported the programmes and activities on education, training and public awareness that have been undertaken by the Government, especially by the Viet Nam Climate Change Country Team (VNCCCT) established in 1994. These included a number of climate change projects, workshops, seminars and meetings all of which helped to raise public awareness on climate change issues. A number of national educational institutions have conducted education and training courses on climate change.
123. In addition, the publicity created by the *Energy Saving Programme* developed in 1997, the annual *National Environment Week*, the *Tet Planting Festival*, the adoption of the *National Environmental Protection Strategy*, and activities and projects related to the Clean Development Mechanism (CDM), have all contributed to enhancing the public awareness on environmental and climate change issues.
124. TV and radio programmes on climate change have been broadcasted on central and local TV and radio stations. Some outreach materials (e.g., MONRE publications, brochures, etc.) have also been disseminated.

### Gaps

125. The major gaps are:

- (i) Lack of a national strategy and programme on climate change education, training and public awareness;
- (ii) There is also a need to introduce or strengthen climate change science at the primary, secondary and tertiary levels and through non-formal public education;

- (iii) General lack of outreach materials (especially in Vietnamese language) on climate change issues, especially those for children and young people;
- (iv) Lack of public awareness on climate-induced disaster preparedness; hence there is a need to introduce and strengthen community education on climate change and climate-induced disaster preparedness;
- (v) Education, training and public awareness on climate change have not yet become social activities, and partnerships between the public and private sectors, including community groups and NGOs, are needed.
- (vi) Lack of financial resources for climate change outreach programmes and activities.

### **Proposed activities**

126. The Education, Training and Public Awareness (ETPA) Group will provide information on activities relating to climate change education, training and public awareness that has been undertaken in the country. In addition, the Group proposes to undertake the following activities:

- (a) Climate change public awareness surveys will be conducted among the general public at all levels in Hanoi, Hue and Ho Chi Minh City (HCMC), with a view to assessing the extent and the existing level of public awareness on climate change issues, including science and policy, so as to facilitate the development of better strategy for further public awareness programmes and campaigns;
- (b) A national programme on education, training and public awareness on climate change will be developed;
- (c) Outreach materials in Vietnamese language (leaflets, booklets, calendars, posters, quarterly newsletters, video, CD) will be further developed and disseminated through mass media (TV, radio, newspapers, magazines, Internet, etc.). The information provided by relevant sources<sup>18</sup> would be used for outreach activities where appropriate. New Vietnamese words on specific climate terminology may need to be created;
- (d) Existing Bulletins on Climate Change and others published by MONRE may be used to publicise the important results of all proposed activities in this project;
- (e) A special 25-30 minutes video documentary on the vulnerability of Viet Nam to climate change and its potential impacts, as well as possible adaptation options may be produced and shown at all central and local TV stations and educational institutions;
- (f) A user-friendly database will be established with the inputs of other Working Groups, v
- (g) Enhancement of an existing website for climate change. This will facilitate information dissemination and sharing of experiences and lessons learned among communities. Capacity-building for updating and maintaining this website is essential in order to ensure its sustainability even after the completion of the project;
- (h) Strengthening of education on climate change at the primary, secondary and tertiary levels;

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<sup>18</sup> These include IPCC, WMO, IUC/UNEP, UNITAR and the UNFCCC Secretariat and their associated web pages

- (i) Establishment of billboards to publicize climate change issues;
- (j) Continuous public awareness campaigns in all provinces;
- (k) Strengthening of the climate change agencies in MONRE both in terms of resource facility, including information materials and personnel, and promoting the use of this resource facility by the general public;
- (l) Encouragement of scientific and policy research relating to climate change at the universities and research institutes through scholarship and/or fellowship programmes;
- (m) Incorporation of climate change issues into non-formal education and into the different levels of curricula of the formal education systems.

127. In order to achieve the above proposed activities, which will be undertaken nationally throughout the project cycle by the ETPA Group, reasonable financial resources will be needed, not only for human and institutional capacity strengthening, but also for the acquisition of certain relevant communication equipment.

128. At the end of the proposed activities, a workshop will be held to review the results and outcomes. Further constraints and specific financial, technical and institutional needs for capacity-building on public awareness, education and training will be identified and highlighted at the end of the activities.

129. A total of **US\$10,000** is requested to undertake the proposed activities, including the costs for capacity building, outreach materials and other relevant expenses over the 3-year project cycle (Table 3). This amount is very modest indeed in view of the scope and extent of the proposed activities.

### **Major outputs and indicators**

130. The major outputs and indicators of this Component will be:

- (i) Educational and public awareness programmes at national, provincial and local levels;
- (ii) Outreach materials in English and in Vietnamese;
- (iii) Enhanced scientific and policy research relating to climate change;
- (iv) Strengthened curriculum on climate change at primary, secondary and tertiary levels;
- (v) Strengthened climate change focal point agency in MONRE;
- (vi) Strengthened human, scientific, technical and institutional capacity;
- (vii) The review workshop report, including major papers presented.

## ***Component 8: Integration of Climate Change Concerns into Sustainable Development Strategy***

### ***Previous activities***

131. In recent years, Viet Nam has been increasingly paying more attention on the climate change issues. This has resulted in the Prime Minister's Directive No. 35/2005/CT-TTg *On the implementation of Kyoto Protocol (KP) to the United Nations Framework Convention on Climate Change (UNFCCC)* issued on 17 October 2005.

### **Gaps**

132. Despite the Prime Minister's Directive, the following gaps remain:

- (i) Lack of policy measures to integrate climate change concerns into national long-term socio-economic and environmental planning;
- (ii) Lack of technical capacity to effectively integrate V&A assessment and mitigation options analysis into sustainable development programmes, and hence to develop national adaptation and mitigation programmes of action.

***Proposed activities***

133. Disseminate the results of V&A assessment and mitigation options analysis in key socio-economic sectors to national planners and policy makers, so as to encourage them to integrate climate change concerns into their development planning and decision making processes. To this end, training workshops will be organized for the national and local planners, as well as policy and decision makers from all relevant ministries and government agencies, especially those of the Ministry of Planning and Investment (MPI).

134. There is a need to review and analyse existing national/sectoral strategies on sustainable development, and based on the review and analysis, climate change concerns will be integrated into sustainable development strategies for various key socio-economic sectors, including strengthening of cooperation and partnership between the public and private sectors.

135. The above activities will be undertaken by the NCCSC.

136. A total of **US\$5,000** is requested to undertake the proposed activities, including capacity-building and other relevant expenses over the 3-year project cycle (Table 3). This amount is very modest in view of the scope and extent of the proposed activities.

**Major outputs and indicators**

137. The major outputs and indicators of this Component will be:

- (i) Capacity-building programmes that integrate climate change concerns into sustainable development plans and programmes for national planners, policy and decision makers at the national/sectoral and local levels;
- (ii) Integration of climate change concerns into sustainable development strategies for various key socio-economic sectors;
- (iii) Strengthened human, scientific, technical and institutional capacity;
- (iv) The reports of the training workshops that include the papers presented.

***Component 9: Information and Networking***

***Previous activities***

138. Website and information networking have been established to facilitate information sharing and exchanging.

### Gaps

139. The major gaps are:

- (i) Computers and Internet access to all project team members can be improved;
- (ii) Difficulty and time-consuming (because of slow connection) in accessing Internet;
- (iii) Inadequate information networking.

### Proposed activities

140. The following activities are proposed:

- (i) Establishment of Internet facilities for all project team members so as to facilitate their information networking;
- (ii) Participation in and contribution to subregional and regional information networks on climate change issues, especially those relating to national communication;
- (iii) Compilation of a roster of national experts, who have participated in the climate change and other environmental projects;
- (iv) Assessment of current capacity in information communication technologies;
- (v) Institutional strengthening, including human resources development, technical and technological capabilities, on the use of information communication technologies for sharing of climate change information.

141. The above activities will be coordinated by the Project Coordinator in consultation with the Chair of the NCCSC and the PMT members.

142. A total of **US\$5,000** is requested to undertake the proposed activities, including capacity-building and other relevant expenses over the 3-year project cycle (Table 3). This amount is very modest in view of the scope and extent of the proposed activities.

### **Major outputs and indicators**

143. The major outputs and indicators of this Component will be:

- (i) Information networks established for the project team members;
- (ii) Strengthened human, scientific, technical and institutional capacity in information networking.

### ***Component 10: Preparation and presentation of the Second National Communication (SNC)***

144. Based on Components 1 to 9 as described above, the SNC will be compiled, edited and prepared. This task will be coordinated by the Project Coordinator. It will involve all members of the technical working groups, each of which will prepare the relevant sections/chapters of the SNC.

145. The proposed contents of the SNC are as follows:

Executive Summary (not more than 10 pages)  
Chapter1: Introduction



- Chapter 2: National Circumstances
- Chapter 3: GHG Inventory
- Chapter 4: Programmes containing measures to facilitate adequate adaptation to climate change (i.e., V&A Assessment on key socio-economic sectors)
- Chapter 5: Programmes containing measures to mitigate climate change (i.e., mitigation options analysis on key socio-economic sectors)
- Chapter 6: Development and Transfer of Environmentally Sound Technologies
- Chapter 7: Research and Systematic Observation
- Chapter 8: Education, Training and Public Awareness
- Chapter 9: Integration of Climate Change Concerns into Sustainable Development Programmes
- Chapter 10: Information and Networking
- Chapter 11: Capacity-building
- Chapter 12: Other Information Considered Relevant to the Achievement of the Objective of the Convention
- Chapter 13: Constraints and Gaps, and Related Financial, Technical and Capacity Needs
- Chapter 14: Conclusions and Recommendations
- Annex: List of projects for bilateral and multilateral funding

- 146. The draft SNC will be first reviewed by all members of NST. Based on this review, a revised version will be produced. A workshop, with the participation of all members of NST, PMT and NCCSC, policy and decision makers, private sector, communities, and NGOs, will then be organized to review this revised draft SNC before it is finalized, printed and submitted to the UNFCCC Secretariat. The SNC will be translated into Vietnamese language for wider dissemination.
- 147. A total of **US\$15,000** is requested to undertake the proposed activities, including translation to Vietnamese language and printing cost.

### ***Major output***

- 148. The major output of this Component will be a comprehensive SNC based on the COP 8 Guidelines, which will be submitted to the UNFCCC Secretariat by April 2009.

### **Technical Support**

- 149. UNEP, as the GEF Implementing Agency for the project, will be consulted on all aspects during the execution of the project. It will be fully informed of all activities and invited to actively participate in all technical and policy workshops related to the project, so that it can provide useful inputs to ensure the successful implementation of the project.
- 150. The expertise of the UNEP Risoe Centre on Energy, Climate and Sustainable Development (URC) based in Denmark will be tapped for mitigation options analysis. Technical support will also be sought from the National Communication Support Programme (NCSP) based in UNDP/GEF New York where appropriate.
- 151. In addition, technical assistance will also be sought from UNESCAP, which has provided useful technical advisory service to MONRE during the Stocktaking and Stakeholders Consultation Workshop and during the preparation of this project proposal.
- 152. Technical support from other national, regional or international organizations and consultants will also be sought where and when necessary and appropriate.

## Proposed work schedule

153. It is expected that the proposed 3-year project will commence in May 2006 and end in April 2009. The proposed work schedule for each component of proposed activities is shown in Table 4. The detailed 3-year work plan is shown in Table 5. The matrix of activities, outputs and indicators is shown in Table 6.
154. This proposal has been extensively reviewed by relevant technical groups and other stakeholders, including experts from a number of relevant ministries. It has also been critically reviewed by UNESCAP and UNEP before its final submission. It has been ensured that there will be no duplication of effort for this project with the past and existing activities.

### *Appropriate sequencing*

155. The proposed activities will be undertaken in appropriate sequence so as to maximize the synergies between each component of the proposed activities, and to enhance the efficiency and cost-effectiveness of project implementation throughout the project cycle. Some proposed activities that are not directly related to each other, such as GHG inventory and V&A assessment, will be undertaken in parallel, as indicated in Table 4.

### *Good practices in project implementation*

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

## Project financing, budget and justifications

157. As the proposed activities are standard enabling activities required for the preparation of national communication, so the incremental cost for undertaking these activities are also full cost, and hence no incremental cost analysis is required.
158. As a least-developed country “with low-lying coastal areas” (Article 4.8 (b)); “with arid and semi-arid areas, forested areas and areas liable to forest decay; (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 of high urban atmospheric pollution” (Article 4.8 (f)); “with areas with fragile ecosystems, Including mountainous ecosystems” (Article 4.8 (g)); “whose economies are highly dependent on income generated from the production, processing and export, and/or on consumption of fossil fuels and associated energy-intensive products” (Article 4.8 (h)), Viet Nam 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.
159. Thus, the total requested funding of **US\$405,000** as indicated in Table 5 reflects the current real needs and concerns of the country in order to fulfilling its commitments for the preparation of its SNC. Due to limited capacity, a significant portion of the funding would be used for human and institutional capacity building, with a view to building up a solid technical team that would be responsible for preparing future national communications in a sustainable manner.

160. The proposed budget for each proposed component of activities has been realistically estimated by MONRE in consultation with relevant stakeholders, and thoroughly reviewed by UNESCAP and UNEP. It has been fully endorsed by the national GEF Operational Focal Point.
161. The in-kind contribution of the Government of Viet Nam, which is estimated to be **US\$60,000** over the 3-year project cycle, will include office building, some logistical support, basic communication, library and information facilities, among others. UNESCAP is expected to contribute US\$20,000 in-kind through its technical advisory services during the project cycle.

### **Rationale for GEF support**

162. This is a standard enabling activities proposal that will facilitate the preparation of the SNC of Viet Nam based on the COP 8 Guidelines as provided by decision 17/CP.8, and hence it will assist Viet Nam to fulfil its reporting requirements under the UNFCCC. As GEF is the international entity entrusted to operate the financial mechanism for the UNFCCC, and Viet Nam is a Party to the Convention, hence the proposed activities are eligible for GEF funding.

### **Sustainability and public participation**

162. The Government of Viet Nam 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 capacity of Viet Nam in various aspects of the proposed activities, as well as the leading role taken by MONRE 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 and implementation 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 will be sustainable.
164. Public participation in certain aspects of the project activities will be encouraged where appropriate and possible. For example, the promotion and development of endogenous technologies in Component 5 would require the participation of local communities and the private sector. The proposed outreach activities in Component 7 would also need the extensive support of the local communities and NGOs in order for the activities to be effective and successful. Local communities, NGOs and the media will be invited to participate in all workshops as appropriate.
165. On the completion of this project, it is expected that further institutional and technical capacity of Viet Nam would have been considerably strengthened to enable it to better respond to the challenges and opportunities presented by climate change, as well as to better fulfil its commitments under the UNFCCC.

### **Issues and risks**

#### *Issues*

166. In order to successfully implement the project, close coordination and consultation between the PMT, NST, NCCSC, MONRE and relevant stakeholders, including policy and decision makers, are essential.

#### *Risks*

167. The potential risks which may mask the objectives and goals of the project are:

- (a) Longer time period than expected to re-constitute the technical working groups, as highly-skilled professionals who are knowledgeable may not be easy to be recruited due to the unattractiveness to the remuneration that may be offered;
  - (b) Longer time than expected for the collection and analysis of the data in each proposed component and hence the delay in the preparation of the SNC;
  - (c) Inadequate or lack of consultations between PMT, NST, NCCSC, MONRE and other relevant stakeholders;
  - (d) Lack of standardized methodology for socio-economic assessment of projects;
  - (e) Inadequate or lack of a number of approved sectoral development programmes, and uncertainties related to national development trends;
  - (f) Inadequate or lack of reliable data for V&A assessment, GHG inventory and mitigation options analysis in certain socio-economic sectors;
  - (g) Lack of young specialists who can participate in the various modelling exercises, such as the EFOM, LEAP, IAM and WEAP, and longer time taken to build capacity in such modelling activities.
168. Necessary action will be undertaken to avoid all the risks mentioned above. As MONRE, with dedicated and effective management and staff members, enjoys strong national support and it is the UNFCCC Focal Point that is responsible for implementing the Convention and national climate change programmes in collaboration with other relevant ministries and stakeholders, the risk for failure will be greatly minimized. In additions, lessons have been learned during the implementation of the INC.

## **Monitoring and evaluation**

169. UNEP's established guidelines and procedures on reporting, monitoring and evaluation will be followed throughout the project cycle based on the proposed activities and approved budget. The PMT will prepare annual work plans based on the three-year-overall work plan. .

### ***Project reporting***

#### *Quarterly and Annual Progress Reports*

170. The Project Coordinator will provide a Quarterly Progress Report (QPR) and an Annual Progress Report (APR) to UNEP and copy to all members of NST, NCCSC and MONRE. These reports will enable MONRE and UNEP to evaluate the progress of the project on a regular basis and identify difficulties and shortcomings at an early stage. They will be reviewed by UNEP for their quality and standard, comprehensiveness, and conformity to the proposed terms of reference and dates of completion. If possible, these reports may be compiled into electronic newsletters and distributed to all participating institutions. A mid-term review between UNEP and MONRE may be conducted. An independent evaluation by a qualified consultant will be conducted at the end of the project.

#### *Inception Report (IR)*

171. Project Inception Report will be prepared immediately following the Inception Workshop. It will include a detailed First Year Work Plan divided in quarterly timeframes detailing the activities

and progress indicators that will guide implementation during the first year of the project. The Report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 months time-frame.

172. The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. In addition, a section will be included on progress to date on project establishment and start-up activities and an update of any changes in external conditions that may effect project implementation.
173. When finalized the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, the UNEP will review the document.

#### *Technical Reports*

174. Technical Reports are detailed documents covering specific areas of analysis or scientific specializations within the overall project. As part of the Inception Report, the PMT will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent Annual Progress Reports. Technical Reports may also be prepared by external consultants and should be comprehensive, specific analyses of clearly defined areas of research within the framework of the project. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at the local, national, and international levels.
175. Local consultants will submit monthly progress reports to the Project Coordinator, who will share it with NST, NCCSC and MONRE. It must be ensured that all consultants' progress reports, including those for surveys, trainings, workshops, meetings and field activities, must be submitted on a timely basis.

#### *Monitoring*

176. The NCCSC will meet on a quarterly basis to review project implementation and provide scientific, technical, policy and strategic guidance, so as to avoid any major deviations from the plan and deciding necessary actions to remedy the situations as appropriate. The minutes of these meetings will be shared with all participating institutions.
177. Local consultants will submit monthly progress reports to the Project Coordinator, who will share it with NST, NCCSC and MONRE. It must be ensured that all consultants' progress reports, including those for surveys, trainings, workshops, meetings and field activities, must be submitted on a timely basis.
178. The GEF procedures require the Project Implementation Revision (PIR) to be carried out annually. The Project Coordinator will prepare the preliminary project report for revision and, where necessary, specific recommendations will be made for any revisions that may be required during the course of the implementation of the project.
179. The Project Coordinator will monitor the work of the NST based on the project's Annual Work Plan and its indicators, and informed the UNEP of any delays or difficulties faced during

implementation so that appropriate support or corrective measures can be under taken in a timely manner.

#### *Audit arrangement*

180. An annual audit of the project resources will be carried out by an accredited auditor who shall, in addition to the national government requirements, pay particular attention to the UNEP financial regulations, policies and procedures that apply to projects; the project document and work plans, including activities, management arrangements, expected results, monitoring, evaluation and reporting provisions; and the key considerations for management (indicators and outputs), administration and finance. The audit shall not cover expenses incurred by the UNEP.
181. During the implementation of the project, regular financial statements will be prepared by MONRE and provided to UNEP for accessing funds for project activities.

#### *Project review meetings*

182. A detailed schedule of project review meetings will be developed by the PMT, in consultation with project implementation partners and stakeholders representatives and incorporated in the Project Inception Report. Such a schedule will include: (i) tentative time frames for NCCSC meetings, including relevant advisory and/or coordination mechanisms; and (ii) project related Monitoring and Evaluation activities.
183. A total of **US\$15,000** is allocated for monitoring and evaluation, including the mid-term review and the final evaluation at the end-of the project.

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**Figure 2. Institutional framework for project management.**

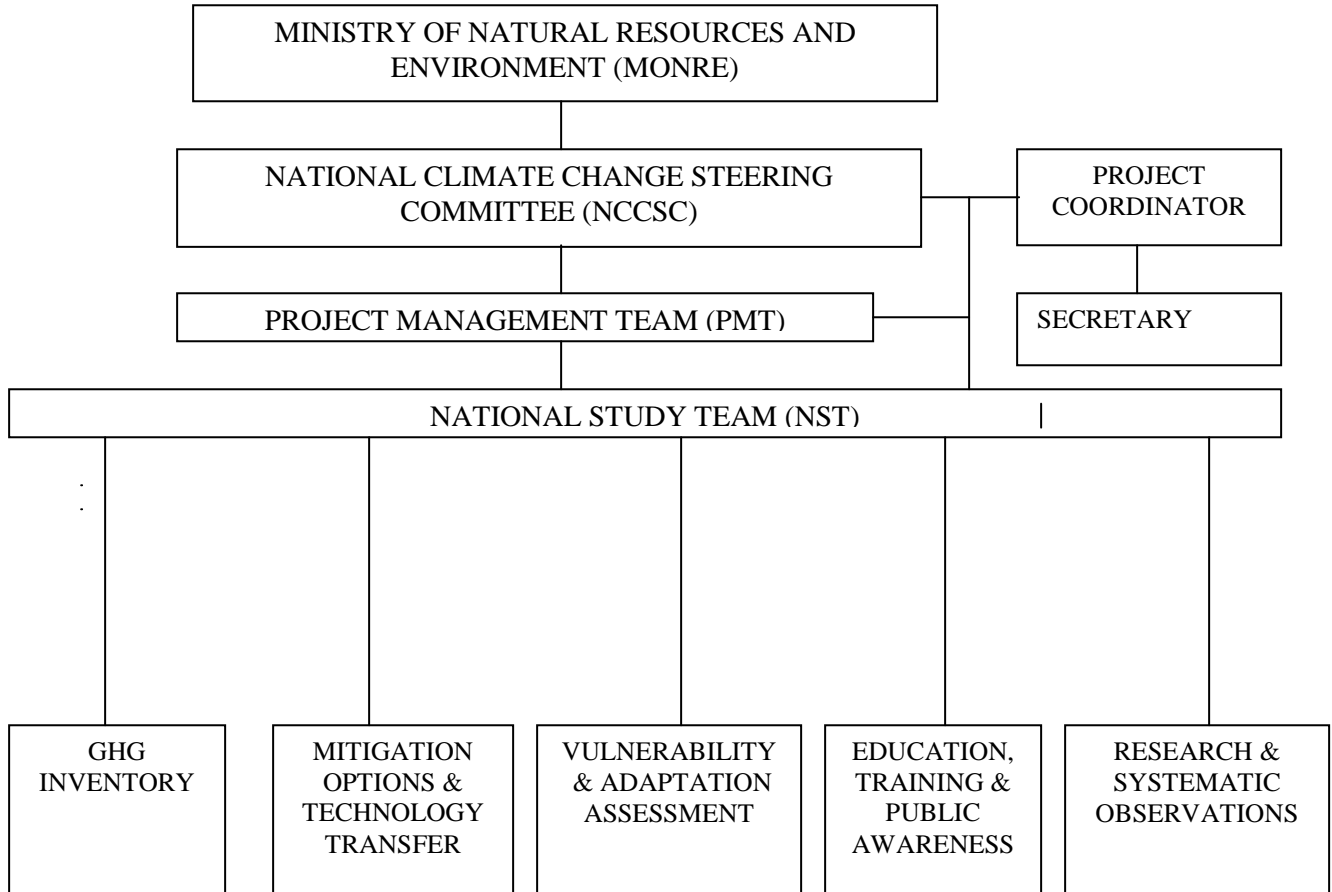




Table 1. Matrix to assist in stocktaking of activities financed under GEF enabling activities and other efforts. The cells marked with “X” simply means that some activities had been undertaken under the INC and other projects. However, new and additional activities that can be fully justified will be undertaken during the process of the preparation of the Second National Communication. It will be ensured that there will be no duplication of activities.

Activity in Second National Communications	NAPAs	NCSAs	Phase II	INC	Other
<b>II. NATIONAL CIRCUMSTANCES</b>					
Description of development priorities, objectives and circumstances, etc.				X	
Description of existing institutional arrangements for preparing communications continuously				X	
<b>III. NATIONAL GREENHOUSE GAS INVENTORIES</b>					
Estimation of national GHG Inventories for '90, '94, 2000, depending on circumstances				X	X <sup>1</sup>
Formulation of cost-effective programs to develop country-specific emission factors and activity data					
Description of arrangements to collect and archive data to make inventory preparation a continuous process				X	
Information on the level of uncertainty associated with the inventory data					
<b>IV. GENERAL DESCRIPTION OF STEPS</b>					
Description of steps taken towards formulating programs containing measures to facilitate adequate adaptation				X	X <sup>2</sup>
Information on vulnerability to the adverse effects of climate change and on adaptation measures being taken				X	X <sup>3,4,5</sup>
Information on evaluation of strategies and measures for adapting to climate change				X	X <sup>2,5</sup>
Policy frameworks, national adaptation programmes, plans and policies for developing and implementing adaptation strategies					
Description of steps taken for formulating programs containing measures to mitigate climate change				X	X <sup>5</sup>
<b>V. OTHER RELEVANT INFORMATION</b>					
Information on integrating climate change considerations into social, economic and environmental policies and actions				X	X <sup>4,5</sup>
Information on transfer of, and access to ESTs and know-how, development of endogenous capacities; measures to enhance enabling environment for transfer of technologies			X		X <sup>2,3</sup>
Information on Climate change research and systematic observation		X	X	X	
Information on CC education, training and public awareness		X	X	X	X <sup>3,4</sup>
Capacity Building Activities, Options and Priorities		X	X	X	X <sup>3,4,5</sup>
Information on efforts to promote information sharing and networking					X <sup>2</sup>
<b>VI. CONSTRAINTS AND GAPS; RELATED FINANCIAL, TECHNICAL, AND CAPACITY NEEDS</b>					

Constraints and Gaps and related financial, technical and capacity needs, and activities for overcoming gaps and constraints for national communications, and climate change measures and programs		X			X <sup>5</sup>
Financial resources and technical support for preparing national communications provided by themselves, GEF, Annex II Parties, bilateral or multilateral institutions					
Financial resources and technical support provided by various sources					
List of projects proposed for financing or in preparation for arranging technical/financial support			X	X	X <sup>5</sup>
Opportunities, barriers for implementation of adaptation measures, Including pilot and/or demonstration projects					X <sup>2,3</sup>
Country-specific technology needs and assistance received from developed country Parties and the GEF, and how assistance was utilized			X		

Note for the column "Other"

1. Under the annual programme "activities to implement the UNFCCC" funded by the Government of Viet Nam and implemented by MONRE.
2. Under the project entitled "*Viet Nam - Netherlands Integrated Coastal Zone Management (VNICZM)*" funded by the Government of Netherlands and implemented by MONRE.
3. Under the project entitled "*Capacity-Building for Adaptation to Climate Change (CACC)*" funded by CIDA and implemented by the Department of Natural Resources and Environment (DONRE) of Thua Thien-Hue.
4. Under the project entitled "*Disaster Preparedness Concerned to Climate Change*" funded by the Government of Netherlands and implemented by Viet Nam Red Cross Society.
5. Under the "*Viet Nam Disaster Reduction Programme*" funded by UNDP/World Bank.

**Table 2 (a). National Greenhouse Gas Inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol<sup>a</sup> and greenhouse gas precursors**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> emissions (Gg)	CO <sub>2</sub> removals (Gg)	CH <sub>4</sub> (Gg)	N <sub>2</sub> O (Gg)	CO (Gg)	NO <sub>x</sub> (Gg)	NMVOCs (Gg)	SO <sub>x</sub> (Gg)
<b>Total national emissions and removals</b>	X		X	X	X	X	X	X
<b>1. Energy</b>	X		X	X	X	X	X	X
A. Fuel combustion (sectoral approach)	X		X	X	X	X	X	X
1. Energy industries	X		X	X	X	X	X	X
2. Manufacturing industries and construction	X		X	X	X	X	X	X
3. Transport	X		X	X	X	X	X	X
4. Other sectors (Commercial institution)	X		X	X	X	X	X	X
5. Other (please specify)								
B. Fugitive emissions from fuels	X		X		NA	NA	NA	NA
1. Solid fuels	X		X		NA	NA	NA	NA
2. Oil and natural gas	X		X		NA	NA	NA	NA
<b>2. Industrial processes</b>	X		NA	NA	X	X	X	X
A. Mineral products	X				NA	NA	NA	NA
B. Chemical industry	X		NA	NA	NA	NA	NA	X
C. Metal production	X		NA	NA	NA	X	X	X
D. Cement production	X				X	X	X	X
E. Production of halocarbons and sulphur hexafluoride								
F. Consumption of halocarbons and sulphur hexafluoride								
G. Other (please specify)								
<b>3. Solvent and other product use</b>	NA			NA			NA	NA
<b>4. Agriculture</b>			X	X	X	X	NO	NA
A. Enteric fermentation			X					
B. Manure management			X	X			NO	
C. Rice cultivation			X				NO	
D. Agricultural soils				X			NO	
E. Prescribed burning of savannahs			X	X	X	X	NO	
F. Field burning of agricultural residues			X	X	X	X	NO	
G. Other (please specify)								
<b>5. Land-use change and forestry</b>	X	X	X	X	X	X	NO	
A. Changes in forest and other woody biomass stocks	X	X						
B. Forest and grassland conversion	X		X	X	X	X		
C. Abandonment of managed lands		X						
D. CO <sub>2</sub> emissions and removals from soil	X	NE						
E. Other (please specify)								
<b>6. Waste</b>			X	X	NE	NE	NE	NE
A. Solid waste disposal on land			X		NE		NE	
B. Waste-water handling			X	NE	NE	NE	NE	
C. Waste SNCineration			X		NE	NE	NE	NE
D. Other (please specify)			X	X				NA
<b>7. Other (please specify)</b>								
<b>Memo items</b>								
<b>International bunkers</b>	NA		NA	NA	NA	NA	NA	NA
Aviation	NA		NA	NA	NA	NA	NA	NA
Marine	NA		NA	NA	NA	NA	NA	NA
<b>CO<sub>2</sub> emissions from biomass</b>	NE							

Notes: Shaded cells do not require entries.

<sup>a</sup> The following standard indicators should be used, as appropriate, for emissions by sources and removals by sinks of GHGs: **NO** (not occurring) for activities or processes that do not occur for a particular gas or source/sink category within a country, **NE** (not estimated) for existing emissions and removals which have not been estimated, **NA** (not applicable) for activities in a given source/sink category which do not result in emissions or removals of a specific gas, **IE** (Included elsewhere) for emissions and removals estimated but Included elsewhere in the inventory (Parties should indicate where the emissions or removals have been Included), **C** (confidential) for emissions and removals which could lead to the disclosure of confidential information.

<sup>b</sup> Do not provide an estimate of both CO<sub>2</sub> emissions and CO<sub>2</sub> removals. "Net" emissions (emissions - removals) of CO<sub>2</sub> should be estimated and a single number placed in either the CO<sub>2</sub> emissions or CO<sub>2</sub> removals column, as appropriate. Note that for the purposes of reporting, the signs for removals are always (-) and for emissions (+).

**Table 2 (b). National Greenhouse Gas Inventory of anthropogenic emissions of HFCs, PFCs and SF<sub>6</sub>**

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	HFCs <sup>a,b</sup> (Gg)			PFCs <sup>a,b</sup> (Gg)			SF <sub>6</sub> <sup>a</sup> (Gg)
	HFC-23	HFC-134	Other (to be added)	CF <sub>4</sub>	C <sub>2</sub> F <sub>6</sub>	Other (to be added)	
<b>Total national emissions and removals</b>							
<b>1. Energy</b>							
A. Fuel combustion (sectoral approach)							
1. Energy industries							
2. Manufacturing industries and construction							
3. Transport							
4. Other sectors							
5. Other (please specify)							
B. Fugitive emissions from fuels							
1. Solid fuels							
2. Oil and natural gas							
<b>2. Industrial processes</b>							
A. Mineral products							
B. Chemical industry							
C. Metal production							
D. Other production							
E. Production of halocarbons and sulphur hexafluoride							
F. Consumption of halocarbons and sulphur hexafluoride							
G. Other (please specify)							
<b>3. Solvent and other product use</b>							
<b>4. Agriculture</b>							
A. Enteric fermentation							
B. Manure management							
C. Rice cultivation							
D. Agricultural soils							
E. Prescribed burning of savannahs							
F. Field burning of agricultural residues							
G. Other (please specify)							
<b>5. Land-use change and forestry</b>							
A. Changes in forest and other woody biomass stocks							
B. Forest and grassland conversion							
C. Abandonment of managed lands							
D. CO <sub>2</sub> emissions and removals from soil							
E. Other (please specify)							
<b>6. Waste</b>							
A. Solid waste disposal on land							
B. Waste-water handling							
C. Waste SNCineration							
D. Other (please specify)							
<b>7. Other (please specify)</b>							
<b>Memo items</b>							
<b>International bunkers</b>							
Aviation							
Marine							
<b>CO<sub>2</sub> emissions from biomass</b>							

<sup>a</sup> Parties may wish to express HFC, PFC and SF<sub>6</sub> emissions as either potential or actual. Potential emissions should be estimated using the tier 1 approach of the IPCC Guidelines. Actual emissions should be estimated using the tier 2 approach of the IPCC Guidelines.

<sup>b</sup> Parties reporting HFCs and PFCs should provide emission estimates on a gas-by-gas basis, that is, disaggregated estimates by chemical expressed in units of mass (Gg), as indicated in the table (e.g. HFC-23), where information is available. This should be done by inserting a column for each HFC and PFC gas for which emissions do occur in the country. The gases in the column headings are given as examples only. Other gases to be reported in this table include HFC-32, HFC-41, HFC-43-10, HFC-125, HFC-134a, HFC-152a, HFC-43-10mcc, HFC-143a, HFC-227ea, HFC-236fa, HFC-245ca, C<sub>3</sub>F<sub>8</sub>, C<sub>4</sub>F<sub>10</sub>, c-C<sub>4</sub>F<sub>8</sub>, C<sub>5</sub>F<sub>12</sub>, C<sub>6</sub>F<sub>14</sub>, and any other GHG with high global warming potential not covered in this list.

**Table 3: Second National Communication Components Budget**

<i>Activities</i>	Cost	Total Cost (US\$)
<b>I. NATIONAL CIRCUMSTANCES</b>		
		<b>3,000</b>
<b>II. NATIONAL GREENHOUSE GAS INVENTORIES</b>		
		<b>60,000</b>
<b>III. GENERAL DESCRIPTION OF STEPS</b>		
		<b>182,000</b>
<b>IV. OTHER RELEVANT INFORMATION</b>		
		<b>40,000</b>
<b>V. CONSTRAINTS &amp; GAPS; RELATED FINANCIAL, TECHNICAL, &amp; CAPACITY NEEDS</b>		
		<b>5,000</b>
<b>VI. TECHNICAL ASSISTANCE</b>		<b>10,000</b>
<b>VII. COMPILATION, PRODUCTION OF COMMUNICATION, INCLUDING EXECUTIVE SUMMARY &amp; ITS TRANSLATION</b>		<b>15,000</b>
<b>VIII. PROJECT MANAGEMENT (BASED ON 3 YEARS DURATION)</b>		<b>75,000</b>
<b>IX. MONITORING AND REPORTING</b>		<b>15,000</b>
<b>TOTAL</b>		<b>405,000</b>

**Table 4. Estimated timeline for the implementation of project activities (activity numbers are based on those in Table 5; Q1 is first quarter and Q2 is second quarter, etc.)**

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
<b>Proposed activities under the Second National Communication</b>												
<b>I. Project Inception Workshop</b>	X											
<b>II. Project Mid-Term Review Workshop</b>							X					
<b>III. End of Project Review Workshop</b>												X
<b>IV. NATIONAL CIRCUMSTANCES</b>												
<b>Output 1.1: National circumstances reviews, updated and described</b>	X	X										
<b>V. PROPOSED ACTIVITIES</b>												
<b>Activity 1: Establishment of Institutional Framework</b>												
Activity 1.1: Establishment of PMT and NST and operation	X	X	X	X	X	X	X	X	X	X	X	X
Activity 1.1: Establishment of NCCC and quarterly meetings	X	X	X	X	X	X	X	X	X	X	X	X
<b>Activity 2: National GHG Inventory</b>												
Activity 2.1: <b>Establish and strengthen the national GHG inventory team</b> including regular team meetings (e.g., review of past and existing data)	X	X	X	X	X	X	X	X	X	X	X	X
Activity 2.2: <b>Output 2.2: GHG inventory data collected and data gaps reduced</b>	X	X										
Activity 2.3: <b>Output 2.3: Methodologies and EFs for GHG inventory estimates selected, analyzed and validated</b> Development of new emission factors for specific activities; New factor of CO <sub>2</sub> emission/sink from/to soils in "Land-Use Changes and Forestry" sector; and new methane emission factor from rice fields and agricultural soils where possible (Note: this task may be subcontracted to a university research group)	X	X	X									
Activity 2.4: <b>Output 2.4: The Inventory of Vietnam's GHG Emissions and Sinks for 2000 compiled</b>			X	X	X	X						
Activity 2.5: <b>Output 2.5: GHG inventory data and estimates documented and archived</b>					X	X						
Activity 2.6: Strengthening of human, scientific, technical and institutional capacity, including computers, internet and regional/subregional workshops and training workshop on IPCC Technical guidelines and IPCC Good Practice Guidance application, including uncertainties assessment.	X	X	X	X	X	X	X	X	X	X	X	X
<b>Activity 3: Programmes Containing Measures to Facilitate an Adequate Adaptation to Climate Change</b>												
Activity 3.1: Establishment of V&A team, including regular team meetings (e.g., review of past and existing data)	X	X	X	X	X	X	X	X	X	X	X	X
Activity 3.2: <b>Output 3.2</b> identify the approaches, tools and methods to be used under VAA validated Climate change scenarios for Viet Nam and important baseline data for key socio-economic sectors (i.e., water resources (including underground water); agriculture and food security; land use change and forestry; industry; coastal zone and reefs; fisheries; ecosystems (biodiversity, vegetation, wetlands); human health; transportation; public health; and public infrastructure, among others) required for assessing the vulnerability of Viet Nam to climate change and its adaptation options		X										
Activity 3.3: <b>Output 3.3: Vulnerability and Adaptation Assessment</b> performed A comprehensive integrated and quantitative V&A assessment for key socio-economic sectors based on established methodologies, including integrated assessment modelling, possible least-cost adaptation options and adaptation technologies (Note: fees for	X	X	X	X	X	X	X	X	X			







<b>Activity 11: Constraints &amp; Gaps, related financial, technical and capacity-building needs</b>													
Activity 11.1: Constraints, gaps and needs, and activities for overcoming gaps etc												X	
Activity 11.2: Financial resources and Technical support provided by various sources												X	
Activity 11.3: Proposed projects for financing or in preparation for arranging support												X	
Activity 11.4: Opportunities, barriers for implementation of adapting measures												X	
Activity 11.5: Country specific technology needs and assistance received												X	
Activity 11.6: Preparation of the chapter on <i>Constraints &amp; Gaps, related financial, technical and capacity-building needs</i> to be included in the SNC												X	
<b>Activity 12: Preparation and presentation of theSINC</b>												X	X
Activity 12.1: Compilation and preparation of SNC, including a National consultant for compilation and preparation of SNC for 6 months												X	X
Activity 12.2: Translation of SNC into Vietnamese language and printing													X
<b>VI. TECHNICAL ASSISTANCE</b>	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>VII. PROJECT MANAGEMENT</b>													
VII.1 Project Coordinator	X	X	X	X	X	X	X	X	X	X	X	X	X
VII.2 Project Secretary/Administrative Assistant	X	X	X	X	X	X	X	X	X	X	X	X	X
VII.3 Independent Audit						X							X
VII.4 Staff Travel		X		X		X		X		X			X
VII.5 Equipment (2 PCs + laser printer) including consumables	X												
VII.6 Operational expenses (e.g., transportation, communication, etc)	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>VIII. MONITORING AND EVALUATION</b>	QR	QR	QR	AR	QR	QR	QR	AR	QR	QR	QR	QR	AR
							M						E

Note: QR = Quarterly report; AR = Annual report;

M = Mid-term independent review; E = End of project independent evaluation

**TABLE 5. PROPOSED ACTIVITIES/OUTPUTS AND BUDGET REQUIREMENTS FOR THE PREPARATION OF THE SECOND NATIONAL COMMUNICATION OF VIET NAM**

Outputs & Activities under the Second National Communication	Amount US\$				
	2006 May.-Dec.	2007	2008	2009 Jan.-Apr.	TOTAL
<b>1. NATIONAL CIRCUMSTANCES</b>					<b>3,000</b>
<b>Output 1.1: National circumstances reviews, updated and described</b>					
1.1.1 Establishment of an institutional framework for the preparation of 2nd SNC	0				0
1.1.2. Validate information gaps identified under stocktaking exercise in respect of national circumstances Identify relevant sources of information, establish links to obtain relevant the data as appropriate, update with new and additional information and describe the existing institutional arrangements relevant to the preparation of the NCs on a continuous basis.	2,000				2,000
1.1.3. Draft ‘Chapter 2: National Circumstances’ under the SNC, circulate it for comments, receive comments, incorporate them and finalize the ‘Chapter 2: National Circumstances’ under the SNC.		1,000			1,000
<b>2. GREENHOUSE GAS INVENTORY</b>					<b>60,000</b>
<b>Output 2.1: Establish and strengthen the national GHG inventory team</b>					
2.1.1. Formation of the thematic working group on GHG inventory by identifying qualified national experts.	0				0
2.1.2. Organize the first national workshop with the purpose of training the National Inventory Team on IPCC Technical guidelines and IPCC Good Practice Guidance application.	2,000				2,000
<b>Output 2.2: GHG inventory data collected and data gaps reduced</b>					
2.2.1. Review the existing information obtained during the preparation of the first GHG inventory; identify data gaps if any, sources of available data from prior/ongoing international project; barriers to obtaining available data needed; elaborate on any recommendations made during stocktaking exercise on estimation the GHG emissions and sinks for 2000 (data permitting). Describe procedures and arrangements undertaken to collect data, as well as efforts being made for data collection on continuous basis, including information on the role of all institutions involved. Check conversion of units and validate compiled data for estimating GHG emissions for 2000(data permitting).	2,500				2,500
<b>Output 2.3: Methodologies and EFs for GHG inventory estimates selected, analyzed and validated</b>					
2.3.1. Decide on the Tier level (Tier 1 and 2 or 3 methodologies) based on the decision trees as provided for by IPCC GPG		500			500
2.3.2. Identify appropriate methods & emission factors (EFs) source by source, using IPCC GPG decision trees and assess the suitability of the available methodologies for	8,000	3,000			11,000

Outputs & Activities under the Second National Communication	Amount US\$				
	2006 May.-Dec.	2007	2008	2009 Jan.-Apr.	TOTAL
use at the national level, applying IPCC GPG for each source category. Decide on emission factors to be use, analyze the suitability of selected EFs to Vietnam circumstances, propose possible studies that could be implemented in future to provide national EFs by formulating cost-effective programs to develop these country-specific EFs.					
<b>Output 2.4: The Inventory of Vietnam's GHG Emissions and Sinks for 2000 compiled</b>					
2.4.1. Perform the Key Source Analysis for 2000 (data permitting) through applying Tier 1 level and trend assessment in order to assist in developing GHG inventories that better reflect the national circumstances	20,000				20,000
2.4.2. Compile the GHG emissions inventory for 1994-2000 following the IPCC 1996 Revised Guidelines, IPCC GPG and the IPCC GPG on LULUCF		4,000			4,000
2.4.3. Provide information on methodologies used in the estimation of GHG emissions by sources and removals by sinks, including a brief explanation of the sources of EFs and AD.	1,000				1,000
2.4.4. Undertake an uncertainty assessment of the Inventory of Vietnam's GHG emissions and sinks in accordance with the IPCC GPG, provide information on the level of uncertainty with inventory data and their underlying assumptions, and describe the methodologies used for estimating these uncertainties to the extent national capacities allow.		2,500			2,500
2.4.5. Prepare the National Inventory Report (NIR) and circulate the NIR for internal review as part of the 'QA&QC and Uncertainty Management Plan'		4,000			4,000
2.4.6 Organize the second national workshop on GHG Inventory to coordinate and present the results of the Inventory of Vietnam's GHG Emissions and Sinks for 1994-2000.		3,000			3,000
2.4.7. Incorporate the comments received and finalize the NIR, the Inventory of Vietnam's GHG Emissions and Sinks for 1995-2002 and Chapter 3: 'National Greenhouse Gas Inventory' to be part of the SNC		5,000			5,000
<b>Output 2.5: GHG inventory data and estimates documented and archived</b>					
2.5.1. Document the selection process of national activity data, the related parameters used in the inventory preparation process and the data collection methods of data providers. Document also the methods and assumption used in the inventory preparation process, the selection process of EFs and other conversion factors used in the inventory preparation process		1,000			1,000
2.5.2. Archive AD, EFs and conversion factors used in the inventory preparation process and describe procedures and arrangements undertaken to archive data for the preparation of the GHG inventory, as well as the role of the institutions involved		3,500			3,500

Outputs & Activities under the Second National Communication	Amount US\$				TOTAL
	2006 May.-Dec.	2007	2008	2009 Jan.-Apr.	
<b>3. MEASURES TO FACILITATE ADEQUATE ADAPTATION TO CLIMATE CHANGE</b>					<i>140,000</i>
<b>Output 3.1: Establish and strengthen the ‘National Vulnerability and Adaptation Assessment Team’ and capacity building</b>					
3.1.1. Establish the Vulnerability and Adaptation Assessment Team (V&AT) and identify the Team Leader and national experts in all areas of relevance.	0				0
3.1.2. Review of previous work on V&A	500				500
3.1.3. Organize the national workshops on ‘V&A’ to enable discussions /consultations with all relevant stakeholders and identify approaches, tools and methods to be used for V&A and results of V&A studies	2,500	2,500	4,000		9,000
3.1.4. Trainings regional and domestic		10,000	5,000		15,000
<b>Output 3.2 The approaches, tools and methods to be used under VAA validated</b>					
3.2.1. Identify pertinent data and information and decide on the approaches, tools and methods to be used for the assessment. Vietnam scenarios based on “Downscaling of GCM’s data to 2100	2,000	8,000			10,000
3.2.2. Review the policy process and development context for the selected sectors of the economy in order to explore how adaptation measures can be introduced into decision-making agenda and what is the best way of addressing them	1,000	2,000			3,000
<b>Output 3.3: Vulnerability and Adaptation Assessment performed</b>					
3.3.1. Development of Socio-economic scenarios	2,000				2,000
3.3.2. Water resources of Red river, Mekong river deltas, Central highland, North mountains, South of Central		12,000	4,000		16,000
3.3.3. Agriculture in Red river and Mekong river deltas, Central high land (Crop yield, quality, pest and diseases.	2,000	10,000	9,000		21,000
3.3.4. Human health (vector-born diseases, public health etc. )		6,000	5,000		11,000
3.3.5. Coastal zones V&A in provinces	2,000	12,000	7,000		21,000
3.3.6. Transport V&A assessment		5,000			5,000
3.3.7. Climate variability and extreme weather events		6,000	6,000		12,000
<b>Output 3.4: Adaptation measures assessed, described and compile the National Action Plan on Adaptation to Climate Change</b>					
3.4.1. Evaluate current strategies and measures for adapting to climate change in the key areas, including those of are of highest priority		5,000	3,000	2,000	10,000
3.4.2. Compile the National Action Plan on Adaptation to Climate Change (NAPACC)				2,500	2,500
3.4.3. Circulate the draft chapter for internal and external review, receive and incorporate comments, finalize the Chapter 4: ‘Vulnerability and Adaptation to Climate Change’ to be submitted as a part of the SNC			2,000		2,000
<b>4. MEASURES TO MITIGATE CLIMATE CHANGE</b>					<b>42,000</b>
<b>Output 4.1: Establish and strengthen the ‘Climate Change Mitigation Assessment Team’</b>					

Outputs & Activities under the Second National Communication	Amount US\$				
	2006 May.-Dec.	2007	2008	2009 Jan.-Apr.	TOTAL
4.1.1. Created the Climate Change Mitigation Assessment Team (CCMAT) and identify/confirm the Team Leader and national experts in all targeted areas of relevance.	0				0
4.1.2. Organize the first national workshops on 'Climate Change Mitigation Assessment' for the purpose of training the CCMAT in specific approaches, tools and methods to be used under CCMA		2,500			2,500
<b>Output 4.2: Data and relevant information for scenario development collected, analyzed and feed into the scenario development</b>					
4.2.1. Review previous work on mitigation and renewable energy development building on PIREP project results. Consider the GHG inventory for the 1994-2000 and select the priority areas for the reduction measures.	1,000				1,000
4.2.2. Collect all relevant macro-economic data and set assumptions to be made for the purpose of emission scenario development.	2,000				2,000
4.2.3. Assess at what extent the GHG abatement measures are already foreseen and developed under the National Strategies, Programs and Action Plans.	1,000				1,000
4.2.4. Review the status of the relevant policy and legal framework, including sectoral implementation and summarize findings, propose approximation measures.	1,000				1,000
4.2.5. Process the collected data and make them ready as required by the software that is going to be utilized for the purpose of scenario generator. (MARKAL,EFOM, LEAP etc).	2,000	1,000			3,000
<b>Output 4.3: The GHG emissions baseline scenario developed</b>					
4.3.1. Develop a baseline GHG emission scenario for energy sector for 2000-2025 by using a top-down model (e.g.: Energy and Power Evaluation Program)		2,500			2,500
4.3.2. Develop a baseline GHG emission scenario for the rest of sectors as appropriate (non-energy ones) for 2000-2025 by using the bottom-up models (e.g.: STAIR - for services, transport, agriculture, industry and residential energy; COPATH - for agriculture and whatever other relevant models available and considered appropriate).		3,000			3,000
<b>Output 4.4: GHG abatement scenario developed/updated</b>					
4.4.1. Develop/update the GHG abatement scenarios for energy sector for 2000-2025 by using the Energy and Power Evaluation Program, as well as other relevant software (e.g.: STAIR).			2,000		2,000
4.4.2. Estimate the GHG reduction potential against the baseline scenario, cost of reduction and penetration rate of measures proposed under the GHG abatement scenarios for energy sector.			3,000		3,000
4.4.3. Develop/update the GHG abatement scenarios for non-energy sectors by use the available software (e.g.: COMAP).			4,000		4,000
<b>Output 4.5: The GHG abatement measures/technology options revised and compile the National Strategy on Climate Change Mitigation</b>					
4.5.1. Revised the list of the GHG abatement measures/technology options already			1,000		1,000

Outputs & Activities under the Second National Communication	Amount US\$				
	2006 May.-Dec.	2007	2008	2009 Jan.-Apr.	TOTAL
developed under TNA.					
4.5.2. Identify and propose new GHG abatement measure/technology options, according to national priorities described by Policies, Programs and Action Plans, and in corresponding to UNFCCC provisions and national commitments.			2,000		2,000
4.5.3. Undertake an assessment of measures by using a multi-criteria analysis and select priorities for energy sector; in addition, develop alternative approaches of win-win measures that could be implemented faster, cheaper and easier and select priority measures for non-energy sectors, as well			2,500		2,500
4.5.4. Identify barriers and policy needs for implementation the prioritized measures; propose policy interventions and financing schemes (GEF, WB, CDM, bilateral and others) to address the measures under sectoral development.			1,000		1,000
4.5.5. Define clear target areas and project portfolios including: projects concepts, environmental and social benefits; mitigation potential; costs of implementation; a description of the constraints to implementation		2,000	3,000		5,000
4.5.6. Compile the National Strategy on Climate Change Mitigation				1,000	1,000
4.5.7. Organize the second national workshop on 'Climate Change Mitigation Assessment' in final-term period of SNC implementation phase, on the purpose of reviewing and approval the National Strategy on Climate Change Mitigation			2,500		2,500
4.5.8. Incorporate the comments received and finalize the National Strategy on Climate Change Mitigation for approval by MONRE of Vietnam				500	500
<b>Output 4.6: Chapter 5: 'Measures to Mitigate Climate Change' completed</b>					
4.6.1. Develop the draft Chapter 5: 'Measures to Mitigate Climate Change', providing relevant information by key sectors on methodologies applied, scenarios, results of the assessment performed, measures implemented or planned which contribute to reduction of GHG emissions by sources and removals by sinks as well as institutional arrangements. Draft should also build on the outcomes of PIREP project			1,000		1,000
4.6.2. Circulate the draft chapter for internal and external review, receive and incorporate comments, finalize the Chapter 5: 'Measures to Mitigate Climate Change' to be submitted as a part of the SNC			500		500
<b>5. OTHER INFORMATION CONSIDERED RELEVANT TO THE ACHIVEMENT OF THE OBJECTIVE OF THE UNFCCC</b>					<b>40,000</b>
<b>Output 5.1: Establish the 'Cross-cutting Team'</b>					
5.1.1. Establish the 'Cross-cutting team' (CCT) and identify Team Leader and national experts in areas of relevance	0				0

Outputs & Activities under the Second National Communication	Amount US\$				
	2006 May.-Dec.	2007	2008	2009 Jan.-Apr.	TOTAL
<b>Output 5.2: The opportunities on ‘Transfer of Environmental Sound Technologies’ submitted</b>					
5.2.1. Collect, synthesize and provide information on how Vietnam is addressing transfer of, access to environmentally sound technologies and know-how		1,000			1,000
5.2.2. Assessment of existing endogenous ESTs so that they could be promoted or further developed.		500			500
5.2.3. Identification of barriers		500			500
5.2.4. Establish of EST data base for Vietnam to adopt the EST information system (ESTIS) developed by IECT.			1,000		1,000
5.2.5. Summarize all the information collected to draft Chapter 6: Activities Related to Technology Transfer’			500		500
5.2.6. Draft of “Action Plan Framework for transfer and adoption of ESTs”.			500		500
5.2.7. Workshop on review on ESTs studies			1,000		1,000
<b>Output 5.3: The information considered ‘Climate Change Research and Systemic Observation’ compiled and synthesized</b>					
5.3.1. Collect, synthesize and provide information on the research and systematic observation systems. Enhancement of data sources for hydrological and meteorological forecast and early warning	2,000	2,000	2,000		6,000
5.3.2. Management of climate database with GIS technology and construction of climate map based on data in standard period		1,000	1,000		2,000
5.3.3. Research on ENSO, tropical storms and drought and early warning system			1,000		1,000
5.3.4. Draft National Strategy for Research and systematic Observation and Early Warning Systems			500		500
5.3.5. Summarize all the information collected in the draft ‘Chapter 7: Research and Systemic Observation’ prepared in accordance with the UNFCCC guidelines of the SNC			500		500
<b>Output 5.4: An awareness raising campaign developed and the information considered ‘Education, Training and Public Awareness’ compiled</b>					
5.4.1. Implement an awareness raising campaign on target audiences (policy makers, environmental planners, private sector, public society and school pupils and students), inclusive through developing outreach materials on climate change and sustainable development context and dissemination through mass-media.	1,000	2,000	3,000		6,000
5.4.2. Strengthening of education on CC at the primary, secondary and tertiary levels.		500	500		1,000
5.4.3. Promote public access to information on climate change and sustainable development through updating the climate change project web site focusing on the climate change activities in Vietnam		500	500		1,000
5.4.4. Organize a review workshop.			1,500		1,500
5.4.5. Summarize all the information collected in the draft ‘Chapter 8: Education, Training and Public Awareness’ of the SNC			500		500

Outputs & Activities under the Second National Communication	Amount US\$				
	2006 May.-Dec.	2007	2008	2009 Jan.-Apr.	TOTAL
<b>Output 5.5: The sustainable development addressed and climate change priorities integrated</b>					
5.5.1. Collect, synthesize and provide the overall information relevant to the integration of climate change concerns into sustainable development programs, including information obtained through the preparation of the SNC.	500	1,000			1,500
5.5.2. Dissemination of the results of V&A assessment and mitigation options analysis to national planners and policy makers.			1,000		1,000
5.5.3. Workshop on CC and sustainable development			2,000		2,000
5.5.4. Summarize all the information collected in the draft 'Chapter 9: Integration of CC concerns into SD programmes			500		500
<b>Output 5.6: The information and networking</b>					
5.6.1. Establishment of Internet facilities for all project team members.	1,000	500			1,500
5.6.2. Contribution to sub regional and regional information networks on CC.	500	500	500	500	2,000
5.6.3. Compilation of a roster of national experts, who have participated in the CC and other environment projects.			1,000		1,000
5.6.4. Summarize all the information collected in the draft 'Chapter 10: Information and networking of the SNC.			500		500
<b>Output 5.7: Capacity building, options and priorities. ( Total 5000)</b>					
5.7.1. Identification of Capacity building needs and priorities	1,000				1,000
5.7.2 Training on CC related issues for provinces ( 4 provinces)		2,000	1,000		3,000
5.7.3. Training material preparation	500				500
5.7.4. Compilation of draft 'Chapter 11: Capacity-building'			500		500
<b>6. CONSTRAINTS, GAPS AND RELATED FINANCIAL, TECHNICAL AND CAPACITY NEEDS</b>					<b>5,000</b>
<b>Output 6.1: Constraint, gaps and related needs (financial, technical and capacity) identified and reported</b>					
6.1.1. Review constraints and gaps (financial, technical, institutional, methodological and capacity) identified from climate change previous studies with the view to ensuring that future NCs are of a better quality and that they can also be prepared on a continuous basis. Identify new constraints and gaps associated with each thematic area under the SNC and propose measures to address them. Compile the draft Chapter 12.		1,000	1,000		2,000
6.1.2. Summarize constraints, gaps and needs identified and draft a synthesis report as a chapter 13 of SNC				500	500
6.1.3. Compile and analyze information on financial resources and technical support provided by GEF, Annex II Parties, bilateral/multilateral institutions, for activities related to climate change. Experiences learnt.		2,000			2,000
6.1.4. Circulate the draft chapter for internal and external review, receive and incorporate comments, finalize the Chapter 13: 'Constraints, Gaps and Related Financial, Technical and Capacity Needs' to be submitted as a part of the SNC.			500		500



Outputs & Activities under the Second National Communication	Amount US\$				
	2006 May.-Dec.	2007	2008	2009 Jan.-Apr.	TOTAL
<b>7. TECHNICAL ASSISTANCE</b>	<b>10,000</b>				
<b>Output 7.1: Technical assistance performed</b>					
7.1.1. Regional and international consultants provide assistance to V&AT in specific approaches, tools and methods to be used under the V&A		7,000			7,000
7.1.2. Regional and international consultants provide assistance to CCMAT in specific approaches, tools and methods to be used under the CCMA		3,000			3,000
<b>8. COMPILATION AND PRODUCTION OF THE SNC, SUBMISSION AND DISSEMINATION</b>	<b>15,000</b>				
<b>Output 8.1: The SNC prepared and submitted</b>					
8.1.1. Compile a draft of the SNC and circulate for comments				1,000	1,000
8.1.2. Organize two national workshops to get comments and endorse draft SNC				6,000	6,000
8.1.3. Publish and prepare e-copies of the SNC on CD-ROMs and submit officially to the UNFCCC secretariat and introduce Vietnam's SNC at a side event during a CoP/ Subsidiary Body session				8,000	8,000
<b>9. PROJECT MANAGEMENT</b>	<b>75,000</b>				
9.1. Project kick-off meeting	2,500				2,500
9.2. Project Coordinator	8,000	12,000	12,000	4,000	36,000
9.3 Project Secretary	4,000	6,000	6,000	2,000	18,000
9.4 Accountant (part-time)	500	800	800	300	2,400
9.5. Independent Audit				1,500	1,500
9.6 Staff Travel	1,000	3,000	3,000	1,000	8,000
9.7 Equipment (2 PCs + laser printer) including consumables and logistic expenses for 3 years	2,000	500	500	500	3,500
9.8 Communication	700	1,000	1,000	400	3,100
<b>10. MONITORING AND EVALUATION</b>		2,000	5,000	8,000	<b>15,000</b>
<b>TOTALS</b>	<b>79,700</b>	<b>167,300</b>	<b>118,300</b>	<b>39,700</b>	<b>405,000</b>

**Table 6: Matrix of Activities, Indicators and Outputs**

ACTIVITIES	INDICATORS	OUTPUTS
<b>II. NATIONAL CIRCUMSTANCES</b>		
Development priorities, objectives and circumstances, etc.	<ul style="list-style-type: none"> <li>• Compilation of description of national and regional development priorities, objectives and circumstances relating to climate change and its adverse impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Relevant information provided on the socio-economic and environmental conditions</li> </ul>
Existing arrangements for preparing communications continuously	<ul style="list-style-type: none"> <li>• List of existing institutions involved with the preparation of national communications</li> </ul>	<ul style="list-style-type: none"> <li>• Roster produced on all existing institutions involved with the preparation of the national communications</li> <li>• Terms of Reference produced for the various committees involved with the preparation of the national communications</li> </ul>
<b>III. NATIONAL GHG INVENTORIES FOR 2000</b>		
Arrangements to collect and archive data for continuous inventory preparation	<ul style="list-style-type: none"> <li>• Sectoral inventories created for the base years 2000</li> </ul>	<ul style="list-style-type: none"> <li>• Est. of thematic working group on GHG inventory</li> <li>• Database for inventory updating</li> <li>• Updated and improved emission factors for 2000</li> <li>• Updated, improved, and user-friendly GHG inventory database</li> <li>• Updated GHG report, including technical annexes with the inventory procedures and calculations</li> <li>• Review Workshop Report, including major conclusions and recommendations</li> <li>• Strengthened human, scientific, technical and institutional capacity to undertake a GHG inventory</li> </ul>
Identify appropriate methods & emission factors (EFs) source by source, using IPCC GPG decision trees and assess the suitability of the available methodologies for use at the national level. Decide on emission factors to be use, analyze the suitability of selected EFs to Vietnam circumstances	<ul style="list-style-type: none"> <li>• Emission factors to be used, analyzed the suitability of selected EFs to Vietnam circumstances</li> </ul>	<ul style="list-style-type: none"> <li>• Appropriate methods &amp; emission factors (EFs) source by source</li> </ul>
Level of uncertainty associated with inventory data	<ul style="list-style-type: none"> <li>• Reduction of uncertainties in activity data, measured emission coefficient and thus the overall GHG budgets</li> </ul>	<ul style="list-style-type: none"> <li>• Validation of inventories through QA/QC measures</li> <li>• Identification of constraints and gaps of the IPCC GHG inventory methodology</li> </ul>
<b>IV. GENERAL DESCRIPTION OF STEPS</b>		
<ul style="list-style-type: none"> <li>• Establish the Vulnerability and Adaptation Assessment Team (V&amp;AT) and national experts in all areas of</li> </ul>	<ul style="list-style-type: none"> <li>• Identify approaches, tools and methods to be used for V&amp;A and results of V&amp;A studies</li> <li>• Review of previous work on V&amp;A</li> </ul>	<ul style="list-style-type: none"> <li>• the ‘National Vulnerability and Adaptation Assessment Team’ established and it’s capacity building strengthened</li> </ul>

<p>relevance</p> <ul style="list-style-type: none"> <li>Organize the first national workshops on 'V&amp;A' discussions /consultations with all relevant stakeholders and identify approaches, tools and methods to be used for V&amp;A and results of V&amp;A studies</li> </ul>		
Vulnerability to adverse effects of climate change & on adaptation	<ul style="list-style-type: none"> <li>Reports on vulnerability and adaptation suggesting policy frameworks for implementing adaptation measures and response strategies in different sectors</li> <li>Summary of the meeting proceedings, and an improved awareness of vulnerability and adaptation issues in Viet Nam</li> <li>Training on the use and development of approaches, tools and methods to be used for V&amp;A studies</li> </ul>	<ul style="list-style-type: none"> <li>Policy frameworks on vulnerability and adaptation measures put in place</li> <li>Review of project activities and the draft Policy frameworks in a final workshop</li> <li>Tools and methods to be used for V&amp;A studies</li> </ul>
Steps towards programs to facilitate adequate adaptation	<ul style="list-style-type: none"> <li>Reports on adaptation suggesting policy frameworks for implementing adaptation measures</li> <li>Training on the use and development of sector appropriate methodologies relevant for decision-making at all levels</li> </ul>	<ul style="list-style-type: none"> <li>Policy frameworks for implementing adaptation measures and response strategies put in place for the different sectors</li> </ul>
Evaluating of strategies and measures for adapting to climate change	<ul style="list-style-type: none"> <li>Meeting of experts to be organized on impact on climate change</li> <li>Research reports</li> </ul>	<ul style="list-style-type: none"> <li>Policy directions envisaged in the national communication</li> </ul>
Policy frameworks, etc, for developing and implementing adaptation strategies	<ul style="list-style-type: none"> <li>Preliminary assessment of potential impacts of climate change on agriculture, health, forestry, energy, fisheries, and gender</li> </ul>	<ul style="list-style-type: none"> <li>Measures and policies to implement adaptation strategies.</li> </ul>
Steps to formulate programs to mitigate climate change	<ul style="list-style-type: none"> <li>Reports on mitigation suggesting policy frameworks for implementing mitigation measures</li> </ul>	<ul style="list-style-type: none"> <li>Policy framework for implementing mitigation measures put in place</li> </ul>
Climate Change Mitigation Assessment	<ul style="list-style-type: none"> <li>Collection, collation, analysis/archiving of data for economy sectors</li> <li>Training and capacity building for national experts</li> <li>Training on the use of methods, models/tools for generating climate/socioeconomic scenarios</li> <li>Preparation of mitigation projects for funding</li> </ul>	<ul style="list-style-type: none"> <li>Baseline data for socio-economic sectors generated</li> <li>Draft Mitigation and Renewable Energy report</li> <li>Strengthened capacity for mitigation assessment (human/scientific/technical/institutional)</li> <li>Constraints, financial and TNA needs identified</li> </ul>
<b>V. OTHER RELEVANT INFORMATION</b>		
Integrating climate change considerations into social, economic and environmental policies and actions	<ul style="list-style-type: none"> <li>Number of proposals to integrate climate change considerations into social, economic and environmental policies and actions</li> <li>Training workshops</li> <li>Number of individuals and institutions identify for capacity building</li> </ul>	<ul style="list-style-type: none"> <li>Impacts of the publicity material developed</li> <li>Proposals to integrate climate change</li> <li>Considerations into social, economic and environmental policies and actions</li> <li>Reports of training workshops</li> <li>Human, scientific, technical and institutional capacity strengthened</li> </ul>

Transfer of, and access to ESTs, development of endogenous capacities; enabling environments	<ul style="list-style-type: none"> <li>▪ Number of Report on ESTs studies</li> <li>▪ Climate change database on ESTs</li> <li>▪ Number of individuals and institutions identify for capacity building</li> </ul>	<ul style="list-style-type: none"> <li>▪ Report on ESTs studies</li> <li>▪ Database established on EST</li> <li>▪ Technology information networks established</li> <li>▪ Human, scientific, technical and institutional capacity strengthened</li> </ul>
Climate change research and systematic observations	<ul style="list-style-type: none"> <li>▪ Number of report to improve observing systems</li> <li>▪ Number of reports on studying ENSO, tropical storms, drought and early warning</li> <li>▪ Number of workshops</li> </ul>	<ul style="list-style-type: none"> <li>▪ National Information Report to improve observing</li> <li>▪ Observing systems Reports</li> <li>▪ Number of individuals and institutions identify for capacity building</li> </ul>
Climate change education, training, and public awareness	<ul style="list-style-type: none"> <li>▪ Report on climate change education, training and public awareness</li> <li>▪ Number of training workshops</li> <li>▪ Number of individuals and institutions identify for capacity building</li> </ul>	<ul style="list-style-type: none"> <li>▪ Climate Change Education, Training and Public Awareness Document Produced</li> <li>▪ Report of training workshops</li> <li>▪ Human, scientific technical and institutional capacity strengthened</li> </ul>
Capacity building activities, options and priorities	<ul style="list-style-type: none"> <li>▪ Identification of the specific needs, options and priorities for capacity-building such as those identified in the INC and phase II enabling activity projects, PIREP, and other national capacity self-assessment</li> <li>▪ Status of activities and level of participation in and promotion of South-South cooperation with other institutions in developing countries of the Pacific and elsewhere</li> <li>▪ Promotion and level of involvement of a wide range of stakeholders</li> <li>▪ Status of activities relating to the coordination and sustainability of capacity-building activities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Programs to address climate change, adverse impacts including abatement and sink enhancement initiated</li> <li>▪ List of institutions/NGOs identified to Strengthen efforts to increase GHG sinks and undertake measures to take abatement measures</li> <li>▪ Dissemination and sharing of information on capacity building activities</li> <li>▪ Capacity-building activities aimed at integrating adaptation into medium- and long-term planning</li> <li>▪ Promotion of synergy in the implementation of the UNFCCC, UNCB, and UNCCD.</li> </ul>
Efforts to promote information sharing and networking	<ul style="list-style-type: none"> <li>▪ Archival of data base on climate change</li> </ul>	<ul style="list-style-type: none"> <li>• Data centre established for enabling activity</li> </ul>
<b>VI. CONSTRAINTS &amp; GAPS, RELATED FINANCIAL, TECHNICAL, &amp; CAPACITY NEEDS</b>		
Constraints, gaps and needs, and activities for overcoming gaps, etc.	<ul style="list-style-type: none"> <li>▪ Programs to ensure preparation and improvement of NCs on continuous basis</li> </ul>	<ul style="list-style-type: none"> <li>• Regular Report on the preparation and Improvement of NCs on continuous basis</li> </ul>
Financial resources and technical support for preparing communications provided by various sources	<ul style="list-style-type: none"> <li>▪ Level of support mobilized</li> </ul>	<ul style="list-style-type: none"> <li>• Financial and technical support earmarked</li> </ul>
Opportunities, barriers for implementation of adaptation measures	<ul style="list-style-type: none"> <li>▪ Pilot/demonstration projects</li> </ul>	<ul style="list-style-type: none"> <li>• Pilot/demonstration project identified</li> </ul>
Country-specific technology needs and assistance received	<ul style="list-style-type: none"> <li>▪ Report on country Specific technology needs and assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Country specific technology needs and Assessment produced</li> </ul>
<b>VII. TECHNICAL ASSISTANCE</b>		
Contribution of international consultant into trainings on application of integrated impact models and macro-economic models	<ul style="list-style-type: none"> <li>• Report of studies and trainings conducted by international consultants</li> </ul>	<ul style="list-style-type: none"> <li>• Technical back stopping mission executed by international consultant</li> </ul>

<b>VIII. COMPILATION, PRODUCTION OF COMMUNICATION, INCLUDING EXECUTIVE SUMMARY AND ITS TRANSLATION</b>		
	▪ Second National Communication Document	• Communication to COP
<b>IX. PROJECT MANAGEMENT (BASED ON 3 YEARS DURATION)</b>		
	▪ Project staff recruited	• The Project Management Team put in place
<b>X. MONITORING AND REPORTING</b>		
	<ul style="list-style-type: none"> <li>▪ Quarterly Reports</li> <li>▪ Visits of International Consultant each year</li> </ul>	<ul style="list-style-type: none"> <li>• Yearly Report</li> <li>• Yearly visit of the International Consultants during the implementation of the project</li> </ul>

**Table 7: Project financing and budget**

<b>COMPONENTS</b>	<b>GEF contribution US\$</b>	<b>GOV'T contribution US\$</b>	<b>Total US\$</b>
		<b>In-kind</b>	
Component II: National Circumstances	3,000	500	3,500
Component III: National GHG Inventories	60,000	9,500	69,500
Component IV: General description of Steps	182,000	12,500	194,500
Component V: Other relevant Information	40,000	3,000	43,000
Component VI: Constraints and Gaps	5,000	2,000	7,000
Component VII: Technical Assistance	10,000	2,000	12,000
Component VIII: Compilation and Production of SNC	15,000	9,000	24,000
Component IX: Project Management	75,000	20,000	95,000
Component X: Monitoring and Evaluation	15,000	1,500	16,500
<b>TOTAL (US\$)</b>	<b>405, 000</b>	<b>60,000</b>	<b>465,000</b>

### **SECTION III: WORKPLAN AND TIME TABLE, BUDGET AND FOLLOW UP**

197. Budget.

**Please see Table 3:** *(Budget for Proposed activities for the preparation of the Second National Communication)*

198. Workplan and Timetable:

**Please see Table 6** *(Timeline for the implementation of project activities)*

## **SECTION IV: INSTITUTIONAL FRAMEWORK AND EVALUATION**

### **Institutional framework**

199. The Ministry of Natural Resources and Environment as the Executing Agency, will be responsible for the implementation of the project in accordance with the objectives and activities outlined in Section 2 of this document. UNEP, as the GEF Implementing Agency, will be responsible for overall project supervision to ensure consistency with the GEF and UNEP policies and procedures, and will provide guidance on linkages with related UNEP and GEF funded activities. The UNEP/DGEF Coordination will monitor implementation of the activities undertaken during the executing of the project. The UNEP/DGEF Coordination will be responsible for clearance and transmission of all financial and progress reports to the Global Environment Facility.

200. Prior to contracts, sub-contracts, or letters of agreement being entered into by the Ministry of Natural Resources and Environment, the Ministry of Natural Resources and Environment will submit to UNEP/DGEF Coordination copies of all these documents. Within ten working days, UNEP/DGEF Coordination will review, provide guidance and give the Ministry of Natural Resources and Environment substantive clearance on the technical content of these contracts, sub-contracts and letters of agreement.

201. In the recruitment of all senior project personnel, a selection panel/committee consisting of representatives from the Ministry of Natural Resources and Environment and UNEP/DGEF will conduct the evaluation of the candidates, and based on the recommendations of the panel/committee the Ministry of Natural Resources and Environment will issue contracts whose terms and conditions will be cleared by the panel.

202. **Correspondence:**

**All correspondence regarding substantive and technical matters should be addressed to: -**

**At UNEP:**

Mr. Ahmed Djoghlaif  
Assistant Executive Director, UNEP  
Director, Division of GEF Coordination  
UNEP  
P.O. Box 30552  
Nairobi, Kenya  
Tel : +254-20-7624166  
Fax: +254-20-7624041

**With a copy to:**

George Manful (PhD)  
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UNEP/GEF  
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**For Viet Nam :**

Nguyen Khac Hieu  
Deputy Director General,  
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Ministry of Natural Resources and Environment of Viet Nam  
No. 45 Tue Tinh Street, Ha Noi, Viet Nam  
Tel.: 84-4-9743195 / 9743196  
Fax: 84-4-9743200  
Email: [vnccoffice@fpt.vn](mailto:vnccoffice@fpt.vn)

203. **All correspondence related to financial administrative and financial matters related to this sub-project should be addressed to: -**

**At UNEP:**

Mr. David Hastie  
Chief  
Budget and Financial Management Service (BFMS)  
United Nations Office at Nairobi  
P.O. Box 67578  
Nairobi, Kenya  
Tel: +254-20-7623821  
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**With a copy to:**

Mr. Victor Ogbunike  
Fund Management Officer  
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UNEP  
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Email: [vnccoffice@fpt.vn](mailto:vnccoffice@fpt.vn)

204. **Evaluation**

The Ministry of Natural Resources and Environment will maintain systematic overview of the implementation of the project by means of monthly project monitoring meetings or other form of consultation, as well as by regular quarterly progress reports. A terminal/final report of the project will be prepared by the Ministry of Natural Resources and Environment at the end of the project.

Following development of detailed work-plan, the following steps will be undertaken: review of the project, review/definition of defects, gaps, identification of problems that might impede the project implementation. Furthermore, the review is aimed to define potential partners and sources of information for the project.

The implementing agency will oversee implementation of contracted project activities. With this purpose, project coordinator in co-operation with the National Steering Committee will prepare work-plan for project implementation.

## **SECTION V: MONITORING AND REPORTING**

### **Management Reports**

#### **205. Quarterly Progress Reports**

Within 30 days of the end of the reporting period, the Ministry of Natural Resources and Environment will submit to UNEP, using the format given in **Annex 4**, quarterly progress reports as at 31 March, 30 June, 30 September and 31 December, to the UNEP/GEF Division Director, with copies to the Chief, BFMS, on the progress in project execution.

#### **206. Terminal Report**

Within 60 days following the end of the project, the Ministry of Natural Resources and Environment shall submit a Terminal Report in the UNEP format (**Annex 6**) to the Director, Division of GEF Co-ordination and the Chief, Budget and Financial Management Service and the Chief, Program Coordination and Management Unit. The report should indicate the principal factors, which have determined the success or failures of the project in meeting the objectives set forth in the project document. This report will serve as a source of initial lessons for the country's experience and can recommend follow-up activities.

#### **207. Substantive Reports:**

- (i) At the appropriate time, the Ministry of Natural Resources and Environment will submit to UNEP three copies in draft of any substantive project reports(s) and, at the same time, inform UNEP of its plans for publication of that text. UNEP will give the Ministry of Natural Resources and Environment substantive clearance of the manuscript, indicating any suggestions for change and such wording (recognition, disclaimer, etc.) as it would wish to see figure in the preliminary pages or in the introductory texts.
- (ii) UNEP will equally consider the publishing proposal of Ministry of Natural Resources and Environment and will make comments thereon as advisable.
- (iii) UNEP may request, the Ministry of Natural Resources and Environment to consider the publication on a joint imprint basis. Should the Ministry of Natural Resources and Environment be solely responsible for publishing arrangements, UNEP will nevertheless receive an agreed number of free copies of the published work in each of the agreed languages, for its own purposes.

#### **208. Financial Reports (National Project Expenditure Accounts)**

- (i) Details of expenditures will be reported, on an activity by activity basis, in line with project budget codes as set out in the project document, as at 31 March, 30 June, 30 September and 31 December using the format given in **Annex 3**. All expenditure accounts will be dispatched to UNEP within 30 days of the end of the quarter to which they refer, certified by a duly authorised official of the Ministry of Natural Resources and Environment.
- (ii) On completion of the project a final audited statement of account certified by a duly authorised official of the Ministry of Natural Resources and Environment, containing a signed audit opinion by a recognised firm of public accountants or for Governments by a Government auditor, should be dispatched to UNEP within 180 days, (i.e. by 30 June). In particular, the auditors should be asked to report whether, in their opinion:

- Proper books of account and records have been maintained;
  - All project expenditures are supported by vouchers and adequate documentation;
  - Expenditures have been incurred in accordance with the objectives outlined in the project document;
  - The expenditure reports provide a true and fair view of the financial condition and performance of the project.
- (iii) If requested, the Ministry of Natural Resources and Environment shall facilitate an audit by the United Nations Board of Auditors and/or the Audit Service of the accounts of the project.
- (v) Any portion of cash advances remaining unspent or uncommitted by the Ministry of Natural Resources and Environment on completion of the project will be reimbursed to UNEP within one month of the presentation of the final statement of accounts. In the event that there is any delay in such disbursement, the Ministry of Natural Resources and Environment will be financially responsible for any adverse movement in the exchange rates.

## **TERMS AND CONDITIONS**

### **209. Inventory of Non-expendable equipment purchased against UNEP projects**

The Ministry of Natural Resources and Environment will maintain records of non-expendable equipment (items costing US\$1,500 or more as well as items of attraction such as pocket calculators, cameras, computers, printers) purchased with UNEP funds (or Trust funds or Counterpart funds administered by UNEP), and submit an inventory of such equipment to UNEP as at 31 March, 30 June, 30 September, and 31 December following the format contained in **Annex 5**, attached to the quarterly progress report, indicating description, serial number, date of purchase, original cost, present condition, location of each item.

Within 60 days of completion of the project, the Ministry of Natural Resources and Environment will submit to UNEP a final inventory of all non-expendable equipment purchased under this project indicating description, serial number, original cost, present condition, location and a proposal for the disposal of the said equipment.

Non-expendable equipment purchased with funds administered by UNEP remains the property of UNEP until its disposal is authorised by UNEP, in consultation with the Ministry of Natural Resources and Environment.

The Ministry of Natural Resources and Environment shall be responsible for any loss or damage to equipment purchased with UNEP administered funds. The proceeds from the sale of equipment, (duly authorised by UNEP) shall be credited to the accounts of UNEP, or of the appropriate trust fund or counterpart funds. A duly authorised official of the Ministry of Natural Resources and Environment should physically verify the inventory.

### **210. Responsibility for Cost Over-runs**

Total Project cost to the GEF Trust Fund cannot exceed the approved budget as shown on page 1 of the project document. Any cost overrun (expenditure in excess of the amount budgeted in each budget sub line) shall be met by the organization responsible for authorizing the expenditure, unless written agreement has been received in advance, from UNEP. In cases, where UNEP has indicated its agreement to a cost overrun in a budget sub line to another, a revision to the project document amending the budget will be issued by UNEP.

### **211. Claims by Third Parties against UNEP**

The Ministry of Natural Resources and Environment, shall be responsible for dealing with any claims which may be brought by third parties against UNEP and its staff, and shall indemnify UNEP and its staff against any claims or liabilities resulting from operations carried out by the Ministry of Natural Resources and Environment, under this National Project document, except where it is agreed by the Ministry of Natural Resources and

Environment and UNEP that such claims or liabilities arise from negligence or misconduct of the staff of UNEP.

#### 212. **Cash Advance Requirement**

Initial cash advance of **US\$ 54,775** will be made upon signature of the project document by both parties and will cover expenditures expected to be incurred by the Ministry of Natural Resources and Environment during the first three months of the project implementation. Subsequent advances are to be made quarterly, subject to:

(i) Confirmation by the Ministry of Natural Resources and Environment at least two weeks before the payment is due, that the expected rate of expenditure and actual cash position necessitate the payment, including a reasonable amount to cover "lead time" for the next remittance; and

(ii) The presentation of

- ◆ A satisfactory financial report showing expenditures incurred for the past quarter, under each project activity (See format in **Annex 3**).
- ◆ Timely and satisfactory reports on project implementation (**Annex 4**).

Requests for subsequent cash advances should be made using the standard format provided in **Annex 2**.

#### 213. **Amendments**

The Parties to this project document shall approve any modification or change to this project document in writing.

#### 214. **United Nations Security Council Resolution on the fight against terrorism**

The United Nations Security Council Resolution 1373 of 28 September 2001 on the fight against terrorism shall be adhered to by the Executing Agency, failure to which shall, without prejudice to other legal actions, lead to the immediate cancellation of the project.

## **LIST OF ANNEXES**

- Annex 1: Summary Report on the National Workshop for Stocktaking and Stakeholders Consultation for the preparation of the Second National Communication of Viet Nam to the United Nations Framework Convention on Climate Change
- Annex 2: Endorsement letter from GEF Operational Focal Point of Viet Nam
- Annex 3: Endorsement letter from UNFCCC Focal Point of Viet Nam
- Annex 4: Budget in UNEP Format (in Microsoft Excel format).
- Annex 5: Format for Cash Advance Request with its Appendix 1 to Annex 2 providing additional information for the requested cash advance funding.
- Annex 6: Format for Quarterly Expenditure Statement with its Appendix 1 to Annex 3 providing explanatory notes on the reported expenditures.
- Annex 7: Quarterly Progress Report Format with its Appendix 1 to Annex 4 for inventory of outputs/services.
- Annex 8: Format for Inventory of Non Expendable Equipment
- Annex 9: Format for Terminal Report with its Appendix 1 to Annex 6 for the inventory of outputs/services.
- Annex 10: Terms of Reference

## ANNEX 1

### Summary Report on

### **The National Workshop for Stocktaking and Stakeholders Consultation for the preparation of the Second National Communication of Viet Nam to the United Nations Framework Convention on Climate Change, (Ha Noi, 18-19 January 2006)**

The National Workshop for stocktaking and stakeholders consultation for the preparation of the Second National Communication (SNC) of Viet Nam to the United Nations Framework Convention on Climate Change (UNFCCC) was held at Horison Hotel in Ha Noi, Viet Nam, on 18-19 January 2006. It was organized by the International Cooperation Department (ICD) of the Ministry of Natural Resources and Environment (MONRE) of Viet Nam in close cooperation with relevant ministries, agencies and organizations.

#### **I. Attendance:**

The Workshop was attended by 78 people. They were former members/experts participated in of the Initial National Communication (INC) project, members of national study team and stakeholders, representatives, policy makers, scientists, researchers, experts of various levels from relevant Ministries, Agencies, organizations such as MONRE, Ministry of Planning and Investment (MPI), Ministry of Industry (MOI), Ministry of Agriculture and Rural Development (MARD), Ministry of Science and Technology (MOST), Ministry of Transport (MOT), Ministry of Education and Training (MOET), Ministry of Trade (MT), Ministry of Finance (MOF), Vietnamese Academy of Science and Technology (VAST), Viet Nam Union of Science and Technology Associations (VUSTA), Center for Research and Development of Sustainable Agriculture, Research Center for Climate Change and Sustainable Development, Research Center for Energy and Environment, Viet Nam Forestry Science and Technology Association. A number of resource persons from universities, research institutes and centers, non-governmental organizations (NGOs) and State/private companies, enterprises also participated in the workshop. In addition, representatives from United Nations Development Programme (UNDP), SNV and ISGE also attended the workshop.

Dr. Pak Sum Low, Regional Adviser on Environment and Sustainable Development of United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), served as a resource person for the workshop.

#### **II. Background:**

Viet Nam ratified UNFCCC on 16 November 1994 and Kyoto Protocol (KP) on 25 September 2002. The INC of Viet Nam was completed and submitted to the UNFCCC Secretariat in November 2003. MONRE was assigned by the Government as a National Focal point Agency for implementing the UNFCCC and KP in Viet Nam. In particular, the ICD of MONRE was designated as a National Authority for managing and coordinating the implementation of all climate change related activities under UNFCCC, KP and UNFCCC Focal Point in Viet Nam. It is also responsible for the preparation of the SNC of Viet Nam to the UNFCCC.

#### **III. Objectives:**

The overall objective of the stocktaking and stakeholder consultations was to review the past and current climate change activities, and to identify and discuss the gaps and further needs that are required to be addressed in the preparation of the SNC. Such consultations among relevant stakeholders will help to identify the financial resources and technical assistance needed for the preparation of its SNC, as well as to strengthen the existing institutional arrangements with the participation of relevant stakeholders for the implementation of the preparation of the SNC project. The consultations would also ensure the ownership of the SNC by the participating stakeholders.

The specific objectives of the workshop were:

To review comprehensively the major results and outcomes of the INC project and the Phase II project for measures for capacity building in priority areas, and other existing climate change activities;

To identify and highlight specific issues, problems, constraints, gaps and further needs in the following areas: GHG inventory; mitigation options analysis; vulnerability and adaptation (V & A) assessment; technology transfer and capacity development; research and systematic observation; and education, training and public awareness; and to propose further activities in these areas for the SNC;

To discuss the details of the proposed activities for the SNC and the estimated cost for each proposed activity, based on the COP8 Guidelines and the *GEF Operational Procedures for the Expedited Financing of National Communications from non-Annex I Parties*.

To provide inputs for the preparation of the SNC project proposal.

#### **IV. Opening addresses:**

The workshop commenced with the opening address by Mr. Nguyen Khac Hieu - Deputy Director General, ICD, MONRE. On behalf of MONRE, he warmly welcomed all participants to the workshop. In his address, he highlighted efforts made by Viet Nam in addressing climate change issues, both nationally and internationally. He underscored the importance of the workshop and highly appreciated the close cooperation between MONRE and other related ministries, agencies, organizations, including NGOs and private sector. He also expressed sincere thanks to UNEP, GEF, UNESCAP and other concerned international organizations and several donor countries for their financial and technical support to the implementation of climate change activities, the INC in the past and the preparation of the SNC of Viet Nam in the coming period. He believed that the workshop will contribute significantly to the SNC project proposal of Viet Nam to UNFCCC.

On behalf of UNESCAP, Dr. Pak Sum Low, Regional Adviser on Environment and Sustainable Development, also gave some brief remarks. He recalled his first visit to Viet Nam in 1997 with fond memories, and complimented the growing institutional and technical capacity of Viet Nam in dealing with climate change issues. In particular, he cited the Vietnamese Prime Minister's *Directive No. 35/2005/CT-TTg dated 17 October 2005 on the implementation of Kyoto Protocol (KP) to the United Nations Framework Convention on Climate Change (UNFCCC) in Viet Nam*, which was the first of its kind in ASEAN, and probably the first of its kind in the Asia-Pacific region. He commented that the workshop would provide a good opportunity for all stakeholders to share experiences and lessons learned, and wished the workshop every success.

#### **IV. Conduct of the Workshop:**

The overall workshop was chaired by Mr. Nguyen Khac Hieu, Deputy Director General, ICD, MONRE, while Mr. Hoang Manh Hoa, Senior Expert on climate change, ICD, MONRE served as the Secretary for the workshop.

#### **V. Main activities of the Workshop:**

After the opening ceremony, a number of national experts gave their presentations on various topics relevant to the preparation of the SNC, as follows:

Professor Dr. Bui Huy Phung of Viet Nam Academy of Science and Technology reviewed the past work on GHG inventory, and discussed the major issues that need to be addressed in the preparation of the SNC. Based on the work in the INC, he pointed out the following major gaps:



- CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, NO<sub>x</sub>, CO, NMVOC and SO<sub>x</sub> data in the five source categories need to be updated and extended based on the COP8 Guidelines and to be stored in GHG database;
- Inventory was not extensive and comprehensive due to the lack of data or poor data quality in certain source categories;
- Emission from energy consumption in different sectors are calculated using the reference approach only and there is a need for the sectoral or bottom-up approach for emission estimation;
- The role of savannas and abandonment lands in CO<sub>2</sub> uptake needs to be studied;
- Activity data for solvent and other product use sector have not been collected, and hence emission from this sector was not estimated;
- Lack of country-specific emission factors (e.g., coal, gas, mining, soils, biomass, etc);
- Uncertainties for sources and sinks were not estimated;
- User-friendly software for GHG emission projection is needed;
- Capacity building in IPCC methodologies for GHG inventory, including the application of good practice guidance and uncertainty management is still very much needed.

He also proposed further activities for the SNC.

Prof., Dr. Nguyen Tien Nguyen of Research Center for Energy and Environment, reported on the development of GHG mitigation options and discussed the major issues that need to be addressed in the preparation of the SNC. In particular, he emphasized the following major gaps:

- Updated and improved cost-effective mitigation options assessment for CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, NO<sub>x</sub>, CO, NMVOC and SO<sub>x</sub> and new assessment of mitigation options for HFC<sub>s</sub>, PFC<sub>s</sub> and SF<sub>6</sub> for the year 2000, including appropriate mitigation technologies;
- Lack of analytical models for agricultural sector and the need for improved models for energy sector;
- Need for promotion of legal and economic instruments for mitigation measures;
- Lack of a national strategy for GHG mitigations;
- Limited technical capacity in quantitative mitigation options analysis, including application of relevant methodologies.

He presented further activities for the SNC.

Mr. Nguyen Mong Cuong of Research Center for Climate Change and Sustainable Development, reported on climate change vulnerability and assessment, adaptation options and discussed the major issues that need to be addressed in the preparation of the SNC. He highlighted the following major gaps:

- Lack of comprehensive quantitative V & A assessment for key socio-economic sectors based on established methodologies, and hence the adaptation options derived earlier are only qualitative;
- Lack of integrated vulnerability assessment to assess the impacts of climate change in a realistic (holistic) and integrated manner;
- Lack of realistic data for assessing climate change vulnerability, including data for cost-effective analysis of various adaptation options, including adaptation technologies;
- Lack of a national strategy for adaptation to climate change and its related disaster prevention, preparedness and management;

- Lack of local expertise in the field of V & A assessment and integrated assessment (including integrated assessment modelling);
- Lack of assessment of impacts of climate variability and extreme weather events on key socio-economic sectors;
- Capacity-building is urgently needed in V & A assessment, including training on relevant methodologies.

He also proposed further activities for the SNC.

Dr. Nguyen Chi Quang of Ha Noi University of Technology, reported on technology transfer, capacity development and discussed the major issues that need to be addressed in the preparation of the SNC. He indicated the following major gaps:

- Lack of database on Environmentally Sound Technologies (ESTs), including endogenous technologies;
- Lack of human and institutional capacity in assessing, evaluating and verifying ESTs;
- Identification and removal of barriers to the adoption of ESTs.

He proposed further activities for the SNC.

Dr. Tran Duc Hai of ICD, MONRE reported on raising public awareness and strengthening education on climate change and discussed the major issues that need to be addressed in the preparation of the SNC. He demonstrated the following major gaps:

- Lack of a national strategy and programme on climate change education, training and public awareness;
- General lack of outreach materials on climate change issues, especially those for children and young people;
- Lack of public awareness on climate - induced disaster preparedness; hence there is a need to introduce and strengthen community education on climate change and disaster preparedness;
- Education, training and public awareness on climate change have not yet become social activities and partnerships between the public and private sector, including community groups and NGOs are needed;
- Lack of financial resources for climate change outreach programmes and activities.

He also introduced further activities for the SNC.

Dr. Le Thanh Hai of National Hydro-Meteorological Service, MONRE, gave a very comprehensive review of the current hydrological and meteorological observation and monitoring network and system in Viet Nam. He identified the following major gaps:

- Climate data quality needs to be further enhanced;
- Lack of analysis of existing climate data by local expertise;
- No forecast of ENSO events in Viet Nam;
- Inadequate human and institutional capacity in climate data monitoring.

He presented further activities for the SNC.

Mr. Hoang Manh Hoa of ICD, MONRE reported on the main results of UNEP/GEF project entitled *Expedited financing for measures for capacity building in priority areas in Viet Nam (Phase II)*. He emphasized the importance of this project and stressed that the results of the project formed an important basis for the preparation of the SNC. He also proposed further activities related to the institutional framework for the SNC.

Dr. Pak Sum Low, Regional Adviser of UNESCAP, gave a presentation on COP8 *Guidelines for the preparation of National Communications from non-Annex I Parties to the UNFCCC*. He highlighted the objectives and the scope of the Guidelines in comparison to the COP 2 Guidelines for the Initial National Communication. These include GHG inventory; programmes containing measures to facilitate adequate adaptation to climate change; programmes containing measures to mitigate climate change; and other information considered relevant to the achievement of the objective of the Convention, including transfer of technologies (for mitigation and adaptation), research and systematic observation, education, training and public awareness, information and networking, and capacity-building, as well as the constraints and gaps and related financial, technical and capacity needs, and any other relevant information. He responded to many questions raised during and after his presentation.

During the second day of the workshop, the participants were divided into three Working Groups: (1) GHG Inventory and Mitigation Options (chaired by Professor Dr. Bui Huy Phung); (2) Vulnerability & Adaptation Assessment and Research & Systematic Observation (chaired by Mr. Nguyen Mong Cuong); and (3) Technology Transfer and Education, Training & Public Awareness (chaired by Dr. Mnguyen Chi Quang). Each group was composed of about 12 experts from various stakeholders. Dr. Pak Sum Low provided Guidelines for the Working Groups on their deliberations. He requested the Working Groups to specifically focus on the following areas: (a) Review of past and current activities; (b) Identify gaps; (c) Proposed new activities and provide justifications; and (d) Capacity-building needed; and (e) Estimate the cost for each proposed activity for 3 years. Dr. Pak Sum Low provided further guidance during the discussion process. The results of the discussion of the Working Groups were later presented by the Group leaders and critically reviewed by all participants in the plenary. These results have provided useful inputs for the various components of the proposed activities as described in the project proposal. However, due to the budget limit provided by the GEF *Operational Procedures for the Expedited Financing of National Communications from non-Annex I Parties*, the indicative cost estimated by the Working Groups for each of their proposed activities was later adjusted accordingly. The reports of the Working Groups are attached.

The synergies between the SNC activities and other existing or planned activities of other agencies, such as the adaptation activities to be proposed by UNDP, has been emphasized.

Table 1 in the project document shows the matrix to assist in stocktaking of activities financed under GEF enabling activities and other efforts. This table has been included in the project document.

The following tentative structure of the SNC, which has been included in the project document, was proposed during the workshop:

- Executive Summary
- Chapter 1: Introduction
- Chapter 2: National Circumstances
- Chapter 3: GHG Inventory
- Chapter 4: Programmes containing measures to facilitate adequate adaptation to climate change (i.e., V&A Assessment on key socio-economic sectors)
- Chapter 5: Programmes containing measures to mitigate climate change (i.e., mitigation options analysis on key socio-economic sectors)
- Chapter 6: Development and Transfer of Environmentally Sound Technologies
- Chapter 7: Research and Systematic Observation
- Chapter 8: Education, Training and Public Awareness
- Chapter 9: Integration of Climate Change Concerns into Sustainable Development Programmes
- Chapter 10: Information and Networking
- Chapter 11: Capacity-building
- Chapter 12: Other Information Considered Relevant to the Achievement of the Objective of the Convention
- Chapter 13: Constraints and Gaps, and Related Financial, Technical and Capacity Needs
- Chapter 14: Conclusions and Recommendations
- Annex: List of projects for bilateral and multilateral funding

The Chairperson comprehensively summarized the results of the workshop before it was concluded.

On behalf of the ICD of MONRE, the Chairperson expressed its deep gratitude to relevant ministries and agencies, the GEF, UNEP, UNESCAP, other international organizations, as well as Dr. Pak Sum Low and representatives, experts, scientists from various national institutions, for their persistent strong support and cooperation.

The participants thanked the ICD of MONRE and organizers for conducting the workshop and also expressed special appreciation to ICD, MONRE for the warm hospitality and wonderful venue.

## **VI. Conclusions and recommendations:**

The two-day Workshop on stocktaking and stakeholders' consultation was successfully held. It proved to be a very useful forum to share information and lessons learned, as well as to identify issues, gaps, barriers and constraints, with a view to proposing future activities for the preparation of the SNC.

The Workshop recognized that the preparation of the SNC will enable Viet Nam to fulfil its commitments and obligations as required by Article 4.1 and 12.1 of the Convention.

The Workshop further requested the financial and technical support from the GEF, UNEP, UNESCAP and other international agencies, as well as from donor countries, for future climate change activities in Viet Nam.

The workshop recommended MONRE, in close cooperation with related ministries and agencies, to formulate the project proposal for the preparation of the SNC soon, so that it can be submitted to GEF/UNEP for funding during March 2006.

**Discussion of the GHG Inventory and Mitigation Options Working Group  
(Chaired by Dr. Bui Huy Phung)**

**National Workshop for Stocktaking and Stakeholders Consultation for the preparation of the SNC of Viet Nam to the UNFCCC**

*(Ha Noi, 18-19 January 2006)*

**I. The weaknesses and gaps**

1- Less comprehensive inventory

- Energy consumption in different sectors is calculated in top down approach. There is lack of calculation in detail for each industry.

- Industries considered in industrial processes are not full

- Waste sector faced a lack of data from many activities.

2- Lack of sector detail statistical data and general data, information at national level are at low accuracy.

3- Most of emission factors are used by the IPCC 1996 or foreign country, especially in using coal, gas, mining that need the Vietnam data. The activity emission factors need to be further developed.

4- Lack of economic technical data of new technologies for identifying GHG mitigation projects.

5- Methodology model and software tools: Only inventory software given with IPCC 1996 was used, it was not enough for inventory and for emission projection.

6- Capacity and organization

Through there were the focal office and the technical expert group, but implementation skills were still rather weak, due to lack of information and of technical training in inventory field.

**II. Activity proposals in coming years**

1- Organizing better collection of database for all 5 sectors

2- Typical survey to check data.

3- Combining main sectors to collect detail data, such as energy, transport, agriculture

4- Methodology

- Dividing more clearly sectors and activities

- GHG inventory software transfer.

- Study and use IPCC guide version 2006.

5- Perfecting more identified mitigation projects and identify new projects in all 5 considered fields.

6- Organizing more frequently workshops, conferences in country and outside countries for exchanging information and experiences.

7- Training workshops to develop capacity on GHG inventory activities especially for National expert group.

8- The fields need to be more detail implemented GHG inventory

- Carbon sinks

- Waste sector

- Industrial processes

### **III- Estimated budget**

#### 1- Inventory

- Energy sector	20,000 USD
- Industrial processes	15,000 USD
- Agriculture	15,000 USD
- LULUCF	15,000 USD
- Waste	15,000 USD

#### 2- Mitigation

- Perfecting identified mitigation activities/projects and their development priorities	20,000 USD
- Identify new mitigation activities especially in using energy, transport, waste sectors (about 10 project)	25,000 USD

#### 3- Study methodology

- Dividing more clearly sectors, activities	5,000 USD
- Methods and software transfer from international agencies (experts, training workshops...)	15,000 USD

#### 4- Workshops (Combine for all projects)

- 3 local workshops for 3 areas of country	12,000 USD
- 3 national workshops	15,000 USD

#### 5- Business trip/typical survey

- To some energy exploitation, using units...	10,000 USD
- To some sinks (forestry, chemical) agriculture areas	10,000 USD

***Total*** ***192,000 USD***

**Discussion of the Vulnerability and Adaptation Assessment and Research and Systematic Observation  
Working Group**

**(Chaired by Mr. Nguyen Mong Cuong)**

**National Workshop for Stocktaking and Stakeholders Consultation for the preparation of the SNC of Viet  
Nam to the UNFCCC**

*(Ha Noi, 18-19 January 2006)*

1/ The second day of the workshop, group discussion on “Vulnerability & Adaptation and Research and Observation system on Climate Change” was organized.

2/ The participants all agreed with the report presented by Mr. Nguyen Mong Cuong entitled “*Activities on Climate change Vulnerability and Adaptation assessment in Vietnam*” with the main contents as follows:

After evaluating the previous activities concerning the V&A assessment, the author analyzed the gaps on the past V & A activities in Vietnam and also proposed some activities to overcome.

3/ The participants also recognized that most of the previous climate change adaptation activities are of a predominantly technical nature. Although most activities have positive effects on wellbeing as an objective, this component is often assumed to materialize from the implementation of the activity and the linkages between the more technical aspects of the activities and the socio-economic objectives do not always to be specified very clearly. Thus, the socio-economic aspects and the relationship between national development programmes, poverty alleviation, Millennium Development aspects, and climate change vulnerability and adaptation seem not to have been covered in the previous projects in Viet Nam.

4/ The participants also analyse the financial located for V&A activities for three years as follows:

No	Activities	Year 1 (2006)	Year 2 (2007)	Year 3 (2008)	Comments
1	Review of previous work on V&A assessment	800			Agriculture, water resources, Coastal zone, disaster mitigation
2	Development of detail climate scenarios for Vietnam based on "Downscaling" of outputs provided by GCMs to 2100, including 1.Mapping local element referring to global CC scenarios 2 Identifying transferring factors (CCS) for every regions of Vietnam 3 Setting up CCS for Vietnam 4. Using regional climate model (RCgCM3) to develop CCS 5. Combining two scenarios (item 1 and 4) as well as existing scenarios in Vietnam to develop a final scenario	4,000 1,000 1,000 3,000			Monthly for (5 elements 12 month x 3 scenarios)  -Run the REG-CM3 for basis period (1961-1990) -RUN REG-CM3 for 21 century -Comparison the results

		1,000			
3	Development of Socio-economic scenarios (low, medium, high)	2,000			-Collecting and gathering data for population, economy, ecosystem, adaptation capacity, national policies.... -Analyzing data and report compilation.
4	Assessment of vulnerability to CC by integrated impacts assessment methods on key socio-economic sectors: 4.1 Water resources focus on Red river and Mekong river deltas, Central highland, North Mountains, South of central -Hydrologic resources -Water demand for economy and life		10,000	5,000	Data collection Selecting model and operation Surveys Report compilation
	4.2 Agriculture: focus on Red river and Mekong river deltas, Central highland. -Review the studies on crop - animal - weather relationships -CC effect on crop yield and production (rice, maize, coffee, tea...), pest and diseases -Livestock (cow, buffalo...)	6,000	8,000	10,000	Crop data (rice, maize, coffee, tea) collection Selecting model and operation Surveys Report compilation
	4.3 Human health: -Impact assessment of vector-borne diseases -Public health infrastructure damage (water supply, food production...)		10,000	5,000	Data collection Selecting model and operation Surveys Report compilation
	4.4 Coastal zone: -Vulnerability assessment of flood with high tides together storm surge in coastal zone (Quang Ninh, Quang Binh, Quang Tri, Hue, Danang, Quang Nam, Binh Dinh) -Assessment for the salt intrusion in coastal zone (three provinces)...	6,000	8,000	6,000	7 provinces x 2000 = 14,000 (data collection, selecting model, surveys..)
	4.5 Transportation: -Assessment of vulnerability of sea level rise for infrastructure.		5,000		Data collection Selecting model and operation Surveys Report compilation
5	Assessment of effects of climate variability and extreme				



	weather events (Flood, drought, typhoon..) under CC on the key socio-economic sectors. -Review the previous studies on effect of extreme weather events to socio-economy -Survey and investigating -Analysis the impacts of increasing of probability of extreme weather events on socio-economy.		5,000	7,000	- Flood, Drought, Typhoon. - Data collection - Selecting model and operation - Surveys - Report compilation
6	Development and evaluation of adaptation measures that are of the highest priority based on vulnerability assessment on key sectors: - Agriculture - Water resources - Coastal zone - Human health - Transportation		5,000	5,000	-Selecting model and operation -Expert adjustment -Interview and survey by questionnaires
7	Development of policy framework on national adaptation programme, plans, policies			3,000	
8	Trainings	10,000	5,000		-Two person/one month in regional training course for V&A assessment methodologies - Four local training courses (each 15 people) for training the models, methodology in Hanoi and Hochiminh City
9	Workshops	2,500 (Workshop 1)	2,500 (W 2)	4,000 (W3)	Workshop1: Discussion, review, exchange the results agriculture and coastal zone (30 man- two days) Workshop2: Human health, transportation, water resources (30 man-2 days) Workshop 3: Discussion and review the policy framework on adaptation program (50 man -2 days)
	TOTAL	37,300	58,500	45,000	140,800

**THE PARTICIPANTS ALL AGREED WITH THE REPORT ENTITLED *CLIMATE OBSERVATION AND MONITORING SYSTEM IN VIET NAM*. PRESENTED BY DR. LE DUC HAI WITH THE MAIN CONTENTS AS FOLLOWS:**

After evaluated the previous activities on Climate observation and monitoring system in Viet Nam, the gaps for the activities, he described some proposed activities for observation station network, climate database in Viet Nam and the research of climate change in Viet Nam including the studies on Climate and drought, expansion of deserts in Viet Nam.

The participants discussed the funding required for the proposed activities of climate observation and monitoring system and research in Viet Nam under the Second National Communication project, which amounts to a total of US\$ 15,000.

1. Planning of the networking hydrology, meteorology and environment to 2020
2. The research of acid rain in Viet Nam
3. The research of typhoon in Viet Nam for 45 years (1960 – 2005)
4. The research of the severe weathers for 10 recent years
5. Improve predictive climate models in Viet Nam.

**Discussion of the Technology Transfer and Education, Training and Public Awareness Working Group  
(Chaired by Mr. Nguyen Chi Quang)**

**National Workshop for Stocktaking and Stakeholders Consultation for the preparation of the SNC of Viet Nam to the UNFCCC**

*(Ha Noi, 18-19 January 2006)*

**1. Transfer of EST**

Overview on past and current activities

- National Cleaner Production Programme
- Waste Processing for energy generation
- Clean Coal Briquette Production

GAPs for Transfer of Environmental Sound Technology (EST)

- Difficulty for small and medium firms to access technology information
- Lack of previous survey of local needs and aspects;
- Lack of or inappropriate state of air emission purification facilities.
- Lack of the industrial production of small energy devices and the infrastructure.
- Inadequate legal and regulatory frameworks, insufficient assessment of technology needs and implementation plans
- Construction and installation capability of EST. There is a need of foreign engineering contractors to jointly construct and install EST adaptation to climate change or to provide engineering consultants (CDM Project).
- Economic incentives for ESTs transfer. There is a need to study economic and financial feasibility of EST transfer project and define concessionary polices such as financial, tax and tariff policies.
- Lack of experience with the acquisition and management of ESTs transfer projects
- Lack of (access to) data and information concerning available technological options and financial information;

## Proposal Project Activities

Survey and assessment on EST for key sectors (Energy, Transport, Agriculture)

### **2. Education, training and public awareness**

#### Identify on GAPS (Education)

- Lack of graduation for climate change specialization
- Lack of integrate to other training and education programme
- No priority problems in education programme

#### Proposal Solutions (Education)

- Only education on CC for **training trainer** for commune
- **Information training** on CC for governance
- **Technical training** on CC for policymakers, Scientifics and consultancy

#### Proposal Project Activities (Education)

**Activity 1:** Survey on needs, contents of CC training for difference stockholders

**Activity 2:** Workshop on CC for stakeholders (government, business, scientists and community) and cooperation with NGOs and others

**Activity 3:** Integrated training on CC with others relative programme (disasters management, energy efficiency, cleaner productions,...)

## ANNEX 2

### Endorsement letter from GEF Operational Focal Point of Viet Nam

#### GEF-VIET NAM

Add: 83 Nguyen Chi Thanh Street, Hanoi, Vietnam  
Tel.: 084-4 773 4985 – Fax: 084-4 773 4245

March 06, 2006

**To : Mr. Ahmed Djoghlaif**  
Head, UNEP GEF Coordination Office  
P.O. Box 30552  
Nairobi, Kenya  
Fax: 254-20-624041  
Email: Max.Zieren@unep.org

**Subject: GEF National Focal Point Endorsement:  
UNEP-GEF Project: Viet Nam Second National Communication.**

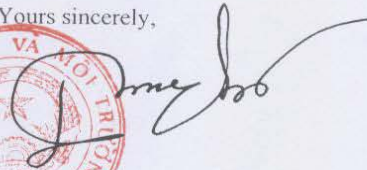

Dear Mr. Ahmed Djoghlaif,

On behalf of GEF-Vietnam, I am pleased to inform you that we fully support the above project proposal.

GEF-Vietnam has reviewed the draft project proposal in detail and concluded that Viet Nam Second National Communication will help Viet Nam to fulfill the obligations of the United Nations Framework Convention on Climate Change (UNFCCC). Moreover, implementation of this project will enhance institutional and human capacity at both technical and policy levels of Viet Nam. The proposed project is significantly meaningful for Viet Nam in dealing with the gaps after the completion of the first National Communication.

We therefore strongly recommend GEF to support this proposal.

Yours sincerely,

**Phạm Khôi Nguyễn**  
GEF Vietnam Chairman  
Senior Vice Minister  
Ministry of Natural Resources and Environment, Vietnam  
Telephone: 084-4 773 3929  
Fax: 084-4 773 4245  
E-mail: nvtai@yahoo.com

### ANNEX 3

Endorsement letter from UNFCCC Focal Point of Viet Nam



**MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT  
OF THE SOCIALIST REPUBLIC OF VIET NAM**

Telephone : 84-4-9743195      No. 83 Nguyen Chi Thanh street,  
Fax : 84-4-9743200      Ha Noi, Viet Nam  
Email: vnccoffice@fpt.vn

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No. 59 / HTQT

Ha Noi, 05 March 2006

**To:** Dr. GEORGE MANFUL,  
Senior Task Manager, Climate Change Enabling Activities,  
Division of Global Environment Facility Coordination (DGEF),  
United Nations Environment Programme (UNEP),  
P.O.Box 30552, 00100 Nairobi , Kenya;  
Fax: 254 20 762.43.24  
Email: George.Manful@unep.org

**CC:** Dr. VICTOR OGBUNEKE, UNEP, Kenya  
Email: Victor.Ogbuneke@unep.org

**Subject:** Viet Nam's Second National Communication Project Proposal

Dear Dr. GEORGE MANFUL,

We are pleased to send an attached file concerning Viet Nam's Second National Communication Project Proposal (total number of 60 pages) for your process. We believe that with your kind and timely support, Viet Nam will receive a fund from UNEP/GEF for the preparation of its Second National Communication soon.

Please kindly let us know the next steps regarding this matter as well as your receipt of our Proposal.

In looking forward to receiving your early reply, we would like to take this opportunity to express our sincere thanks for your valuable assistance and cooperation.

With our best regards.

NGUYEN KHAC HIEU,  
Deputy Director General,  
International Cooperation Department,  
Ministry of Natural Resources and Environment of Viet Nam  
No. 83 Nguyen Chi Thanh street, Ha Noi, Vietnam;  
Fax: 84-4-9743200;  
Email: vnccoffice@fpt.vn

## ANNEX 4

### Budget in UNEP format

**Table 7: Preparation for the Second National Communication under UN Framework Convention on Climate Change (UNFCCC)**

Code	Description	2006 (May-Dec)	2007	2008	2009 (Jan-Apr)	Total
1101	National Project Coordinator	8 000	12 000	12 000	4 000	36 000
1102	National Project secretary	4 000	6 000	6 000	2 000	18 000
1201	National Consultants (National Circumstances)	2 000	1 000	0	0	3 000
1202	National Consultants (GHG)	30 500	19 500	0	0	50 000
1203	National Consultants ( V&A)	8 500	62 000	33 000	4 500	108 000
1204	National Consultants ( Mitigation)	6 000	6 500	16 000	1 500	30 000
1205	National Consultants (other information)	5 500	10 000	15 000	0	30 500
1206	National Consultants(Constraints and Gaps)	0	3 000	1 500	500	5 000
1207	Technical Assistance from International experts	0	10 000	0	0	10 000
1301	Accountant (part time)	500	800	800	300	2 400
1382	Monitoring and Evaluation	0	2 000	5 000	8 000	15 000
1383	Independent Financial Audit of the project	0	0	0	1 500	1 500
1601	Staff Travel (Local)	1 000	3 000	3 000	1 000	8 000
3201	National Workshops (National GHG Inventories)	2 000	3 000	0	0	5 000
3202	National Workshops (General Description of steps)	2 500	5 000	6 500	0	14 000
3203	National Workshops (Other information)	0	0	4 500	0	4 500
3204	National Workshops (kick off meeting)	2 500	0	0	0	2 500
3205	National Workshops (validation SNC)	0	0	0	6 000	6 000
3206	Training V&A and other (regional or international)	500	12 000	6 500	0	19 000
4101	Office Supplies	2 500	8 000	5 000	500	16 000
4102	Maintenance	1 000	2 000	2 000	0	5 000
4201	Office equipment(computers, etc)	2 000	500	500	500	3,500
5202	Compilation and Production of SNC	0	0	0	9 000	9 000
5301	Communication	700	1 000	1 000	400	3 100
99	<b>GRAND TOTAL</b>	<b>79,700</b>	<b>167,300</b>	<b>118,300</b>	<b>39,700</b>	<b>405,000</b>

## ANNEX 5: CASH ADVANCE STATEMENT

Statement of cash advance as at : {Reporting end date}

Cash requirements for the period: From: {Starting date} To: {Ending date}

*Name of Executing Agency: {Insert name of Executing Agency}*

Project No.: **IMIS: GFL/2328-2724-4929**

**PMS: GF/2010-06-86**

Project title: {Insert exact title of the project}

### I. Cash statement

1. Opening cash balance as at {Insert project commencement date} US\$ NIL
2. Add: cash advances received:

<i>Number</i>	<i>Date</i>	<i>Amount</i>
First cash advance	{Insert date}	{Insert amount}
Second cash advance	{Insert date}	{Insert amount}
Third cash advance	{Insert date}	{Insert amount}
Fourth cash advance	{Insert date}	{Insert amount}
Fifth cash advance	{Insert date}	{Insert amount}
3. Total cash advanced to date US\$	{Insert amount}	
4. Less: total cumulative expenditures incurred to date		US\$ {(Insert amount)}
5. Closing cash balance as at US\$ (reporting end date)		

### II. Cash Requirements forecast

6. Estimated disbursements for period ending {Insert date} US\$ {Insert amount}
7. Less: closing cash balance (see item 5 above) US\$ {Insert amount}
8. **Total cash requirements** for period from: {Insert date} to: {Insert date} US\$ **{Insert amount}**

Prepared by: \_\_\_\_\_

Date: \_\_\_\_\_

Request approved by: \_\_\_\_\_

Date: \_\_\_\_\_

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**NB:** To be completed by duly authorized officials of {Insert name of Executing Agency}

**Appendix 1 to Annex 2: EXPLANATIONS ON THE PLANNED USE OF THE REQUESTED FUNDING FOR THE NEXT REPORTING PERIOD BASED ON WHICH THE CASH ADVANCE STATEMENT OF THIS REPORT WAS MADE**

Project No. {GFL/2328-2724-4929}

Executing Agency: {Insert name of Executing Agency}

Project title: {Insert the full title of the project here}

Project commencing: {Insert commencement date}

Project ending: {Insert completion date}

DESCRIPTION FOR THE CODES	EXPENDITURE ESTIMATES	CLARIFICATION/BREAKDOWN
1101 Project personnel		
1201 Consultant		
1301 Project administrative personnel		
1401 Volunteer		
1601 Travel on official business		
2101 Sub-contract (with IAs)		
2201 Sub-contract (with SOs)		
2301 Sub-contract (business entity)		
3101 Fellowship		
3201 Group training		
3301 Meeting/Conference		
4101 Expendable equipment		
4201 Non-expendable equipment		
4301 Premises		
5101 Operation and maintenance		
5201 Reporting		
5301 Sundry		
5401 Hospitality		
5501 Evaluation		
99 TOTAL		

**NB:** Object of expenditure in the report should be exactly as required, in order to substantiate the "estimated disbursement" reflected in item 6. of the cash advance statement. The above is simply an example with one code in each class. In the actual projects there may be more than one code in a class and some classes may even not be there.



**Annex 6: FORMAT OF QUARTERLY PROJECT EXPENDITURE ACCOUNTS FOR SUPPORTING ORGANIZATIONS**

Quarterly project statement of allocation (budget), expenditure and balance (Expressed in US\$) covering the period

from.....to.....

Project No.:.....

Supporting organization.....

Project title:.....

Project commencing:.....

Project ending:.....

Object of expenditure in accordance with  UNEP budget codes	Project budget		Expenditure Incurred				Unspent balance of budget allocation for year.....
	Allocation for Year		For the quarter		Comulative expenditures this Year		
	m/m (1)	Amount (2)	m/m (3)	Amount (4)	m/m (5)	Amount (6)	m/m (7)
1101 National Project Coordinator							
1102 National Project secretary							
1201 National Consultants (National Circumstances)							
1202 National Consultants (GHG)							
1203 National Consultants ( V&A)							
1204 National Consultants ( Mitigation)							
1205 National Consultants (other information)							
1206 National Consultants(Constraints and Gaps)							
1207 Technical Assistance from International experts							
1301 Accountant (part time)							
1382 Monitoring and Evaluation							
1383 Independent Financial Audit of the project							
1601 Staff Travel (Local)							
3201 National Workshops (National GHG Inventories)							
3202 National Workshops (General Description of steps)							
3203 National Workshops (Other information)							
3204 National Workshops (kick off meeting)							
3205 National Workshops (validation SNC)							
3206 Training V&A and other (regional or international)							
4101 Office Supplies							
4102 Maintenance							

4201 Office equipment(computers, etc)							
5202 Compilation and Production of SNC							
5301 Communication							
<b>99 GRAND TOTAL</b>							

Signed: \_\_\_\_\_

**Duly authorized official of supporting organization**

**NB: The expenditures should be reported in line with the specific object of expenditure as per project budget.**

## Annex 7 – Format for Quarterly Progress Report

As at 31 March, 30 June, 30 September and 31 December

(Please attach a current inventory of outputs/Services when submitting this report)

### 1. Background Information

1.1 Project Number:

1.2 Project Title:

1.3 Supporting Organization (if relevant):

1.4 Reporting Period (the three months covered by this report):

1.5 Staffing Details of Supporting Organization (Applies to personnel / experts/ consultants paid by the project budget):

Functional Title	Nationality	Object of Expenditure (1101, 1102, 1201, 1301 etc.)

1.6 Sub-Contracts (if relevant):

Name and Address of the Sub-Contractee	Object of Expenditure (2101, 2201, 2301 etc.)

### 2. Project Status

2.1 Information on the delivery of outputs/services

	Output/Service (as listed in the approved project document)	Status (Complete/Ongoing)	Description of work undertaken during the reporting period	Description of problems encountered; Issues that need to be addressed; Decisions/Actions to be taken
1.				
2.				

2.2 If the project is not on track, provide reasons and details of remedial action to be taken:

### 3. Discussion acknowledgment (To be completed by UNEP)

Project Coordinator's General Comments/Observations	UNEP Task Manager (or its Equivalent) Approval
NAME: _____ DATE: _____	NAME: _____ DATE: _____
SIGNATURE: _____	SIGNATURE: _____

## Appendix 1 to Annex 4

### Attachment to Quarterly Progress Report: Format for Inventory of Outputs/Services

#### Meetings (UNEP-convened meetings only)

No	Meeting Type (note 4)	Title	Venue	Dates	Convened by	Organized by	# Participants	List attached Yes/No	Report issued as doc no	Language	Dated
1.											
2.											
3.											

#### List of Meeting Participants

No.	Name of the Participant	Nationality

#### Printed Material

No	Type (note 5)	Title	Author(s)/Editor(s)	Publisher	Symbol	Publication Date	Distribution List Attached Yes/No
1.							
2.							
3.							

#### Technical Information / Public Information

No	Description	Date
1.		
2.		
3.		

#### Technical Cooperation

No	Type (note 6)	Purpose	Venue	Duration	For Grants and Fellowships		
					Beneficiaries	Countries/Nationalities	Cost (in US\$)
1.							
2.							
3.							

#### Other Outputs/Services (e.g. Networking, Query-response, Participation in meetings etc.)

No	Description	Date
1.		

2.		
3.		

10. NOTE 4

Meeting types (Inter-governmental Meeting, Expert Group Meeting, Training Workshop/Seminar, Other)

14. NOTE 5

Material types (Report to Inter-governmental Meeting, Technical Publication, Technical Report, Other)

15. NOTE 6

Technical Cooperation Type (Grants and Fellowships, Advisory Services, Staff Mission, Others)

**Annex 8 – Format for Inventory of Non-Expendable Equipment**

PURCHASED AGAINST UNEP PROJECTS UNIT VALUE US\$1,500 AND ABOVE AND  
ITEMS OF ATTRACTION

As at \_\_\_\_\_

Project No. \_\_\_\_\_

Project Title \_\_\_\_\_

Executing Agency: \_\_\_\_\_

Internal/SO/CA (UNEP use only) \_\_\_\_\_

FPMO (UNEP) use only) \_\_\_\_\_

Description	Serial No.	Date of Purchase	Original Price (US\$)	Purchased / Imported from (Name of Country)	Present Condition	Location	Remarks/recommendation for disposal

The physical verification of the items was done by:

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

## Annex 9– Format for Terminal Report

### TERMINAL REPORT

#### *1. Background Information*

**1.1 Project Number**

**1.2 Project Title**

**1.3 Implementing Organization**

#### *2. Project Implementation Details*

**2.1. Project Activities** (*Describe the activities actually undertaken under the project, giving reasons why some activities were not undertaken, if any*)

**2.2. Project Outputs** (*Compare the outputs generated with the ones listed in the project document*)

**2.3. Use of Outputs** (*State the use made of the outputs*)

**2.4. Degree of achievement of the objectives/results** (*On the basis of facts obtained during the follow-up phase, describe how the project document outputs and their use were or were not instrumental in realizing the objectives / results of the project*)

**2.5. Determine the degree to which project contributes to the advancement of women in Environmental Management and describe gender sensitive activities carried out by the project.**

**2.6. Describe how the project has assisted the partner in sustained activities after project completion.**

#### *3.1 Conclusions*

**3.1 Lessons Learned** (*Enumerate the lessons learned during the project's execution. Concentrate on the management of the project, including the principal factors which determined success or failure in meeting the objectives set down in the project document*)

**3.2 Recommendations** (*Make recommendations to (a) Improve the effect and impact of similar projects in the future and (b) Indicate what further action might be needed to meet the project objectives / results*)

**4. Attachments**

**4.1 Attach an inventory of all non-expendable equipment (value over US\$ 1,500) purchased under this project indicating Date of Purchase, Description, Serial Number, Quantity, Cost, Location and Present Condition, together with your proposal for the disposal of the said equipment**

**4.2 Attach a final Inventory of all Outputs/Services produced through this project**



**APPENDIX 1 OF ANNEX 6**

**ATTACHMENT TO TERMINAL REPORT:  
FORMAT FOR INVENTORY OF OUTPUTS/SERVICES**

**Meetings (UNEP-convened meetings only)**

No	Meeting Type (note 4)	Title	Venue	Dates	Convened by	Organized by	# of Participants	List attached Yes/No	Report issued as doc no	Language	Dated
1.											
2.											
3.											

**List of Meeting Participants**

No.	Name of the Participant	Nationality

**Printed Materials**

No	Type (note 5)	Title	Author(s)/Editor(s)	Publisher	Symbol	Publication Date	Distribution List Attached Yes/No
1.							
2.							
3.							

**Technical Information / Public Information**

No	Description	Date
1.		
2.		
3.		

**Technical Cooperation**

No	Type (note 6)	Purpose	Venue	Duration	For Grants and Fellowships		
					Beneficiaries	Countries/Nationalities	Cost (in US\$)
1.							
2.							
3.							

**Other Outputs/Services (e.g. Networking, Query-response, Participation in meetings etc.)**

No	Description	Date
1.		
2.		
3.		

13. NOTE 4

Meeting types (Inter-governmental Meeting, Expert Group Meeting, Training Workshop/Seminar, Other)

14. NOTE 5

Material types (Report to Inter-governmental Meeting, Technical Publication, Technical Report, Other)

15. NOTE 6

Technical Cooperation Type (Grants and Fellowships, Advisory Services, Staff Mission, Others)

## ANNEX 10

### **Terms of Reference Project Management National Climate Change Steering Committee (NCCSC)**

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

#### **Duties and Responsibilities**

The NCCSC responsibilities will include the following:

1. Ensuring that national climate change policies and programs are consistent with national development priorities and objectives;
2. Ensuring that all relevant stakeholders in the country are kept informed and consulted on the development of climate change issues and policies;
3. Overseeing national policies on climate change;
4. Coordinate the overall project activities in accordance with the project schedule and budget;
5. Facilitate coordination of project activities across institutions;
6. Review the project activities, and their adherence to the work plan set forth in the project document;
7. Review and comment on each year's proposed work plan and budget;
8. Take decisions on the issues brought to its notice by UNEP and other cooperating institutions, and provide advice regarding efficient and timely execution of the project;
9. Initiate remedial action to remove impediments in the progress of project activities that were not envisaged earlier;
10. Developing negotiating positions and strategies for the Government of the Viet Nam for meetings of the Conference of Parties of the UNFCCC;
11. Monitoring and reviewing the progress of the project against its stated outputs, including progress reports prepared by the PMT;
12. Reviewing and approving the project work plan;
13. Reviewing and approving the monitoring and evaluation timetable;
14. Making modifications, as necessary, to the number and scope of workshops being organized under the project;
15. Providing strong political support and overall policy advice for the development and realization of the project;
16. Assisting in mobilizing available data and expertise;
17. Endorsing the detailed work plan, produced thematic reports, Final SNC Report and Action Plans;
18. Proposing to the Government to adopt the SNC for submission to the UNFCCC Secretariat.

## NATIONAL PROJECT STAFF

### NATIONAL PROJECT COORDINATOR

#### Project background information

A national Project Coordinator (PC) will be hired to oversee project implementation, under the UNEP supervision. He/she will be responsible for the overall management of all aspects of the project, and will provide technical assistance to the national technical expert groups. The candidate should be highly motivated, enthusiastic, and capable of working independently. He/she should have a strong institutional and policy background. The PC should have experience in preparation of Initial National Communication on Climate Change and /or in other climate change enabling activities. The ability to work with a wide variety of people from governments, agencies, non-governmental organizations, and research institutions is essential.

#### Duties

1. Co-ordinate all project activities with leaders of technical expert groups, and a range of institutions and agencies, including UNEP, IPCC, UNFCCC, GEF, and national institutions to ensure smooth and timely execution of project activities.
2. Prepare a detailed project work plan and Approve terms of reference for the project consultants.
3. Liaise with the relevant ministries, national and international research institutes, NGOs, and other relevant institutions in order to involve their staff in the project activities, and to gather and disseminate information relevant to the project.
4. Foster and establish links with related national and regional projects, and other international programmes.
5. Provide elements and data to the Project Secretary for the preparation of the periodic progress reports on project implementation and ensure that all national project outputs are sent to UNEP.
6. Execute the project expenditures according to the project budget.
7. Arrange national workshops and trainings according to the project work plan. Attend, whenever possible, the relevant regional and international workshops, trainings and conferences.
8. Review all materials generated during the project.
9. Ensure the publication and dissemination of the reports identified as project outputs.
10. Liaise and conduct negotiations on co-operation with Government and financing institutions in order to identify and mobilize sources for the follow-up activities.

#### Qualifications

1. Advanced university degree in the fields related to climate change and/or environmental management;
2. Minimum of 5 years of working experience in the area relevant to the project;
3. Involvement in the preparation of the national GHG inventory, vulnerability and adaptation assessment and the preparation of second national communication - not necessary, but highly recommended;
4. Demonstrated ability in managing projects, and in liaising and cooperating with all project stakeholders including government officials, scientific institutions, NGOs and private sector;
5. Familiarity with international organizations operations and structure;
6. Substantial experience in Government and in interdepartmental procedures;
7. Familiarity with international negotiations and processes under the UNFCCC;
8. Fluent written and oral communication in English and Vietnam language ;
9. Strong communications and interpersonal skills;
10. Excellent computer knowledge (MS Office, Internet); and
11. Of Viet Nam citizenship.

**Duty Station:** ICD, MONRE; Hanoi

**Duration:** Three years.

## **ACCOUNTANT**

An Accountant will work on a part-time basis under supervision of PC and in cooperation with PS. The function of the part-time accountant will be to:

1. Perform the work of book keeping;
2. Track payment/invoices/receipts and reconcile the accounts for the project ensuring that the funds are properly spent;
3. Ensure that there is proper accountability of the funds;
4. Prepare the expenditure statements in line with the UNEP budget code;
5. Advise on the appropriate utilisation of funds and sign on the accuracy of the expenditures along with the National Focal Point on Climate Change or his PC designated representative.
6. Of Viet Nam citizenship.

### **Qualifications**

1. A university degree in economics/finance.
2. A minimum of 3 years of relevant experience.
3. Work experience with international organizations.
4. Knowledge of computers and word processing.
5. Excellent English and Vietnamese.

**Duty Station:** ICD, MONRE; Hanoi

**Duration:** Part-time work based on project assistance needed.

## **SECRETARY**

Secretary will work on a full-time basic under supervision of Project Coordinator (PC) . The function of the secretary will be to:

1. Provide secretarial support to PC.
2. Assist the PC on Co-ordinating all project activities with leaders of technical expert groups, and national institutions to ensure smooth and timely execution of project activities.
3. Assist the PC in preparation of a project work plan and draft the project progress reports, cash advance statement, expenditure equipment inventory
4. Prepare the periodic progress reports on project implementation and ensure that all national project outputs are sent to UNEP.
5. Assist the PC to arrange national workshops and trainings according to the project work plan. Attend, whenever possible, the relevant regional and international workshops, trainings and conferences.
6. Identify training needs of the contracted national consultants and other project stakeholders, and identify appropriate courses and trainings for national capacity building.
7. Of Viet Nam citizenship

### **Qualifications**

1. An advanced scientific university degree in climatic science or other related field.
2. Relevant experiences in the field of climate change
3. Familiarity with national communications, and with international negotiations and processes under the UNFCCC
4. The ability to work with a wide variety of people from governments, agencies, non-governmental organizations and research institutions.
5. Familiarity with computers and word processing
6. Excellent knowledge of Viet Nam

7. Good command in English and Vietnamese. Translate official project-related papers from English into Vietnamese and vice versa.

**Duty Station:** ICD, MONRE; Hanoi

**Duration:** Three years.

## THEMATIC WORKING GROUPS

### THEMATIC WORKING GROUP ON GHG INVENTORY

#### Scope of Work

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

#### Duties and Responsibilities

Specific duties may be as follows:

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

#### Qualifications and Skills

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

1. Sound and broadly-recognized scientific expertise on climate related research in Viet Nam;
2. Familiarity with the UNFCCC and IPCC technical guidelines; and
3. Prior experience in inventory preparation, through involvement in the Second National Communication recommended.

#### Expected output:

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

### THEMATIC WORKING GROUP ON VULNERABILITY ASSESSMENT AND ADAPTATION

#### Scope of Work

The group will ensure implementation of specific activities outlined below, as well as coordination of the outputs of other consultants engaged outside the institution. The activities undertaken by the national institutions will also strengthen institutional arrangements for systematic climate observation, data management and control, processing and updating of meteorological and hydrological services data.

## **Duties and Responsibilities**

Particular duties may be as follows:

1. Participate in the training workshop on V&A methods and tools available for V&A assessment work;
2. Analyze the climate changes for the period 1961-2000 for existing stations of the following parameters: temperature, precipitation, wind, cloudiness and sunshine hours;
3. Identify the data needs, availability and suitability, and establish datasets baselines of the assessment;
4. Analyze the existing climate data and parameters, by months and years;
5. Prepare climate maps using GIS technology;
6. Review the vulnerability assessment of the following sectors: agriculture, water resources, natural ecosystems, forestry, and human health, including identification of vulnerable areas that are most critical;
7. Integrated assessment of key socio-economic sectors using Integrated Assessment Modelling (IAM);
8. Describe links between climate, and socio-economic baseline conditions of the country in the most vulnerable sectors;
9. Based on the output of the vulnerability assessment, evaluate the feasibility of available adaptation measures to meet their specific needs and concerns arising from the adverse effects from the climate change;
10. Prepare a national adaptation action plan to implement those measures being of highest priority including clear distinction of responsibilities among the relevant stakeholders, timeframe for fulfilment/implementation of the recommended measures, financial means for implementation of the measures, and identification of possible barriers and risks;
11. Liaise and consult with the Technical Working Group on Technology Transfer and Research and Systematic Observation on issues relating to technology needs assessment and climatic conditions of Viet Nam;
12. Organize (in cooperation with the PMT) a workshop to present the results from V&A;
13. Prepare comprehensive report on the vulnerability assessment and national adaptation Action plan; and
14. Prepare a chapter on “Programs containing measures to facilitate adequate adaptation to climate change,” in accordance with the UNFCCC guidelines.

## **Qualifications and Skills**

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

1. Sound and broadly-recognized scientific expertise on climate related research in Viet Nam;
2. Prior experience in vulnerability assessment and adaptation process, through involvement in the Second National Communication recommended;
3. Highly qualified scientists working in the fields of climate observation and vulnerability analysis in the specific sectors; and
4. Familiarity with the UNFCCC, IPCC methodology, MAGICC/SCENGEN and other methods.

## **Expected output:**

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

## **THEMATIC WORKING GROUP ON MITIGATION OPTIONS ANALYSIS**

### **Scope of Work**

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

## **Duties and Responsibilities**



- 1 Based on the results from the GHG Inventory and future development plans, particularly in the energy and land use change and forestry sectors, develop a baseline and mitigation scenarios to abate the increase of GHG emissions;
- 2 Consider the main national economic and social development trends in the analysis, including expected GHG emissions in energy, agriculture, land-use change and forestry and waste management;
- 3 Extend the analysis on the side of energy consumption, including energy consumption in the industry (for heating, for technological processes), in the public sector and in the residential sector;
- 4 Revise the measures contained in the INC according to the latest economic development, including quantitative measures in all sectors;
- 5 Identify, formulate and prioritize programs containing measures to mitigate climate change within the framework of sustainable development;
- 6 Finalize the GHG mitigation analysis using the selected tools and additional background information in order to finalize the cost-benefit analysis of the different measures, develop a series of mitigation scenarios to abate the increase of the GHG emissions;
- 7 Liaise and consult with the Technical Working Groups on GHG Inventory and Technology Transfer and Research and Systematic Observation on matters relating to GHG inventories and on technology needs for mitigation;
- 8 Formulate a final national action plan to abate the GHG Emissions including information cost analysis, assessment of technology options for the different mitigation options in various sectors, institutional capacity-building needs to sustain mitigation work, and the related legal and institutional frameworks;
- 9 Organize (in cooperation with the PMT) a workshop to present the results of the GHG Mitigation and draft national action plan; and
- 10 Prepare final report on GHG mitigation and national action plan, including comments from the stakeholders.

### **Qualifications and skills**

1. The institutions contracted for undertaking project activities should meet the following minimum criteria:
2. Sound and broadly-recognized scientific expertise on climate related research in Viet Nam;
3. Experience in preparing scenarios for GHG mitigation through involvement in the Second National Communication recommended;
4. Qualified scientists working in the related areas: Energy, Agriculture, Land Use Change and Forestry, Waste; and
5. Familiarity with the UNFCCC, software modelling tools such as EFOM, COMAP, LEAP, ENPEP, WASP, GACMO, etc.

### **Expected output:**

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

1. The proposed activities will be undertaken in appropriate sequence so as to maximize the synergies between each component of the proposed activities, as well as the efficiency and cost-effectiveness for the implementation throughout the project cycle. Some proposed that are not related to each other, such as GHG inventory and vulnerability assessment, will be undertaken in parallel.
2. Good practices in project implementation, such as the efficient use of financial and human resources, the engagement of qualified local and regional consultants, public participation throughout the project cycle, will be adopted where appropriate. Established guidelines will be followed, while established tools and methodologies will be used.

## THEMATIC WORKING GROUP ON TECHNOLOGY TRANSFER AND RESEARCH AND SYSTEMATIC OBSERVATION

### **Scope of Work**

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

### **Duties and Responsibilities**

1. Participate in a training workshop on the technology needs assessment and the use of the UNFCCC guidelines on research and systematic observation;
2. Carry out technology needs assessment for Viet Nam;
3. Prepare an analysis of the climatic conditions of various stations in Viet Nam;
4. Liaise closely and consult with the TWGs on GHG inventory, Vulnerability and Adaptation, and Mitigation on issues of relevance, especially on climate data, technologies and capacity-building;
5. Provide substantive input to the work of TWGs on Vulnerability and Adaptation and Mitigation;
6. Formulate an action plan for technology needs for mitigation and adaptation including assessment of technology options in various sectors, institutional capacity-building needs, related legal and institutional frameworks;
7. Organize (in cooperation with the NST) a workshop to present the results of the technology needs assessment and research and systematic observation
8. Prepare final report on technology transfer issues and research and systematic observation, including comments from the stakeholders

### **Qualifications and Skills**

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

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

### **Expected output:**

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

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

### Scope of work

The group will examine ways to promote climate change education, training and public awareness building on the work already done on this issue during INC activities. The group will ensure timely and effective implementation of specific activities outlined below, as well as coordination with the outputs of other consultants engaged outside the institution.

### Duties and responsibilities

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

## THEMATIC WORKING ON NATIONAL CIRCUMSTANCES AND INTEGRATION INTO NATIONAL COMMUNICATION

### Scope of work

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

### Duties and responsibilities

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