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STOCKTAKING ASSESSMENT REPORT ON THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE AND KYOTO PROTOCOL

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VIETNAM NCSA

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LIST OF ACRONYMS

ADB	Asian Development Bank
ALGAS	Asian Least-cost Greenhouse Gas Abatement Strategy
CDM	Clean Development Mechanism
COP	Conference of the Parties
GEF	Global Environmental Facility
GHG	Green House Gas
IPCC	Intergovernmental Panel on Climate change
MARD	Ministry of Agriculture and Rural Development
MONRE	Ministry of Nature Resources and Environment
NCSA	National Capacity Self-Assessment
NGOs	Non-government Organizations
UNCBD	United Nations Convention on Biodiversity
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNITAR	United Nations Institute of Training and Research
WB	World Bank

TABLES

INTRODUCTION

The project entitled "Self-assessment of National Capacity to Manage the Global Environment (NCSA)" developed by the Global Environment Facility (GEF) in collaboration with the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP) aims at assisting countries to develop their capacity to manage the global environment. NCSA project deals with the three international environmental conventions developed and negotiated in Rio de Janeiro, Brazil in 1992 namely the United Nations Convention on Biological Diversity (UNCBD); the United Nations Framework Convention on Climate Change (UNCCC); and the United Nations Convention to Combat Desertification (UNCCD). Vietnam ratified the UNCBD and UNCCD on November 16, 1994 and the UNCCC on August 25, 1998.

Like many other countries, capacity to fulfill the commitments under these conventions of Vietnam is still limited in certain extent. Hence, strengthening national capacity to manage the global environment is of great significance to the successful implementation of these conventions in Vietnam.

To be financed by the GEF, UNDP-Vietnam has been, in collaboration with the Ministry of Natural Resources and Environment (MONRE), implementing an eighteen-month-NCSA-project since October 2004.

The overall objective of NCSA project is to identify national priorities and needs for capacity building to address global environmental issues in three particular thematic areas: biodiversity, climate change, and land degradation, with the aim of catalyzing domestic and externally assisted action to meet those needs in a well coordinated and planning manner.

The NCSA project will provide Vietnam with opportunities to (i) identify and determine the nature of critical capacity constraints and priority capacity needs faced by Vietnam as they relate to the global environment; and (ii) prepare a national strategy and action plan for addressing those constraints focusing on

issues cutting across conventions and will build on existing institutional mechanisms.

The stock-taking report on the UNFCCC is one of the initial reports that are of great importance to the NCSA process. The scope of this stock-taking report covers the assessment and summary of the achievements, tools and measures to mitigate green house gas (GHG) emission for supporting the UNFCCC implementation which is considered to be a base for a successive NCSA thematic assessments.

The stock-taking report on UNFCCC is presented in six parts:

Part I : Overview of green house gas emission in Vietnam during the past ten years;

Part II : Obligations of Vietnam under UNFCCC;

Part III: Key institutions and legislation related to the UNFCCC;

Part IV: Tools and enabling activities supporting to UNFCCC implementation;

Part V : Policies and measures on GHG emission reduction in Vietnam; and

Part VI: Lessons learnt from national capacity self-assessment in Vietnam.

This report is a scientific study produced by team efforts of both national and international consultants and Vietnam NCSA project team. However, the collection and compilation of information may be insufficient. Hence, we hope to receive comments from all readers so that the report becomes more complete and the capacity to nationally legalize the international conventions in Vietnam is to be strengthened.

NCSA PROJECT MANAGEMENT UNIT

Part I: OVERVIEW ON GREEN HOUSE GAS EMISSION IN VIETNAM FOR THE PAST TEN YEARS

"Climate change" means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

"Green house gases" means those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation.

Climate change has many negative impacts on agriculture, water resources, forestry, fishery, ecological system, fauna and flora, coastal area, energy sectors, transportation and human health.

1.1. Activities related to Green House Gas emission

1.1.1. GHG emission in energy sector

- Burning fossil fuel (coal, oil, gas, etc…)
- CH_4 emission in coal and oil exploitation and transportation
- Burning biomass materials (woods, and other agricultural by-products, etc…)

1.1.2. GHG emission from industrial activities

- Production of construction materials (cement, lime, etc …)
- Production of steel
- Production of papers and pulp
- Production of foods, beverage (wine, beer, etc …)

1.1.3. GHG emission in Forestry and land use changes

- Forest plantation
- Forest exploitation
- Natural forest rehabilitation

1.1.4. GHG emission from agricultural activities

- Planting water paddy fields.
- Burning forests for farming (savanna)
- Burning agricultural by- products on fields.
- Rearing cattle.

- Farming land and fertilizers, cattle discharge, agricultural discharge, etc. in land.

1.1.5. GHG emission from waste

- Solid waste
- Household, commercial, industrial, sewage and discharge from anthrochorous sources.

1.2. GHG emission in main areas

In addition to the national inventory of GHG in 1990 and according to the project "Training on Climate Change in 1994", GHG inventory were carried out three times from 1993 to 2002:

- The national inventory of GHG in 1993 of the project "Asian Least-cost Greenhouse Gas Abatement Strategy (ALGAS)".
- The national GHG inventory in 1994 of the project (The first national report of Vietnam on United Nations Framework Convention on Climate Change)
- The national GHG inventory in 1998 by Office of Climate Change
- The above inventory have been gathered from five key areas (Table 1)

Table 1: GHG emission statistics in key areas in 1993, 1994 and 1998

Areas	**1993**		**1994**		**1998**	
	Amount (thousand tons)	**Rate (%)**	**Amount (thousand tons)**	**Rate (%)**	**Amount (thousand tons)**	**Rate (%)**
Energy	38,752.35	31.52	25,637.09	24.7	43.2	36
Industrial processes	3,86.83	2.51	3,807.19	3.7	5.6	5
Agriculture	48,192.13	39.19	52,450.00	50.5	57.3	47
Forestry and land use	31,246.00	25.42	19,380.00	18.7	12.1	10
Waste	1,674.12	1.36	2,565.02	2.4	2.6	2
Total amount	**122,951.43**	**100**	**103,839.30**	**100**	**120.8**	**100**

The GHG emission in 2002 in each area was estimated and assumed as follow:

Energy	: 67000 thousand tons CO_2 equivalent		(46.2%)
Industrial processes	: 15000	,,	(10.3%)
Agriculture	: 50000	,,	(34.48%)
Forestry and land use changes	: 10000	,,	(6.90%)
Waste	: 3000	,,	(2.07%)
Total amount	: 145000	,,	(100%)

1.3. Remarks

(1) The amount of GHG emission in Vietnam was at approximately 100-125 million tons CO_2 equivalent in 1993, 1994 and increased to 140-150 million tons CO_2 equivalent in 2002 and possibly higher for 1-2 years recently.

(2) For ten years from 1993-2002, GHG was emitted at the highest rate in agriculture, energy, forestry and land use. The above mentioned changes in GHG emission amount for the ten-year-time proves that GHG emission amount increased quickly in energy, slightly in agriculture and dropped in forestry and land use.

(3) In 1993, from 1994 to 1998 and possibly in 1999 as well, GHG emission was higher in agriculture than in other areas. However, in 2000, it fell in energy. This is an inevitable consequence of the socio-economic development tendency of a country as reported in the initial national communication and other relevant documents related to climate change.

Part II: OBLIGATIONS OF VIETNAM UNDER UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

2.1. Introduction

2.1.1. The United Nations Framework Convention on Climate Change

Climate change has caused many negative impacts on many countries and on human life all over the world. Upon the great threats and challenges, the United Nations and The World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) gathered scientists and consultants all over the world to discuss and achieved a consensus on the necessity to have a convention on climate. This should then be a legal framework for mobilizing resources of the global community to response to the negative changes of the climate. In 1990, the United Nations General Assembly, (UNGA), conducted a negotiation on UNFCCC. In May 1992, UNFCCC was approved and it became effective in April 1994. Up to May 2004, 166 countries were contracting parties to it. Vietnam signed the UNFCCC in June 11, 1992, ratified it in November 16, 1994 and it came to effect in February 14, 1995.

Objective

The objective of the Convention is "the stabilization of green house gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system". The Convention covers all green house gases not covered by the Montreal Protocol with the focus being on the following:

- Carbon dioxide
- Methane
- Nitrous Oxide
- Hydrofluorocarbons
- Perfluorocarbons
- Sulphur hexafluoride

Commitments under the Convention

The Convention divides countries into three main groups, with commitments varying according to their classification. Annex I Parties include the industrialized countries that were members of the Organization for Economic Co-operation and Development (OECD) in 1992 along with countries with economies transition (EIT). Annex II Parties consist of OECD members of Annex I excluding the EIT Parties. These Parties are required to provide funding to developing country Parties to undertake emissions reduction activities and to help them to adapt to the adverse effects of climate change. The third group is

the Non-Annex I Parties and includes the developing country Parties. The commitments for developing country Parties, including Small Island Developing States (SIDS) are set out in Box 1 and include:

- Develop, periodically update, publish and make available to the Conference of the Parties, in accordance with Article 12, national inventories of anthropogenic emissions by sources and removals by sinks of all green house gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of the Parties;
- Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all green house gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change;
- Take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions.
- Cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods.

2.1.2. Regional Activities under the Convention

In October-November 2001 the Conference of the Parties to the UNFCCC reached agreements on a number of issues (referred to as the ***Marrakesh Accords***) including capacity building. Here parties agreed on two new frameworks for capacity building, one for developing countries and one for countries with economies in transition (EIT).

A number of capacity building initiatives have been carried out at the regional level and include:

- Caribbean Planning for Adaptation to Climate Change (CPACC) (1997-2001);
- Adapting to Climate change in the Caribbean (ACCC), 2001-2004);
- Mainstreaming Adaptation to Climate Change (MACC);
- The Climate Studies Group, University of the West India, Mona (CSGM) AIACC SIS06 Project;
- Caribbean Renewable Energy Development Project (CREDP); and
- Preparedness to Climate Variability and Global Change in Small Island Developing States, Caribbean Region (SIDS-Caribbean Project).

2.1.3. Kyoto Protocol

The Conference of the Parties (COP) to the UNFCCC realized that there should be stronger and more particular commitments of the developing countries in responses to the serious impacts of climate change. At its first COP held in May 1995 in Berlin, Germany, this problem was taken to start negotiations. After that, the Kyoto Protocol (KP) was adopted at the third COP held in December 1997 in Kyoto, Japan. Up to August 2005, 84 countries are members to it. Vietnam signed KP in 3 December 1998, ratified it in 25 September 2002 and this came into force in 16 February 2005.

The Parties shall reduce their overall green house gas emissions of such gases by average 5.2 per cent below 1990 levels in the first commitment period 2008 to 2012.

KP presents three "flexible mechanisms" to assist developing countries to fulfill their commitment of emissions as follow:

- Joint implementation (JI);
- International Emission Trading (IET);
- Clean Development Mechanism (CDM).

2.1.4. The Clean Development Mechanism

The purpose of the clean development mechanism shall be to assist:

- The developing countries in achieving sustainable development and in contributing to the ultimate objective of the UNFCCC;
- The developed countries in achieving compliance with their quantified emission limitation and reduction commitments under KP.

2.2. The context of Vietnam when acceding the Convention

Vietnam allocates in the region affected by typhoons and tropical low pressure of the North West Pacific region. On average, there are about 4-5 typhoons and tropical low pressure affected Vietnam annually. The average temperature increases 0.1^{o}C over every decade and about 0.1-0.3^{o}C in summer time.

The investigations show that GHG emission in 1993 was 122.951 million tons CO_2 equivalent, of which 64.062 million tons CO_2; 2.588 million tons CH_4; 14.63 thousand tons N_2O; 182.09 thousand tons NO and 3.127 million tons CO.

The high emission rates fall on such sectors as: agriculture (39.20%), energy (31.52%), forestry and land use changes (25.41%).

Due to the above status and being aware of an importance of the Convention, Vietnam entered UNFCCC in June 11, 1992 and approved it in November 16, 1994 and signed Kyoto Protocol in December 03, 1998 and approved in September 25, 2002.

2.3. Vietnam's obligations under United Nations Framework Convention on Climate Change

Vietnam commits to fulfill the following obligations under UNFCCC

(1) Monitoring climate and developing a systematic observation networks; Promoting an exchange of information on climate and climate change; Informing other parties of the Convention about data and information relating to climate change.

(2) Carrying out a national inventory of GHG in every fields of national economy.

(3) Carrying out scientific research and developing inter-governmental or international programs on systematic monitoring, capacities of scientific research related to climate change and training scientific staffs of climate change.

(4) Considering of integrating climate change into environmental and socio-economic policies and actions, etc.

(5) Implementing national programs on mitigating climate change by:

- Taking remedial measures to GHG emission, adapting and propagating the processes that examine, prevent or reduce and limit emission and preserve sinks and reservoirs of GHG;
- Developing, strengthening plans to manage the riverside and coastal areas.

(6) Putting on mass media issues of climate changes; developing, implementing the national programs or undertaking international cooperation on educating and improving public awareness of climate change and the effects thereof.

(7) Proposing, implementing or internationally cooperating on implementation of projects that are financed with incremental cost and other necessary equipments.

Especially since February 16th, 2005, Vietnam has obligations to implement The Clean Development Mechanism. Under this mechanism, Vietnam is able to:

- Implement projects that reduce emissions in non-Annex I Parties, in return for certified emission reductions (CERs).
- Sell such GHG emission reductions to other party or parties at the prices of each ton of CO_2.
- The revenue from such project activities is used for payment of administration as well as expenses for remedy of climate change, etc.

2.4. National Communication on UNFCCC implementation

2.4.1. National Communication

Besides the regular and unregular reports given to Inter-governmental Panel on Climate change (IPCC) and Working Groups of this Panel, and at the Conferences of Parties, Vietnam handed in "The Initial National Communication on United Nation Framework on Climate Change of Vietnam" to UNFCCC Secretariat at the ninth Conferences of Parties (COP 9) in 2004.

The Communication presented seven main themes:

(1) National Inventory of GHG emission in 1994

With the total GHG emission of 103,839.30 thousand tons of CO_2 equivalent, the GHG emission in the main areas as follows:

Energy	: 25,637.09 million tons of CO_2 equivalent	
Industrial processes	: 3,087.19	,,
Agriculture	: 52,450.00	,,
Forestry and Land use changes	: 19,380.00	,,
Waste	: 2,565.02	,,

(2) Estimated GHG emission to 2020

Energy	: 196,98 million tons of CO_2 equivalent	
Forestry and Land use changes	: 28,40	,,
Agriculture	: 64,70	,,
Total	: 233,28	,,

(3) The options of GHG reduction in the main areas

- Energy: Improving obsolete coal-fired and oil-driven boilers into a new high-efficiency ones; Increasing productivity of transportation means by improving petrol-driven engines; developing geothermal power; developing solar energy; building wind electricity stations; innovating coal stoves; replacing electric threaded bulbs with compact lights and improving productivity of electrical motors in industrial production;

- Forestry and land use change: Actively protecting about 3 million hectare prohibited forests, rehabilitating special-use protection forests on a recovery planning basic associated with reforestation of one million hectares; undertaking forestation of one million hectare in combination with permanent settlement and cultivation; planting 1.6 million hectare short-term protection forest and 1.3 million hectare long-term protection forest and 4 million plants shatteringly (equivalent to 1.6 million hectares);

- Agriculture: Managing irrigation for rice breeding; Providing processing foodstuff for cattle; building biogas-driven cookers instead of burning fuels in rural areas.

(4) Remedial measures to climate change

- Water resource : Building reservoirs for reserving flood water with total capacity of 15- 23 billion cubic meters especially in the South East region, the Highland and the Eastern mountainous areas in a priority given manner; Upgrading and enlarging water drain works; Upgrading coastal and estuary dyke systems; Restraining population growth rates and planning residential areas; Extracting unused land for agricultural production; Using water rationally and scientifically; Exploitation being matched with conservation and protection of water resource; Investing in researches on long-term forecasting and anticipating water resources and about rain.
- Agriculture: Developing cultivated crop structure appropriately with climate change; Effectively using water on a planning basic and improving irrigation systems; Developing varieties of drought resistant plants; conserving local varieties; Setting up a variety bank; building farming techniques appropriate with climate change conditions.
- Forestry: Enhancing forestation to regret bare land and degraded hills, developing mangrove forests; Protecting natural forests; Enhancing forest fire prevention; Protecting some varieties of valuable and rare forest tree; Enhancing wood use efficiency; Selecting and multiplication some cultivars which are appropriate with climate change conditions.
- Coastal zone: Considering and appropriately choosing one among three options: full protection, adaptation and withdrawal.
- Energy and transportation: Developing energy and transportation development plan with regard to climate change; Upgrading and improving traffic infrastructure where is threatened by upwelling sea water, flood; Managing energy demand basing on the high energy productivity; Using energy in a rational and economical manner; Developing remedial and adaptation strategies to climate change.
- Medicine and Health: Implementing the Hunger Eradication and Poverty Reduction Program; Improving people’s awareness of environmental sanitation and culture; Keeping control over and observations of, medical status in the areas that are vulnerable to infectious diseases; Establishing green-clean-beautiful areas; Enhancing public awareness of climate change, etc.

(5) Climate change monitoring and observations

- Planning networks of hydro meteorological stations
- Monitoring meteorology for climate change observations and researches.
- Recording, collecting and processing data for study of climate change tendencies.
- Timely anticipating, warning natural calamities for responses to adverse effects of climate change

(6) Educating, vocationally training and enhancing public awareness

- Giving professional refresher and vocational training courses on climate change;
- Developing basic and qualified foundation for in-depth studies on climate change;
- Developing project proposals and implementing projects on climate changes; Broadcasting on television and radio about the climate change on central and local channels

(7) Key visions for GHG emission mitigation in typical areas

- Energy: Improving effectiveness of energy use and conservation for lighting; Economically using energy in establishments and enterprises; Implementing the programs on Demand of Energy Management; Effectively using energy in buildings; Developing recycled energy sources; Economically using energy in transportation.
- Agriculture: Developing new farming techniques and methods that increase economic effectiveness and reduce GHG emission; improving irrigation for paddy fields for rice; Changing land use for paddy into for farm produce and other plant cultivation.
- Forestry: Giving focus on implementing the Project of Five Million hectare forestation (Project 661) that was approved by National Assembly in 1997 increasing the forest coverage up to 43%; preventing forest resource degradation; stabilizing the structure of protection, special-use and production forests; implementing social policies on forests such as land and forest allocation, settled cultivation, settlement, hunger eradication and poverty reduction, facilitating the Program of Five Million hectares of Forestation, involving households into forest protection and plantation, etc.; renovating production relations in forestry.

2.4.2. Activities

MONRE is assigned to be a focal point for UNFCCC, KP and CDM implementation in Vietnam. So far, in collaboration with ministries, sectors, agencies, localities and the support of international organizations, MONRE has deployed some main activities as follows:

- To establish Vietnam Climate Change Country Team;
- To carry out the inventories for 1990, 1993, 1994 and 1998;
- To develop and assess the GHG mitigation options and propose measures to adapt with climate change in Vietnam;
- To develop and implement projects of climate change;
- To establish a focal agency of CDM;
- To establish the Consultancy Group of CDM ;
- To implement a project entitled “Strengthening capacity to implement CDM in Vietnam”.

Part III: KEY INSTITUTIONS AND LEGISLATION RELATED TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

3.1. Key institutions and organizations relating to UNFCCC implementation

3.1.1. Institutions at Provincial and Ministerial levels

(1) Ministry of Natural resources and Environment

Being assigned to be focal point for UNFCCC, KP and CDM implementation (with an office based in the of International Cooperation Department). Being responsible to the Government for issues relating to obligations and rights of a Convention party.

- Establishing and managing a National Steering Committee of UNFCCC implementation.
- Establishing and managing an Office of International Conventions. UNFCCC is one of these Conventions.
- Coordinating activities relating to climate change.
- Presiding over reviewing, approving and submitting the projects on climate change approved by the Government to Global Environment Facilities (GEF) and international funds for finance.
- Doing scientific researches on climate change and their effects in Vietnam and the region.
- Preparing regular and irregular reports on Convention implementation activities to the Government and the UNFCCC Secretariat

Under the management of MONRE, the National Steering Committee prepared national programmes (plans) to implement the UNFCCC and KP. These programmes were brought to consult relevant ministries and sectors. The final document was submitted to the Government for approval and decided for implementation. Ministries, sectors and localities with specific responsibilities will then implement the national programme to implement the UNFCCC and KP accordingly.

(2) Ministry of Foreign affairs: Being in charge of diplomatic issues at national level which are related to UNFCCC and Kyoto Protocol.

(3) Ministry of Planning and Investment: Appraising and submitting to the Government for approval and managing projects relating to climate changes.

(4) Ministry of Science and Technology

- Taking part in reviewing, appraising projects on climate change and submitting them for Government's approval.
- Developing and managing national level programs and scientific themes on climate change.

(5) Ministry of Finance: Providing guidance, assisting Convention executing agencies to receive and manage finance from national and international support through climate change projects.

(6) The State Bank: Providing guidance's on receiving finance from international Banks to the Convention Executing agencies.

(7) General Department of Statistics: Providing with favor information of social and economic activities relating to the obligations to conduct regular and unregular national inventories of GHG emission.

(8) Ministries, sectors and localities *(*Hanoi, Quang Ninh, Thanh Hoa, Thua Thien - Hue, Ba Ria - Vung Tau and Ho Chi Minh city).

(9) GEF Vietnam

(10) GEF Small- grant programmes of Vietnam

3.1.2. Institutes under Ministries and sectors

(1) Institute of Hydrometeorology - MONRE

(2) Institute of Energy - Ministry of Industry (MOI)

(3) Institute of Agriculture Planning - MARD

(4) Institute of Agricultural economy - MARD

(5) Institute of Forestry Science - MARD

(6) Forest Inventory and Planning Institute - MARD

(7) Institute of Water Resource Planning - MARD

(8) Institute of Development Strategy - Ministry of Planning and Investment (MPI).

(9) Center of Hydrometeorological and Environmental Science and Technology - Vietnam Union of Science and Technique Associations.

(10) Ecological and Environmental Institute (EEI)- Vietnam Union of Science and Technique Associations.

(11) Research Center for Energy and Environment (RCEE) - Vietnam Union of Science and Technique Associations

(12) Institute of Industrial Technology and Chemical Safety - Chemical Association

(13) Research Center for Climate Change and Sustainable Development (RCCCSD).

3.2. Legislative framework on UNFCCC

(1) UNFCCC Document (Rio De Janeiro, Brazil, June 1992), signed by Mr. Nguyen Khanh - Deputy Prime Minister of Socialist Republic of Vietnam.

(2) UNFCCC approval Document of Prime Minister of Socialist Republic of Vietnam in November 16, 1994.

(3) Document of Vietnam Government on signing Kyoto Protocol in December 3, 1998 and approving it in September 25, 2002.

Part IV: TOOLS AND ENABLING ACTIVITIES SUPPORTING UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE IMPLEMENTATION

4.1. Categories and brief contents of projects, programmes and activities relating to UNFCCC implementation

Projects:

(1) The project "Study of global environmental issues in South East Asia (1994) financed by Asian Development Bank (ADB) with the following main contents: (i) Effects of climate change on Vietnamese economy and society; (ii) Remedial measures to climate change in Vietnam; and (iii) The mitigation and adaptation policies of Vietnam.

(2) The project "Analysis of Climate change adverse effects on Vietnam through natural and social conditions" (1996) financed by The United Kingdom with the main content: Economic and social loss caused by adverse effects of climate change in coastal and Red River Basin, Vietnam.

(3) The project "Training on Climate change" (1994) financed by UNDP/UNITAR/GEF with the main contents: (i) Training on knowledge and skills of global climate change; and (ii) Building National Program on UNFCCC implementation of Vietnam.

(4) The project "Assessment of loss caused by climate change in coastal area" (1996) financed by Netherlands Government with the main contents: Effects of climate change and remedial options thereto in coastal zones.

(5) The project "Asian Least-cost Greenhouse Gas Abatement Strategy (ALGAS), (1995-1996) financed by ADB with main contents: (i) The national GHG inventory in 1993 and the estimation of GHG emission to 2020; (ii) GHG emission mitigation options; (iii) Climate change strategies to 2020, 2050; (iv) Action plan for GHG emission mitigation; and (v) The list of projects on climate change.

(6) The project "Economic issues and aspects of GHG emission mitigation" (1996) financed by UNEP/GEF with main contents: (i) Basic and practical sceranios for GHG emission; and (ii) Prices of GHG emission reduction options.

(7) The project "Vietnam – The first National Report on UNFCCC implementation" (1999 – 2000) financed by UNEP/GEF with main contents: (i) National GHG inventory in 1994; (ii) GHG mitigation options to 2020; (iii) Effects of climate change and the response measures thereto; (iv) Monitoring network for observation weather and climate changes; (v) Educating, training and improving people's awareness; (vi) Key orientation of GHG mitigation;

(8) The project on National Strategic Study on Clean Development Mechanism – CDM (2000 – 2002) financed by WB, Au AID with main contents: (i) Overview study on CDM; (ii) GHG mitigation potentials; (iii) Marketing opportunities of GHG emission reduction; (iv) Essential conditions and options to CDM; and (v) The projects on GHG emission reduction and methods of assessment.

The above eight projects have been closed.

(9) The project "Capacity Development for CDM implementation in Vietnam" (CD4CDM) (2005) with main contents: (i) Improving people's awareness and education capacities on CDM; (ii) Strengthening capacities of plan makers to implement CDM; and (iii) Strengthening capacities of competence authorities on CDM and relevant agencies of CDM; This project has been implementing.

(10) The projects on Clean Development Mechanism: Up to March 2005, 25 proposals and projects on CDM were developed and considered, among which:

- Five projects on enhancing conservation effectiveness and saving energy reduced 131 thousand tons CO_2;
- One project on switching fossil fuels reduced 58 thousand tons CO_2;
- Three projects on collecting and using gas from rubbish dumps and coal exploitation reduced 322 thousand tons CO_2;
- Fourteen projects on recycle energy reduced 734 thousand tons CO_2;
- One project on forestation and reforestation reduced 27 thousand tons CO_2;
- One project on collecting and using drilling associated gas reduced 680 thousand tons CO_2;

All of the above 25 projects are able to reduce 1.952 million tons CO_2.

Among these, seven projects have been considered and reviewed (Table 2).

Table 2: CDM projects have been reviewed

Items	**Projects**	**Places**	**Reduction potentials (thousand tons CO_2)**	**Status**
1	Increasing energy efficiency of Brewery factory	Thanh Hoa province	12	Endorsement letter
2	Collecting and using CH_4 at Thong Ly rubbish dump	Hay Phuong city	9	Endorsement letter
3	Rubbish dump CH_4	Ho Chi	313	Endorsement

	generated Power Plant	Minh city		letter
4	Fuel switching from oil to gas - driven in Thu Duck hydro-power plant	Ho Chi Mink city	58	On review
5	Forest Plantation in A Louis district project	Thus Then Hue province	27	On review
6	Thanh Hoa Rice husk generated Power Plant	Tine Gang province	55	On review
7	Phi Quay Combined Wind and diesel Oil Power Plant	Binh Than province	13	On review

Programmes and study themes:

(1) Vietnam National programme on UNFCCC implementation (2001): The programme has three main activities: (i) Strategy for GHG reduction in 3 sectors: energy, forestry and land use, agriculture; (ii) Activities to response to impacts of climate change; and (iii) Policies and legal documents. This programme has been being finalized for submission to the Government.

(2) Research programme on climate change of General Department of Hydrometeorology (implemented during 1995 – 1999).

(3) Economic development forecast to 2030 assisting environmental research (1998)

(4) Overall planning of gas in Vietnam (1996)

(5) Overall project on energy - saving and effective use in Vietnam (1997)

(6) Vietnam overall diagram of electricity development in the period from 1996 - 2000 and vision towards 2010 (1996)

(7) Energy development vision and environmental issues in periods of 1995-2010-2020 (1997)

(8) “Building the basic energy database system of Vietnam" (1995)

(9) Applicable study results of MEDEE-ENV and EFOM-ENV models into analyzing and forecasting performance and optimal development planning of energy system of Vietnam

(10) Policies and organization mechanism and technical potentials for development of new energy, improvement of energy efficiency and prevention of GHG emission (2002)

(11) Progress in science and technology development and a situation of renewable energy development in the world and in Vietnam (2004)

(12) The master development plan of energy sector and renewable energy of Vietnam today and in 2010 and 2020 (2004)

(13) Overall research on a relation between sustainable development and energy development in Vietnam (2004)

(14) The activities of industrial sectors relating to climate change (1995)

(15) Current situation and development directions of transportation sector relating to GHG emission (1999)

(16) Current situation assessment of natural resources and forestry environment of Vietnam (1994)

(17) Vietnam forestry sector - Current situation and development directions in the period 1996-2010 (1997)

(18) Analysis of GHG emission reduction strategy for Forestry (1996)

(19) Study results of current situation of agricultural production and production orientation toward 2000 – 2020 (1996)

(20) Agriculture development orientations to 2000 and 2010 (1997)

(21) Effects of climate change on rising sea water level (1991)

(22) Effects of climate change on mangrove forests and coastal seafood (1995)

(23) Studying and assessing effects of climate change on potential water evaporation in water resource in Vietnam (2002)

4.2. The list and main contents of important strategies and plans related to climate change

(1) National Orientation Strategy for Sustainable Development in Vietnam (Vietnam Agenda 21) issued together with Decision No.153/2004/QD-TTg dated August 17, 2004 by the Prime Minister.

Vietnam Agenda 21 is a framework strategy that acts as a legal framework for ministries, sectors, localities, organizations and relevant individuals to follow and express Vietnam's commitments to the international community.

According to the framework strategy, objectives of sustainable development are rational exploitation, saving use of natural resources; prevention, treatment and effective control over environmental pollution, etc. One of the priority given areas of the strategy is to take mitigation measures to climate change, to reduce advert effects of climate change, to prevent natural calamities, to change and renew production models and technologies in the light of being cleaner and more friendly to the environment; to apply technologies of saving natural resources and having low emission and pollution levels; to encourage the use of renewable energy, etc.

The strategy has also clearly stated that it is necessary to propagandize, educate, disseminate and improve people's awareness for effective implementation of National plan to implement UNFCCC. Regarding to international relations for sustainable development, the objectives which are clearly stated in the

Convention are to fully fulfill every Convention which Vietnam has been a signatory party thereof.

(2) National Strategy for environmental protection until 2010 and vision toward 2020 (issued under Decision No. 256/2003/QD-TTg dated December 02, 2003 by the Prime Minister)

One of the strategic objectives is to improve capacities in the prevention and control of adverse impacts of natural disasters, particularly those of climate change, etc. Regarding to specific objectives of the strategy to 2010, 100% of newly constructed production units must adopt clean technologies or be equipped with pollution mitigation and waste treatment facilities meeting environmental standards; 90% of the streets are tree planted; the rate of park land is doubled as compared to 2000; total forest cover is increased to 43% of total natural forest land area; 50% of degraded watershed forests is restored and the quality of forests is improved; and people are encouraged to plant trees scattered; Total mangrove forest area is rehabilitated and increased to 80% of that as of 1990.

The text provided solutions for the strategy implementation. One of them is enhancing cooperation with international organizations including UNDP, UNEP, WB, GEF, Governmental and non-Governmental organizations, etc.

Among 36 priority programmes on environmental protection until 2010 and vision to 2020, there are four programmes relating to UNFCCC implementation:

- MT.PK5: Cleaner production and environmentally friendly technology adoption in Vietnam.
- MT.PK7: Development and implementation of environmentally friendly technology innovation road-map.
- MT.BK6: Restoration of seriously degraded watershed forest.
- MT.TN1: Implementation of five million hectare reforestation programme.

(3) GEF Strategy for a period 2001-2010 and GEF program for a period 2001-2005 (2000)

One of the objectives of GEF Strategy and Programme is to mitigate the effects of climate change to the nation. Therefore, a strategy of GEF finance seeking for Vietnam has been undertaken at full swing. As a result, at least four projects, one among which is of more than five million USD, are submitted to GEF for their review.

(4) Least – cost GHG emission reduction strategy for forestry sector. Main contents: Total GHG emission amount caused by forests and land use change; Solutions to GHG emission amount caused by forests; and the basic sceranios for GHG emission reduction to 2020.

(5) Strategies on transportation development and anticipation of energy demand by MEDEE – S/ENV model (for strategic research on responses to climate change) (1997).

4.3. The achievements

(1) Well organizing a meteorological monitoring network, maintaining meteorological database, ensuring information exchanges of meteorology with a global monitoring network, reporting on climate change to the World Meteorology Organization (WMO).

(2) Having undertaken national GHG inventory nationwide:

- National GHG inventory in 1990;
- National GHG inventory in 1993 (ALGAS project)
- National GHG inventory in 1994 (National inform project)
- National GHG inventory in 1998 (Programme on Climate change)

(3) Implementing the National Programme on climate change mitigation by undertaking remedial measures and responses to GHG emission through programmes and projects such as:

- Programme 327 “Regrinding bare land and degraded hills”;
- Programme PAM financed by UNDP;
- Programme on rehabilitation of mangrove forest areas of Mekong river basin;
- The master programme on economical and efficiency energy use in Vietnam;
- GEF and GEF/SGP Vietnam programmes on biogas and energy use in economical manner;
- The project on national strategy for study on CDM of Vietnam.

(4) Building plans for management of coastal areas through the following projects:

- Assessment of loss caused by climate change in coastal areas;
- Studying global environmental issues in the region;
- Analyzing effects of climate changes in Vietnam on natural and social conditions;

(5) Considering to issues of climate changes in the State strategies and programs

- Vietnam Agenda 21;

- National Strategy for Environmental Protection to 2010 and Vision toward 2020

- Visions of energy development and environmental issues

(6) Having completed the first National Report on UNFCCC implementation of Vietnam and given to COP9. This report presents National GHG inventory, GHG mitigation options, solutions to GHG mitigation and reduction of climate change effects, managing the monitoring networks for observations of weather and climate change, educating, training staffs and improving people's awareness.

(7) The results of scientific studies and international cooperation are:

- To organize thematic researches on climate change, undertaking university and master graduation themes relating to climate change.

- To successfully carry out experimental studies on CH4 emission mitigation on water paddy fields;

- To co-implement ALGAS project of 12 Asian countries (North Korea, South Korea, Mongolia, China, Vietnam, Thailand, India, Pakistan, Bangladesh, Myanmar, Indonesia, Philippines)

- To co-implement projects on economic issues of addressing GHG emission of 8 countries that are representatives of 4 continents (Vietnam, Indonesia, Estonia, Hungary, Mauritius, Senegal, Argentina, Ecuador);

- To frequently send Vietnam delegation to COP, IPCC in order to address relevant issues such as: negotiating Kyoto Protocol documents and its key mechanisms, developing the third report on climate change (TAR, 2001)

(8) About mass media:

- Translating, printing and disseminating UNFCCC and Kyoto Protocol documents;

- Printing and disseminating collection of research work on climate change;

- Translating, printing manuals on GHG inventory, assessment of climate change effects and developing strategies for GHG emission reduction, etc, of IPCC, UNEP, etc.

- Editing, printing and disseminating handouts of issues relating to climate change;

- Developing seminar programs, classes for special subjects of climate change for students of: Hue University; Vietnam Forestry University in Hatay province; Hochiminh Technical University; Hochiminh Agricultural and Forestry University. Each course comprises of 15 classes and after finishing the course, students are granted with certificates.

- Developing, broadcasting document films and giving presentations on popular scientific issues relating to climate change on televisions and radios on central and local channels;

(9) Vietnam has been implementing 4 programs on climate change specified in ***the National Strategy for environmental protection until 2010 and vision toward 2020 (2003):*** MTPK5, MTPK7, MTBK6, MTTN1.

In forthcoming years, Vietnam has planned to propose and implement about ten GEF projects on climate change and tries to have about 20% of the GEF/SGP projects of climate change;

(10) Vietnam has developed options for improving energy efficiency and economical use of the critical industrial sectors:

- Improving energy efficiency of Vietnam Steel Corporation;

- Improving energy efficiency of Vietnam Cement Corporation;

- Collecting CH4 gas from coal mines of Vietnam Coal Corporation

(11) Vietnam has developed 25 CDM projects of which, 7 projects have received endorsement letters or have been reviewed for endorsement letters.

4.4. Assessment of the achievements

4.4.1. Achievements and strong points

(1) Since the Convention was signed (11 June 1992) and approved (19 November 1994) and especially since the Convention took effect in Vietnam (14 February 1995), Vietnam has made great effort to fulfill all obligations of a party of the Convention through the following activities:

- Considering to climate change in the State strategies, programs and plans;

- Undertaking national GHG inventory and developing solutions to GHG mitigation;

- Studying effects of climate change and proposing plans for responses;

- Monitoring, doing researches on climate change, communicating on mass media of climate change and developing proposals and implementing projects on climate change.

(2) Vietnam strategy for climate change thematic area is appropriate with strategy for sustainable development and the national strategy for environmental protection of Vietnam. Each activity of climate change thematic area is also an integral part of national programs or plans on energy, industry, transportation, agriculture, forestry, and environment. As a result, capacities to implement UNFCCC of Vietnam are sustainable ensured.

(3) Activities to implement UNFCCC in Vietnam have drawn attentions of managers, cooperation of scientist, and support of communities. In fact, those activities improved capacities to direct and manage skills to study science, capacities to participate in the international activities of environment in general and of climate change in particular.

(4) Achievement of UNFCCC implementation actively contributed to improving people's awareness of environmental issues of the globe as well as of Vietnam. Especially, every GEF project on climate change results in particular environmental, socio-economic benefits to beneficiary communities in the project sites. In return, the support of communities to the projects is also an important factor to push up activities of the projects and ensure the success of the projects on climate change.

(5) Vietnam has built an organizational structure including the state management agencies of ministry level, the state institutions, universities, and NGOs that is sufficient to implement UNFCCC. In particular, Vietnam has set up a National Working Group, Consultancy Boards in implementing critical project especially CDM projects.

(6) Vietnam has also developed staffs implementing UNFCCC of various majors (energy, transportation, industry, forestry, agriculture, hydrometeorology, etc.), generations of scientific and management officials ranging from being well experienced to mature.

The UNFCCC implementation process so far proves that the capacities to manage, monitor and implement UNFCCC in Vietnam have been ever-improved, strengthened and completed.

4.4.2. Short-comings and weakness

(1) Not having approved the National Program or Plan for UNFCCC implementation yet.

The first draft of this plan was made in 1994 at the same time with the completion of project "Training on Climate change". Up now, this document has been only in draft after many revisions. Therefore, the state agency that is assigned to execute UNFCCC implementation has no firm legal basic to organize, manage, activities to fulfill obligations of Vietnam under the Convention. In return, the relevant agencies and sectors do not thoroughly collaborate with executing agency.

(2) The complete Office of UNFCCC implementation has not been established.

Though UNFCCC came into effect in Vietnam in 1995, the Office of UNFCCC implementation has been established for 5-6 years. So far, this office has not been sufficient of human and physical resources for deploying periodical and unpatriotically activities such as providing bulletins on UNFCCC and on Kyoto Protocol, undertaking annual GHG inventory, updating and providing notices of data relating to climate change in the globe as well as in Vietnam.

(3) UNFCCC and activities to implement UNFCCC have not been popular in Vietnam.

In spite of active communication on mass media, the general understanding of climate change and fundamental knowledge of UNFCCC have not been widely introduced in public. The term of climate change and its issues have not been popularized among university students and scientific professionals.

Some of professional issues of climate change have not attracted attentions of or involved the most appropriate scientific staffs of this major. Many scientific institutions and scientists of climate change have not been updated with UNFCCC information and UNFCCC implementation activities in Vietnam.

(4) Up now, there has not been any general basic legal document for energy (except Law on electricity) - one of the first and overriding areas of responses to climate change.

Part V. POLICIES AND MEASURES ON GHG EMISSION REDUCTION

5.1. Principal laws relating to climate change

(1) Law on Environmental Protection: This Law was approved by The National Assembly of Socialist Republic of Vietnam dated December 27, 1993.

Articles and contents relating to climate change include:

- To prohibit forest cutting and burning, mass mineral resource exploitation causing serious damage to environment, import and use of machines and equipments that are not sufficient to environmental standards;
- To prohibit circulation of transportation means that are not sufficient to environmental standards;
- The State implements international conventions relating to environment that Vietnam signed or participated.

(2) Law on Forest protection and development: This Law was approved by The National Assembly of Socialist Republic of Vietnam dated August 12, 1991.

Articles and contents relating to climate change include:

- The state consistently manages forest and forest land. The state allocates forest and land to organizations, individuals for protection, development and stable and sustainable use of forests on the state plans and schemes;
- To prohibit every activity of forest and forest land cutting and encroaching;
- The state encouraging application of forestry-biological and biological methods into prevention of harmful insects;
- The state has policies on circulating, mobilizing and calling for fund from organizations and individuals in the country and abroad for investing in, building and conserving sustainable protection and special use forests;
- The state has policies on encouraging and assisting organizations and individuals that are allocated with land in forestation in bare land and degraded hills.

(3) Law on Water Resources (No. 08/1998/QH10 dated May 20, 1998 of The National Assembly of Socialist Republic of Vietnam dated August 12 1991)

- The state has policies on managing, protecting and rationally and economically using water resources;

- Protecting and preventing water resources from being degraded and exhausted should be combined with forest protection and development and the ability of restoration;
- The state invests in fundamental investigation of water resource, monitoring network and data system development, improvement of abilities to forecast about flood, storms, drought, salination intrusion, upwelling and overflowing sea water, and other adverse effects caused by water.
- The state prohibit every activity causing water resource degradation and exhaust;
- The state has plans to protect and develop upstream protection forests and other types of forests, to build small irrigation schemes, to restore the degraded and exhausted water resources; to encourage organizations and individuals to use water in a rational and economical manner for water resource protection;
- The Government decides and directs ministers, sectors and People's Committees of all levels to undertake remedial measures to effects of flood and other adverse effects caused by water;
- The state management agencies of hydrometeorology are responsible for timely providing information and forecast of hydrometeorology for prevention of drought.

(4) Law on Electricity (Order of The Prime Minister of Socialist Republic of Vietnam dated, No. 24/2004/L - CTN).

Articles and contents relating to climate change include:

- Applying scientific and technological progress into activities of electricity use and activities in order to economize electricity, improve efficiency of energy resources and protect ecological environment;
- Enhancing exploitation and use of new and renewable energy sources for electricity generation;
- To develop and approve the national and local electricity development plans for legal basic on which investment in electricity development is deployed and adjusted in the light of being appropriate with socio-economic conditions in each period;
- The State has policies on assisting, encouraging and enhancing energy economical use in the process of electricity generation, transmission, distribution and use.

(5) Law on Road transportation (Order of The Prime Minister of Socialist Republic of Vietnam dated, No. 07/2001/L-CTN dated 12/7/2001).

The state gives priority to development public transportation and restriction of individual means of transport in big cities.

(6) Ordinance on prevention of storm and flood (No. 09/L - CTN dated 20/3/1993 of The Prime Minister of Socialist Republic of Vietnam)

Articles and contents relating to climate change include:

- The State consistently manages the performance of storm and flood prevention nationwide;
- The State of Vietnam extends cooperation relationships with countries, international organizations, foreign organizations and individuals in investigation, scientific researches, technology exchange and provision of training services on techniques of warning, preventing and overcoming the damages of storms and flood;
- The State organizes and invests in developing information systems to collect information about global, regional climate change and about climate change of each area of the nation; to process information for improving efficiency of forecasting and warning for managing, monitoring and directing storm and flood prevention;
- Developing storm and flood prevention options in the whole area and in each important area;
- Developing schemes, plans for and directing the performance of storm and flood forecast and prevention and overcoming the damages thereof; Doing researches and applying scientific and technological progress in warning and preventing storms and flood.

5.2. Policies relating to climate change

(1) **Policies on enhancing searches, investigation, exploitation, conservation and efficient use** of existing energy resources and development of new energy sources, diversification of exploitation activities and use of energy of different types.

According to this policy, undertaking searches, investigation and exploitation of commercial energy sources including; Coal, hydro power, oil, gas, nuclear power, solar power, wind power, biogas power, geothermal and tidal power.

Critical solutions to GHG emission reduction of these policies on energy are:

- Developing hydro-power plants with special priority given to high efficient hydro-power plant projects such as Da river and Susan river hydro-power plants.
- Enhancing the use of natural gas for electricity generation.

- Developing solar, wind, geothermal and tidal energy.

(2) **Policies on developing systems that rationally and economically use** energy and improving this efficiency in the whole society.

Regarding to these policies, energy intensity in Vietnam's industry is at two folds in comparison with Thailand. Right now, it is necessary to take measures of economization in production and consumption at the average level of Asian countries. The State should provide a Program on energy economization in the national scale.

The critical solutions to GHG emission are:

- Reducing loss in electricity transmission and distribution processes to the average level of the region 9% compared with present level of 20%.
- Enhancing use of electricity – driven equipments of high efficiency for energy economization and electricity efficiency.
- Providing policies on encouraging application of energy and electricity economization measures in high buildings.

(3) **Rapidly applying scientific and technological progress** into searches, investigation, exploitation, conservation and efficient use of energy resources in the national economy and improving energy efficiency.

The efficiency of energy development depends much on applying scientific and technological progress into production and use of energy. Widely applying scientific and technological progress into investigation and assessment of natural resources and their reserves; transmitting, using and exchanging energy resources, etc, for the highest socio-economic efficiency are all measures for GHG emission reduction.

(4) **Policies on sustainable development**, harmonious combination between developments of energy based economy and environmental and ecological protection within national and international scales.

Policies directly relating to GHG emission mitigation include:

- Replacing steam stoves, kilns, ovens of old technology generation with the clean coal-driven and high efficiency ones; investing in technology of gas transformation into ground coal in Red River Delta.
- Mitigating GHG emission from transportation means especially in big cities through policies on encouraging use of fuels and means of low GHG emission. Policy on prohibiting the circulation of so obsolete means of transport regulated in the Government's Decrees is also one of the most critical measures.

(5) **Policies on organizing and managing energy sector**

The contents of these policies are:

- To clearly identify the sector-wide energy management institutions for consistent policy planning among performance steps of energy sector beside of continuously maintaining and renovating activities of large enterprises in this area.

(6) **Policies on electricity development**

Main contents relating to climate change include:

- Sustainable developing electricity basing on optimal exploitation of every resource, meeting the needs of electricity for people and socio-economic development.
- Applying scientific and technological progress into activities of electricity and electricity use so that electricity is used economically and the efficiency of every energy resource is improved.
- Enhancing exploitation and use of new and renewable energy resources for electricity generation.

(7) **Policies on encouraging electricity economization**

Main contents relating to climate change include:

- Applying a favored tax policies on categories of electricity economization products and machines, equipments, materials, technological line imported for production of electricity economization products.
- The projects that apply results of scientific researches and technological development, invest in producing electricity economization products or are for electricity economization purposes should be provided with favoured loans.
- Projects that invest in developing power plants using new and renewable energy resources are done with favour in investment, electricity price application and tax policies.
- Developing a national targeting program on energy economization.

(8) **Policies on electricity development in rural, mountainous areas and on islands.**

Main contents relating to climate change include:

- Gathering every resource for building electricity infrastructure, pushing up the process of electrification in rural, mountainous areas and on islands.

- Encouraging organizations and individuals to build electricity networks or electricity generation stations driven by in-situ, new, renewable energy for electricity supply in rural, mountainous areas and on islands.

(9) **Visions to develop agriculture in combination with GHG mitigation requirements.**

- Giving focus on developing new farming techniques that both increase agricultural production, industrial efficiency and mitigates GHG emission.
- Improving management of irrigation on aquatic paddy fields.

(10) **Visions to develop forestry in combination with GHG mitigation requirements.**

- Giving focus on implementing the program on five million hectare of afforestation approved by the National Assembly in 1997 to increase forest coverage to 43%;
- Developing the National Action Plan for preventing forest resource degradation.
- Stabilizing area allocation structure of three types of forest: protection, special-use and production forests.
- Consistently implementing policies on land and forest allocation, settled cultivation and resettlement, hunger eradication and poverty reduction, etc. supporting the program on five million hectare of afforestation.

5.3. Achievements by enforcing laws and policies

(1) Law on environmental protection, especially Law on Forest protection and Development, policies on implementation of five million hectare of afforestation have taken an important part in reduction of GHG emission caused by forest cutting and exploitation and have increased the sinks and reservoirs of GHG thanks to an increase of forest area and density. Consequently, GHG emission has decreased from 31.2 million tons in 1993 to 12.1 million tons in 1998 and will possibly down to negative numeric values in the early 2010s.

(2) Energy policies on hydro-power plant development (Yaly, Sesan, etc…), use of natural gas for generating power to increase energy efficiency, energy economization, development of new and renewable energy sources have actually reduced GHG emission in energy area especially in the cause of pushing up a national industrialization and modernization process.

(3) Together with policies on energy, Law on Electricity has reduced energy intensity in industrial production, energy loss in electricity transmission and distribution and thus reduced GHG emission. Additionally, Law of road transportation with specified policies on enhancing public means of transport

and reducing individual ones together with Law on Environmental Protection regulating thoroughly handling out-of-date means of transport, etc. are all outstanding measures for GHG emission reduction that are accepted, supported by international environmental organizations and now in the initial steps of implementation in big cities.

(4) Policies on agricultural development with proposals for switching intensive farming structure to farm produce and paddy cultivation for managing irrigation systems for water paddy fields together with the Law on Water Resources regulating the rational use and exploitation of water resources have contributed to electricity loss reduction and thus reduced GHG emission. Herein also, management techniques of irrigation on water paddy fields directly reduced emission of CH4 - one of the most important GHG of countries whose agriculture production accounting for rather high proportion in GDP as of Vietnam.

(5) The Ordinance on prevention of storms and flood and Law on Water Resources play an important role in directing effective performance of storm and flood prevention, reduce damages and losses of lives and property during the past decades.

(6) However, many legal documents and policies have not been effectively put into practice, such as:

- To prohibit every activities of forest cutting, burning, occupying forest and forest land (Law on Forest Protection and Development);
- To prohibit every activities seriously degrading and exhausting water resources (Law on Water Resources);
- To prohibit every activities of forest cutting, burning, mass exploitation of natural resources (Law on Environmental Protection);

Similarly, many policies have not been implemented;

- Enhancing exploitation and use of new and renewable energy resources, etc. (Law on Electricity, policies on energy);
- Using electricity driven equipments of high efficiency for economization of energy and electricity efficiency.

Part VI. LESSONS LEARNT FROM NATIONAL CAPACITY SELF-ASSESSMENT

(1) In order to have accurate policies on UNFCCC implementation process, It is necessary, firstly, to carefully study the Convention Document including objectives, principles and articles of which, the especially important ones are articles of commitments (Article 4)

(2) After taking careful consideration of the Convention, the obligations of Vietnam under the Convention should be well identified through objectives, principles and articles of the Convention. The articles of commitments should be regarded as central articles for developing and completing the categories of Vietnam's obligations under UNFCCC, developing programs and action plans for implementing and fulfilling those obligations.

(3) It is a must to be clearly aware of the final goal of the Convention is to prevent the dangerous intervention of human beings to climate change system – one of the most important factors of global environment. It is, therefore, necessary to consider obligations under UNFCCC to be one of the critical issues of Vietnam Agenda 21.

(4) The first and overriding priorities given to UNFCCC implementation are developing documents of national program on UNFCCC implementation which presents an overview of legal basic, natural and socio-economic conditions, climate changes that used to happen, will happen and their adverse effects, visions and plans to develop major economic sectors, an amount of GHG emission at present and in the future, policies and strategies for GHG emission mitigation, etc.

(5) To be aware of the utility of global environmental benefits through UNFCCC implementation of a country and the national benefits through national programs and plans for environmental protection. So, enhancing UNFCCC implementation activities also contributed to the practice of environmental programs.

(6) Capacities to implement UNFCCC of Vietnam can only be exploited and promoted by the cooperation and linkages between relevant ministers, sectors under coordination of an appropriate Focal agency nominated by the Government. The Focal agencies, including the former - General Department of hydrometeorology and the present one – MONRE, have successfully undertaken their focal functions, actively contributed to pushing up UNFCCC implementation.

(7) In order to have efficient capacities for UNFCCC implementation, it is necessary to involve enough professionals of relevant areas of technical and social sciences. There should be an Advisory Council or National Working Group comprising of representatives from ministries, sectors that are closely related to climate change and directly implement or monitor the Convention implementation or consult focal agencies in managing every activity related to the Convention implementation.

(8) Capacities to implement UNFCCC have been clearly enhanced thanks to bilateral and multilateral cooperation within framework of UNFCCC implementation such as technology exchange, site visits, co-implementation of projects, participation in workshops, etc. Many important documents such as GEF programs on UNFCCC have been completed through the cooperation between national experts and experts of UNDP, WB, etc. Many Vietnamese experts have achieved great progress and much better qualified through the cooperation process between Vietnam and other 11 Asian countries in the ALGAS project and with experts of UNITAR in project of Training on climate change, etc.

(9) UNFCCC implementation is a time-consuming process. Much attention, therefore, should be paid to training staffs especially the young, qualified and devoted ones. The success of this process requires not only the close cooperation of scientists but also the collaboration and assistance of generations of scientists.

(10) The team of UNFCCC implementation is formed by representatives from different ministries, sectors and relates to different areas and localities. So, it is necessary to set up an office for UNFCCC implementation that is equipped with efficient human and physical sources. This office does not only coordinate UNFCCC implementation but also acts as a center of data and information about UNFCCC and may become a forum for professionals of climate change area.

CONCLUSION

The NCSA stock-taking assessment report on the UNFCCC in Vietnam has provided an overview of the achievements, supporting instruments and measures of green house gas emission and preliminary assessment on implementation of the UNFCCC and Kyoto Protocol in Vietnam. Some key findings can be summarized as follows:

1. The report has introduced about an overview of green house gas emmission in Vietnam during the past ten years. This part mentions to activities related to green house gas emmission in Vietnam in key sectors including energy, industrial activities, forestry and land use changes, agricultural activities, and wastes.

2. The report has introduced about obligations of Vietnam under the UNFCCC upon which, Vietnam committed to fulfill through national communications and national action plan to implement the UNFCCC in Vietnam.

3. The report has also mentioned to key relevant institutions, organizations, and institutes responsible for the UNFCCC and Kyoto Protocol implementation in Vietnam. Among many others, the International Cooperation Department under MONRE has been designated to be a national focal point of this process.

4. The report has provided an overall assessment of achievements in the UNFCCC and Kyoto Protocol implementation in Vietnam by adopting legal instruments and supporting activities.

5. The report has analyzed achievements in the UNFCCC and Kyoto Protocol implementation in Vietnam by adopting policies on and measures on climate change.

6. Upon NCSA stock-taking assessment on the UNFCCC and Kyoto Protocol implementation in Vietnam, 10 lessons learnt have been withdrawn. Among them, the most significant lesson for Vietnam in this period is that Vietnam should develop a national action plan to implement the UNFCCC and Kyoto Protocol.

With the aim to conduct a stock-taking assessment on the implementation process and the achievements thereof of the UNFCCC in Vietnam, conclusions, recommendations and assessment in this report may have certain weakness. However, the report has provided an overview of the achievements and remained issues in the UNFCCC and Kyoto Protocol implementation in Vietnam. The NCSA stock-taking assessment report will act as a basic for the successive assessment reports and a good reference for managers and researchers who have been implementing the UNFCCC and Kyoto Protocol and other relevant stakeholders.

The project team and consultants would like to extend our gratefulness to all relevant institutions and agencies that have actively participated in and provided us with valuable documents and information for development of this report. The project team and consultants would also like to receive any comments of managers and consultants of relevant areas for finalizing the report with higher quality and for better supplementing the successive assessment reports of the project./.

Hanoi, July 2005

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