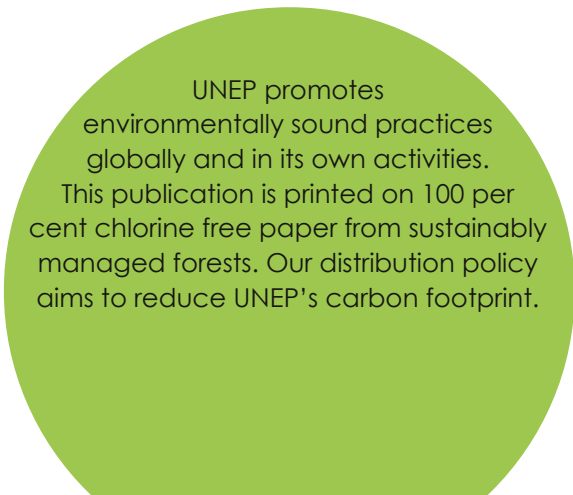


**GUIDEBOOK ON
NATIONAL LEGISLATION
FOR ADAPTATION TO
CLIMATE CHANGE**

2011



UNITED NATIONS ENVIRONMENT PROGRAMME



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GUIDEBOOK ON NATIONAL LEGISLATION FOR ADAPTATION TO CLIMATE CHANGE

2011

About this Guidebook

This Guidebook, which is based on the outcome of a UNEP pilot project that was carried out in three South East Asian countries in 2009-2010 - Cambodia, Lao PDR and Vietnam - is intended to serve as a tool to help decision-makers and legal drafters to incorporate measures for adapting to the adverse impacts of climate change into their national sustainable development policies, plans and programmes by creating the necessary legal, regulatory and institutional framework for such action.

It provides a series of draft legal provisions, founded on the collective suggestions emerging from national experiences in the three project countries, which are expected to underpin and support national actions to identify possible adverse impacts of climate change on seventeen key sectors of national economic, social and environmental activities and to develop and implement appropriate adaptation measures to respond to the anticipated consequences.

Publication: Guidebook on National Legislation for Adaptation to Climate Change

ISBN: 978-92-807-3188-0

Job Number: DEL/1232/NA

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MESSAGE



Adaptation to the adverse impacts of climate change can not, and must not, wait for the successful conclusion of an international climate change regime for the post-Kyoto period. There is already mounting evidence of adverse impacts of climate change that are fundamentally affecting the health and well being of the people and the planet.

UNEP's Medium Term Strategy for 2010-2013 recognizes this and calls for the promotion of national legislative, economic and institutional frameworks that are adequate to address climate change challenges. The pervasive nature of these adverse impacts require integrated and coordinated responses that involve the participation of regional, national and local institutions and stakeholders that are best realized through appropriate policy

and regulatory frameworks. Furthermore, the impacts that are felt across national boundaries require effective international cooperation, based on regional environmental accords.

The extensive desk study done by UNEP on the vulnerability to and adverse impacts of climate change in thirteen countries in the Asia-Pacific region pointed to the recognition by several governments of the need for establishing policy, regulatory and legal frameworks as a necessary pre-requisite for successfully developing and implementing measures for adapting to the adverse impacts of climate change.

Accordingly, the governments of Cambodia, Lao PDR and Vietnam undertook, with technical and financial support from UNEP, a review of their respective national laws and regulations. The results of this work are made available through this publication to a wider global audience in the form of a guidebook to policy makers as well as to legal drafters on the policy, legislative and institutional underpinnings of national measures for adaptation to the adverse impacts of climate change.

The UN Conference on Environment and Development confirmed nearly twenty years ago that laws and regulations suited to country-specific conditions are among the most important instruments for transforming environment and development policies into action. We hope that the legal provisions contained in this guidebook, borne out of national experience, will serve as a useful tool for policy makers and legal drafters in order to catalyze effective responses to one of the greatest challenges for this generation.

Achim Steiner
United Nations Under Secretary General and
Executive Director, United Nations Environment Programme

ACKNOWLEDGEMENTS

This Guidebook is the result of collaboration between the National Teams of Experts of the three Project Countries- Cambodia, Peoples Democratic Republic of Laos and Vietnam, international legal experts and the staff of the UNEP Division of Environmental Law and Conventions (DELIC) under the guidance of its Director, Mr. Bakary Kante.

First and foremost, we express our grateful thanks to the Members of the National Teams of the three Project countries for the crucial contribution they made towards the preparation of this Guidebook. They are Sum Thy, Chea Chan Thou, So Puthea and Hak Mao of Cambodia; Syamphone Sengchandala, Ketkeo Salichanh and Immala Inthaboualy of Lao PDR and Prof. Dr. Tran Thuc, Dr. Nguyen Thi Hien Thuan, Dinh Thai Hung, Ms. Nguyen Thi Tho of Vietnam. Without their sincere commitment and vision as well as the groundbreaking work that they did in collaboration with colleagues in other relevant Ministries and Agencies, toward the development of country-specific national legal, regulatory and institutional frameworks for addressing adaptation to the adverse effects of climate change, this Guidebook would not have been possible.

We also acknowledge with gratitude the work done by the team of senior legal drafters and legal experts led by the Senior Consultant of the Commonwealth Secretariat on Legal Drafting and former Legal Draftsman of Sri Lanka Mr. Nalin Abeysekera, in the formulation of a series of draft legal provisions contained in this publication, based on the work done by the National Teams. He was ably assisted by Senior Legal Consultant Mr. U. L Kaluarachchi and Senior Lecturer at the Open University of Colombo, Dr. Camena Guneratne. Finally our grateful thanks go to Lal Kurukulasuriya, former Chief of the UNEP Environmental Law Programme and currently Director General of the Centre for Environmental Research, Training and Information (CERTI) who served as the UNEP Consultant for this project with distinction. We also acknowledge the support provided to him in the preparation and lay out of this Guidebook by Ms. Anoma Palihakkara and Ms. Shamila Mc Cluskey.

We also acknowledge the important legal and logistical assistance and support provided by the staff of DELIC, in particular, Ms. Eva Durchschlag and Ms. Wanhua Yang towards the successful development and implementation of this Project.

Arkadiy Levintanus
Chief, Climate and Energy Law and Governance Unit
Division of Environmental Law and Conventions

FOREWORD

This publication is an outcome of a UNEP project, carried out on a pilot basis by the Climate and Energy Law and Governance Unit of the Division of Environmental Law and Conventions, aiming at improving national legal and regulatory regimes to support and facilitate the development and implementation of measures for adaptation to climate change. The project was carried out in three developing countries in Asia, namely, Cambodia, Lao PDR and Vietnam. It builds on the in-depth study that was done on the legal, regulatory and institutional measures required for adaptation to the adverse impacts of climate change in the Asia-Pacific region which pointed, inter alia, to the recognition by governments of the need for establishing policy, regulatory and legal frameworks as a necessary pre-requisite for successfully developing and implementing measures for adapting to the adverse impacts of climate change across various sectors of national activity

The project was founded on the premise that appropriate policy, legal and institutional underpinnings are an essential pre-requisite for the development and implementation of adaptation measures. The project also envisaged sharing the experiences and lessons learned from this pilot project with other developing countries through the formulation of a set of draft legal provisions, based on those proposed by the three countries, that could serve as a reference tool to policy makers and legal drafters of a larger number of countries, in their efforts to further strengthen existing legislation to support and facilitate adaptation.

The project adopted an open and highly participatory and consultative programme of work driven by Government-appointed national teams which were provided with UNEP's technical advice and financial support. The national teams, in collaboration with their colleagues from relevant ministries, departments and agencies collated and analysed applicable national laws and regulations against the new requirements for adaptation to climate change at national, regional and local levels and came up with ways in which these legal regimes needed to be further strengthened in order to facilitate and support the development and implementation of measures to adapt to the adverse impacts of climate change. The results of their work were placed before inter-ministerial review meetings in their respective countries to obtain useful feedback on the viability of the proposed legal developments. UNEP organized two consultative workshops attended by the national teams and UNEP technical experts to facilitate collective planning, management, execution and review.

Following agreement among the national teams at the first UNEP consultative meeting, the national legislative review was focused on the following sectors: Water, Irrigation, Agriculture, Environment, Transportation (incl. shipping), Land and land use planning, Construction, Health, Biodiversity and Ecosystems, Forestry, Energy, Mining Coastal and Marine management, Aquaculture/Fisheries, Tourism/Sport/Recreation, Cultural and Historical Heritage, Financing/Planning/Monitoring. Accordingly, the national teams and their ministerial colleagues collated, reviewed and analysed all relevant national laws and regulations relating to each of these sectors which impact on issues relating to adaptation to climate change and formulated improvements that facilitate and support adaptation.

The Reports of the three national teams containing the texts of the laws and regulations examined and the suggested changes to each of them have been presented to UNEP and provide a platform on which to build future programmes of national action, supported by UNEP and other agencies within and outside the United Nations system, to incrementally strengthen the policy, legal and institutional framework for adaptation to the adverse impacts of climate change in each of the three project countries.

As mentioned above, the other outcome of this project was the development of this Guidebook, based on the work done by the national teams, that could serve as a reference tool for policy

makers and legal drafters of a broader range of countries throughout the world in their efforts to further strengthen existing legislation to support and facilitate adaptation.

The work of the national teams constitute a veritable reservoir of carefully thought out legal provisions to strengthen existing sector-specific laws and regulations to facilitate and support the development and implementation of measures for adapting to possible adverse impacts of climate change. While some of the provisions are anticipatory and therefore designed to prevent or mitigate the adverse impacts of climate change, others are reactive and focus on measures to respond to economic, social and environmental consequences brought about by the adverse impacts on climate change. The legal provisions crafted by the national teams, in the context of their specific national laws and regulations, were placed before a team of senior legal drafters and legal experts led by the Senior Consultant of the Commonwealth Secretariat on Legal Drafting and former Legal Draftsman of Sri Lanka Mr. Nalin Abeysekera, that developed a series of draft legal provisions contained in this publication, which are intended to serve as sample provisions with a more generic application in respect to adaptation legislation. It is hoped that these sample legal provisions, based on the specific legal provisions developed by the national teams of the three project countries, would serve as a useful tool for legal drafters and policy developers particularly in developing countries, in their endeavour to strengthen their respective national policy, legislative and regulatory frameworks for adaptation to the adverse impacts of climate change.

The national teams recognized that strengthening the legislative and regulatory framework for adaptation is likely to have a synergetic effect on elaborating adaptation-related laws and regulations for similar initiatives with CDM, REDD, technology transfer, etc., and environmental law at large and on promoting and streamlining on-the-ground projects and programmes and on attracting additional investment for adaptation related projects. It could also serve as a vehicle to upgrade and enhance institutional frameworks for climate change and as a driver for capacity-building as well as for enhancing environmental governance through encouraging dialogue and interaction among line ministries such as those in charge of Environment, Planning, Economy, Finance, etc. It was also recognized that the strengthening of adaptation legislation could facilitate the crafting national climate strategies and policies and assist in advancing inter-linkages and synergies-based implementation of multilateral environmental agreements including those relating to climate change, ozone depletion, depletion of biodiversity and land degradation. These issues have been examined in some depth in Chapter 21 of the Guidebook.

Every effort has been made to make the Guidebook as user-friendly as possible. Towards this end a colour-coding system of texts derived from each project country has been adopted, to facilitate easy recognition of the relevant legal and policy documents of Cambodia, Lao PDR and Vietnam. The Cambodian documents are coded in **yellow** while those of Lao PDR's are in **light brown** and Vietnam's in **green**. The generic legal formulations prepared by the team of Legal Experts, follow the same colour coding to demonstrate their links to the respective original national suggestions.

It must be recognized however, that legislative development in any country is not a quick-fix response to climate change challenges and requires painstaking adherence to well entrenched governmental and parliamentary procedures which almost always require an extremely long timescale before the required constituency of support could be mustered and the procedures set in train to realize the legislative objective. The outcome of the work of the national teams and the legal provisions in this Guidebook however, could serve the more immediate purpose of driving the design and establishment of policy, regulatory and administrative frameworks for adaptation, while the more long term legislative development programmes take their normal, time-bound course.

ABBREVIATIONS

| | |
|-----------------|---|
| Art | Article |
| CCCCO | Cambodian Climate Change Office |
| CCEAP | Climate Change Enabling Activity Project |
| CCM | Council of Ministers |
| CDM | Clean Development Mechanism |
| CO ₂ | Carbon Dioxide |
| COP | Conference of Parties |
| DNA | Designated National Authority |
| EIA | Environmental Impact Assessment |
| ENSO | El Niño-Southern Oscillation |
| GDP | Gross Domestic Product |
| GEF | Global Environment Facility |
| GHG | Green House Gases |
| ICEM | International Centre of Environmental Management |
| IPCC | Intergovernmental Panel on Climate Change |
| IUCN | World Conservation Union |
| IWRM | Integrated Water Resources Management |
| Lao PDR | Lao People's Democratic Republic |
| LDCs | Least Developed Countries |
| LLDC | Land-Locked Least Developed Country |
| MAFF | Ministry of Agriculture, Forestry and Fisheries |
| MDGs | Millennium Development Goals |
| MoNRE | Ministry of Natural Resources and Environment |
| MRC | Mekong River Commission |
| MWBP | Mekong Wetlands Biodiversity Conservation and Sustainable Use Programme |
| NA | National Assembly |
| NAPA | National Adaptation Programme of Action |
| NAPCC | National Action Plan on Climate Change |
| NGIC | National Greenhouse Gas Inventory Committee |
| NGIP | National GHG Inventory Project |
| NGO | Non Governmental Organization |
| R&D | Research and Development |
| ROK | Republic of Korea |
| STEA | Science Technology and Environment Agency |
| TWG | Technical Working Group |
| UN System | United Nations System |
| UNDP | United Nations Development Programme |
| UNEP | United Nations Environment Programme |
| UNFCCC | United Nations Framework Convention on Climate Change |
| UNIDO | United Nations Industrial Development Organization |
| UNWTO | World Tourism Organization |
| V&A | Vulnerability and Adaptation |
| WMO | World Meteorological Organization |
| WWF-UK | World Wide Fund for Nature – United Kingdom |

PART 1

Chapter 1- INTRODUCTION

This Guidebook, which is based on the outcome of a UNEP pilot project that was carried out in three South East Asian countries in 2009-2010 - Cambodia, Lao PDR and Vietnam - is intended to serve as a tool to help decision-makers and legal drafters to incorporate measures for adapting to the adverse impacts of climate change into their national sustainable development policies, plans and programmes by creating the necessary legal, regulatory and institutional framework for such action. It provides a series of draft legal provisions, founded on the collective suggestions emerging from national experiences in the three project countries, which are expected to underpin and support national actions to identify possible adverse impacts of climate change on seventeen key sectors of national economic, social and environmental activities and to develop and implement appropriate adaptation measures to respond to the anticipated consequences.

As pointed out in Agenda 21¹, "Laws and regulations suited to country-specific conditions are among the most important instruments for transforming environment and development policies into action not only through 'command and control' methods but also as a normative framework for economic planning and market instruments." During the past three decades, most, if not all countries have enacted laws and regulations and amended existing sectoral laws to support environmental management including the integration of environment into development decision making, pollution control, the conservation and sustainable use of natural resources and environmental impact assessment of major development projects and national development programmes. Except in the area of renewable energy and carbon trading and very recently, the creation of national institutional frameworks for addressing climate change issue, there is no evidence that these environment-based legal reforms have focused on issues relating to climate change, in particular, adaptation to the adverse impacts of climate change.

¹ UN Department of Economic and Social Affairs, Division for Sustainable Development, available at <http://www.un.org/esa/dsd/agenda21/res_agenda21_00.shtml>

Adaptation to climate change is a long term and continuing process. Successful adaptation requires increasing a country's adaptive capacity in the short term and the long term, and may even include measures such as economic diversification in order to reduce a country's dependence on climate-sensitive economic sectors. These strategies involve a country's economic planning and development goals. The existence of adaptation-supportive legal and institutional frameworks is very likely to assist policymakers in evaluating such issues, as well as mainstreaming adaptation considerations into domestic policy-making.

The main goal of all policies and laws in the area of adaptation is to create appropriate, country-specific responses to the impacts of climate change within a framework of sustainability, poverty alleviation and inclusive governance. While law is one of the most universally applied instruments for translating environmental policies into action, it is often, itself, a catalyst for the development of a network of related policies that in turn could trigger legislative development. Thus, the nexus between policy development and law remain one of the fundamentals for effectively addressing environmental challenges at national level.

It must be noted however, that there are inevitable overlaps in policy and law between development and adaptation. It will be readily observed that almost every area of policy and legal development in regard to adaptation falls squarely into one or more sectors of development and resource management, such as water, forestry, fisheries, coastal and urban areas, agriculture, and so on. All of these sectors are extensively regulated by national policies and laws. There are possibilities for the adaptive elements to be added on to these existing policy and legal frameworks, to make these policies and laws more adaptation supportive. That has been the primary focus of the legal review that was carried out in the three project countries.

The Copenhagen Accord adopted at the Fifteenth Session of the Conference of Parties of the UNFCCC in December 2009² once again reaffirmed that adaptation to the adverse effects of climate change and the potential impacts of response measures is a challenge faced by all countries and that enhanced action

and international cooperation on adaptation is urgently required to ensure the implementation of the Convention by enabling and supporting the implementation of adaptation actions aimed at reducing vulnerability and building resilience in developing countries, especially in those that are particularly vulnerable, especially least developed countries, small island developing States and Africa.

National policy documents on the impacts of climate change including National Communications under the UNFCCC which outline the best available information on the current and potential adverse impacts of climate change, point to the need to integrate and mainstream adaptation into development and investment planning and implementation at all levels. The pervasive nature of the adverse impacts of climate change which at national level affect, often simultaneously, several key sectors in a variety of ways and in varying intensities, necessitates response measures to be carried out in a highly integrated and coordinated manner engaging national, regional and local institutions and stakeholders. A case in point is the impact of floods and droughts on water resource management, irrigation, agriculture, ecosystems, biodiversity and the social and economic foundations of society, requiring the development and implementation of a series of interconnected impact-specific responses. Furthermore, climate change induced impacts often affect several countries in a region which perforce necessitates coordinated responses across national boundaries, founded on peaceful and effective international cooperation.

UNEP's Medium Term Strategy for 2010-2013³ emphasizes that the objective of its climate change programme is to strengthen the ability of countries to integrate climate change responses into national development processes and provides that this will include efforts to create enabling environments at national level through the promotion of national legislative, economic and institutional frameworks that are adequate to address climate change challenges. Over the past few years the United Nations Environment Programme (UNEP) has carried out several activities in developing countries, in particular the Least Developed Countries, to support the development and implementation of policies, programmes and projects including those for strengthening legal and regulatory frameworks aimed at supporting national efforts to identify

² UNFCCC, FCCC.CP.2009.L.7, 18th December 2009, Conference of the Parties, Fifteenth Session, Copenhagen 7-18 December 2009, Agenda item 9, High-level segment, Draft decision -/CP.15 Copenhagen Accord, available at <unfccc.int/resource/docs/2009/cop15/eng/107.pdf>

³ UNEP/GCSS.X/8, United Nations Environment Programme, *Medium-term Strategy 2010-2013, Environment for Development*.

vulnerability to climate change and their current and potential adverse impacts and to develop and implement appropriate response measures

Among these is the project on *“The legal, regulatory and institutional measures required for adaptation to the adverse impacts of climate change in the Asia-Pacific region”* under which, an extensive desk study was done on the vulnerability to and adverse impacts of climate change in thirteen countries in the Asia-Pacific region, the range of measures that the respective governments consider necessary to adapt to these impacts and the institutional, policy, legal and regulatory frameworks currently available to address these challenges. The study also pointed to the recognition by governments of the need for establishing policy, regulatory and legal frameworks as a necessary pre-requisite for successfully developing and implementing measures for adapting to the adverse impacts of climate change across various sectors of national activity.

The study has served as a platform for carrying out a Pilot Project in three South East Asian Countries – Cambodia, Lao PDR and Vietnam- where national teams supported by UNEP examined national laws and regulations governing seventeen key sectors of national activity and suggested possible ways of strengthening the legal and institutional regimes to facilitate and support the development and implementation of measures for addressing the adverse impacts of climate change. The underlying premise is that adaptation activities undertaken in the context of climate change are more likely to be effectively implemented if they are supported by an appropriate legal and institutional regime.

The outcome of the Pilot Project (which is described in greater detail below) was a series of carefully thought out legal provisions to strengthen existing sector-specific laws and regulations to facilitate and support the development and implementation of measures for adapting to possible adverse impacts of climate change. While some of the provisions are anticipatory and therefore designed to prevent or mitigate the adverse impacts of climate change, others are reactive and focus on measures to respond to economic, social and environmental consequences brought about by the adverse impacts on climate change. These provisions are founded on existing national laws and regulations and were prepared by the national teams supported by UNEP, in consultation with officials of relevant Ministries and agencies and were considered at Inter-Ministerial Consultative

Meetings in their respective countries, with a view to securing a broad consensus on the proposed policy, legal and institutional measures among the relevant Ministries, Departments and other stakeholders.

The legal provisions crafted by the national teams provide a valuable insight into the desirable, if not necessary, legislative underpinnings of adaptation to the adverse impacts of climate change across a broad range of sectors. The sectors considered include Water, Irrigation, Agriculture, Environment, Transportation (incl. shipping), Land and land use planning, Construction, Health, Biodiversity and Ecosystems, Forestry, Energy, Mining, Coastal and Marine Management, Aquaculture/Fisheries, Tourism/Sport/Recreation, Cultural and Historical Heritage and Finance and Planning.

The results of the country studies and drafting exercises carried out by the national teams in Cambodia, Lao PDR and Vietnam independent of each other, evidenced a remarkable commonality in regard to both, the scope and content of the legislative provisions that were suggested to existing national laws in each of the sectors examined, as well as the rationale for the suggested legislative provisions. This provided UNEP with an opportunity to make available the outcome of the Pilot Project, suitably generalized, to a wider global audience in the form of a Guidebook to policy makers and legal drafters on the policy, legislative and institutional underpinnings of national measures for adaptation to the adverse impacts of climate change. Out of this emerged the current publication *“Guidebook on National Legislation for Adaptation to Climate Change.”*

The Guidebook is also expected to advance the implementation of the mandate of UNEP in regard to climate change contained in the Medium Term Strategy for 2010-2013 by serving as a tool to promote the development of national legislative, economic and institutional frameworks that are adequate to address the climate change challenges. More specifically, it could serve as a useful handbook to policy makers and legal drafters in all countries in their efforts to formulate appropriate country-specific policies and legal and institutional measures to address the principal challenges of adapting to the adverse impacts of climate change in regard to a wide range of sectoral issues.

The Guidebook is organized in two parts. **Part 1** provides an introductory backdrop to the UNEP project which led to the development of the

Guidebook, the rationale for its development, the methodology adopted to secure national ownership of the results of the review of national laws and regulations including the legal drafts that were formulated to support national measures for adaptation to climate change and the process of editing the draft legal provisions to enhance their usefulness and application, especially among developing countries that may engage in similar legal drafting exercises. This part also contains a succinct overview of the vulnerability to climate change, the expected adverse impacts and adaptation measures under consideration in the three project countries in the wider context of regional and global climate change concerns.

Part 2 which constitutes the core of the Guidebook for formulating national laws and regulations to address climate change, provides sample legal provisions organized under different chapters, each dealing with a sector of national activity that is affected by or considered by the national teams to be likely to be affected by climate change. It also contains information on current developments in the Asia-Pacific region in regard to policy, legal and institutional developments to address climate change in countries in the Asia-Pacific region as well as a chapter on conclusions that may be drawn from this exercise.

Each sector-specific chapter contains sample draft legal provisions placed in colour coded boxes with references to the source of the particular provision in the national laws of the three project countries. Each of the Chapters in this part deals successively with the following sectors: Water, Irrigation, Agriculture, Environment, Transportation (incl. shipping), Land and Land Use Planning, Construction, Health, Biodiversity and Ecosystems, Forestry, Energy, Mining, Coastal and Marine Management, Aquaculture/Fisheries, Tourism/Sport/Recreation, Cultural and Historical Heritage and Finance and Planning.

Conclusions of the Guidebook present recommendations on the ways in which the draft legal provisions contained in this Guidebook may provide a legal basis for taking a wide variety of action at national, provincial and local levels to address climate change issues, in particular, adaptation to the adverse impacts of climate change

VULNERABILITY TO IMPACTS OF AND ADAPTATION TO CLIMATE CHANGE

Vulnerability to climate change refers to the extent to which countries will be adversely affected by climate change as well as their capacity to cope with those impacts in an effective and timely manner. Developing countries are particularly vulnerable and have acknowledged the urgent need to embark on adaptation measures.⁴ The areas in which the impacts of climate change will be most felt by these countries can be put into three broad categories. These are in relation to the degradation of their natural resource base, threats to human well-being or even survival, and obstructions to their economic and social development process.

The natural resource base will be particularly affected in such areas as biodiversity and ecosystems, coastal and marine resources and fisheries, forests, land and water. Climate change and environment are closely linked. On the one hand climate change affects the environment and on the other, environmental conditions help to regulate climates. This equilibrium has largely been altered by human intervention and many of these sectors are already under stress due to human activities. Biodiversity loss, the increasing scarcity of water, depletion of fish stocks, and the degradation of land, forests and other ecosystems are the result of human impacts. These problems will be further aggravated by the impacts of climate change.⁵

Human survival and well being will also be affected by climate change. Food security will be threatened by increased impediments to agriculture, irrigation and related activities.⁶ The impacts on human health will be overwhelmingly harmful.⁷ Further, the economic development of countries will suffer setbacks in all spheres.

⁴ Saleemul Huq, Atiq Rahman, Mama Konate, Youba Sokona and Hannah Reid, *Mainstreaming Adaptation to Climate Change in Least Developed Countries (LDCS)*, April 2003, available at www.un.org/special-rep/ohrrls/ldc/LDCsreport.pdf; See also <http://www.iisd.org/climate/south/>.

⁵ http://unfccc.int/adaptation/adverse_effects/items/4973.php.

⁶ Saleemul Huq, Atiq Rahman, Mama Konate, Youba Sokona and Hannah Reid, *Mainstreaming Adaptation to Climate Change in Least Developed Countries (LDCS)*, April 2003, available at www.un.org/special-rep/ohrrls/ldc/LDCsreport.pdf

⁷ <http://www.who.int/mediacentre/factsheets/fs266/en/> Saleemul Huq, Atiq Rahman, Mama Konate, Youba Sokona and Hannah Reid, *Mainstreaming Adaptation to Climate Change in Least Developed Countries (LDCS)*, April 2003, available at www.un.org/special-rep/ohrrls/ldc/LDCsreport.pdf

Infrastructure development in areas such as construction, transport and energy will slow down. Economic activities such as mining,⁸ and income generating sectors such as tourism,⁹ will regress with the need to cope with and adapt to the effects of changing climates. Countries will be compelled to revise strategies on finance, planning and management in order to integrate adaptation measures into the development process with the least negative impacts. They will have to be particularly aware of the repercussions of both the problem and the remedial measures on the most vulnerable sectors of their peoples.

Global climate change will have ramifications in all countries throughout the world. The impacts will be determined by such factors as location, environmental conditions and socio-economic circumstances. For example, melting glacial ice caused by increased temperatures will also affect the availability of water in many countries.¹⁰ Warmer winter temperatures will cause decreases in snow packs and thus less water availability in the summer months. Countries located at the mid latitudes and in mountainous regions will be particularly affected since they depend upon glacial runoff to replenish river systems and groundwater supplies.¹¹ The reduction in glacial runoff water will potentially affect around 1/6th of the global population.

The socio-economic conditions of some countries have made them both particularly vulnerable to the effects of climate change, and also more powerless to deal with the ensuing problems. Africa is particularly vulnerable to desertification as two thirds of the continent is desert or drylands. There is no question that the poor suffer the most from the impacts of climate change. At the same time, poverty is a significant contributor to this problem as land is over exploited due to extensive agriculture in drylands and the fact that rural people are heavily dependent on natural resources for subsistence. It is estimated

that changes in rainfall and intensified land use would further aggravate the desertification process (particularly in the Western Sahel and Northern and Southern Africa). Coping strategies of the population are limited, leading to increasing poverty.¹² Clearly, alleviation of poverty is an essential prerequisite for mitigating climate change and for adapting to its adverse impacts.

The Asia Pacific region includes a diversity of countries in various stages of economic development and vulnerability to climate change. At one end of the spectrum they range from countries such as Japan, Australia and South Korea which are economically highly developed, to India and China with vast populations which are experiencing a period of rapid industrialisation. All these countries are large contributors to the problem and India and China are emerging as the largest emitters of greenhouse gases though in per capita terms, their emissions are much less than those of the industrialized countries.¹³ At the other end, they include poor and less developed countries ranging from those in South Asia to small island developing States such as Fiji, Samoa and the Maldives which are both economically, socially and environmentally among the most vulnerable to climate change impacts.¹⁴

Economic development is not in itself a protection from the impacts of climate change. Australia, for example, will experience increased inundation of coastal wetlands and lowlands, increased storm frequency and intensity, causing forest damage. It will also have to deal with changes in species distribution, increased variability and changes to seasonality of rainfall, reduced soil moisture, changes to the dynamics of pests, diseases and weeds, and reduced grain quality/nutrient content. These will affect agriculture and other activities.¹⁵ However, these countries have greater economic capacity to deal with these problems and to put in place the infrastructure to mitigate them. On the other hand, the poor countries in the Asia Pacific

⁸ <<http://www.skmconsulting.com/Knowledge-and-Insights/Publications/Achieve-Magazine/Previous-Editions/2008/Issue-2/Am2-mining-sector.aspx>>

⁹ David Viner and Maureen Agnew, *Climate Change and Its Impacts on Tourism*, Report Prepared for WWF-UK Climatic Research Unit, University of East Anglia Norwich, UK NR4 7TJ July 1999; Simpson, M.C., Gossling, S., Scott, D., Hall, C.M. and Gladin, E. (2008) *Climate Change Adaptation and Mitigation in the Tourism Sector: Frameworks, Tools and Practices*, UNEP, University of Oxford, UNWTO, WMO: Paris, France.

¹⁰ <<http://www.global-greenhouse-warming.com/glacial-retreat.html>>

¹¹ United Nations Framework Convention on Climate Change, *Climate Change: Impacts, Vulnerabilities and Adaptation in Developing Countries*, (2007).

¹² *Background paper on impacts, vulnerability and adaptation to climate change in Africa for the African Workshop on Adaptation Implementation of Decision 1/CP.10 of the UNFCCC Convention*, Accra, Ghana, 21 - 23 September, 2006

¹³ <<http://maps.grida.no/go/graphic/top-20-greenhouse-gas-emitters>>

¹⁴ Marc Overmars and Sasha Beth Gottlieb, *Perspectives on water and climate change adaptation*, Adapting to climate change in water resources and water services in Caribbean and Pacific small island countries, (2009).

¹⁵ <<http://www.climatechange.gov.au/en/climate-change/impacts.aspx>>

region, particularly small island developing states, whose contribution to the problem in global terms is yet insignificant, will bear the brunt of the adverse impacts and some are at risk of being obliterated in whole or part by sea level rise. They are already undergoing coastal erosion, flooding and forest degradation, which in turn are impacting on economic activities particularly in coastal zones and exacerbating poverty. In all these countries it is the poorest segments of the population which are the worst affected.¹⁶

The following is a brief survey of adaptation measures that are currently contemplated to the adverse effects of climate change in the three project countries. It will be observed that these have a resonance in the policy, legal and regulatory requirements for addressing climate change.

Cambodia, Lao PDR and Vietnam are neighboring countries in South East Asia, in which an overwhelming majority of the population live in rural areas, with agriculture accounting for a significant proportion of its GDP. The Mekong River passes through all three countries and plays a key role in the socio-economic development and environmental management including issues relating to climate change, in all of them.¹⁷

Floods are an annual occurrence in the Mekong region.¹⁸ They are looked upon as part of the natural landscape, and for generations, communities have lived in accordance with the annual flooding cycle. The main impacts from these extreme climate events are the loss of paddy fields, rice stocks, livestock, and equipment. Other impacts are disease following the floods and damage to housing. Climate change is likely to enhance the severity and frequency of floods in the future. A shorter and more intense rainy season will result in bigger floods during the wet season and drought during the dry season. Development efforts, however, could significantly increase the resilience of villagers by promoting a broader range of

livelihood options and better preparedness against climate extremes.¹⁹

Agriculture is the principal economic sector in the three countries²⁰ and the high economic dependency on its natural resources and agriculture makes them vulnerable to the impacts of climate change. All three countries have extensive forest cover²¹ and rich biodiversity resources²² and significantly high deforestation rates.

Vietnam and Cambodia with long coastlines are prone to typhoons and cyclones annually, in addition to the Mekong floods, which are likely to intensify as a result of climate change. Large areas of the deltas in the two countries are less than 1m above mean sea level; some areas are even below sea level. Currently, over 80% of the population of the two countries live in rural and low-lying coastal areas that are susceptible to water-related natural disasters.²³

Cambodia, Vietnam and Lao PDR face several common problems in relation to climate change. Sea level rise (in Cambodia and Vietnam) flooding and storms will have some of the greatest impacts. For example, the Mekong and Red River deltas are projected to be inundated by sea level rise.²⁴ Floods and droughts affecting agriculture and irrigation systems will threaten food security. Species extinction and ecosystem degradation which is already taking place will affect the most vulnerable communities, those with direct dependence on their natural resource base. The ramifications of ecosystem degradation will extend to forests and coastal and marine areas and those living within them. Adverse impacts on health will be yet another factor which these countries will have to contend with. It has been predicted that extreme weather conditions will affect the elderly and sick, and the incidence of vector borne diseases such as malaria, dengue and Japanese encephalitis

¹⁶ African Development Bank et al, *Poverty and Climate Change Reducing the Vulnerability of the Poor through Adaptation*, (2003).

¹⁷ <<http://www.mrcmekong.org/>>

¹⁸ Human Development Report 2007/2008, Fighting climate change: Human solidarity in a divided world Human Development Report Office, Occasional Paper, Huu Ninh Nguyen, *Flooding in Mekong River Delta, Viet Nam*, 2007/53.

²⁰ International Centre for Environmental Management Review of protected areas and development in the four countries of the Lower Mekong River Region Lessons learned in Cambodia, Lao PDR, Thailand and Vietnam (2003) page 8.

²¹ See for example <<http://rainforests.mongabay.com/20laos.htm>>

²² See for example <http://www.panda.org/what_we_do/where_we_work/greatermekong/news/?174681/New-species-discovered-in-the-Greater-Mekong-at-risk-of-extinction-due-to-climate-change>

²³ Annual Flood Report 2008, Mekong River Commission, Flood Management and Mitigation Programme, available at <http://www.mrcmekong.org/flood_report/2008/table_of_content08.htm>

²⁴ Human Development Report 2007/2008, Fighting climate change: Human solidarity in a divided world Human Development Report Office, Occasional Paper, Huu Ninh Nguyen *Flooding in Mekong River Delta, Viet Nam*, 2007/53.

²⁵ N H Ninh and L Q Huy, *Climate Change Vulnerability, Challenges and Opportunities and Indochina*, (2007), available at <www.igbp.net/documents/NL_67-5.pdf>

will rise. Further, the threats to food security, with the diminishing of agriculture, will make certain sectors of the population vulnerable to hunger and malnutrition.²⁵

Measures that have been suggested to respond to projected decreases in water resources include: incentives to encourage the use of water saving devices; selecting appropriate drought tolerant vegetation; establishing river buffer zones to enhance the resilience of the river and catchment area; updating national water policies, improving water resources management; revising building codes to increase opportunities for rainwater catchment and storage; preparing water resource master plans for islands; and assessing and improving the water supply system.

Possible measures to address impacts on infrastructure and settlements include: providing for the scientific and engineering services required to assess vulnerabilities and define priorities, retrofitting buildings; integrating adaptation into population and resettlement programs; improving the planning and permitting processes to guide coastal zone activities, including regulatory adjustments, awareness raising and enforcement; producing design and construction guidelines and applying them in pilot investments.

Measures to address the impacts of climate change on biodiversity and land degradation include: creating land use plans and corresponding enforcement strategies; rainwater harvesting, water demand management, provision of water storage and water efficient household appliances; flood risk analysis with land zoning and flood mitigation actions; strengthening of institutional capacity to enforce land zoning restrictions, including the application of beach setbacks for construction; the use of land use models in order to make farming more efficient and less destructive to the environment and training fishermen and women in sustainable fishing practices.

All three countries have consistently reiterated that their contribution to climate change is negligible and they are the victims rather than the polluters. Nevertheless, all have committed themselves to both adaptation and mitigation measures and to contributing fully to reversing climate change. However, this will inevitably place a heavy burden on them, as being among the less developed of Asian countries, they are hampered by such factors as poverty and lack of infrastructure in formulating and implementing adaptation strategies. Necessary investments in protection measures and infrastructure will be a financial drain on these countries and funds which would have been earmarked for development purposes will have to be diverted to climate change adaptation.

Chapter 2 - ROAD MAP

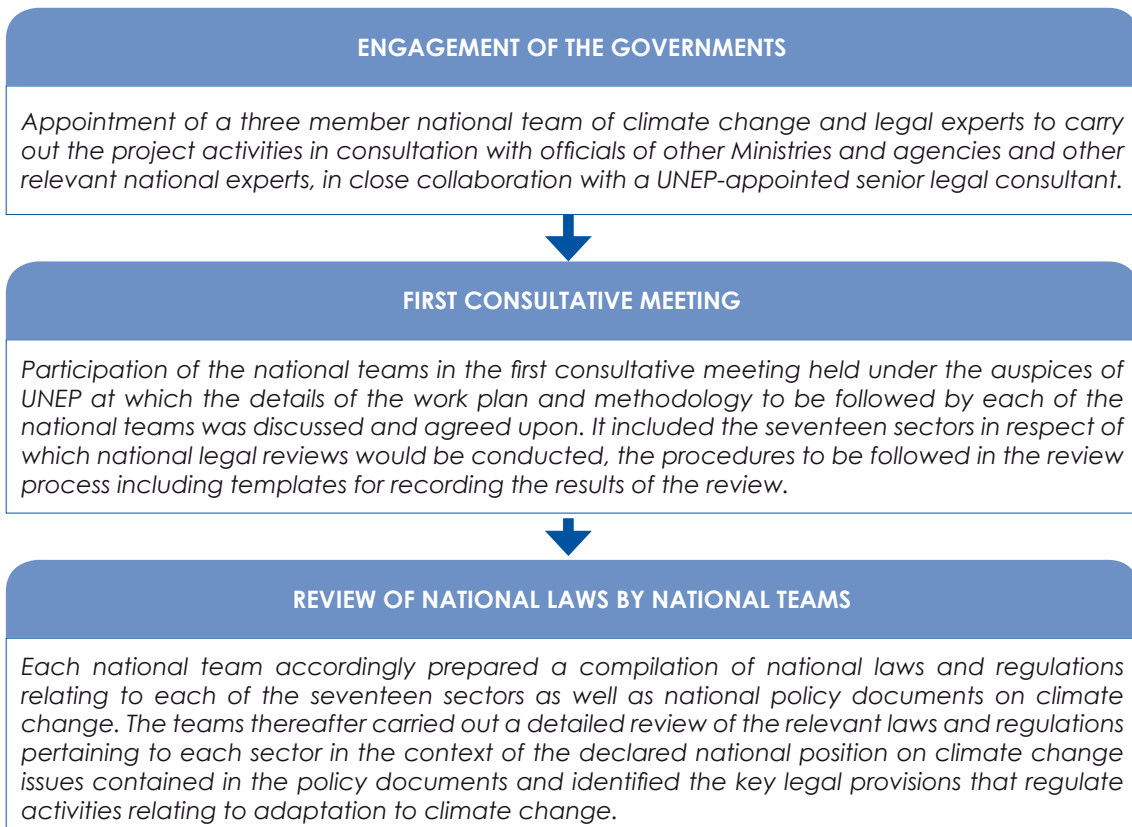
This publication was developed by the Climate and Energy Law and Governance Unit of UNEP's Division of Environmental Law and Conventions pursuant to its programme of work for 2008-2009 which required it to take appropriate action within the broad framework of UNEP's mandate in the area of climate change, to provide technical assistance to governments, upon request, on climate change law and policy including for further strengthening environmental legal and institutional frameworks aimed at sustainable development, in particular, support for legislation and governance for the implementation of the United Nations Framework Convention on Change and the Kyoto Protocol.

The objective of the pilot project was to develop a set of regulatory and legal documents in three Asian countries (Cambodia, Lao PDR and Vietnam) to reduce vulnerability to the effects of climate change. Drawing from this experience and to enhance capacity of a larger group of countries to address climate change issues, the project further provides for the development

of guidelines aimed at decision makers and legal drafters in developing countries on crafting adaptation legislation and regulatory frameworks. In this endeavour, the project builds on previous analytical work undertaken by UNEP's Division of Environmental Law and Conventions entitled: *"The legal, regulatory and institutional measures required for adaptation to the impacts of climate change in the Asia Pacific region."*

Consultations between UNEP and the Ministries in charge of the subject of environment in the three project countries resulted in the Governments agreeing to undertake a national consultative process to carry out a comprehensive review of their respective legal and regulatory frameworks with a view to considering appropriate legal measures to achieve reduced vulnerability and improved adaptation to the effects of climate change. This resulted in the conclusion of agreements between UNEP and the three Governments under which the following Road Map for subsequent actions was elaborated and adopted.

STEP BY STEP APPROACH



NON-BINDING SUGGESTIONS FOR LEGISLATIVE DEVELOPMENT TO SUPPORT ADAPTATION

Based on this assessment, the national teams, in close consultation with the relevant Ministries and agencies made preliminary, non-binding suggestions that in their view could provide the desired legal underpinning to support the development and implementation of measures at national and local levels to reduce vulnerability and adapt to the adverse impacts of climate change. They were assisted in their work by the senior legal consultant appointed by UNEP.



BUILDING NATIONAL CONSENSUS FOR SUGGESTED LEGISLATIVE DEVELOPMENTS

The national teams then placed the outcome of their work before a national consultative meeting in their respective countries attended by senior officials of the relevant ministries and agencies and obtained useful feedback which were used in the finalization of the review and accompanying legal suggestions. It is the outcome of these national processes that have formed the essential basis of the present Guidebook.

AGREED PRINCIPLES THAT GUIDED THE WORK OF THE NATIONAL TEAMS

In carrying out their work relating to the review of national legal, regulatory and institutional regimes with a view to bringing them in line with the needs of adaptation to the adverse impacts of climate change, the national teams were guided by the following principles.

STARTING POINT FOR NATIONAL ACTION TO STRENGTHEN NATIONAL LEGAL REGIMES TO SUPPORT ADAPTATION TO CLIMATE CHANGE

The review process was both important and timely as it serves as a starting point for a longer-term inter-ministerial and inter-disciplinary process to identify the current and potential impacts of climate change based on well founded empirical data and evidence and related studies and the formulation of national, provincial and local actions to develop and implement appropriate adaptation measures in a coordinated and cohesive manner, with the engagement of all relevant stakeholders.



DEVELOPMENT OF LAWS AND REGULATIONS IS THE GOVERNMENT PREROGATIVE

The above review process does not in any way imply any undertaking whatsoever relating to parliamentary action to enact or amend national legislation. That will remain a prerogative of the respective Governments and would be exercised in accordance with established governmental procedures relating to policy development and enactment and amendment of national laws and regulations.



PIONEERING ACTION TO STRENGTHEN LEGISLATIVE FRAMEWORK FOR ADAPTATION IN THE ASIA PACIFIC REGION

The legal review took into account the fact that this was a pioneering exercise in the Asia-Pacific region and perhaps in the rest of the world as well, since there was little or no information on similar reviews being carried out in other countries with a view to strengthening national legal and institutional regimes to support adaptation to climate change. The only known legal developments in the region in the area of climate change related to carbon trading and institutional development, and very recently the enactment of laws to establish the institutional framework for addressing climate issues in countries like the Philippines and Indonesia.

FULL IMPACTS OF CLIMATE CHANGE STILL UNDER STUDY

It was also evident that few countries if any, had even begun to systematically study the myriad impacts of climate change –both current and potential- on the various economic, social and environmental dimensions of society, based on sound empirical data and evidence. The project countries like other countries, would at best be making intelligent guesses of the possible impacts based on available national data, information and studies and on global studies and assessments, in particular, the Assessments of the Intergovernmental Panel on Climate Change (IPCC).



NATIONAL INSTITUTIONAL ARRANGEMENTS FOR ADDRESSING CLIMATE CHANGE

The project countries have, however, established institutional arrangements for dealing with climate change issues through administrative action, which have been described in some detail below, and have initiated some activities, often in collaboration with international partners within and outside the United Nations system, towards developing the necessary capacity, including technical and financial resources as well as the policy, legal and institutional framework for adapting to the adverse impacts of climate change in a well informed and coordinated manner. The current legal review process is expected to contribute significantly to this national programme of work.

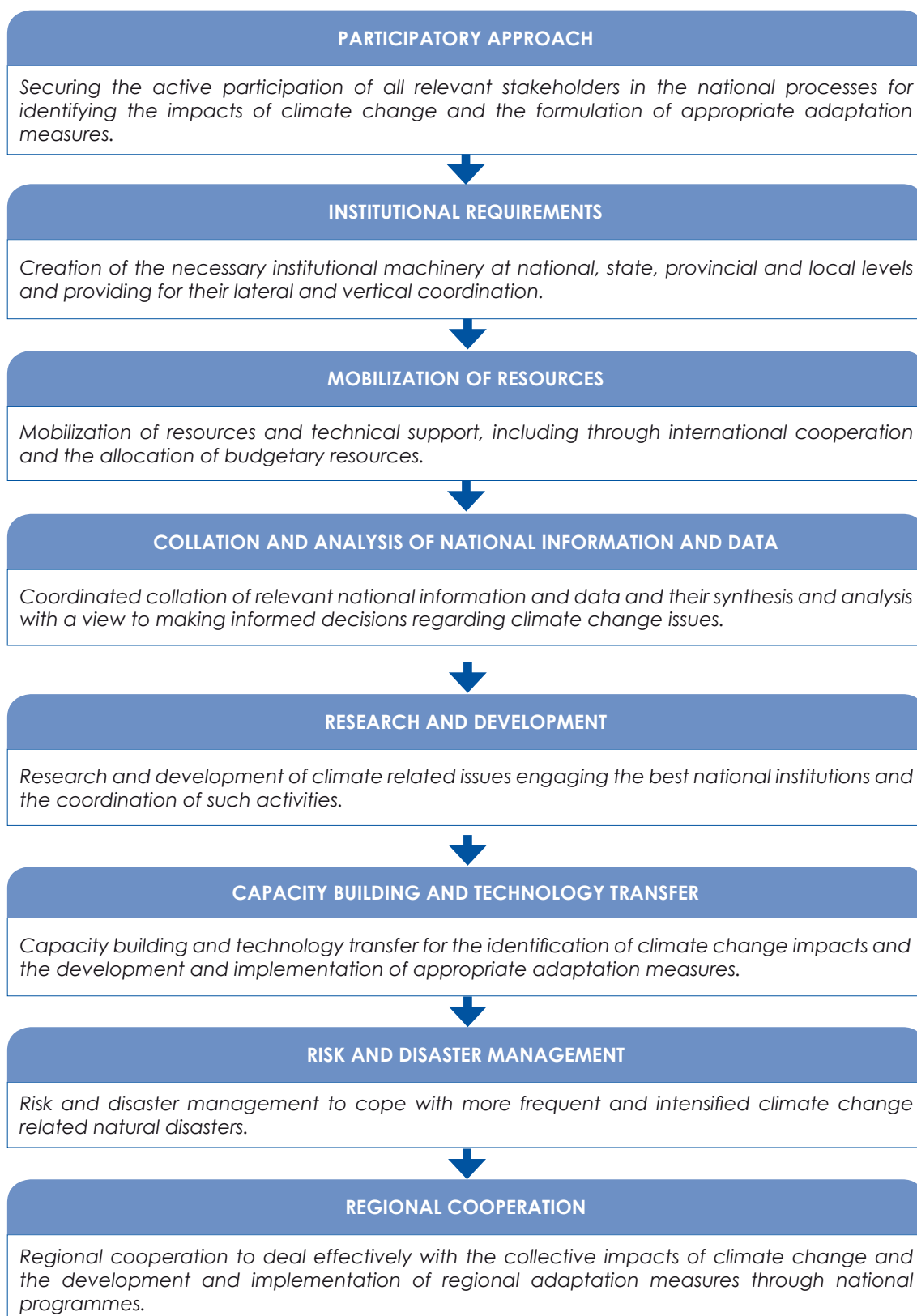


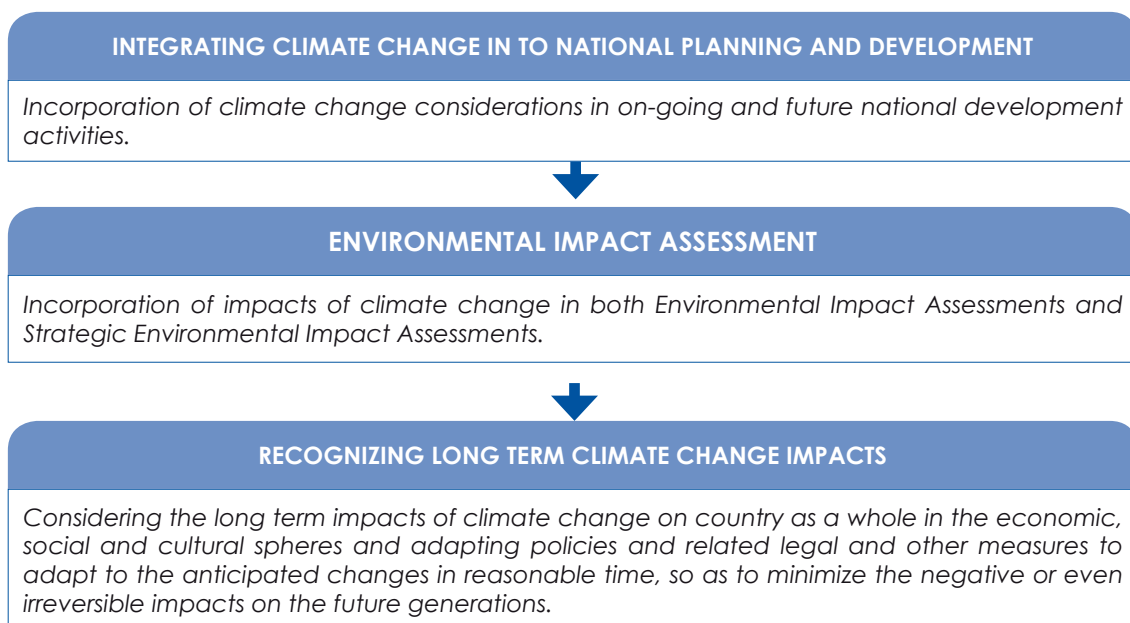
JUSTIFICATION FOR FURTHER LEGISLATIVE AND POLICY REVIEWS

The current state of knowledge on the impacts of climate change also determined the areas of focus of the legislative review. As the knowledge base expands and the countries have a fuller understanding of the exact nature and extent of the impacts and possible adaptation measures, there may be justification for further legislative and regulatory changes. For the time being, however, the legal reviews have focused on the following areas of action.

FOCUS OF LEGISLATIVE IMPROVEMENTS TO SUPPORT ADAPTATION

The national teams focused their attention on the following issues in determining areas for legislative strengthening having regard to existing uncertainties relating to the precise nature, extent, severity as well as the temporal and spatial aspects of the impacts of climate change on various dimensions of the socio-economic and environmental foundations in the three project countries.





INSTITUTIONAL FRAMEWORK FOR ADDRESSING ADAPTATION TO CLIMATE CHANGE

CAMBODIA

Cambodia is a least developed agrarian country. The Government acknowledges the country's low adaptive capacity due to major resource constraints. According to the Government, the National Adaptation Programme of Action to Climate Change (NAPA)²⁶ aims at addressing the country's urgent adaptation needs, achieving the Millennium Development Goals (MDGs) and other development objectives under the conditions of climate change. The major challenge facing the Government is to mobilize adequate resources for the implementation of NAPA.

The Cambodian NAPA provides a framework for the coordination and implementation of adaptation initiatives through a participatory approach and to build synergies with other relevant environment and development programmes. It presents a series of priority projects to address the urgent and immediate need to adapt to the adverse effects of climate change in key sectors such as agriculture, water resources, coastal zone and human health. It identifies agriculture, forestry, human health, coastal zone and water resource as

priority sectors. The cross-sectoral adaptation project activities include: enhancement of the national weather forecast centre under the Department of Meteorology, awareness raising and education on climate change issues, development of school extra-curricular materials on climate hazards, vegetation planting for flood and windstorm protection and strengthening community disaster preparedness and response capacity.

The Cambodian Climate Change Office (CCCO) was created in 2003 and was elevated as Climate Change Department on 14 October 2009 under the *General Directorate of Administration for Nature Conservation and Protection* of the Ministry of Environment. It is responsible for, inter alia, all technical activities related to the implementation of the UNFCCC and other climate change-related tasks assigned by the Ministry of Environment, identifying and assessing new adaptation technologies, which are appropriate for Cambodia, and promoting climate change-related research activities and human capacity-building. The Ministry of Environment also coordinated the formulation of the "National Action Plan on Climate Change" in 2001. The NAPCC aims to integrate climate change concerns into other national plans and programmes, to develop adaptation strategies, and to catalyze the involvement of relevant stakeholders. The NAPCC also recommended adaptation measures in various vulnerable sectors, such as water supply, agriculture and the coastal zone.

²⁶ Royal Government of Cambodia, Ministry of Environment National Adaptation Programme of Action to Climate Change (NAPA) (October 2006) available at <unfccc.int/resource/docs/napa/khm01.pdf>

CAMBODIA

CAMBODIA- FUNCTION OF CAMBODIAN CLIMATE CHANGE DEPARTMENT,

The Cambodian Climate Change Department was established under the government's Sub-decree No. 175 NorKror/BorKor, dated 14 October 2009 on the creation of Department and Promotion of Office to become technical department under the General Directorate of Administration for Nature Conservation and Protection, Ministry of Environment.

Climate Change Department, Ministry of Environment shall have the following key roles and functions:

- *Develop, in collaboration with relevant agencies, national strategy, action plan and policy and legal instruments related to climate change;*
- *Implement United Nations Framework Convention on Climate Change (UNFCCC), protocols to and decisions under it;*
- *Develop national communications and green house gases (GHG) inventory of the Kingdom of Cambodia under the UNFCCC;*
- *Conduct an assessment of potential GHG mitigation and promote the implementation of GHG mitigation projects in the Kingdom of Cambodia with appropriate technology;*
- *Conduct assessment of vulnerability and adaptation (V&A) to climate change and promote implementation of climate change adaptation project in the Kingdom of Cambodia;*
- *Promote mainstreaming of climate change in the national development and sectoral plans and coordinate the implementation of clean development mechanism and carbon credit projects in the Kingdom of Cambodia;*
- *Promote research, education, dissemination, training, workshop and meeting to promote awareness on climate change and motivate participation of local communities in implementation of climate change response project;*
- *Develop projects and programs and coordinate, monitor and evaluate the implementation of all climate change related project and programs in the Kingdom of Cambodia;*
- *Mobilized required resources, particularly to attract grants for implementation of policy, strategy, legal instruments, plans and programs on climate change;*
- *Play role as a focal point for the UNFCCC, Kyoto Protocol, CDM, resolutions and IPCC and develop government position for negotiation;*
- *Perform secretarial role for the national climate change committee;*
- *Cooperate with line agencies for the development and management of climate change fund and carbon credit policy;*
- *Enhance collaboration with national agencies, development partners, civil society, and private sector for effective implementation of response measures to climate change as well as the UNFCCC; and*
- *Develop reports of activities and progress of work for submission to the government, ministry of environment, national and international agencies and relevant development partners.*

LAO PDR

In Lao PDR, the Science Technology and Environment Agency (STEA) which is within the Office of the Prime Minister,²⁷ is in charge of the overall coordination and oversight of environmental affairs including setting policy and regulatory framework, monitoring the state of the environment and compliance with policies and regulations. Climate change-related activities are carried out by the National Greenhouse Gas Inventory Committee (NGIC) which functions under the Department of Environment which is one of the departments that function under the STEA. It is headed by the Chairman of the STEA. It is supported by a Technical Working Group comprising senior officials of several Ministries and is responsible for preparing the country's greenhouse gas inventory and exploring actions to address climate change. Responsibilities with regard to environmental protection and natural resource conservation and sustainable use are also shared by several Ministries including the Ministry of Agriculture and Forestry, Ministry of Industry and Handicraft, Ministry of Communications, Transport, Post and Construction, Ministry of Public Health and the State Planning Committee.

LAOS

LAOS: INSTITUTIONAL FRAMEWORK FOR ADAPTATION TO CLIMATE CHANGE: SCIENCE TECHNOLOGY AND ENVIRONMENT AGENCY

The Science Technology and Environment Agency (STEA) is in charge of the management and protection of the environment.²⁸ Climate change-related activities also fall within the responsibility of the STEA. The National Greenhouse Gas Inventory Committee (NGIC) is chaired by the STEA chairman and provides overall guidance to the climate change policy. The Technical Working Group (TWG), which comprises of representatives from each government ministry, is responsible for preparing the country's greenhouse gas inventory and exploring actions to address climate change. The figure below, Figure: Organizational Structure of the NGIP, shows the institutional arrangement described above.²⁹

| | |
|---|--|
| Prime Minister's Office | |
| Science Technology and Environment | |
| Department of Environment | |
| National Greenhouse Gas Inventory Committee | Technical Working Group |
| <ul style="list-style-type: none"> - STEA – Chairman - Ministry of Agriculture and Forestry – Member - Ministry of Industry and Handicrafts – Member | <ul style="list-style-type: none"> - STEA – Team Leader - Ministry of Agriculture and Forestry – Member - Ministry of Industry and Handicrafts – Member - Ministry of Communication, Transport, Post and Construction – Member - Ministry of Public Health – Member |

The table below provides an overview of the various government agencies that deal with environmental matters, as well as the principal laws and other legal instruments that address environmental protection and management.³⁰

²⁷ See <<http://www.culturalprofiles.net/laos/Units/605.html>> last visited 5th March 2010.

²⁸ Lao PDR's First National Communication at p. 39.

²⁹ Ibid. at p. 40.

³⁰ This table is reproduced from International Centre of Environmental Management (ICEM), "Lao PDR National Report on Protected Areas and Development. Review of Protected Areas and Development in the Lower Mekong River Region" (2003) Indooroopilly, Queensland, Australia (hereinafter "National Report on Protected Areas and Development")

GOVERNMENT AGENCIES DEALING WITH ENVIRONMENTAL ISSUES AT POLICY, PLANNING, AND MANAGEMENT LEVELS

| Agency | Responsibilities |
|--|--|
| Science, Technology and Environment Agency, Office of the Prime Minister | Overall coordination; oversight of environmental affairs; environmental management (setting policy and regulatory framework, monitoring state of the environment and compliance with policies and regulations) |
| Ministry of Agriculture and Forestry | Forest resource use and management; biodiversity conservation and management; soil resource management; water resource management; fisheries, livestock and crop production. |
| Ministry of Industry and Handicrafts | Hydropower development; industrial environment development; mineral resources. |
| Ministry of Communications, Transport, Post and Construction | Development and management of infrastructure. |
| Ministry of Public Health | Public health and sanitation; medicinal plants. |
| State Planning Committee | National development planning; development project and approvals. |

(Source: National Report on Protected Areas and Development, p. 52)

VIETNAM

The Decision No. 158/2008/QĐ-TTg³¹ made by the Prime Minister of Vietnam, pursuant to the Law on Organization of Government, on Approval of the National Target Program to respond to Climate Change, sets out Vietnam's policy framework and the institutional arrangements for addressing issues relating to climate change. It sets out Vietnam's viewpoints, guiding principles and scope; the General and specific objectives; tasks and solutions including assessment of climate change extent and impacts in Viet Nam, identification of measures to respond to climate change, development of a science and technology program on climate change,

strengthening the capacities of organization, institutions and policy on climate change, awareness raising and human resources development, enhancement of international cooperation, mainstreaming climate change issues into socio-economic, sectoral and local development strategies, plans and planning, development of Action Plans of Ministries, sectors and localities to respond to climate change and the development and implementation of projects of the Program. The Prime Ministerial Decision also provides a Financial Mechanism for the implementation of the Program and its Organisational structure. The box below sets out Vietnam's institutional structure for addressing climate change challenges.

³¹ <http://www.isge.monre.gov.vn/index.php?lang=1>

VIETNAM

Institutional arrangements for addressing climate change (Excerpt from Decision No. 158/2008/QĐ-TTg made by the Prime Minister of Vietnam, pursuant to the Law on Organization of Government, on Approval of the National Target Program to respond to Climate Change)**Article 2. Organization for implementation****1. Establish the National Steering Committee, Executive Board, and Standing Office of the NTP**

- a) *The National Steering Committee for the National Target Program to Respond to Climate Change (hereinafter referred to as the Steering Committee) comprises of: the Prime Minister - Chairman; Minister of the Ministry of Natural Resources and Environment - Standing Vice Chairman; Minister of the Ministry of Planning and Investment - Vice Chairman; Minister of the Ministry of Finance - Vice Chairman; Others Members are the Minister of the Ministry of Agriculture and Rural Development and Minister of the Ministry of Foreign Affairs.*
- b) *Executive Board of the NTP (hereinafter referred to as the Executive Board) comprises of: the Minister of the Ministry of Natural Resources and Environment - Chairman; the two Vice Chairmen are a Vice Minister of the Ministry of Planning and Investment and a Vice Minister of the Ministry of Finance; Other members are representatives of the Ministries of Agriculture and Rural Development, Foreign Affairs, Industry and Trade; Labour, Invalids, and Social Affairs; Transportation; Construction; Information and Communication; Education and Training; Home Affairs; Health; Science and Technology; Culture, Sport and Tourism; Defense; and Public Security.*

The Minister of Ministry of Natural Resources and Environment shall submit to the Prime Minister functions, tasks, and operational regulations of the Steering Committee and the Executing Board.

- c) *The Standing Office of the NTP, located at the Ministry of Natural Resources and Environment, is an assisting agency of the Executing Board to coordinate activities of the NTP. The Minister of Ministry of Natural Resources and Environment shall promulgate operation regulation of the Standing Office of the NTP.*

2. Responsibilities of Ministries, sectors, provinces, and related organizations

- a) *Ministry of Natural Resources and Environment The Ministry of Natural Resources and Environment, according to the assigned State management functions responsibilities, shall assist the Executive Board to coordinate activities of Ministries, sectors, provinces in managing and implementing the NTP, focusing in the following main tasks:*
- *To chair and co-operate with the relevant agencies and authority of different levels in developing mechanism, policies for the management and execution of the implementation of the NTP to submit to the Prime Minister for issuing or to issue according to the assigned functions and tasks;*
 - *Based on the NTP implementation plan, calculate the necessary budget to submit to the Executing Board in order to summarize and incorporate into annual funding plans reported to the Ministries of Planning and Investment and Finance in accordance with the Law on State Budget;*
 - *To guide and assist ministries/sectors/provinces in developing and implementing their action plans to respond to climate change;*
 - *To inspect, test, and regularly assess and draw lessons learnt from implementation of the NTP;*
 - *To generally co-ordinate the activities of the publication of information, training, education, and communication related to climate change;*
 - *To annually synthesize and report to the Prime Minister results of the NTP implementation, and propose measures to resolve problems that are outside the Ministry's functions and authority;*
 - *To chair, co-ordinate with Ministry of Planning and Investment to develop a monitoring and evaluation mechanism for NTP implementation;*
 - *To instruct, monitor and evaluate NTP implementation;*
 - *To develop and implement action plans of the Ministry to respond to climate change, and carry out assigned projects/plans.*
- b) *Ministry of Planning and Investment:*
- *To take the lead and co-ordinate with other ministries/sectors/provinces to develop a standard framework procedure and guidelines for mainstreaming climate change issues into socio-economic development strategies, programs, plans and planning;*

- To co-ordinate with the Ministry of Natural Resources and Environment in the development of a monitoring and evaluation mechanism for NTP implementation;
- To develop and implement action plans of the Ministry to respond to climate change.

c) Ministries, ministerial agencies and other Governmental authorities:

To develop and implement their action plans to respond to climate change; carry out tasks assigned by the NTP; proactively participate in common coordinated activities under the direction of the Steering Committee.

d) People's Committees of Provinces and central-governed Cities

- To develop and implement action plans to respond to climate change in their provinces and cities;
- To organize the implementation of related activities approved in the NTP;
- To ensure the correct and efficient use of funds allocated under the NTP;
- To mobilize additional resources and combine all related activities of other programs within provinces/cities to achieve the objectives of the NTP;
- To comply with the monitoring and evolution principles defined in the NTP;
- To periodically report on the implementing progress of the NTP objectives and tasks at the provincial/city level.

e) Social Organizations, Non-Government Organizations, and Enterprises Promote political-social organizations, unions, non-government organizations, private sector, and enterprises, according to their functions and roles, to actively participate in climate change response activities, especially in the area of information, education and communication; support and mobilise the communities in active participation, expansion and dissemination of experiences of climate change response models; implement or participate in the NTP and action plans of Ministries, sectors and localities....."

NATIONAL CONSENSUS BUILDING ON THE OUTCOME OF THE WORK DONE BY THE NATIONAL TEAMS

The overwhelming governmental support for this work in the three project countries including the convening of inter-ministerial consultative meetings to facilitate a broad consensus on the proposed provisions to strengthen support for adaptation across a wide range of economic sectors, demonstrates the recognition by governments of the importance of this process for taking action at national, provincial and local levels for adaptation to climate change and the seriousness with which the proposals of the national team are being considered at the

national level. It must be recognized, however, that this is only the beginning of a long-term national process in the three project countries to further consider the proposals of the national teams and other proposals that may emerge in the future, in the light of continuing process of collection and analyses of evidence of the actual impacts of climate change and to set in train appropriate national action for further development of policies and related legislative and regulatory measures. The following boxes set out summaries of the reports of the Inter-Ministerial Consultative Meeting of Cambodia, Lao PDR and Vietnam, respectively.

CAMBODIA

Inter-ministerial Consultative Meeting on the Draft Amendments of existing Laws and Regulations to Integrate Climate Change Adaptation

Summary

The Ministry of Environment of the Royal Government of Cambodia with the support from the United Nations Environmental Programme (UNEP) organized a Consultative Meeting on the Draft amendments of existing Laws and Regulations to Integrate Climate Change Adaptation on 24th December 2009. The objectives of the meeting are to: (a) introduce the proposed amendments of existing laws/regulations/policies to integrate climate change adaptation, (b) facilitate the integration of climate change adaptation into sectoral policies and plans, and, (c) obtain comments and suggestions from key government ministries on the proposed amendments of existing laws/regulations/policies to integrate climate change adaptation. There were 20 participants from key line ministries and institutions including Ministry of Environment; Ministry of Agriculture, Forestry and Fisheries; Ministry of Industry, Mines, and Energy; Ministry of Land Management, Urban Planning and Construction; Ministry of Water Resources and Meteorology; and Electricity Authority of Cambodia.

At the start of the meeting, H.E. Mr. **Thuk Kroeun Vutha**, Secretary of State, Ministry of Environment delivered welcome remarks to all the participants. He highlighted the impacts of climate change, such as increase global temperature, sea level rise, change in precipitation and other climate extreme events, which consequently impacts on the socio-economy. He mentioned that adaptation to climate change for all concerned sectors is crucial, in particular in the least developed countries, like Cambodia, which mostly relies on agriculture. He also pointed out that Cambodia was similar in this regard to the other two countries, namely Lao.P.D.R and Vietnam in implementation of UNEP's pilot project on **legal and regulatory aspects of vulnerability to climate change in Asia Pacific**. Finally, he thanked the national project team for their hard work and encouraged participants to actively take part in discussion on the draft amendments of existing Laws and Regulations to integrate Climate Change Adaptation.

Dr. Tin Ponlok, National Project Coordinator of Second National Communication to the United Nations Framework Convention on Climate Change (UNFCCC), chaired the meeting. He noted that Cambodia ratified the UNFCCC in December 1995 and acceded to the Kyoto Protocol in July 2002. He informed participants about the recent development of climate change institutional arrangement in Cambodia, including the elevation of the Cambodian Climate Change Office to Climate Change Department by a sub-decree dated 14 October 2009.

Mr. Sum Thy, Director of the Climate Change Department and the National Project Leader introduced the background of the project to all participants. He mentioned that the project was initiated by the Division of Environmental Law and Conventions, and aims at addressing legal and regulatory aspects of vulnerability to climate change, and further seeks to improve national legislation on adaptation to climate change in three developing countries in Asia. He added that the project is intended to be a pilot exercise, which, if successful, will be upgraded and replicated in other regions and experiences and lessons learned from this project will be translated into draft guidelines for crafting adaptation legislation in other developing countries. He noted that the objective of the project are to: (1) amend to legal and appropriate policy tools that will be developed and proposed for reducing vulnerability to climate change, (2) develop agreed package of legislative, regulatory and other policy instruments to be submitted to the Governments of the selected countries for consideration to address vulnerability and risks associated to climate change. He also expected that the discussion on draft exercise will help participants from relevant ministries understand more about the integration of climate change adaptation initiatives into the relevant existing laws and regulations.

Mr. Hak Mao, National Project Expert presented the outcomes of suggested revisions to the existing laws and regulations prepared by the project team to all the participants. He mentioned that 16 laws and regulations were selected for review and suggestion for amendments.

The followings are summary of comments and suggestions raised in the meeting:

- Request to add the Community Fisheries Sub-Degree to the existing 16 sectors. Project team will contact the Fishery Administration to obtain the sub-decree in both English and Khmer
- Remove all suggested provisions to the laws and regulations on fines and punishments, taking into account the non-legal binding commitment of Cambodia to the United Nations Framework Convention on Climate Change (UNFCCC)
- Request to translate those reviewed laws and regulations to Khmer language to facilitate further consultation

- Request the UNEP's law experts to visit offices of concerned ministries to discuss and consult with the respective law experts in each ministry and institution
- There were some concerns on the utilization of word "amendments of existing Laws and Regulations", since they had already been adopted by the National Assembly and Endorsed by the King
- The proposed amendments should clearly distinguish the adaptation and GHG mitigation actions
- Some thought was raised on the development of a new separate climate change law. Therefore a request was made to the UNEP's law experts to investigate whether similar climate change laws were developed by any countries, so that Cambodia can use them as the model; and
- Some participants requested to integrate only climate change adaptation into concerned sectors.

LAO PDR

Lao PDR Outcome of Inter-Ministerial Consultative Workshop on the review of the national laws to support adaptation to climate change

1. It is of paramount importance that the line Ministries in Lao PDR be aware of these issues and the sectoral considerations as all these sectors are related to the National Social Economic Development Plan
2. Use the outcome of the work of the National Team to mainstream Climate Change activities into the concerned sectors and for also raising awareness and for the implementation of measures for adaptation to climate change in the future.
3. It is challenging to assimilate Climate Change issues in the context of existing rules and regulations in the concerned sectors, as any changes in the legislation have to be endorsed by relevant sectors and some of the sectors have just completed revising their legislations. The process is likely to be very time consuming.
4. Consideration should be given to the development of a specific regulation on Climate Change or alternatively, integrating matters relating to climate change in the Environment Protection Law.
5. Water Resources Environment Administration needs to inform the line Ministries concerned about the results of the assessment of 15 laws in Lao PDR that was done by a Lao National Team and propose that different sectors consider updating the relevant laws taking into consideration the outcome of the work of the National Team, when the revision of the laws are done.
6. The initial step should be to develop regulations/decrees or soft law instruments incorporating agreed suggestions of the National Team.

VIETNAM

National consultations on the legal and regulatory aspects of vulnerability to climate change in Viet Nam

The above consultations were held at a workshop organized by the Ministry of Natural Resources and Environment in Hanoi, Vietnam on 22 December 2009. It was attended by 78 participants from almost every Ministry and Agency dealing with climate change issues.

Objectives:

- To discuss the preliminary results of the legal review carried out by the national team among a broad cross section of national stakeholders with a view to obtaining their comments and suggestions and other feedback.
- To benefit from the varied expertise and experience of senior officials, experts and policy makers of ministries and agencies and other institutions in the country in regard to the development and implementation of policies, laws and regulations that relate to economic, social and environmental activities in Vietnam in the context of current and anticipated impacts of climate change.
- To ensure a common understanding of the proposals among the participants and to promote a national consensus for the suggested changes to existing national laws and regulations for the purpose of integrating climate change considerations into national legal and institutional regimes.

Focus of workshop:

- Impact of the climate change on sustainable development of Vietnam.
- Current laws in Vietnam relating to the 17 sectors examined by the national team.
- Outcome of the work done by the national team on integrating climate change issues into current laws.
- Review of comments and suggestions received from various ministries and agencies on the preliminary suggestions of the national team.

Outcome

- In general, the suggestions of the national teams will contribute to better adaptation to the current and anticipated adverse impacts of climate change and that there was a need to look at other sectors not covered by the national team such as education as well as the positive impacts of climate change.
- The incorporation of provisions relating to climate change in the objectives and principles sections of the related laws may contribute towards the interpretation and application of the entire legal instrument in a manner that would take into account the consequences of climate change.
- The policy and legal reforms should be viewed as a means of implementing international treaties to which Vietnam is a party and that these should be realistic and be based on the obligations of the treaty as well as scientific evidence. Where appropriate, new laws and regulations should be considered to replace outdated ones.
- That the proposed changes should be followed by continuing research and data collection to ascertain more definitively the adverse impacts of climate change and to determine appropriate response measures.

PART 2

Chapter 3- INTRODUCTION

The legal provisions contained in this publication have been developed on the basis of the suggestions made by the national teams in the context of their respective national laws and are therefore necessarily illustrative rather than comprehensive. Furthermore, since the legal provisions are based on specific national laws, their applicability must be viewed from the perspective of the particular national circumstances that underlie such provisions. However, since there are striking similarities in the manner in which climate change impacts on the economic, social and environmental dimensions of countries, these policy and legal formulations are likely to provide pointers to the type of legal provisions that may be formulated by countries to support adaptation to climate change. The legal provisions in these publications are therefore aimed at being an illustrative guide to policy makers and legal drafters engaged in further strengthening national laws and regulations to support adaptation to the adverse impacts of climate change.

EMERGING LEGAL AND INSTITUTIONAL ARRANGEMENTS

There are no provisions in the national laws and regulations in the three project countries that specifically focus on climate change issues, not even in respect of the implementation of the UNFCCC to which all three countries are parties.

THE PHILIPPINES

The **Philippines** appears to be the first developing country in Asia to have enacted a law dealing specifically with climate change issues, namely, the Climate Change Act of October 2009.³² The Law states that it is aimed at “mainstreaming climate change into government policy formulations, establishing the framework strategy and program on climate change, creating for this purpose the climate change commission, and for other purposes.” It does not however contain legal provisions relating to specific measures that are to be taken for the purpose of adapting to the adverse effects of climate change. Instead, it establishes a Climate

³² <http://tonyocruz.com/?p=2536>

Change Commission which is empowered to recommend legislation, policies, strategies, programs on and appropriations for climate change adaptation and mitigation and other related activities;

The policy declaration in Article 2 of the Act provides, *inter alia*, that the State shall

- cooperate with the global community in the resolution of climate change issues, including disaster risk reduction;
- enjoin the participation of national and local governments, businesses, nongovernment organizations, local communities and the public to prevent and reduce the adverse impacts of climate change and, at the same time, maximize the benefits of climate change;
- strengthen, integrate, consolidate and institutionalize government initiatives to achieve coordination in the implementation of plans and programs to address climate change in the context of sustainable development;
- recognizing that climate change and disaster risk reduction are closely interrelated and effective disaster risk reduction will enhance climate change adaptive capacity, the State shall integrate disaster risk reduction into climate change programs and initiatives.

By Article 4 of the Act an independent and autonomous Commission of Climate Change attached to the Office of the President of the Philippines is established, comprising high level government officials including local government officials and representatives of the private sector and civil society. The Commission is the sole policy-making body of the government which is empowered to coordinate, monitor and evaluate the programs and action plans of the government relating to climate change. Among the functions of the Commission set out in Article 9 are the following:

- Ensure the mainstreaming of climate change, in synergy with disaster risk reduction, into the national, sectoral and local development plans and programs;
- Recommend legislation, policies, strategies, programs on and appropriations for climate change adaptation and mitigation and other related activities;
- Formulate and update guidelines for determining vulnerability to climate change

impacts and adaptation assessments and facilitate the provision of technical assistance for their implementation and monitoring;

INDONESIA

A similar institutional arrangement has been established in **Indonesia** by Presidential Decree No. 46 of 2008 by which a National Council for Climate Change was established chaired by the President of the Republic of Indonesia and comprising several Ministers in charge of the sectors dealing with climate change issues³³. Its mandate is to coordinate the control over climate change and to strengthen the position of Indonesia in international forums on climate change. Its functions include formulating national policies, strategies, programs and activities to control climate change; coordinating activities in controlling climate change including the activities of adaptation, mitigation, transfer of technology and funding.

REPUBLIC OF KOREA

Speaking at the 64th session of the United Nations General Assembly in September 2009, the President of the **Republic of Korea** stated that they are currently working on enacting a Framework Law on Green Growth.³⁴ Based on the press release published by the Prime Minister's Office,³⁵ the Framework Act will include provisions relating to the following:

- Providing a framework for the government to work out a comprehensive plan for climate change response and annual implementation plans;
- The Korean government and local governments shall draw up and implement a five-year comprehensive plan for climate change response and annual implementation plans accordingly;
- Providing a framework for establishing and operating the Climate Change Measures Committee and the Working-level Committee ;
- The Climate Change Countermeasures Committee shall consist of members including

³³ http://www.bkpm.go.id/file_uploaded/2008+Perpres+46+-+English.doc

³⁴ <http://www.un.org/ga/64/generaldebate/KR.shtml>

³⁵ <http://www.guardian.co.uk/environment/2009/aug/27/china-climate-change>

a chair (the President), a vice chair (the Prime Minister) and a head of administrative organization, and associate members of experts;

- The Committee shall review and decides on the matters as follows:
 - Framework for climate change response, and strategy & planning;
 - Matters on establishing, implementing, checking and evaluating a comprehensive plan for climate change response; and,
 - Matters on research and development regarding climate change response;
 - Preparing the provision on creating and managing the Climate Change Response Fund;
- The Fund shall be created, administered and managed to efficiently push for and support projects designed to address climate change at home and abroad;
- Preparing the provision on encouraging organizations in private sector to take actions for climate change response, drawing up measures for adjustment through evaluating impact and effects of climate change and the nation's vulnerability, working out measures to foster science & technology of the nation and nurture talented manpower.

NEW ZEALAND

In **New Zealand**, the Climate Change Response Act 2002 puts in place a legal framework to allow New Zealand to ratify the Kyoto Protocol and to meet its obligations under the United Nations Framework Convention on Climate Change.³⁶

The Act includes powers for the Minister of Finance to manage New Zealand's holdings of units that represent New Zealand's target allocation for greenhouse gas emissions under the Protocol. It enables the Minister to trade those units on the international market. It establishes a registry to record holdings and transfers of units. The Act also establishes a national inventory agency to record and report information relating to greenhouse gas emissions in accordance with international requirements. Furthermore, under the Resource Management Act, local government councils are required to consider the effects of a changing climate on

³⁶ <http://www.elaw.org/node/5130>

their communities and to incorporate climate change into existing frameworks, plans, projects and standard decision-making procedures. A climate change perspective is now integrated into activities such as flood management, water resources, planning, building regulations and transport³⁷

The Coastal Management Plans prepared by local authorities under the Coastal Protection Act (1979) of New South Wales, **Australia** provides for protection and preservation beach environments. The North Coast Regional Environment Plan obliges the council to consider sea-level rise when considering applications for development of coastal land.³⁸

JAPAN

Japan's Law concerning the Promotion of Measures to Cope with Global Climate Warming came into effect in October 1998.³⁹ Article 1 sets out the purpose of the law as being to promote the measures to cope with global warming through, e.g. defining the responsibilities of the central government, local governments, businesses and citizens to take measures to cope with global warming, and establishing a basic policy on measures to cope with global warming, and thereby contribute to ensuring healthful and cultural lives of present and future generations of people, and to contribute to the welfare of all human beings.

CHINA

China's legislative body, the National People's Congress, approved its first climate change resolution on 28 August 2009 and announced plans to draw up new laws to combat global warming⁴⁰. It is expected that China will draw up new laws and regulations to provide a legal basis for combating climate change. The resolution inter alia, called for the government to strengthen its early warning systems and make better preparation for extreme events, such as typhoons. It recommends greater investment in

³⁷ «Resource Management Act 1991 New Zealand (Including amendments)
http://www.legislation.govt.nz/act/public/1991/0069/latest/DLM233820.html?search=sw_096be8ed804daffa_local+government&p=1&sr=12”

³⁸ Climate law in Australia, Tim Bonyhady and Peter Christoff (2007) pg. 130

³⁹ <http://www.env.go.jp/en/laws/global/warming.html>

⁴⁰ <http://www.guardian.co.uk/environment/2009/aug/27/china-climate-chang>

water-saving technologies and low carbon energy. The country already has the Energy Conservation Law, Renewable Energy Law,

Circular Economy Promotion Law, Cleaner Production Promotion Law, Forest Law and Grassland Law.

LIST OF SECTORAL LAWS AND REGULATIONS REVIEWED BY THE NATIONAL TEAMS

The following box contains the list of Laws and Regulations relating to each of the seventeen thematic areas examined and reviewed by the respective National Teams.

| CHAPTER TITLE | CAMBODIA | VIETNAM | LAO PDR |
|--------------------|--|---|---|
| WATER | <ol style="list-style-type: none"> 1. Law on Water Resources Management 2. Water Pollution Sub-decree | <ol style="list-style-type: none"> 1. Law on Water Resources (1998) | <ol style="list-style-type: none"> 1. Law on Water and Water Resources |
| IRRIGATION | <ol style="list-style-type: none"> 1. Law on Water Resources Management in Chapter III and Chapter IV. | <ol style="list-style-type: none"> 1. Law on Dikes (2006) | |
| AGRICULTURE | <ol style="list-style-type: none"> 1. Sub-Decree on the Management/ Administration and the Use of Agricultural Lands | <ol style="list-style-type: none"> 1. Law on High Technologies (2008) 2. Law on Product and Goods Quality (2007) 3. Law on Technology Transfer (2006) | <ol style="list-style-type: none"> 1. Law on Agriculture |
| ENVIRONMENT | <ol style="list-style-type: none"> 1. EIA Sub-decree 2. Air Pollution Control and Noise Disturbance Sub-decree 3. Ozone Depletion Substances Sub-decree 4. Law on Protected Areas 5. Solid Waste Management Sub-decree 6. Law on Environment Protection and Natural Resource Management 7. Law on the Management of Quality and Safety of Products and Services | <ol style="list-style-type: none"> 1. Law on Environmental Protection (2005) | <ol style="list-style-type: none"> 2. Environmental Protection Law |
| TRANSPORT | <ol style="list-style-type: none"> 1. Cambodian Land Traffic Law 2. Law on Civil Aviation | <ol style="list-style-type: none"> 1. Law on Road Traffic (2008) 2. Railway Law (2005) 3. Law on Inland Waterway Navigation (2004) 4. Vietnam Civil Aviation Law (2006) | <ol style="list-style-type: none"> 1. Land Transport Law 2. Law on Public Roads 3. Law on Land Traffic |

| CHAPTER TITLE | CAMBODIA | VIETNAM | LAO PDR |
|------------------------------------|--|---|---|
| LAND AND LAND USE | 1. Land Law 2002 | 1. Land Law (2003) | 1. Land Law |
| CONSTRUCTION | 1. Law on Country Planning, Urbanization and Construction, (1994) | 1. Law on construction (2003) amended (2008) 2. Law on Urban Planning (2009) 3. Law on Housing (2005) | 1. Law on Urban Plans |
| HEALTH | 1. (There is no national law on Health) | 1. Law on People Health Protection (1989) 2. Law on Prevention and control of infectious diseases (2007) | 1. Law on Health Care 2. Law on Hygiene, Disease Prevention and Health Promotion |
| BIODIVERSITY AND ECOSYSTEMS | 1. Law on Biosafety – revised | 1. Law on Biodiversity (2008) | 1. Not available |
| FORESTRY | 1. Law on Forestry 2. Sub-decree on Forest Community | 1. Law on Forest Protection and Development (2004) | |
| ENERGY | 1. Law on Electricity 2. Petroleum Regulation | 1. Electricity Law (2004) 2. Law on Atomic Energy (2008) | 1. Energy Law |
| MINING | 1. Law on Mineral Resource 2. Management and Exploitation | 1. Law on Minerals (1996), amended (2005) 2. Law on Petroleum (1993), amended (2000, 2008) | 1. Mining Law |
| COASTAL AND MARINE AREAS | 1. There is no national law on Coastal and Marine areas | 1. The Vietnam Maritime Code (2005) | 1. (No Coast) |
| FISHERIES | 1. Fisheries Law | 1. Law on Fisheries (2003) | |
| TOURISM | 1. There is a Law of Tourism that was passed by the Parliament but there is no official translation of it. | 1. Law on Tourism (2005) | 1. Law on Tourism |
| CULTURE AND HISTORY | 1. Law (Kret) on Establishing Protected Cultural Zones in the Siem Reap/Angkor Region and Guidelines for their Management Dated May 28, 1994 2. Law (Kram) on the Protection of Cultural Heritage, dated January 25, 1996 | 1. Law on Cultural Heritage (2001) | |
| FINANCE AND PLANNING | Law of Investment in Cambodia | State Budget Law (2002) Investment Law (2005) | State Budget Law |

Chapter 4 - WATER RESOURCES

SECTION I – OVERVIEW OF THE EXTENT OF VULNERABILITY AND SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

All three project countries are experiencing the impacts of climate change in regard to water resources, particularly in the form of floods and droughts. The rainy season has seen increased rainfall which has caused severe floods in Central and Southern Vietnam. The dry season has seen a corresponding decrease in rainfall and the country has experienced droughts almost annually. Vietnam has also experienced extreme weather conditions and natural disasters, including typhoons as well as floods and droughts. Cambodia too is experiencing increased floods and droughts as well as windstorms. Water shortages have already become common throughout the year. These phenomena have caused a significant number of deaths as well as economic losses. Floods were the cause of 70% of rice production losses between 1998 and 2000 while droughts accounted for 20% of losses. From 1966 to 1995, Lao PDR has suffered the effects of both droughts and floods, which has cost the country millions of dollars and affected millions of people. The glacial retreat in China will affect the water supply of the Mekong River, thus causing water insecurity.

Measures to adapt to climate change in Lao PDR include mainstreaming climate change, building the adaptive capacity of the poor, enhancing ecosystem resilience and comprehensive disaster management. Measures to improve drought management and rural water supply systems must also be put in place. Other key areas of adaptation include improving and building management systems for sustainable use of drinking water and sanitation with the participation of communities in flood and drought affected areas, and enhancing knowledge and skills regarding water and sanitation system engineering. The Cambodian Government expects to develop relief and emergency services, meteorological and hydrological networks, and improve natural disaster prevention and preparedness in order to minimise the vulnerabilities of the rural poor to the effects of climate change. Vietnam too will take similar measures, including flood containment measures, rationalizing the management and use of water and conducting studies to predict

the impact of climate on water resources in the medium and the long term.

The purpose of the *Law on Water Resources Management* of Cambodia has, as its general purpose, to foster the effective and sustainable management of the water resources of the country to attain socio-economic development and the welfare of the people. It has been proposed that this section should be re-worded to encompass climate change issues and therefore would also provide that such objective should take into account the impacts of climate change on water resources that could adversely affect the socio-economic development and welfare of the people. Water and water resources must be managed and developed on the basis of an integrated water management plan, which, it is proposed, must take into account, climate change impacts on water. A centralised inventory on water resources will also take into account the adverse impacts of climate change. Proposed changes to support adaptation measures focus importantly on controlling water pollution to protect human health and the environment. Particular emphasis has been placed on reducing or preventing pollution of freshwater and saltwater ecosystems that may cause an increase in seawater levels. The discharge of hazardous wastes into public water areas has also been addressed. All stakeholders must be involved in the process. Other areas which have been emphasized include farmers' water use communities, groundwater, protected water use zones, flood control and international rivers.

The *Law on Water and Water Resources (1996)* of Lao PDR determines the framework relating to the administration, exploitation, use and development of water and water resources in the country. In order to incorporate climate change concerns into this law it proposes to require that this will be done taking account of the adverse impacts of climate change on water and water resources. The government will promote the development, use and protection of these resources, including the prevention of adverse impacts from water and all acts that cause the depletion of water. This necessarily will include adaptation to the adverse impacts of climate change on water. Water resources development activities also include within its definition those which protect against climate

change. A provision relating to the protection of water and water resources will also be amended to require protection from climate change impacts.

The Vietnam *Law on Water Resource (1998)* states that water resources come under the ownership of the people under the unified management of the State. Organisations and individuals are entitled to exploit and use these resources for life and production. The law provides that they have the responsibility to protect the water resources, and a proposed change to this provision would also include a requirement to respond to the adverse impacts of climate change together with the responsibility to protect and conserve water, as well as to prevent, combat and control the harmful effects caused by water as a result

of climate change. Further changes proposed require the State to adopt policies to manage and protect water resources and to exploit these resources rationally, economically and efficiently. The State shall also invest in the development of water resources and enhance its capacity to deal with the adverse impacts caused by water as a result of climate change. In this regard, it will encourage and facilitate co-operation with other countries, organizations and individuals and include formulation and implementation of measures, which provide for adaptation to the adverse impacts of climate change. Some specific features of the proposed changes relate to the exploitation and use of water for hydro-electricity, preventing and dealing with flash floods and the consequences of drought.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

The draft legislative provisions cover the following matters:

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| 2.10 Groundwater | |
| 2.11 Obligations of organizations and individuals that exploit and use water resource | |
| 2.12 Discharge of hazardous wastes into public water areas | |
| 2.13 Exploitation and use of water resource for hydro-electricity | |
| 2.14 Contents of State management of water resources | |
| 2.15 Farmers' Water User Communities | |
| 2.16 Water Source Development Activities | |
| 2.17 Principles Governing Water Source Development Activities | |
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1. GENERAL PROVISIONS

1.1 General Provisions

Add following sub-section to the list of objectives of the Law:

"The purpose of this sub decree is to control water pollution in order to prevent and reduce the pollution of public water areas, with a view to ensuring the protection of human health and the protection of the environment and in particular, to prevent or reduce the pollution of freshwater and saltwater ecosystems that may result in increasing seawater levels and adversely affect human health and biodiversity .

(Based on the Water Pollution Sub-decree of the Kingdom of Cambodia - (Art. 1))

Add following sub-section to the list of objectives of the Law:

"The State shall adopt policies-

- (a) for managing and protecting, and for exploiting rationally, economically and efficiently, all water resources,*
- (b) for preventing, combating and controlling the harmful effects caused by water, with a view to ensuring adequate supplies of water for domestic and economic purposes and for national defense and security,*
- (c) for the protection of the environment, ecosystems and biodiversity, including policies providing for effective adaptation to climate change and for the sustainable development of the country."*

(Based on the Law of Water Resources of Vietnam (1998) - (Art. 4))

1.2 Use of water resources

1.3 Function of the Law on Water and Water Resources

The Law on Water and Water Resources sets out the principles and provisions for the management, exploitation, use and development of water and water resources in the country, in order to-

- (a) ensure sustainability of water and water resources, taking into account in particular, the adverse impacts of climate change on water and water resources;*
- (b) ensure that water of satisfactory quality, and in sufficient quantities, is available to meet the living requirements of the people;*
- (c) promote agriculture, forestry, and industry;*
- (d) contribute to the development of the national economy; and*
- (e) ensure protection of the environment.*

(Based on the Water Law (1996) of Lao PDR – (Art. 1))

2. MANAGEMENT OF WATER RESOURCES

2.1 Management of water resources

"Organizations and individuals are entitled to exploit and use water resources for life and production. At the same time they have the responsibility to protect and conserve water resources and to prevent, combat and control the harmful effects caused by water, as a result of climate change and as prescribed by law."

(Based on the Law on Water Resources of Vietnam (1998) - (Art. 1))

2.2 Integrated Water Resources Management (IWRM)

“Water and water resources shall be managed and developed based on an integrated water resources management plan (IWRM).”

The IWRM shall take into account impacts of climate change on water resources.

(Based on the Law on Water Resources Management of the Kingdom of Cambodia - (Art. 4))

2.3 Protection of Water Resources

“The discharge, disposal or deposit of polluting substances which are likely to result in the deterioration of the quality of water and to endanger human, animal and plant life shall be subject to water license or authorization. The sub-decree on water licensing or authorization may also deal with the impact of climate change on water resources including the effect of climate change and pollution on fauna and flora or ecosystems.”

(Based on the Law on Water Resources Management of the Kingdom of Cambodia - (Art. 22))

2.4 Protecting, exploiting and using water resource; preventing, combating and overcoming the harm caused by water

“For preventing, combating and controlling harm caused by water and the impacts of climate change, there shall be a plan, commensurate with the available resources of the State, containing measures for the taking action for preventing, avoiding, alleviating and limiting the harm caused by water and climate change; and for ensuring the maintenance of a harmonious balance between the interests of the whole country and those of different regions, between different sectors of the national economy, and between modern science and technology and the indigenous traditions of the people.”

“Projects for the protection, exploitation and use of water resource and for the prevention, combating and control of harm caused by water must contribute to socio-economic development and shall include measures which ensure the well being of the population, national defense and security, protection of historical and cultural relics, natural landscapes and the environment and ecosystems including measures providing for effective adaptation to the impacts of climate change.”

(Based on the Law of Water Resources of Vietnam (1998) - (Art. 5))

2.5 Promotion, Development and Preservation of Water and Water Resources

The State shall promote the development, exploitation, use, preservation and protection of water and water resources, including the adoption of measures to adapt to the adverse impacts of climate change on water and water resources.

(Based on the Water Law (1996) of Lao PDR – (Art. 5))

2.6 Protection of Water and Water Resources

Individuals and organisations shall have the obligation to preserve water and water resources and to not cause water resources to become depleted or to be polluted.

Water and water resources shall be used economically and the State shall-

(a) provide measures –

- (i) to protect water resources against adverse environmental impacts, including the adverse effects of climate change;*
- (ii) to preserve, restore and rehabilitate forest and land resources in water catchment areas, in accordance with the relevant plans relating to water source allocation, forests, headwaters and water sources; and*

(b) determine and promulgate protected and reserved areas for the purpose preserving water resources.

(Based on the Water Law (1996) of Lao PDR – (Art. 29))

2.7 Policy of investment in developing water resource

“ The State shall invest in a basic survey of water resources, build a system of observation posts and a system for the collection and analysis of data and information and shall raise the capacity of the relevant authorities to forecast rising water levels, floods, droughts, salinity infiltration, rise and spill-over of sea water and other adverse impacts caused by water, including those caused by climate change, and shall formulate and implement measures providing for adaptation to the adverse impacts of climate change”

“The State shall formulate a policy which accords preferential treatment to organizations and individuals in the country and to foreign organizations and individuals, who invest in developing water resources, conduct research on water resources and adaptation to climate change and on the application of advanced science and technology for developing water resources and overcoming the adverse impacts of climate change on water resources, by affording protection to the rights and interests of those organizations and individuals.”

(Based on the Law of Water Resources of Vietnam (1998) - (Art. 6))

2.8 Water Resources Management Plan and related Project

“The Ministry shall be responsible for preparing a national water resources management plan which shall take into account inter alia, the adverse impacts of climate change.

Water resources projects shall be prepared based on the data and information contained in the water resources inventory, and in accordance with the national water resources plan, national plans for adaptation to climate change, the economic development plan and the national and regional environmental plans, in order to ensure that a proper balance is maintained between water availability and present and future demands for water.”

(Based on the Law on Water Resources Management of the Kingdom of Cambodia - (Art. 9))

2.9 Protected Water Use Zones

The Ministry may declare contingency or protected «water use» zones in the following cases:

- when surface or underground water sources seriously affect the quantity, quality or ecological balance of water resources in the zone,*
- when a watershed is degraded by human activities, natural causes or climate change,*
- When water in the zone is hazardous to the people health,*
- When there is a likelihood of water resources in the zone being affected by global warming*

(Based on the Law on Water Resources Management of the Kingdom of Cambodia - (Art. 23))

2.10 Groundwater

“Any person who wishes to carry out drilling or digging of wells for professional or commercial purposes shall supply the Ministry with a detailed report on the proposed drilling or digging operation, the technical specifications and other information..

...The detailed report shall include an Environmental Impact Assessment Report which shall include research on the effect of such activity on climate change as well as the impact of climate change on groundwater resources in the vicinity of the proposed activity”

(Based on the Law on Water Resources Management of the Kingdom of Cambodia - (Art. 20))

2.11 Obligations of organizations and individuals that exploit and use water resource

“In order to ensure the protection of human health and the conservation of biodiversity, the Minister shall, having regard to the effects of climate change on water resources, determine the levels of pollution that may be contained in any liquid waste released from a source of pollution into a designated water area.

(Based on the Water Pollution Sub-decree of the Kingdom of Cambodia - (Art. 7))

2.12 Discharge of hazardous wastes into public water areas

“Organizations and individuals that exploit and use water resources have the following obligations:

..... to consider impacts of climate change in the formulation of plans for the safe and efficient exploitation and use of water resources.”

(Based on the Law of Water Resources of Vietnam (1998) - (Art. 23))

2.13 Exploitation and use of water resource for hydro-electricity

“.....Organisations and individuals that exploit and use water resource for hydro power shall have to ensure minimum flow for the downstream, avoid the conflict of water usage and consider the change of water resources caused by climate change, in order to design and operate hydro power plants efficiently”

(Based on the Law of Water Resources of Vietnam (1998) - (Art. 29))

2.14 Contents of State management of water resources

“State management of water resource consists of the following:

.....To formulate, and direct the implementation of the strategy, policies and plans for the protection, exploitation, use and development of water resource; the prevention, combating and control of the harmful effects of water and the adverse impacts of climate change on water resources”;

(Based on the Law of Water Resources of Vietnam (1998) - (Art. 57))

2.15 Farmers' Water User Communities

"To ensure effective and sustainable management and operation of the irrigation system, the Ministry shall encourage and facilitate the formation of Farmers' Water User Communities. All farmers using water from the same irrigation system or part thereof may form a Farmers' Water User Community.

The Ministry shall use Farmer Water User Communities to disseminate information on the adverse impact of climate change on water resources and identify the adaptation measures to address the climate change impacts."

(Based on the Law on Water Resources Management of the Kingdom of Cambodia -(Art. 19))

2.16 Water Source Development Activities

Water source development activities are activities which relate to constructing, digging, drilling, installing, improving, expanding, or repairing reservoirs, water catchments, ponds, wells, deep aquifer wells, canals, dikes, or drainage pipes, to exploit, collect, accumulate or retain water from surface, underground, or atmospheric water sources, for use for any purpose provided in Article 13 of this law, and includes activities to protect against the adverse impacts of flooding, drought, soil erosion and climate change

(Based on the Water Law (1996) of Lao PDR – (Art. 20))

2.17 Principles Governing Water Source Development Activities

Water source development activities shall be conducted in accordance with the following principles:

1. *Shall comply with the relevant development plans, the master plan, periodic development plans of each sector, and the approved construction plan for the project for the conduct of such activity;*
2. *Shall ensure the preservation of water and water resources, the environment and areas of scenic beauty;*
3. *Shall prevent adverse impacts from the conduct of such activities which are likely to have socio-economic or environmental consequences*
4. *Shall adopt measures to adapt to the adverse impacts of climate change on water and water resources*
5. *Shall be subject to inspection by the relevant authorised agencies responsible for water and water resources.*

(Based on the Water Law (1996) of Lao PDR – (Art. 22))

2.18 Promoting the Preservation, Development of Headwaters and Water Resources for Use in Producing Electrical Power

The State shall promote the development and use of water resources for the generation of large, medium, and small-scale electrical power at water sources where there are suitable conditions for the generation of electrical power. The use of water resources for the generation of electrical power shall take into account the capacity of the water resource and impacts of the use of the water resource for generating electrical power. If the conditions are suitable, the State shall promote the building of several hydro-electric dams or multi-purpose electric dams on the same river.

In the building of a hydro-electric dam, account shall be taken of the following matters: the need to protect and preserve headwaters, forests, the environment, water supply, irrigation, water communications, fishing and aquaculture, the prevention of flooding and the adverse impacts of the dam on climate change.

(Based on the Water Law (1996) of Lao PDR – (Art. 25))

2.19 Development and Management of Water and Water Resources between Countries

The management, protection, development, exploitation and use of water and water resources among countries shall be conducted in compliance with international law and with treaties and conventions such as The United Nations Framework Convention on Climate Change to which the country is a party. The sharing of the use and preservation of water and water resources between the country and neighbouring countries shall be conducted on the basis of fairness, reasonableness, equality, and respect for each other's independence, sovereignty and autonomy.

(Based on the Water Law (1996) of Lao PDR – (Art. 44))

3. FLOOD AND DROUGHT CONTROL

3.1 Flood Control

For the purpose of flood protection, the Ministry in consultation with the other agencies concerned, may designate any floodplain area as a Flood Control Area.

Within a Flood Control Area, the relevant authority together with other concerned agencies and local authorities shall formulate a plan setting out measures for flood prevention and mitigation including in the context of climate change and measures to ensure the safety of human life, animals and property.

(Based on the Law on Water Resources Management of the Kingdom of Cambodia -(Art. 24))

3.2 Setting norms and plans to prevent and combat floods

".....It shall be the duty of the State Meteorology Agency to provide for the observation of the weather and to issue timely information on rain, floods and rising levels of sea water on a national scale, and to study the impacts of climate change on water resources with a view to preparing plans for combating floods and other consequences of climate change."

(Based on the Law of Water Resources of Vietnam (1998) - (Art..37))

3.3 Preventing, combating and overcoming the consequence of drought

".....The state shall invest in and support, studies on climate change scenarios to plan and manage water resources and to reduce the risk of natural disasters."

(Based on the Law of Water Resources of Vietnam (1998) - (Art. 43))

4. INTERNATIONAL COOPERATION

4.1 International cooperation in the management and development of water resource

".....The State shall encourage and facilitate cooperation with other countries, organizations and individuals with regard to the survey, protection, exploitation, use and development of water resources including adaptation to climate change as well as the training of personnel, scientific research on water resources including climate change and the prevention, combating and overcoming the harmful effects of water"

(Based on the Law of Water Resources of Vietnam (1998) - (Art. 55))

4.2 International Rivers

"The Ministry shall encourage and facilitate the optimum and effective use of the (International River Basin) for all activities including navigation and transport, consistent with the governing principles of any regional agreement relating to the International River and taking into account, the impacts of climate change on the resources of the International River Basin."

(Based on the Law on Water Resources Management of the Kingdom of Cambodia - (Art. 34))

5. ENFORCEMENT

5.1 Implementation of the law by the Ministry

"In implementing the present law, the Ministry shall:

..... conduct consultations with other concerned ministries and where necessary the Government shall set up a joint commission for coordinating activities among the Ministries concerned and for addressing issues arising from the adverse effects of climate change.

..... formulate the policy on water resources management, conservation and development taking into account the specific requirements and demands of each zone and region with a view to ensuring the sustainability of water resources and the effectiveness of water utilization, the prevention of disasters and conflicts and the minimization of the economic, social and environmental impacts of climate change.

..... encourage and facilitate collaboration with relevant agencies, the private sector, beneficiary groups, Non Governmental Organizations and International Organizations in all activities related to the management, investment, exploitation, conservation and development of water resources, including the identification and addressing of the impacts of climate change."

(Based on the Law on Water Resources Management of the Kingdom of Cambodia - (Art. 5, 6 & 7))

5.2 Incentives for research

"The Government may grant rewards or incentives to those who engage in research, or develop new technologies or install modern equipment that will contribute to the reduction of pollution and the improvement in water quality, and increase water use efficiency including research on climate change impacts on water resources and the identification of appropriate adaptation measures to prevent adverse effects on the environment, health and society resulting from climate change"

(Based on the Law on Water Resources Management of the Kingdom of Cambodia -(Art. 35))

5.3 Licenses and Permits

"The diversion, abstraction or use of water resources for any purpose and the construction of the waterworks relating thereto, are subject to a license or permit..... The extraction of sand, soil, stones, gravel, petroleum and gas from the beds and banks of watercourses, lakes, canals and reservoirs is also subject to licensing

....The proposed activity shall be clearly described with the purpose of identifying:

(a) the impacts on the environment which could contribute to climate change,

(b) whether... the proposed activities could lead to the lack of water for consumption by people and animals and to an increase in the risks of the adverse effects of climate change."

(Based on the Law on Water Resources Management of the Kingdom of Cambodia -(Art. 12))

Chapter 5 – IRRIGATION

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

Irrigation systems are under threat in all three project countries as result of climate change. In Cambodia floods have become more frequent and have caused a great deal of destruction. The intensity of floods is expected to increase in the future. Conversely, water shortages have also become a common occurrence. Both factors have put increasing pressure on irrigation systems.

Glacial retreat in China is having impacts in Lao PDR where there is increasing water insecurity, which directly affects irrigation. The country is also becoming more vulnerable to floods. Both factors aggravate stress on farming communities in the context of water management and affect farming activities. Similar impacts are being felt in Vietnam where abnormal changes in rainfall intensity on the one hand, and drought on the other, are hindering farming and other agricultural activities.

Both Cambodia and Lao PDR have planned several measures to address the problems faced by the irrigation sector. These include the expansion of irrigation and irrigated land and the management of water resources to reduce vulnerability to natural disasters. Some specific measures proposed in Lao PDR are expanding irrigation to reduce water resource variability throughout the year and to prevent floods and droughts, and establishing irrigation development plans. Cambodia also plans the development and improvement of community irrigation systems, improvement of water use in farming communities, continuing the implementation of irrigated-water policies, and improving technology application and other infrastructure for reducing dependency on nature. Vietnam will emphasise the effective use of irrigated water and upgrading existing agricultural irrigation systems.

Legal provisions on irrigation in Cambodia are found in Chapters III and IV of the *Law on Water Resources Management*. This law provides that every person has the right to use water resources for his/her vital human needs including the irrigation of domestic gardens and orchards. It is proposed to include provisions which state

that both farmers and government agencies must take into account the adverse impacts of climate change on the irrigation system and take appropriate measures to ensure that people can use water for agriculture and other purposes, both during the wet and dry seasons. The construction of more reservoirs with sufficient capacity to ensure adequate water supplies for human consumption must also be considered. Farmer's water user communities must also recognise that the adverse impacts of climate change can lead to water shortages for irrigation and they must take measures to ensure that there is adequate water for all users.

In Lao PDR, Chapter 2 of the *Agriculture Law 1998* also relates to irrigation. This law notes that because agricultural production in the country is still natural resource dependent and subject to the threat of both floods and droughts, irrigation systems are necessary. The use of irrigation in agricultural production must comply with the *Law on Water and Water Resources*. Provisions of the law deal with building and management of irrigation, reservoirs, weirs and pumping of water.

Vietnam has a *Law on Dikes*, which provides for anti-flood planning of diked rivers, dike planning, construction, repair, upgrading and solidification investment, management and protection, and maintenance and use of dikes. These provisions are based on the principles of ensuring sustainable development, defense and security; protecting the people's lives and property and the national sovereignty and interests; and contributing to socio-economic development. It has also been suggested that adaptation to climate change should be included as a principle. In Vietnam, the grounds for formulation of dike planning must generally include strategies and plans for the prevention, combating and reduction of natural disasters, and, in addition, as proposed, adaptation to climate change. The Vietnam law on dikes and embankment systems must focus on anti-flood planning of diked rivers which are consistent with overall socio-economic development planning, defense and security objectives; strategies and plans for prevention, and as suggested, "combating and reduction of natural disasters and adaptation to climate change, and flood control planning of river basins." It is also suggested that flood control plans must take into account the need to combat the effects of climate change on irrigation.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

The draft legislative provisions cover the following matters:

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1. GENERAL PROVISIONS

1.1 Water resources use and development

"Every person shall have the right to use water resources for his her vital human needs including drinking, washing, bathing and other domestic purposes, and for animal husbandry and fishing and the irrigation of domestic gardens and orchards, in a manner that will not affect the legal rights of other persons .The reasonable use of water resources for any of the aforementioned purposes shall not be subject to licensing..

Both farmers and the government agencies shall take into account the adverse impacts of climate change on the irrigation system and take appropriate measures to ensure that the people can use water from the system for agriculture and other purposes, both during the wet and dry seasons. Consideration shall also be given to the construction of more reservoirs with sufficient capacity to ensure adequate supplies of water for human consumption."

(Based on Law on Water Resource Management of the Kingdom of Cambodia – (Art. 11))

1.2 Principles for activities in the dike domain

Ensuring sustainable development and effective adaptation to climate change, defense and security, protection of people's lives, property and the environment, national sovereignty and interests relating thereto and contributing to the socio-economic development of the country;"

(Based on the Law on dikes (2006) of Vietnam – (Art. 5))

1.3 Principles and grounds for formulation of dike planning

".....Dike planning shall be in conformity with the overall socio-economic development planning , defense and security objectives; strategies for the prevention, combating and reduction of natural disasters and adaptation to climate change and flood control plans of diked rivers ,in order to ensure uniformity in the dyke system and the continuity of dike planning;"

"Grounds for formulation of dike planning include:

.....strategies and plans for the prevention, combating and reduction of natural disasters and for adaptation to climate change;"

(Based on the Law on dikes (2006) of Vietnam – (Art. 14))

2. FARMER WATER USE COMMUNITIES

2.1 Farmer water use communities

"To ensure the effective and sustainable management and operation of the irrigation system, the Ministry shall encourage and facilitate the formation of Farmers' Water User Communities.

....Recognize that the adverse impacts of climate change can result in shortages of water for irrigation and take appropriate adaptation measures to ensure that there will be adequate supplies of water for all users."

(Based on Law on Water Resource Management of the Kingdom of Cambodia – (Art. 19))

3. FLOOD CONTROL

3.1 Principles and grounds for elaboration of anti-flood planning of diked rivers

".....Being consistent with overall socio-economic development planning, defense and security objectives; strategies and plans for prevention, combating and reduction of natural disasters and adaptation to climate change, and flood control planning of river basins;"

(Based on the Law on dikes (2006) of Vietnam – (Art. 8))

3.2 Contents of flood control plans

".....To anticipate the environmental impacts of flood control plans of diked rivers and to propose measures to minimize their adverse impacts on the environment, to mitigate the effects of natural disasters and to adapt to climate change"

(Based on the Law on dikes (2006) of Vietnam – (Art. 9))

3.3 Adjustment of flood control plans of diked rivers

"...The flood control plans of diked rivers shall be reviewed and amended periodically once in every ten years or upon the occurrence of any of the following: natural disasters, changes in the overall socio-economic development planning, defense and security objectives or strategies for the prevention, combating and reduction of natural disasters or adaptation to climate change."

(Based on the Law on dikes (2006) of Vietnam – (Art. 10))

Chapter 6 - AGRICULTURE

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

The agricultural sector in all three countries will experience negative impacts due to the effects of climate change in various ways. For example, in Cambodia, floods and droughts may cause a decrease in rice production and increased floods will cause damage to rice crops. Lao PDR is equally vulnerable to the effects of climate change on its agriculture as it is the principal economic sector in the country. Over 80% of the population is engaged in agriculture and fisheries. Vietnam is also primarily a rice based agricultural economy with rice contributing 24% of GDP. Thus the impacts of climate change on water resources would have significant consequences for its agriculture and food security. In regard to crop distribution, the planting boundaries of tropical trees and crops will move northwards and towards higher mountainous regions. Subtropical trees would have a narrower adaptation area, and by the latter half of the century mountainous trees would be able to grow at an altitude of 100-550 metres higher than at present. Salt water intrusion caused by sea level rise will affect agricultural land in the Mekong and Red River deltas, which will have major impacts on farmer livelihoods and food security.

Several measures have been taken in the three countries to adapt to climate change impacts on agriculture. Lao PDR has already taken steps to improve productivity and market access for dry land farmers and to expand agro forestry. Cambodia formulated the Five-Year Socio-economic Development Plan II (2001-2005) and the National Poverty Reduction Strategy 2003-2005, both of which specifically address the issue of adaptation to floods and drought in the context of agriculture. In 2004, the Government adopted a strategy which addresses the need to improve agricultural productivity by expanding irrigation and water resources management in order to reduce vulnerability to natural disasters. The measures to be taken in Vietnam include reclaiming areas, especially in the hilly midland areas in the North, for agricultural production. Steps will also be taken to develop crop patterns that will adapt to predicted climate change impacts. Upgrading existing agricultural irrigation systems to ensure the effective use of irrigation

water is also an important step. Vietnam will also develop new crop varieties that can withstand severe environmental conditions and further, establish a seed bank of existing crop varieties to preserve local ones. Developing new farming techniques better suited to future conditions caused by climate change is also considered important.

Cambodia has a *Sub-decree on the Management and Use of Agricultural Lands*. It notes that all agricultural lands must be used correctly and managed efficiently. The sub-decree states that authorities at all levels shall have the duty to administer the knowledge within their own respective administrative geographical boundaries. Suggested changes to laws impacting on agriculture in Cambodia in the context of climate change include provisions that require consideration to be given to the introduction of species or crops that are suited for adaptation to the adverse impacts of climate change. Unsustainable use of lands such as the use of prohibited or restricted chemicals including fertilizers, which could result in ecosystem changes that contribute to climate change, has also been addressed. The use of water bodies outside of fishing areas must also be prioritised for domestic, agricultural or aquacultural purposes. Measures must also be taken to take into account the impacts of uncultivated or degraded land on climate change and mitigate those consequences by the planting of trees and other vegetation on such lands. Further, when providing land for construction purposes, the impacts of the proposed construction on climate change and vice versa must be considered.

Lao PDR has a comprehensive *Agriculture Law* of 1998. It determines the principles, rules and measures relating to the agricultural process which is the basis of the country's economy. Its objectives include encouraging and enhancing the country's agricultural activities so as to enhance the food supply and to contribute to national economic growth. Suggested improvements to the law regarding climate change include avoiding to damage the environment including through the adverse impacts of climate change and taking adaptation measure. Those undertaking agricultural activities will also have an obligation to take these factors into account. The needs of farmers and protecting their interests and

also training them in best agricultural practices including climate change adaptation will also be emphasized in the proposed amendments.

Vietnam has no specific law relating to agriculture but has a *Law on High Technologies (2008)*. This includes technology which could facilitate agricultural development. These laws relate to such issues as the quality control of products and goods to ensure the safety of humans, animals, plants and assets, food security and environmental protection, to which it is proposed to add adaptation to climate change. Several amendments to the laws have been proposed in order to address climate change issue.

Goods shall be produced to be energy saving, environmentally friendly and adaptable to the impacts of climate change. The laws and policies in this regard should promote social awareness and facilitate the adoption of sustainable consumption habits. State policies on hi-tech activities and technology transfer activities have also been provided for in the proposed laws. These technologies include those which promote the re-use and re-cycling of wastes and high efficiency and saving of energy and natural resources. The transfer of technology to areas with poor socio-economic conditions or difficult environmental conditions is also encouraged.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

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1. GENERAL PROVISIONS

1.1 General Provisions

"The authorities at all levels shall have duty to administer and use lands within the boundaries of their respective administrative geographical borders. However, the use of the lands within those respective administrative boundaries shall be in a sustainable manner, especially with regard to the use of prohibited or restricted chemicals including fertilizer that can result in ecosystem changes that contribute to climate change. Consideration shall also be given to the introduction of species or crops that are suited for adaptation to the adverse impacts of climate change."

(Based on the Sub decree on the Management, Administration and Use of Agricultural Lands of the Kingdom of Cambodia – (Art. 1))

1.2 Function of the Law

The function of Law on Agriculture shall be to provide an organizational structure for the regulation and management of agricultural production and agricultural activities with the following objectives in view-

- (a) to encourage and promote the expansion of agricultural production, with a view to augmenting food supply;*
- (b) to promote the production of agricultural commodities for export;*
- (c) to create favourable conditions for the processing of agro-industrial products;*
- (d) to contribute to national economic growth;*
- (e) to prevent damage to the environment, including the adoption of measure to adapt to the adverse impacts of climate change.*

(Based on the Agriculture Law (1998) of Lao PDR – (Art. 1))

1.3 Environmental Protection

Individuals and organisations engaged in agricultural production shall have an obligation to protect the environment, and shall use agricultural methods and equipment that ensure protection of the environment from damage, including damage from the adverse impacts of climate change.

(Based on the Agriculture Law (1998) of Lao PDR – (Art. 6))

1.4 Use of Irrigation

As agricultural production in the country is still dependent on nature, and subject to the threat of droughts, floods and other adverse impacts of climate change, the State shall encourage the construction of irrigation works for use in agricultural production. The use of irrigation works in agricultural production shall comply with the Law on Water and Water Resources.

(Based on the Agriculture Law (1998) of Lao PDR – (Art. 17))

1.5 Building and Management of Irrigation

Irrigation works shall be in three scales:

- (a) small-scale irrigation;*
- (b) medium-scale irrigation;*
- (c) large-scale irrigation.*

.....In the management of irrigation works, account shall be taken of the adverse impacts of climate change on such irrigation works, and the measures necessary to adapt to such adverse effects.

(Based on the Agriculture Law (1998) of Lao PDR – (Art. 18))

1.6 Environmental Protection

Individuals and organisations engaged in any type of agricultural activity shall ensure the protection of the social and natural environment, including the protection of people, animals, land, soil, water, forests, and the air from the adverse impacts of climate change.

(Based on the Agriculture Law (1998) of Lao PDR – (Art. 65))

2. MANAGEMENT OF AGRICULTURAL LANDS

2.1 Lakes, ponds and pools, outside of fishing areas

The lakes, ponds and pools which are located in a village or commune shall be administered by such village or commune and shall be used for the common good of the people in such village or commune, but priority shall be given to those who use water for domestic, agricultural or aqua-cultural purposes. The village chief or the people in the village shall give consideration to the adoption of appropriate measures for adaptation to climate change; especially through building new water reservoirs and water harvesting, with a view to preventing water shortages.

(Based on the Sub decree on the Management, Administration and Use of Agricultural Lands of the Kingdom of Cambodia – (Art. 9))

2.2 Free lands not yet cultivated

Agricultural lands which are not used or cultivated in any locality, shall belong to such locality and the relevant local authority shall manage such lands properly and efficiently, based on plans prepared for such purpose. These plans shall ensure that the land is put to the best use and that it is not sold or otherwise alienated to individuals. The local authority shall take into account the consequences of degraded uncultivated land on climate change and adopt measures for adaptation to the adverse impacts of climate change, by the planting trees and other vegetation on such uncultivated lands.

(Based on the Sub decree on the Management, Administration and Use of Agricultural Lands of the Kingdom of Cambodia – (Art. 11))

2.3 Lands for construction projects

“.....Detailed studies shall be carried out when providing land for construction purposes, with particular focus on the impacts of the proposed construction on climate change and vice versa.”

(Based on the Sub decree on the Management, Administration and Use of Agricultural Lands of the Kingdom of Cambodia – (Art. 12))

2.4 Principles for product and goods quality control

“..... Quality control of products and goods shall be the responsibility of producers and traders and shall be directed at ensuring safety for humans, animals, plants and assets, food security, the protection of the environment and adaptation to the impacts of climate change, as well as to raising the productivity, quality and competitiveness of products and goods.”

(Based on the Law on Product and Goods Quality (2007) of Vietnam - (Art. 5))

3. POLICY DEVELOPMENT

3.1 State policies on product and goods quality-related activities

"..... To formulate and disseminate policies and laws on product and goods quality; to facilitate the formation of a sense of producing and trading in quality products and goods for the benefit of consumers, being products and goods which save energy, are environment-friendly and are adaptable to the impacts of climate change; to raise social awareness about consumption and to promote the adoption of civilized consumption habits."

(Based on the Law on Product and Goods Quality (2007) of Vietnam - (Art. 6))

3.2 State policies towards hi-tech activities

"To mobilize and apply investment resources in a coordinated manner and develop mechanisms for the offer of valuable land, tax and other incentives for the commencement of hi-tech activities in the country, with a view to affording a leading role for high technologies in scientific and technological development for socio-economic development, defense and security maintenance, environmental protection, adaptation to climate change, sustainable development and improvement of the quality of life of the people."

(Based on the Law on High Technologies (2008) of Vietnam - (Art. 4))

3.3 State policy on technology transfer activities

"..... To give priority to the development of technology in areas such as effluent and emission treatment and recycling, environmental protection and energy efficiency, in order to prevent and mitigate the adverse effects of climate change and to promote sustainable development"

(Based on the Law on Technology Transfer (2006) of Vietnam - (Art. 5))

3.4 Tax policies in order to promote technology transfer activities

"..... Income tax exemption for any entity which transfers technology which saves energy, provides clean energy, reduces emissions and enhances adaptation to climate change"

(Based on the Law on Technology Transfer (2006) of Vietnam - (Art. 44))

4. RIGHTS AND DUTIES

4.1 Obligations of producers

"To promptly stop production and give notice of such stoppage to concerned parties, and to take remedial measures when discovering that products or goods are unsafe or fail to conform to announced applicable standards or relevant technical regulations or are known to have adverse effects on humans, animals, property or the environment including effects that may contribute to climate change."

"To withdraw from circulation products and goods of poor quality or those that are known to have adverse effects on humans, animals, property or the environment including effects that may contribute to climate change."

(Based on the Law on Product and Goods Quality (2007) of Vietnam - (Art. 10))

4.2 Obligations of importers

"To destroy imported goods which fail to conform to relevant regulations or which are known to have adverse effects on humans, animals, property or the environment including adverse effects that may contribute to climate change, being in every case imported goods that cannot be re-exported."

(Based on the Law on Product and Goods Quality (2007) of Vietnam - (Art. 12))

4.3 Obligations of consumers

"To observe legal provisions on environmental protection, energy efficiency and adaptation to climate change in the course of using products and goods."

(Based on the Law on Product and Goods Quality (2007) of Vietnam - (Art. 18))

4.4 Rights and obligations of professional organizations

"To propagate and disseminate to production and business organizations and to individuals, information about the application of the law on products and goods quality: to facilitate the formation of a sense of responsibility for producing and trading in quality-products and goods for the benefit of consumers, being products and goods which save energy are environment-friendly and promote the mitigation of, and adaptation to, the impacts of climate change; to raise social awareness about consumption, and to promote the adoption of civilized consumption habits."

(Based on the Law on Product and Goods Quality (2007) of Vietnam - (Art. 21))

4.5 Rights and Duties of those who undertake Agricultural Activities

Persons engaged in agricultural activities have the following rights:

.....to take such measures as are necessary to adapt to the adverse impacts of climate change on such activities.

(Based on the Agriculture Law (1998) of Lao PDR – (Art. 10))

4.6 Rights and Duties of the Ministry of Agriculture and Forestry

The Ministry of Agriculture and Forestry when regulating agricultural activities shall have the following rights and duties:

.....to take into account the adverse impacts of climate change on such activities, and the measures necessary for adapting to such adverse effects.

(Based on the Agriculture Law (1998) of Lao PDR – (Art. 70))

5. INFORMATION AND DATA

5.1 Agricultural Information and Data

The State shall provide information, data and statistics with respect to agricultural production, including information, data and statistics on the techniques used for agricultural cultivation, animal husbandry and fisheries, the plant and animal species used for these purposes, international quality standards for agricultural products, price fluctuations in the marketplace for agricultural products, meteorology, hydrology, and the adverse impacts of climate change on agricultural production and the measures necessary to adapt to such adverse effects. The State shall also provide for a system for the collection of such information, data and statistics from the village level upwards to ensure accuracy of the information, data and statistics.

(Based on the Agriculture Law (1998) of Lao PDR – (Art. 57))

6. RESEARCH AND DEVELOPMENT

6.1 Priority areas for high technologies for development

"Priority shall be given to investment in the development of high technologies in the following technological domains:

- a. Information technology;*
- b. Biotechnology;*
- c. New material technology;*
- d. Automation technology.*
- e. Clean technology, energy efficiency and emission reduction and adaptation to climate change"*

"The above mentioned high technologies shall be in conformity with advanced scientific and technological developments and trends in the world, promote the country's advantages, be feasible, and satisfy any of the following conditions:

...a) bringing about significant benefits by way of socio-economic development, defense and security maintenance, environmental protection, adaptation to climate change and sustainable development"

(Based on the Law on High Technologies (2008) of Vietnam - (Art. 5))

6.2 Technologies the transfer of which are encouraged

The transfer of technology shall be encouraged where the technology satisfies one of the following requirements-

- ... promotes the reuse and recycling of wastes;*
- ... promotes high efficiency and the saving of energy and natural resources.*

(Based on the Law on Technology Transfer (2006) of Vietnam - (Art. 9))

6.3 Transfer of technology encouraged to rural areas, mountainous areas, areas with difficult socio-economic conditions and areas with specially difficult socio-economic conditions

"..... Technologies for the prevention, mitigation and treatment of natural disasters and epidemics, for overcoming the adverse impacts of climate change, and for community health care"

"...Technologies for prevention and treatment of epidemics affecting plants and animals and for adaptation to climate change"

"...Technologies using renewable energy, saving energy and reducing emissions"

(Based on the Law on Technology Transfer (2006) of Vietnam - (Art. 35))

6.4 Hi-tech products encouraged for development

"Hi-tech products encouraged for development are those that can be produced by technologies on the list of high technologies prioritized for investment, and satisfy the following conditions:

..... Being Hi-tech products which are non-polluting and environment-friendly and are reusable or recyclable."

(Based on the Law on High Technologies (2008) of Vietnam - (Art. 6))

6.5 Hi-tech research and development

"The State encourages hi-tech research and development activities which provide for socio-economic development, defense and security maintenance, environmental protection, adaptation to climate change and sustainable development."

(Based on the Law on High Technologies (2008) of Vietnam - (Art. 11))

6.6 Encouragement of hi-tech transfer

"...The State shall allocate funds for the import of high technologies and hi-tech machinery and equipment which cannot as yet be manufactured within the country for the implementation of important projects relating to socio-economic development, defense and security, environmental protection, adaptation to climate change and sustainable development"

(Based on the Law on High Technologies (2008) of Vietnam- (Art. 13))

7. ENFORCEMENT

7.1 Prohibited acts

"Conducting Hi-tech activities which have a high emission potential that causes green house effects and contribute to climate change."

(Based on the Law on High Technologies (2008) of Vietnam - (Art. 8))

7.2 Prohibited acts

"Replacing, fraudulently exchanging, adding to, or reducing the ingredients or additives of, or adding impurities to products and goods, thereby reducing their quality in contravention of announced applicable standards and relevant technical regulations, and having adverse effects on humans, animals, property or the environment including effects that may contribute to climate change."

(Based on the Law on Product and Goods Quality (2007) of Vietnam - (Art. 8))

7.3 Conduct strictly prohibited during technology transfer activities

"..... destroying natural resources or damaging the environment or adversely affecting measures taken for adaptation to climate change or causing harm to the health of the people, or to the customs, values or ethics of the country."

(Based on the Law on Technology Transfer (2006) of Vietnam - (Art. 13))

7.4 Contents of an Inspection

"..... destroying natural resources or damaging the environment or adversely affecting measures taken for adaptation to climate change or causing harm to the health of the people, or to the customs, values or ethics of the country."

(Based on the Law on Technology Transfer (2006) of Vietnam - (Art. 13))

8. TRAINING

8.1 Farmer Training

In order to make agricultural production more efficient the State shall-

.....(a) promote the training of farmers in agricultural production, animal husbandry and fisheries, by organizing training programmes, study tours, and seminars, both in the country and abroad, to enable farmers to acquire knowledge on the application of scientific and technological techniques to agricultural production, on the international standards relating to agricultural products and on the adverse impacts of climate change on agriculture and the measures necessary to adapt to such adverse impacts;

(Based on the Agriculture Law (1998) of Lao PDR – (Art. 59))

Chapter 7 - ENVIRONMENT AND ECOSYSTEMS

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

Impacts on the environment and ecosystems due to climate change will be particularly felt in developing countries such as Cambodia, Lao PDR and Vietnam. Changes in ecosystems brought about by climate change will impact upon ecosystem services on which both people as well as the economy at large are heavily dependent. In Cambodia, frequent floods and droughts impact on the environment affecting its ecosystems, forests, wetlands and other habitats. It has been predicted that by 2100 the rainfall and temperature would increase drastically. The occurrence of climate extremes would also increase with further negative consequences. In Vietnam, it is estimated that the increase in evaporation and transpiration due to climate change will cause a reduction in soil moisture and thus reduce the biomass index of forest trees. Vietnam's coastal area which is home to 23% of the population is threatened by inundation due to sea level rise. The average temperature is expected to increase by 2.7C by 2070. There will be variations in seasonal rainfall. Increasing sea surface temperatures will increase the occurrence of typhoons.⁴¹ In Lao PDR it has been noted that the dry season is becoming longer and droughts are becoming more frequent and severe. The temperature is continuously increasing and the rainfall is erratic, resulting in a number of adverse impacts to the economic system, environment and the livelihoods of people. Little information exists on precisely how these climatic changes will impact on the natural environment of Lao PDR. However, it is clear that additional pressures on the natural resource base will have serious consequences for the 73% of the Lao population that live in rural areas as they are primarily farmers and fishermen, who rely on natural resources including agricultural land, aquatic resources, forests and wetlands for their livelihoods.

In regard to adaptation measures, Cambodia has emphasised the need to strengthen the conservation of protected areas. In order to do so, the legal and institutional framework will be further developed and management plans will be drawn up. Community participation in protected area management will also be strengthened. Programmes to conserve critical wildlife habitats and to encourage the expansion of species and forest communities will be enhanced. Lao PDR will develop activities that prevent damage from, and strengthen adaptation to, climate change and to this end will improve and strengthen the principal legal instruments that address impacts on the environment. It will also give priority to implementing the National Adaptation Programme of Action (NAPA). Vietnam too will strengthen the institutional framework for adaptation to climate change and implement the National Programme to give effect to the UNFCCC. This includes the broad strategy, policy direction and information on specific mitigation and adaptation measures that have been or will be taken in Vietnam. It will also focus on implementing the National Environment Strategy for the period 2001-2010.

The Cambodia Law of Environmental Protection and Natural Resource Management will include as its objectives, to take appropriate measures to adapt to the impacts of climate change through the effective management of natural resources, to prevent forest degradation leading to climate change and to use forests as carbon sinks. Incentives will be provided to those who do so. Environmental Impact Assessment reports and monitoring mechanisms will also include possible long-term impacts on climate change resulting from the proposed activities and relevant adaptation measures. This is also reinforced in the *Sub Decree on Environment Impact Assessment*. Other relevant Sub Decrees include those on Air Pollution Control and Noise Disturbance, Solid Wastes and Ozone Depleting Substances. The *Law on Protected Areas* has as its purpose, to ensure the management and conservation of biodiversity and the sustainable use of natural resources in protected areas and will take into account the impacts of climate change. Provision has been made for a National Protected Area Strategic Management Plan, which shall include appropriate measure to minimize the economic, social and environmental impacts of climate

⁴¹ The workshop on vulnerability, adaptation and resilience to climate risks: an assessment of education and training capacities and needs in Southeast Asia Chiang Mai, Thailand, April 1-3, 2007 - Vulnerabilities, Adaptation And Resilience To Climate Change In Vietnam: Capacity Needs

change, assess its adverse impacts on protected areas and develop adaptation measures.

The Environmental Protection Law 1999 of Lao PDR specifies the framework for protecting the environment and the suggested changes include taking account of the adverse impacts of climate change. Environment protection has been defined as all activities that contribute to the protection of the environment, do not damage it, which ensure a clean and pollution free environment and which do not cause adverse impacts on the health of humans, animals and plants and which balance the ecosystems including from the adverse impacts of climate change. Provision has been made for environmental impact assessment and methods to mitigate impacts on the social and natural environment including adaptation to the adverse impacts of climate change.

The Vietnam Law on Biodiversity (2008) provides for the conservation and sustainable development of biodiversity and applies to both ecosystems and species. In regard to ecosystems it applies to the abundance of natural ecosystems which are important specific or representative, permanent or seasonal habitats of wild species, and environmental landscapes. Chapter III deals with the conservation and sustainable development of natural ecosystems including conservation

zones. Other natural ecosystems include marine ecosystems, natural wetlands, limestone mountain areas and unused land areas.

The changes suggested to *Vietnam's Law on Environmental Protection (2005)* state that environmental protection must be consistent with, among others, sustainable socio-economic development and national responses to climate change. This is echoed in the section on State Policies on Environmental Protection which addresses such issues as promoting environmental education among people, utilizing natural resources and energy rationally and economically, promoting waste reduction, re-use and recycling to reduce greenhouse gas emissions and mitigating climate change and adapting to its impacts. Reference will be made to investment in environmental protection including Clean Development Mechanism projects. Specific measures to implement these objectives will include the development of clean and renewable energies and environment friendly products, dust and air emission management and control, management of gases that cause greenhouse effects and deplete the ozone layer, education and training on environmental protection and environmental taxation.

SECTION II - DRAFT LEGAL PROVISIONS TO FACILITATE ADAPTATION TO CLIMATE CHANGE

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1. GENERAL PROVISIONS

1.1 Objectives

"to take appropriate measures for adaptation to the impacts of climate change, to ensure sustainable management of the environment by the proper management of natural resources, to prevent forest degradation contributing to climate change and to encourage the use of forests as carbon sinks."

(Based on Law of Environmental Protection and Natural Resource Management of the Kingdom of Cambodia - (Art. 1))

1.2 Natural Resources Management

"The Ministry of Environment in collaboration with the concerned ministries, shall conduct a study to assess the environmental impacts on natural resources and recommend measures for adoption by the concerned Ministries to ensure the conservation, development, management and sustainable use of natural resources, including measures for the prevention of the degradation of natural resources that could contribute to climate change and have adverse effects on human health and the social and economic development of the country."

(Based on Law of Environmental Protection and Natural Resource Management of the Kingdom of Cambodia - (Art. 9))

1.3 Environmental Protection

"Measures for the prevention, reduction and control of the pollution of airspace, water and land by wastes, hazardous and toxic substances, noise and vibrations, as well as the possible adverse impacts of such pollution on the environment and climate change; and the measures necessary for mitigation of and adaptation to such adverse impacts, shall be determined by a Sub-decree to be issued by the Ministry of Environment after consideration of proposals relating thereto."

(Based on Law of Environmental Protection and Natural Resource Management of the Kingdom of Cambodia - (Art. 13))

1.4 Objectives

"The main objectives of this sub-decree shall be:

- a) to ensure that the Environmental Impact Assessment reviews the impacts of the proposed project on climate change and recommends adequate measures for mitigation as well as measures for adaptation of the project to the adverse impacts of climate change.*
- b) to require the project proponent to inform the public of the possible impacts of such project on climate change and the measures being adopted for mitigation as well as measures for adaptation of the project to the adverse impacts of climate change."*

(Based on Sub Decree on Environment Impact Assessment of the Kingdom of Cambodia – (Art. 1))

1.5 Objectives

“The objective of this sub-decree shall be to protect the environment and public health from air and noise pollution by assessing the impacts of such pollution on the environment, including impacts that may contribute to climate change; and the formulation and implementation of appropriate measures to respond to such impacts, including measures for mitigating and adapting to the adverse impacts of climate change.”

(Based on Sub-Decree on Air and Noise Pollution 2000 of the Kingdom of Cambodia – (Art. 1))

1.6 Objectives

“The objective of this Sub-decree is to provide rules for discontinuing the use of ozone depleting substances and to regulate the use of ozone depleting substances, in accordance with the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Ozone Depleting Substances, and taking into account the effect of ozone depleting substances on global warming and climate change and the need to adopt appropriate measures for adaptation to the adverse impacts of climate change.”

(Based on Sub Decree of Ozone Depleting Substances of the Kingdom of Cambodia – (Art. 1))

1.7 Objectives

“The objective of this law shall be to ensure the management and conservation of biodiversity, and the sustainable use of natural resources, in protected areas, taking into account the impacts of climate change”

(Based on Law of Protected Areas of the Kingdom of Cambodia – (Art. 1))

1.8 Purpose

“The purpose of this Sub-Decree shall be to regulate solid waste management in a proper technical manner and to provide for safety precautions in order to ensure the protection of human health and the conservation of bio-diversity, including precautions to prevent the long term adverse effects of such wastes on ecosystems that may contribute to climate change and also the prevention of emission of greenhouse gases from wastes such as Methane, caused by improper management or construction of landfill sites and where necessary, to formulate and implement measures for adaptation to the possible adverse impacts of climate change.”

(Based on Sub-Decree on Solid Wastes of the Kingdom of Cambodia – (Art. 1)

1.9 Function of the Environmental Protection Law

The Environmental Protection Law sets out the principles and provisions for monitoring, managing and protecting the environment, in order to protect human health, natural resources and the riches of nature, to ensure the sustainable socio-economic development of the country, and to prevent or mitigate the adverse impacts of climate change on the environment.

(Based on the Environmental Law (1999) of Lao PDR – (Art. 1))

1.10 Environmental Protection

Environmental protection includes all activities that -

- (a) contribute to the protection of the environment and do not cause damage to the environment;*
- (b) ensure a clean and pollution-free environment; and*
- (c) do not cause adverse impacts, including adverse impacts of climate change, to the health of humans, animals, plants or ecosystems.*

(Based on the Environmental Law (1999) of Lao PDR - (Art. 3))

1.11 Basic Principles of Environmental Protection

The basic principles of environmental protection shall be the following:

- 1. Environmental protection shall be the primary consideration and environmental remediation and restoration shall be considered to be a less preferable, but nevertheless important, option;*
- 2. The national socio-economic development plan shall include a programme for the protection of the environment and natural resources;*
- 3. All persons and organisations in the country shall have an obligation to protect the environment;*
- 4. Every person who causes damage to the environment shall be liable for such damage, under the relevant laws;*

Natural resources, raw materials and energy shall be used in such a manner as will minimise pollution and waste, ensure sustainable development and compliance with measures to adapt to the adverse impacts of climate change.

(Based on the Environmental Law (1999) of Lao PDR - (Art. 5))

1.12 Principles of Environmental Protection

"Environmental protection shall be consistent with national laws, cultural traditions and practices, sustainable socio-economic development and measures adopted at national level to respond to climate change which are in force during the relevant period."

(Based on Law on Environmental Protection (2005) of Vietnam– (Art. 4))

1.13 State Policies on Environmental Protection

"Promoting environmental education and awareness among, and mobilization of, the people combined with the introduction of administrative, economic and other measures, to raise awareness of the benefits of environmental protection and the adverse effects of climate change."

"Utilizing natural resources rationally and economically, using energy economically and efficiently, developing clean and renewable energies, promoting waste reduction and reuse and recycling with a view to reducing green house gas emissions, mitigating climate change and adapting to the adverse impacts of climate change."

"Investing in environmental protection means investment in development, diverting investment capital for environmental protection, encouraging local and foreign individuals or organizations to invest in environmental protection projects including Clean Development Mechanism projects such as energy efficiency projects and allocating expenditure for environmental protection from the State budget, annually."

"Giving preferential treatment in land use, taxation and financial support to environmental protection activities and environment-friendly production and consumption programmes as well as to local and foreign individuals and organizations who invest in sustainable development and environmental protection programmes and projects including Clean Development Mechanism projects and projects that effectively harmonize environmental protection with the requirements of development."

(Based on Law on Environmental Protection (2005) of Vietnam – (Art. 5))

2. ENVIRONMENTAL MANAGEMENT

2.1 National and Regional Environmental Plans

"The National Environmental Plan shall:

provide incentives to those who participate in natural resource management programmes, especially for the mitigation of and adaptation to climate change."

(Based on Law of Environmental Protection and Natural Resource Management of the Kingdom of Cambodia - (Art. 3))

2.2 Review of National and Regional Environmental Plans

"National and Regional Environmental Plans shall be reviewed and revised at least once in every five years and shall include a review of the measures adopted for adaptation to the adverse impacts of climate change."

(Based on Law of Environmental Protection and Natural Resource Management of the Kingdom of Cambodia - (Art. 5))

2.3 Establishment and modification of protected areas

"A Protected Area designated as a world or regional heritage site shall require appropriate interventions by the Government to ensure that its management and conservation is consistent with the relevant procedures and regulations as well as with measures for adaptation to the adverse impacts of climate change on such areas."

(Based on Law of Protected Areas of the Kingdom of Cambodia – (Art. 9))

2.4 The National Protected Area Strategic Management Plan

"The National Protected Area Strategic Management Plan shall include, inter alia, the following:

...Appropriate measures to minimize the economic, social and environmental impacts of climate change on such protected areas, an assessment of the adverse impacts of climate change on such protected areas and the formulation of adaptation measures to address such adverse impacts."

(Based on Law of Protected Areas of the Kingdom of Cambodia – (Art. 16))

2.5 Regulations on toxins and hazardous substances

"The Ministry shall issue regulations on the levels of toxins or hazardous substances that may be contained in hazardous waste which is required to be destroyed in order to protect human health and the environment and to conserve bio-diversity. In determining such levels, the Ministry shall take into account the impacts the release of such toxins or hazardous substances into the atmosphere will have on climate change."

(Based on Sub-Decree on Solid Wastes of the Kingdom of Cambodia – (Art. 12))

2.6 Quality label

"A quality label is a separate mark to identify the quality of products, goods or services that the manufacturer or service provider voluntarily affixes to his or her products or services. The affixing of the quality label is done for the purpose of meeting the consumers' demand for information, for improving the manufacturer's and service providers production performance, and for enhancing the quality of domestic products and services.

.....The quality label shall include a statement on the environmentally sound quality of the product, good or service including where appropriate, the level of greenhouse gas emission (carbon foot print) involved in the production of such products, goods and services."

(Based on the management of quality and safety of products and services of the Kingdom of Cambodia – (Art. 14))

2.7 Sanitary requirements

"....Where a product contains toxic materials that can affect human health or contribute to climate change, all possible measures shall be taken to minimize the adverse impacts of such product on human health and on climate change."

(Based on the management of quality and safety of products and services of the Kingdom of Cambodia – (Art. 18))

2.8 Recognition of laboratories

"Government laboratories shall test product samples. Other public or private laboratories recognized by the competent ministries may also conduct product samples testing. The recognition of these public or private laboratories shall be done in accordance with regulations issued by competent ministries. The regulations shall clearly define the scope of competence of these laboratories. The regulations shall also require a determination by such laboratories, of the extent to which the tested samples could contribute to climate change and the measures required to adapt to the adverse impacts of climate change."

(Based on the management of quality and safety of products and services of the Kingdom of Cambodia – (Art. 42))

2.9 Environmental Protection Actions to Be Encouraged

"Developing and utilizing clean and renewable energies and reducing the emission of gases that pollute the environment, cause greenhouse effects, deplete the ozone layer or contribute to climate change."

(Based on Law on Environmental Protection (2005) of Vietnam – (Art. 6))

2.10 Natural Resources Investigation, Assessment and Use Planning

"Natural resource use planning shall be integrated with natural resource conservation planning, including conservation of the environment and ecosystems and the avoidance of uses that contribute to global warming and climate change."

(Based on Law on Environmental Protection (2005) of Vietnam – (Art. 28))

2.11 Development of Clean and Renewable Energies and Environment- Friendly Products

"...Gradual increase of the percentage of clean and renewable energy yields to total national energy production and the implementation of objectives on national energy security, natural resources saving, and reduction of greenhouse gas emissions that cause greenhouse effects and contribute to global warming and climate change"

(Based on Law on Environmental Protection (2005) of Vietnam – (Art. 33))

2.12 Dust and Air Emission Management and Control

".....Organizations and individuals who are engaged in production, business and service activities that emit dusts or gaseous wastes shall be to required to pay a prescribed fee"

(Based on Law on Environmental Protection (2005) of Vietnam – (Art. 83))

2.13 Management of Gases that Cause Greenhouse Effects and Deplete the Ozone Layer

"The Ministry shall have the responsibility to prepare an inventory of greenhouse gas emissions throughout the country , in order to monitor such emissions and to propose reduction measures to mitigate, and adapt to, the adverse impacts of climate change, in compliance with international treaties to which the State is a Contracting Party."

"The State shall encourage and facilitate production, business and service establishments to reduce greenhouse gas emissions"

(Based on Law on Environmental Protection (2005) of Vietnam – (Art. 84))

2.14 Education and Training of Human Resources for Environmental Protection

"All citizens shall be comprehensively educated about the environment and its connection with climate change, with a view to raising awareness of the benefits of environmental protection and the measures necessary to respond to the adverse impacts of climate change"

(Based on Law on Environmental Protection (2005) of Vietnam – (Art. 107))

3. ENVIRONMENTAL IMPACT ASSESSMENT

3.1 Environmental Impact Assessment

".....The Environmental Impact Assessment report and monitoring mechanisms shall include a description of possible long term impacts on climate change resulting from the proposed activities and appropriate measures for the mitigation as well as measures for adaptation of the project to the adverse impacts of climate change."

(Based on Law of Environmental Protection and Natural Resource Management of the Kingdom of Cambodia - (Art. 7))

3.2 Responsibilities of EIA authorities

"The Provincial or Urban authority that is responsible for the proposed project, has the following duties:

....To ensure that the Environmental Impact Assessment report includes a review of all possible impacts of the project on climate change and the measures proposed for mitigation as well as measures for adaptation of the project to the adverse impacts of climate change."

(Based on Sub Decree on Environment Impact Assessment of the Kingdom of Cambodia – (Art. 5))

3.3 Review of EIA Report

"The Ministry of Environment shall review the Environmental Impact Assessment report...and shall disclose its findings and recommendations to the project proponent and the Project Approval Ministry or Institution. The recommendations shall include measures for mitigating and adapting to the adverse impacts of climate change."

(Based on Sub Decree on Environmental Impact Assessment of the Kingdom of Cambodia - (Art. 17))

3.4 Responsibilities of the Project Proponent

"The project proponent shall prepare a full report of the EIA within six months, in accordance with the requirements in Chapter 3 and 4 of this sub-decree..... The report shall include a description of the possible long-term impacts of the project on climate change and measures that are to be adopted for mitigation as well as measures for adaptation of the project to the adverse impacts of climate change"

(Based on Sub Decree on Environmental Impact Assessment of the Kingdom of Cambodia – (Art. 25))

3.5 Environmental Assessment

Environmental assessment is the process of estimating the impacts on the environment of development projects and operations. It shall also identify methods and measures for preventing and mitigating such anticipated impacts on the social and natural environment, including measures for adaptation to the adverse impacts of climate change.

(Based on the Environmental Law (1999) of Lao PDR - (Art. 8))

3.6 Focus of Strategic Environment Assessment Reporting

"Strategies for mitigation of, and adaptation to, the adverse impacts of climate change"

(Based on Law on Environmental Protection (2005) of Vietnam – (Art. 14))

3.7 Focus of Environmental Impact Assessment Reports

".....Other projects that may have potential risks of adverse environmental impacts, including risk of contributing to global warming and climate change"

(Based on Law on Environmental Protection (2005) of Vietnam – (Art. 18))

4. RIGHTS AND DUTIES

4.1 Duties of responsible institutions

The Nature Protection and Conservation Administration shall have the following principal duties:

.....to take appropriate action to prevent possible adverse impacts of climate change on protected areas and to manage such protected areas in a sustainable manner, so that they would not contribute to climate change."

(Based on Law of Protected Areas of the Kingdom of Cambodia – (Art. 5))

4.2 Duties of Officials

Officials of the Nature Protection and Conservation Administration shall have the following rights and duties:

.....Control the export and import of wild flora and fauna, seeds and samples from, or into, Protected Areas, including the import of invasive species of flora and fauna into Protected Areas"

(Based on Law of Protected Areas of the Kingdom of Cambodia – (Art. 6))

4.3 Involvement and access rights of local communities and indigenous ethnic minority communities

Utilization of natural resources shall be in accordance with the Management Plan and technical guidelines formulated to ensure sustainability of natural resources within the community protected areas. Such management plan shall be prepared by taking into consideration the possible adverse impacts of climate change on such community protected areas."

(Based on Law of Protected Areas of the Kingdom of Cambodia – (Art. 23))

4.4 Duties of those generating hazardous wastes

"Every person generating hazardous wastes shall submit quarterly reports on the wastes generated by him or her to the Ministry. The report shall include:

- Type and amount of waste;*
- Temporary storage method;*
- Treatment or elimination method; and*
- Possible impacts of such waste on human health and the environment including the contribution that the storage, treatment and disposal of such waste may make to climate change and ,and the identification of appropriate adaptation measures"*

(Based on Sub-Decree on Solid Wastes of the Kingdom of Cambodia – (Art. 14))

4.5 Duties of owners or operators of waste disposal facilities

"The owner or operator of a hazardous waste storage or disposal facility including a landfill shall submit quarterly reports on the hazardous waste that is received at such facility for disposal or storage and on the waste that has been disposed of in the facility, to the Ministry. The report shall include the following:

- Type and amount of hazardous waste;*
- Sources of the hazardous waste;*
- Packing and transport of the hazardous waste;*
- Processing and management of the hazardous waste within the facility; and*
- Possible impacts of such hazardous waste on human health and the environment including the contribution that the transport, storage and disposal of such hazardous waste may make to climate change, and the identification of appropriate adaptation measures."*

(Based on Sub-Decree on Solid Wastes of the Kingdom of Cambodia – (Art. 18))

4.6 Rights and Duties of the Science, Technology and Environment Agency

The Science, Technology and Environment Agency, being the environmental management and monitoring agency at the central level, shall have the following rights and duties:

..... in carrying out its functions, to take into account the adverse impacts of climate change on the environment and to recommend measures to adapt to such adverse impacts.

(Based on the Environmental Law (1999) of Lao PDR - (Art. 36))

5. ENFORCEMENT

5.1 Inspection Procedure

"An Inspector of the Ministry of Environment, when conducting an environmental inspection, shall comply with the following procedures:

..... the report of the Inspector shall identify the impacts of the project on human health, environment and ecosystems and on its possible contribution to climate change; and recommend measures for the mitigation as well as measures for adaptation of the project to the adverse impacts of climate change ."

(Based on Sub-Decree on Air and Noise Pollution 2000 of the Kingdom of Cambodia – (Art. 29))

5.2 Inspector's duties

"In determining whether an offence that causes air pollution has been committed, the Inspector of the Ministry of Environment shall consider the impact of such air pollution not only in the short-term but also its possible long-term contribution to climate change "

(Based on Sub-Decree on Air and Noise Pollution 2000 of the Kingdom of Cambodia – (Art. 32))

5.3 Inspection, Monitoring and Management of the Ozone depleting substances

"The mandate and duties of the National Ozone Unit of the Ministry shall include:

..... To strengthen capacity of the technical staff for controlling and monitoring the import, export and use of ozone depleting substances, raising awareness of the technical staff on the effects of ozone depleting substances on global warming and climate change and assisting in the formulation and implementation of appropriate measures for adaptation to the adverse impacts of climate change.

... To educate and raise awareness, in coordination with the concerned ministries and local government authorities, among national stakeholders on ozone depleting substance issues, including the impact of ozone depleting substances on global warming and climate change and the formulation and implementation of appropriate measures for adaptation to the adverse effects of climate change."

(Based on Sub Decree of Ozone Depleting Substances of the Kingdom of Cambodia – (Art. 24))

5.4 Prior disclosure

"It shall be strictly prohibited to produce, or place into the stream of commerce products, goods, or services mentioned in Article 6 of this Law where no prior disclosure has been made to, or no prior authorization has been issued by, the competent authorities. The competent authorities shall inspect such products, goods and services to ensure that they do not contain substances that can harm human health or contribute to climate change and shall also take into account, the long term impacts on climate change of such products, goods and services."

(Based on the management of quality and safety of products and services of the Kingdom of Cambodia – (Art. 7))

5.5 Compliance certificates

"..... The issue and inspection of the compliance certificate shall be the responsibility of the Ministry of Commerce and other concerned ministries. The certificate shall include obligations to use environmentally sound technology in the production of the products and goods, and to take all possible measures to ensure that the production of such products and goods do not cause harm to the environment or contribute to climate change."

(Based on the management of quality and safety of products and services of the Kingdom of Cambodia – (Art. 12))

5.6 Environmental Inspection

Environmental inspection refers to the monitoring and inspection of activities relating to the protection, remediation and restoration of the environment, the exploitation and use of natural resources and pollution control, in accordance with the laws and regulations, with the aim of ensuring effective environmental protection and adaptation to the adverse impacts of climate change.

(Based on the Environmental Law (1999) of Lao PDR - (Art. 41))

6. FINANCIAL PROVISIONS

6.1 Application of budgeted funds

"...the collection and dissemination of information on the possible adverse impacts of climate change on protected areas and related adaptation measures"

(Based on Law of Protected Areas of the Kingdom of Cambodia – (Art. 34))

6.2 Environmental Taxation

"Every organization, household and individual, who or which releases emissions into the environment, in violation of the provisions of any law, shall be liable to an environmental tax."

(Based on Law on Environmental Protection (2005) of Vietnam – (Art. 112))

7. INTERNATIONAL COOPERATION

7.1 International Relations and Cooperation Relating to the Environment

The Government shall support cooperation with other countries and international environmental protection agencies in order to attract financial and technical assistance, to receive and exchange technical information on the environment and to train and upgrade the scientific and technical capacity of persons employed in the protection of the environment. The Government shall also cooperate and participate in international activities for the prevention and mitigation of adverse impacts of climate change on the environment, and shall implement its obligations under international conventions and agreements on the environment, such as the UN Framework Convention on Climate Change) to which it is a party.

(Based on the Environmental Law (1999) of Lao PDR - (Art. 33))

8. USE OF FUNDS

8.1 Use of Funds

Environmental protection funds shall be used for the following activities:

.....Funding projects relating to scientific and technological research on environmental protection or for monitoring the implementation of environmental protection legislation or for identification of the adverse impacts of climate change on the environment and the measures necessary to adapt to such adverse impacts.

(Based on the Environmental Law (1999) Lao PDR - (Art. 32))

Chapter 8 - TRANSPORT AND SHIPPING

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

Transport in all three project countries contributes to climate change and is in turn, adversely affected by it. Emissions from the energy sector have increased exponentially in recent years. The largest contribution to total emissions was the transport sub-sector, followed by households. On the other hand, the sector has also been affected by severe floods which have resulted in a high number of casualties and destruction of infrastructure. In Lao PDR, gas and diesel oil are the major source of emissions which are also used for transport. Transport infrastructure is also vulnerable to extreme events associated with climate change which can cause damage to water navigation systems. In Vietnam, the potential impacts of climate change on the energy and transport sectors are mainly seen in energy production, consumption and supply and transportation infrastructure resulting in a decrease of efficiency and productivity. Consequently, there will be increasing expenditure on new investments, maintenance and repairing and upgrading of electrical equipment and supply networks.

Cambodia's adaptation measures are two fold and include measures to mitigate the effects of transportation systems on the climate as well as to protect transportation infrastructure from changing climatic conditions. Lao PDR has taken steps to reduce congestion and local air pollution by using 4-stroke engines to replace 2-stroke ones, and by the expansion of the public transportation service. It will also use public buses in place of three wheeled and two wheeled vehicles. It has plans to develop a railroad system for freight and passenger movement and increase public transportation infrastructure for long distance travel to connect villages and towns. In regard to marine transport, it will carry out the rehabilitation and maintenance of navigation routes and signs in areas that have been affected by severe floods. Vietnam will upgrade and reconstruct transport infrastructure in areas often threatened by sea level rise and floods taking climate factors into account in doing so. It will also ensure demand side management of energy based on high efficiency of energy use, ensuring energy security and safety.

The draft *Land Traffic Law* of Cambodia governs all road users in the country and is aimed at maintaining order and safety in road trafficking, protecting human and animal lives and the environment, curbing the effects on human health and damage to property and curbing the problems arising from the uses of roads. A proposed amendment to address climate change states that it will also be aimed at reducing the risk of climate change resulting from traffic congestion and carbon dioxide emissions and promoting adaptation to the adverse impacts of climate change. To further this objective all vehicles will be required to be certified as to their roadworthiness. The *Law on Civil Aviation* applies to the flight of all civil aircraft, and its purpose is to maintain the safety and order of civil aviation operations in Cambodia, to administer air traffic services within its airspace to ensure air traffic safety, to govern and develop civil airports in the country and to promote the development of safe, reliable and economical civil air transport. Here too, a proposed amendment addressing climate change concerns will include the consideration of possible impacts on climate change resulting from emissions from aircraft engines and the promotion of actions to reduce such emissions. The carriage of goods and products which contribute to this threat will be prohibited.

The *Land Transport Law* (1997) of Lao PDR which determines the regime for the domestic, international and cross-border transport of goods and passengers will be required, according to proposed legislative changes, to take into account the adverse impacts of climate change and corresponding adaptation measures. The rights and duties of the Ministry of Communication, Transport, Post and Construction will include to ensure that engines and vehicles conform to required standards in this regard. Similarly, the *Law of Public Roads* which defines the framework for designing, constructing and maintaining public roads has, as its basis, to ensure smooth transport systems in all areas of the country which can contribute to socio-economic development, support the country's defence and security and establish the basis to integrate the national economy with other countries in the region. Proposed amendments provide the basis for it to also ensure safety, environmental protection and adaptation to climate change. The Ministry of Communication,

Transport, Post and Construction will develop strategic plans and long, medium and short term plans in this regard keeping climate change concerns in mind.

The *Vietnam Railway Law (2005)* governs the planning, investment in, construction and protection of railway infrastructure. Its objectives include to ensure efficient and effective railway communications and transport activities and according to proposed amendments to address climate change, environmental protection including reducing emissions that cause adverse impacts on the environment and also adapting to the adverse impacts of climate change. The railway development policy also encourages the development of modern railways taking into account environmental protection and climate change adaptation. According to a proposed

amendment, investment in construction of railway infrastructure will be required to consider the reduction of greenhouse gas emissions. The *Law on Road Traffic (2008)* requires the implementation of similar principles as does the *Law on Inland Waterways Navigation (2004)*. Proposed amendments to the latter focus particularly on reducing greenhouse gas emissions and climate change adaptation. All activities pertaining to such navigation must conform to these principles. These proposals will also be incorporated into the *Vietnam Civil Aviation Law (2006)*. The principles of civil aviation activities will thus be based on compliance with national sustainable development policies and plans together with compliance with laws relating to environmental protection, emission reduction and adaptation to the adverse impacts of climate change.

SECTION II - DRAFT LEGASLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

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1. GENERAL PROVISIONS

1.1 Purpose of law

"The purpose of this law is to:

..... to reduce the risk to climate change from traffic congestion giving rise to increasing emissions of carbon dioxide into the atmosphere and to promote adaptation to the adverse impacts resulting from such emissions"

(Based on the Land Traffic Law of the Kingdom of Cambodia– (Art. 2))

1.2 Purpose of law

"This Law is enacted to:

..... examine the possible impacts of climate change resulting from the emission into the atmosphere of gases from the aircraft engines and to promote action to reduce such emissions"

(Based on the Law on Civil Aviation of the Kingdom of Cambodia – (Art. 2))

1.3 Function of the Land Transport Law

The function of the Land Transport Law shall be to provide an administrative and organizational structure for the regulation of operations for the domestic and international transport of goods and passengers, with a view to ensuring the safe and efficient transport of goods and passengers, to taking advantage of the country's central geographic location in the region, and to adapting to the adverse effects of climate change on transport activities.

(Based on Land Transport Law (1997) of Lao PDR - (Art. 1))

2. POLICIES, PLANNING AND PRINCIPLES

2.1 Basic principles in railway activities

To ensure smooth, orderly, safe, and efficient railway communication and transport activities; to contribute to socio-economic development, to maintain national defense and security, and to protect the environment, including, inter alia, by reducing emissions that have adverse impacts on the environment and adopting measures for adaptation to the adverse impacts of climate change"

(Based on Railway Law (2005) of Vietnam - (Art. 4))

2.2 Railway development policies

"The State encourages scientific research, the application of advanced sciences and technologies and the training of human resources, for the development of a modern railway system, whilst taking into account the need to protect the environment and adapt to the adverse impacts of climate change"

(Based on Railway Law (2005) of Vietnam - (Art. 5))

2.3 Urban railway development policies

"...The State shall encourage people to use railways as a means of public transport and to engage in practices that reduce green house gas emissions and promotes adaptation to the adverse impacts of climate change"

(Based on Railway Law (2005) of Vietnam- (Art. 56))

2.4 Principles for inland waterway navigation activities

"Inland waterway navigation activities shall be carried on in an orderly and efficient manner, and shall ensure safety for people, vessels and property, as well as environmental protection, reduction of green house gas emissions, adaptation to the adverse effects of climate change, and socio-economic development and also contribute to maintaining national defense and security and protecting national sovereignty and interests."

(Based on the Law on Inland Waterways Navigation (2004) of Vietnam - (Art. 4))

2.5 Principles of civil aviation activities

" Providing for the coordinated development of airports, airfields, means of transport and other resources related to air navigation, whilst ensuring compliance with national sustainable development, communications and transport development strategies, programmes and plans, as well as with laws relating to environmental protection, greenhouse gas emissions reduction and adaptation to the adverse impacts of climate change."

(Based on the Vietnam Civil Aviation Law (2006) - (Art. 5))

2.6 Planning of airports and airfields

"Planning of airports and airfields shall take into account the national socio-economic development strategy, laws and policies for environmental protection and for responding to the adverse impacts of climate change, sustainable development policies, defense and security concerns, development plans of the transport sector and of other sectors and localities, and trends in the development of international civil aviation."

(Based on the Vietnam Civil Aviation Law (2006) - (Art. 56))

2.7 Road traffic principles

"The State shall ensure that road traffic is maintained in a manner that is orderly and safe and contributes to socio-economic development, defense and security maintenance and ensures environmental protection, emissions reduction, adaptation to the adverse impacts of climate change and sustainable development"

(Based on the Law on Road Traffic (2008) of Vietnam – (Art. 4))

2.8 Policies on road traffic development

"The State shall encourage and create conditions for national and foreign organizations and individuals to invest in and commercially operate vehicles which have low rates of emission and use clean and renewable energy."

(Based on the Law on Road Traffic (2008) of Vietnam – (Art. 5))

2.9 Road traffic and transportation planning

Road traffic and transportation planning shall be formulated in consultation with Ministries in charge of other sectors of transport and taking into account the following: socio-economic development strategies, defense and security assurance, integration of international obligations and policies and strategies relating to protection of the environment, reduction of emissions, adaptation to the adverse impacts of climate change and sustainable development".

(Based on the Law on Road Traffic (2008) of Vietnam – (Art. 6))

3. MANAGEMENT

3.1 Technical compliance certificates

"All vehicles, trailers, and semi-trailers, motor bicycles, or motor-tricycles which are used on the roads shall have certificates of compliance with technical standards issued by Ministry of Public Works and Transport.

..... Certificate of compliance with technical standards shall determine the effectiveness of the engines of the vehicles in reducing the emission of gases that contribute to climate change. Vehicles with engines that do not conform to the prescribed standards shall be required to upgrade the engines to conform to the prescribed standards."

(Based on the Land Traffic Law of the Kingdom of Cambodia – (Art. 48))

3.2 Investment in construction of railway infrastructure

"Investors in the construction of railway infrastructure shall observe regulations:

..... To ensure landscape and environmental protection including regulations for the reduction of green house gas emissions."

(Based on Railway Law (2005) of Vietnam - (Art. 18))

3.3 Registry of railway traffic equipment

".....Railway equipment manufactured in Vietnam shall conform to quality, technical safety and environmental protection standards (including standards for reducing emissions that have adverse impacts on the environment and for adapting to the adverse impacts of climate change), and shall be certified by Vietnamese registry offices or foreign organizations authorized to grant certificates of compliance. by Vietnamese registry offices."

"....Railway traffic machinery and equipment, which are in use, shall be periodically inspected for compliance with technical safety and environmental protection standards (including standards for reducing emissions that have adverse impacts on the environment and for adapting to the adverse impacts of climate change) and shall be granted compliance certificates by registry offices."

"....Owners of railway equipment shall repair and maintain such equipment to ensure compliance with standards for technical safety and environmental protection (including standards for reducing emissions that have adverse impacts of the environment and for adapting to the adverse impacts of climate change), between periods of inspection by the registry offices."

"....The Minister of Transport shall determine the quality, technical safety and environmental protection standards relating to railway equipment (including standards for reducing emissions that have adverse impacts on the environment and for adapting to the adverse impacts of climate change). The Minister shall also prescribe the technical qualifications required to be held by officers of the Vietnam Registry of railway traffic and measures to ensure the efficient discharge of the functions of the Registry."

(Based on Railway Law (2005) of Vietnam - (Art. 40))

3.4 Importation of railway traffic equipment

"Imported railway equipment shall be compatible with Vietnamese railway technical standards; be accompanied by certificates of compliance with Vietnamese standards on quality, technical safety and environmental protection (including standards for reduction of green house gas emissions) granted by Vietnamese registry offices or a foreign organization authorized to grant certificates of compliance by Vietnamese registry offices."

(Based on Railway Law (2005) of Vietnam - (Art. 45))

3.5 Vessel registration

"Vessels which are of lawful origin and which comply with the quality, technical safety, environmental protection and green house gas reduction standards prescribed by law, shall be granted registration certificates by competent State agencies"

(Based on the Law on Inland Waterways Navigation (2004) of Vietnam - (Art. 25))

3.6 Vessel registry

"Vessels specified in Clause 1 and Clause 2 of Article 24 of this Law shall be subject to registration and their owners shall comply with the following conditions:

..... Their vessels shall be subject to inspection by Vietnam Registry offices in the course of operation, for compliance with technical safety, environmental protection and green house gas emissions reduction standards; they shall be responsible for ensuring that their vessels comply with the prescribed technical safety, environmental protection and green house gas emissions reduction standards at the time of inspection

.... The Transport Minister shall prescribe the quality, technical safety, environmental protection and green house gas emissions reduction standards of vessels; and shall provide for the registration of all vessels in Vietnam, excluding vessels specified in Clause 4 of this Article.

.....The Defense Minister, the Public Security Minister and the Fisheries Minister shall, in the exercise of their respective powers, prescribe the quality, technical safety, environmental protection and green house gas emissions reduction standards of vessels engaged in performing defense or security tasks, or in fishing, and shall provide for the registration of vessels engaged in the performance of defense or security tasks, or in fishing."

(Based on the Law on Inland Waterways Navigation (2004) of Vietnam - (Art. 26))

3.7 Establishments that build, convert and/or repair vessels

"When building, converting or repairing vessels subject to registration, ship builders and repairers shall comply with the quality and technical safety standards prescribed for those vessels as well as with the design dossiers approved by registry offices for those vessels. The vessels shall be subject to inspection and supervision, in the course of building or repair, by registry offices for compliance with quality, technical safety, environmental protection and green house gas emissions reduction standards."

(Based on the Law on Inland Waterways Navigation (2004) of Vietnam - (Art. 27))

3.8 Import of vessels

"Imported vessels shall comply with the quality, technical safety, environmental protection and greenhouse gas emissions reduction standards prescribed for those vessels and the importation of vessels shall be subject to the provisions of other related laws."

(Based on the Law on Inland Waterways Navigation (2004) of Vietnam - (Art. 28))

3.9 Inland waterway transport activities

"Transporters may operate vessels on inland waterways only for the purposes, and in the areas, specified in the technical safety, environmental protection and greenhouse gas emissions reduction certificates granted to them by registry offices."

(Based on the Law on Inland Waterways Navigation (2004) of Vietnam - (Art. 77))

3.10 Transport of dangerous cargoes

"Vessels engaged in the transport of dangerous cargo or cargo that has a high risk of environmental pollution may be permitted to do so by competent State agencies, subject to compliance with special operational codes. Persons operating such vessels shall comply with the relevant regulations for prevention and control of hazards, fire and explosions, and shall have plans for responding adequately to incidents of environmental pollution and for coping with incidents of oil spill, when transporting petrol and oil."

(Based on the Law on Inland Waterways Navigation (2004) of Vietnam - (Art. 95))

3.11 State management responsibilities of the Government, ministries and ministerial-level agencies for inland waterway navigation

"The Ministry shall have the prime responsibility for and coordinate with the Ministry of Transport in planning the development of river basins, managing and exploiting natural resources in channels and channel protection corridors, ensuring navigation safety on, and protection of the environment in, inland waterways and in responding adequately to incidents of environmental pollution in inland waterways."

(Based on the Law on Inland Waterways Navigation (2004) of Vietnam - (Art. 99))

3.12 Environmental protection in civil aviation activities

"Aircraft, air navigation facilities and equipment, airport and airfield facilities and equipment and other technical equipment on the ground shall comply with the prescribed environmental protection standards and shall be inspected regularly in order to ensure that they are able to prevent and promptly respond to any adverse environmental impacts"

(Based on the Vietnam Civil Aviation Law (2006) - (Art. 7))

3.13 Contents of state management of civil aviation

"Managing scientific and technological activities in the civil aviation sector and ensuring environmental protection, adaptation to the adverse impacts of climate change and sustainable development in regard to civil aviation activities."

"Organizations and individuals engaged in civil aviation activities shall comply with policies and standards relating to emission reduction, energy efficiency, adaptation to the adverse impacts of climate change and sustainable development."

(Based on the Vietnam Civil Aviation Law (2006) - (Art. 8))

3.14 Opening and closure of airports and airfields

"The Prime Minister shall decide on the opening of airports or airfields in accordance with the plans for the development of airports and airfields and on the closure of airports or airfields for security and defense assurance reasons or for special socio-economic reasons, including those relating to the environment and climate change."

(Based on the Vietnam Civil Aviation Law (2006) - (Art. 49))

3.15 Environmental protection, responding to climate change and promoting sustainable development at airports and airfields

"Organizations and individuals engaged in activities at airports or airfields shall comply with regulations on energy efficiency, emissions reduction, adaptation to the adverse impacts of climate change and sustainable development "

(Based on the Vietnam Civil Aviation Law (2006) - (Art. 54))

3.16 Specific provisions on the opening and closure of airports and airfields and management of activities in airports and airfields and areas adjacent thereto

"The Minister shall prescribe the procedures for preparation of the airport and airfield register, procedures for the grant of airport and airfield registration certificates, procedures for the grant of registration certificates to airports and airfields under construction, technical standards to be maintained at airports, airfields and areas adjacent thereto, procedures for the grant of airport and airfield operation certificates and the standards relating to environmental protection and emissions reduction required to be complied with by organizations and individuals carrying on activities in airports and airfields."

(Based on the Vietnam Civil Aviation Law (2006) - (Art. 55))

4. RIGHTS AND DUTIES

4.1 Rights and Duties of the Ministry of Communication, Transport, Post and Construction

In regulating land transport, the Ministry of Communications, Transport, Posts and Construction shall have the following rights and duties:

..... to ensure that the engines of vehicles used for land transport conform to the prescribed standards for reduction of greenhouse gas emissions that contribute to climate change. Owners of vehicles with engines that do not conform to such prescribed standards shall be required to upgrade such engines to conform to such prescribed standards within a specified period of time.

(Based on Land Transport Law (1997) of Lao PDR - (Art. 35))

4.2 Rights and obligations of cargo transport dealers

".... Cargo transport dealers shall maintain proper hygiene and avoid polluting the environment and shall not use means of transport which do not comply with the prescribed quality, technical safety, environmental protection and greenhouse gas emissions reduction standards."

(Based on the Law on Inland Waterways Navigation (2004) of Vietnam - (Art. 87))

5. ENFORCEMENT

5.1 Prohibited acts

"..... the carriage of goods and products that can contribute significantly to climate change"

(Based on the Law on Civil Aviation of the Kingdom of Cambodia – (Art. 19))

5.2 Prohibited acts

"Operating vessels on inland waterways in contravention of the operating conditions prescribed in Article 24 of this Law or operating vessels which do not comply with the technical safety, environmental protection and green house gas reduction standards specified in the certificates issued by registry offices."

(Based on the Law on Inland Waterways Navigation (2006) of Vietnam - (Art. 8))

Chapter 9 - LAND AND LAND USE

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

Climate change will impose constraints on Cambodia in land use and land use planning due to several factors. The frequency and intensity of floods is likely to increase and it is expected that by the next century rainfall would increase by 3% to 35% from current levels. Temperature increase would be in the range of 1.3C to 2.5C. Sea level rise in the coastal zones and submersion of low lying areas will affect human settlements, mangroves and forests. This would reduce the availability of land for agriculture and other uses. In Lao PDR the sloping land in the mountainous areas of the country would become susceptible to erosion due to excessive rainfall, reducing the availability and suitability of land for cultivation. Rice fields in particular would be affected. Vietnam would see the planting boundaries of tropical trees/crops moving towards higher mountainous regions and northwards. There will also be changes in the boundary distribution of primary forest as well as secondary forest. Salt-water intrusion due to sea level rise will significantly affect major cultivation areas in the Mekong and Red River deltas.

Cambodia has taken steps to address land use and land use planning in several sectors. In regard to agricultural uses it will focus on the development of maps showing rice growing areas of provinces prone to flood and drought and the development of irrigation facilities in low land areas. As protection against changes in weather patterns, it will further the development of capacity to adapt to current extreme climate events such as development of early warning systems for flooding and conservation of protected areas. It will also focus on the improvement of forest resources management. It will take steps to combat sea level rise and will formulate a comprehensive adjustment and mitigation policy in the context of integrated coastal zone management and develop computer-based information systems covering the results of surveys, assessments and observations in order to minimize the impact of this threat. Lao PDR will also have to address the threats to agriculture in this context. Measures proposed in this regard are to increase the area of irrigated land, thereby reducing vulnerability

to droughts and floods, and to minimize the variation in annual total production and to implement irrigation and introduce stress-tolerant and high-yielding rice varieties. Vietnam will take similar measures, developing crop patterns that are adjusted to meet predicted climate change impacts, upgrading existing agricultural irrigation systems, and developing new crop varieties that can withstand severe environmental conditions and new farming techniques that are better suited to future changing environmental conditions. To mitigate the impacts on forests it will promote reforestation, especially in the watershed areas, and replanting on bare lands and hills.

The *Land Law 2002* of Cambodia determines the regime of ownership for immovable properties in the Kingdom of Cambodia for the purpose of guaranteeing the rights of ownership and other rights related to such property in accordance with the provisions of the 1993 Constitution of the Kingdom of Cambodia. The suggested changes to this law to address issues of climate change may have impacts on ownership and usage rights. In modifying the original nature and structure of immovable property and activities which occur on it which may be detrimental, due regard must be paid to the impacts of such activities on climate change on the one hand and the impacts of climate change on land on the other. These changes will impose certain restrictions on the rights of owners to prevent climate change impacts. The rights of indigenous communities have also been addressed in the proposed changes and this relates to the practice of shifting cultivation. In determining land reservations for this purpose, the loss of forests and forest degradation must be considered.

In Lao PDR the *Urban Plans Law (1999)* determines the principles, regulations and measures relating to among others, land use, the construction of buildings and structures, urban development, and preserving ancient places. The proposals for change include taking in to account the adverse impacts of climate change in its functioning. The principles of urban planning as reflected in the law also contain proposed changes which incorporate this requirement. The Ministry of Communication, Transport, Post and Construction has a specific obligation to

adhere to this requirement when carrying out its functions.

In Vietnam the *Land Law (2003)* requires the State to adopt policies to create conditions for persons engaged in such activities as agricultural production, forestry, aquaculture, and salt-making, to have land to do so and to facilitate such activities. In doing so, it is proposed that the State must consider whether its policies are suitable to the process of re-structuring land use and the rural economy in the direction of

industrialization and modernization together with the reduction of emissions and adaptation to climate change. The principles of land use too may be further strengthened to include being economical, efficient, protecting the environment and reducing emissions and not harming the legitimate interests of other land users. This would include minimizing one's own contribution to climate change. Land users are encouraged to increase forest areas to prevent floods, absorb CO₂ and adapt to climate change.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

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1. PRINCIPLES AND PLANNING

1.1 Land-use principles

"Land use shall conform to the following principles:

...Be economical, efficient, protect the environment, reduce emissions and not be harmful to the legitimate interests of other land users; "

(Based on the Land Law (2003) of Vietnam – (Art. 11))

1.2 The principles for elaboration of land use planning and plans

"The amendment of land use planning and related plans shall be based on the following principles:

.....Be compatible with overall national planning and related strategies and plans for socio-economic development, defense and security assurance and for addressing global climate change issues including mitigation of climate change and adaptation to the adverse impacts of climate change."

(Based on the Land Law (2003) of Vietnam – (Art. 21))

1.3 Grounds for elaboration of land use planning and, plans

"Grounds for amendment of land use plans and plans include:

.....The strategies and overall planning on socio-economic development, defense and security maintenance, plans for development of various sectors of the economy and of various localities and for adaptation to the adverse impacts of climate change."

(Based on the Land Law (2003) of Vietnam – (Art. 22))

1.4 Contents of land use planning

".....Determination of measures for efficient land use, protection of land and responding to the adverse impacts of climate change on land, improvement of environmental protection and the reduction of emissions resulting from land use changes;

(Based on the Land Law (2003) of Vietnam – (Art. 23))

2. MANAGEMENT

2.1 Lands of indigenous communities

"The lands of indigenous communities include not only lands actually cultivated but also reserved lands necessary for shifting of cultivation which is required by the agricultural methods currently practised by such communities and which are recognized by the administrative authorities. ...In reserving land required for shifting cultivation, the loss of forestry resulting from such cultivation and giving rise to forest degradation shall be taken into account."

(Based on the Land Law of 2002 of the Kingdom of Cambodia – (Art. 25))

2.2 Land concessions

“A land concession shall not be granted if the grant affects roadways or transportation ways or sidewalks or their borders and the land necessary for their maintenance, or waterways, pools, ponds and water reserves used by the people in their daily lives. Consideration shall also be given to the impact of a land concession on climate change and vice versa”.

(Based on the Land Law of 2002 of the Kingdom of Cambodia – (Art. 58))

2.3 Procedure for granting land concessions

“The procedure for granting land concessions for residential as well as for agricultural, subsistence, industrial or agricultural purposes shall be determined by sub-decree. The sub-decree shall include provisions for consideration of the impact of the land concession on climate change and vice versa”

(Based on the Land Law of 2002 of the Kingdom of Cambodia – (Art. 60))

2.4 Regime of private ownership

“Modification of the character and use of immovable property in accordance with the provisions of this law include the clearing of lands and forests (logging) and their cultivation, the filling up of land, the leveling of hills or talus, the digging and hollowing out of land to extract earth, the exploitation of mines or quarries, the establishment or drainage of water reserves, the conversion of agricultural land for housing and related purposes, and the development of industrial zones and factories. In approving such modifications, account shall be taken of the consequences of such modifications on climate change and vice-versa.”

(Based on the Land Law of 2002 of the Kingdom of Cambodia – (Art. 89))

2.5 Protection of Land and Environment

Every individual and organization shall have the obligation to protect the land and to ensure that-

- (a) it is maintained in a condition appropriate to the category of land to which it belongs;*
- (b) it is used in a manner that prevents or minimizes the adverse effects of climate change; and*
- (c) it is not used in a manner that could result in soil erosion, land subsidence, soil degradation or a diminution of its land area or in bringing about adverse impacts on the natural or social environment.*

(Based on Land Law (2003) of Lao PDR - (Art. 6))

2.6 Management of Forest Land

The Ministry of Agriculture and Forestry shall be charged with the management of forest land, the determination of the different categories of forest land and the formulation of regulations for the management, protection, development, and use of forest land including, measures for environmental protection and adaptation to the adverse impacts of climate change. The regulations so formulated shall be submitted to the Government for its consideration and approval.

(Based on Urban Plans Law (1999) of Lao PDR - (Art. 20))

2.7 Management of Water Area Land

The Ministry of Agriculture and Forestry shall be charged with the management of water area land and the formulation of regulations for the management, protection, development, and use of this category of land in co-ordination with the local administrations of the areas within which those lands are situated including, the formulation of measures for adaptation to the adverse impacts of climate change on this category of land. The regulations so formulated shall be submitted to the Government for its consideration and approval.

(Based on Land Law (2003 and Based on Urban Plans Law (1999) of Lao PDR – (Art. 24))

2.8 Management of Industrial Land

The Ministry of Industry and Handicrafts shall be charged with the management of industrial land and the formulation of regulations for the management, protection, development, and use of this category of land including, the formulation of measures for environmental protection and for adaptation to the adverse impacts of climate change on this category of land. The regulations so formulated shall be submitted to the Government for its consideration and approval. In the management of land over or under which electricity transmission lines, energy and gas pipelines, and pipe-lines for water supply have been installed, the Ministry shall act in coordination with the transport, posts and construction sectors and other concerned sectors.

(Based on Land Law (2003 and Based on Urban Plans Law (1999) of Lao PDR – (Art. 28))

2.9 Management of Communication Land

The Ministry of Communications, Transport, Posts and Construction shall be charged with the management of communication land and the formulation of regulations for the management, protection, development, and use of this category of land, including the formulation of measures for adaptation to the adverse impacts of climate change on this category of land. The regulations so formulated shall be submitted to the Government for its consideration and approval.

(Based on Land Law (2003 and Based on Urban Plans Law (1999) of Lao PDR – (Art. 31))

2.10 Management of Cultural Land

The Ministry of Information and Culture shall be charged with the management of cultural land throughout the country and with the formulation of regulations for the management, protection, development, and use of this category of land, including the formulation of measures for adaptation to the adverse impacts of climate change on this category of land. The regulations so formulated shall be submitted to the Government for its consideration and approval. Individuals or organizations using cultural land shall comply with the regulations for the management, use, and protection of cultural land.

(Based on Land Law (2003 and Based on Urban Plans Law (1999) of Lao PDR – (Art. 34))

2.11 Management of Land for National Defence and Security

The Ministry of National Defence and the Ministry of Security shall be charged with the management of land used for national defence and security purposes and with the formulation of regulations for the management, protection, development, and use of this category of land, including the formulation of measures for adaptation to the adverse impacts of climate change on this category of land. The regulations so formulated shall be submitted to the Government for its consideration and approval.

(Based on Land Law (2003 and Based on Urban Plans Law (1999) of Lao PDR – (Art.36))

2.12 Management of Construction Land

The National Land Management Authority shall be charged with the management of construction land and with the formulation of regulations for the management, protection, development, and use of this category of land, including the formulation of measures for adaptation to the adverse impacts of climate change on this category of land. The regulations so formulated shall be submitted to the Government for its consideration and approval.

(Based on Land Law (2003 and Based on Urban Plans Law (1999) of Lao PDR – (Art. 39))

2.13 Encouraging investment in land

“The State shall adopt policies to encourage land users to invest their labor, planting material and capital in, and to apply developments in science and technology to, the following works:

. .Enlarging forest area in order to prevent floods, absorb carbon dioxide and adapt to the adverse effects of climate change”

(Based on the Land Law (2003) of Vietnam – (Art. 12))

2.14 Auction on land use rights, bidding for projects involving land use

“The State may allocate land with the right to collect land use levies or lease land by way of auction or as part of the process of bidding for projects, for use for the following purposes:

..... Use of land funds for afforestation”.

(Based on the Land Law (2003) of Vietnam – (Art. 58))

3. RIGHTS AND DUTIES

3.1 Rights and Duties of Land Management Authorities

The land management authorities shall have the following rights and duties:

1. To formulate principles, policies, laws, Presidential edicts, decrees, regulations, and rules on land management;
2. To undertake and conduct land surveys, land classification and land use planning at the local, regional and national levels;
3. To coordinate with concerned sectors and local administrations in land use planning, the protection and development of land, land classification, assessment of the quality of land, demarcation of land areas for certain uses and the monitoring of land use;
4. To allocate land use rights, to lease or grant concessions to land and to withdraw the right to use land;
5. To prepare land registers, make land evaluations, conduct land registration, issue land titles, and collect land statistics;
6. To collect land tax;
7. To settle land disputes;
8. To manage State land and protect its environment;
9. To determine policies for the management of their organizations and the procedures for the sale and purchase of rights to use land;
10. To provide for a data and information system on land;
11. To formulate regulations to protect people who carry on professional activities relating to land (such as land surveyors, land valuers, and land brokers or representatives of land sellers or buyers);
12. To identify the adverse impacts of climate change resulting from land use and to recommend appropriate policies and measures to adapt to such impacts.
13. To exercise such other rights and perform such other duties as may be assigned to them by the Government.

(Based on Urban Plans Law (1999) of Lao PDR - (Art. 10))

3.2 Obligations of Persons who Have the Right to Use Land and Persons who Hold Land Use Rights

Persons having the right to use land and persons who hold land use rights have the following obligations:

1. To use the land only for the purposes for which it was granted;
2. To use the land in such manner as will not cause damage to land quality or result in adverse impacts on the natural or social environment;
3. To take such measures as are necessary to adapt to the adverse impacts of climate change on the land;
4. To use the land in such manner as will not violate the rights or interests of any other person;
5. To deal with unforeseen occurrences in compliance with the law;
6. To pay fees relating to the land, in full, on the dates on which such fees become payable;
7. In the case of a person who holds land use rights, to fulfill his or her obligations relating to the land, such as payment of land tax, transfer tax, tax on income from leases, inheritance tax, fees for name transfer, fees for registration of legal transactions relating to land, when they become due;
8. To comply with other regulations relating to land.

(Based on Land Law (2003) and Based on Urban Plans Law (1999) of Lao PDR – (Art. 60))

3.3 Obligations of Aliens, Foreign Individuals and their Organisations Relating to the Lease or Concession of Land

Aliens, foreign individuals and organizations who lease land or receive concessions in land shall have the following obligations:

1. *To use the land only for the purposes for which it was leased or given;*
2. *To use the land in such manner as will not, cause damage to land quality or result in adverse impacts on the natural or social environment;*
3. *To use the land in such manner as will not violate the rights and interests of any other person;*
4. *To deal with unforeseen occurrences in compliance with the law;*
5. *To pay the lease or concession fee and other fees relating to the land, in full, on the dates on which such fees become payable;*
6. *To comply with land regulations and the conditions attached to the lease or concession relating to the land;*
7. *To take such measures as are necessary to adapt to the adverse impacts of climate change on the land.*

(Based on Land Law (2003 and Based on Urban Plans Law (1999) of Lao PDR – (Art. 67))

3.4 Rights and Duties in the Control of Land Use

Land management authorities shall have the following rights and duties for the regulation of land use:

1. *In the discharge of their regulatory functions, to demand the production of relevant documents by individuals and organizations who have the right to use land or hold land use rights;*
2. *To undertake the inspection of land sites;*
3. *To give advice on land use to persons who have the right to use land and persons who hold land use rights;*
4. *To issue orders suspending or temporarily stopping illegal operations relating to the land;*
5. *To make recommendations to concerned organizations to consider the withdrawal of rights to use land and land use rights;*
6. *To identify the adverse impacts of climate change resulting from land use and to recommend such measures as are necessary to adapt to such impacts;*
7. *To exercise such other rights and perform such other duties relating to the regulation of land use or land use rights as are conferred or imposed.*

(Based on Land Law (2003 and Based on Urban Plans Law (1999) of Lao PDR – (Art. 79))

3.5 Guarantees for land users

“The State shall adopt policies to create conditions for persons directly engaged in agricultural production, forestry, aquaculture, and salt-making to receive land for these purposes and shall adopt policies giving preferences in land allocation for the following purposes: investment, job training, production and business development, job creation for rural labor, reduction of emissions and adaptation to the adverse impacts of climate change and with a view to restructuring the rural economy for industrialization and modernization.

(Based on the Land Law (2003) of Vietnam – (Art. 10))

Chapter 10 – CONSTRUCTION

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

The construction industry in the three project countries will face constraints as a result of climate change. In Cambodia, harsh environmental conditions, particularly floods and windstorms could result in extensive damage to infrastructure at all levels, from national to personal, causing heavy expenditure for costs of repair, rehabilitation and maintenance. Flood protection infrastructure will also be an added cost. A similar situation prevails in Lao PDR where the impacts of floods and storms have caused damage to infrastructure, power houses and housing. The consequent expenditure which will be required for reconstruction and rehabilitation will be a drain on a small developing country. In Vietnam, sea level rise will affect design and construction and will threaten industrial, transport and national defence structures that were designed based on present sea levels. Increases in floods, storm surges and inundation will negatively affect the foundations of structures and the increase in frequency and intensity of typhoons and tornadoes would require strengthening such structures, thereby placing immense economic pressure on countries which can ill afford it. Sea level rise would make a great deal of land in the Mekong and Red River deltas and coastal zones narrower and will hamper residential and urban planning unless a sufficiently high dike system is built, which will require a huge capital investment.

Cambodia has provision for the repair and rehabilitation of damaged infrastructure and implementation of projects for infrastructure development. It has also made provision to address floods consisting of construction of water culverts and rehabilitation of roads and bridges. Lao PDR plans to ensure protection from floods by building embankments and water drainage channels and water gates and undertake flood and drought prevention/response projects. Adaptation measures taken by Vietnam include implementing measures to protect its infrastructure against sea level rise and to reach communities living in vulnerable areas to adapt to changing oceanic climates. It will also engage in re-settlement, moving both

communities and infrastructure from these areas and develop strategies to adapt to the vagaries of the weather.

In Cambodia the *Law of Country Planning, Urbanization and Construction (1994)* has as its objective to promote the organisation and embellishment of the urban and rural areas of the country to ensure development. A proposed change to address climate change will require consideration of the impacts of climate change resulting from improper development of such areas that can destroy natural resources and cultural areas and also the adaptation measures necessary to deal with climate change. It has also been proposed that a Master Plan should be drawn up in regard to such development which will take into account the impacts of climate change and identify appropriate adaptation measures. Particular attention will be directed to the protection of resorts and immobile objects of archaeological, historical, cultural, aesthetic and technical interest. Some specific measures include the requirement that all explorations and surveys will be required to consider climate change impacts and imposing a ban on construction on lands considered vulnerable to climate change.

The Lao PDR *Urban Plans Law* determines the framework for land use including construction and provides for urban development laws and policies to be aligned with national socio-economic development plans. The proposed changes include protecting the environment from the adverse impacts of climate change. The principles of urban planning set out in the law would need to be strengthened to require consideration of the adverse impacts of climate change and appropriate adaptation measures. The Ministry of Communication, Transport, Post and Construction as well as corresponding divisions at the Provinces, Municipalities and Special Zones, will be required take these considerations into account when carrying out its functions.

In Vietnam, the *Law on Housing (2005)* articulates the housing development policy which addresses issues of house ownership, housing development, management of the uses of houses and house-related transactions and State management of houses. A proposed amendment will be introduced by which the

State shall encourage housing constructions and designs which use measures and materials that minimize climate change and adapt to its adverse impacts. Housing development will require to be based upon the consideration of impacts on the environment, especially climate change, and vice versa, and focus on minimizing such impacts. This applies to both urban and rural areas. House owners have an obligation to construct or demolish their houses so as not to harm the interests of the State, the public or the environment.

The Vietnam *Law on Urban Planning (2009)* provides for urban planning activities and their implementation and management. It will also give effect to the master plan on urban centres and related regional plans. Under proposed changes to address climate change concerns, requirements on urban planning will be required to take environmental protection and climate change concerns into account and provide for adaptation to the adverse impacts of climate change. Importantly, a requirement for strategic environmental assessment will be also be included under the proposed changes.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

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1. GENERAL PROVISIONS

1.1 Objective of the Law

The objective of the Law on the Country Planning, Urbanization and Construction shall be to promote the creation and embellishment of urban and rural areas throughout the country with the purpose of ensuring the development of the country in the spirit of:

..... Giving consideration to the adverse impacts of climate change resulting from unplanned development of urban and rural areas that have the effect of destroying natural resources and cultural areas and to the measures required to adapt to the adverse impacts of climate change. The development of urban and rural areas shall be done in a sustainable manner to ensure the prevention of adverse impacts on the environment"

(Based on the Law of Country Planning, Urbanization and Construction (1994 of the Kingdom of Cambodia – (Art. 1))

1.2 Function of the Law on Urban Plans

The Law on Urban Plans sets out principles and provisions for the management of land use and for regulating the construction of structures at national and local levels, to ensure-

- (a) conformity with other relevant policies and laws;*
- (b) urban development consistent with the national socio- economic development plan;*
- (c) the maintenance of order, safety, discipline and hygiene in the conduct of all social activities in the urban area;*
- (d) the preservation of historical and cultural sites; and*
- (e) the protection of the environment, including protection from the adverse impacts of climate change.*

(Based on the Urban Plans Law (1999) of Lao PDR – (Art. 1))

1.3 Housing development objectives

Housing development shall take into account the impacts of the development on the environment, especially climate change and vice versa, and ensure that the adverse impacts of climate change resulting from such development are minimized and that there are measures in place to adapt to such adverse effects."

(Based on Law of Housing (2005) of Vietnam – (Art. 23))

2. POLICIES, PRINCIPLES AND PLANNING

2.1 City Master Plans

"..... in order to protect the heritage and the environment and to ensure economic development of a particular region as determined by the Council of Ministers, the relevant authority shall have the duty to prepare a development master-plan for that region and shall submit such master plan to the Council of Ministers for its approval. The master plan shall take into account the adverse impacts of climate change on the region and identify appropriate measures for adaptation to these adverse effects."

(Based on the Law of Country Planning, Urbanization and Construction (1994) of the Kingdom of Cambodia – (Art. 5))

2.2 Principles of Urban Planning

Urban planning shall be conducted systematically and in collaboration with all concerned sectors, local administrations and the people. Urban planning shall be consistent with the level of socio-economic development of each area and shall ensure security, safety, social order, hygiene and comfort, aesthetics, preservation of ethnic cultural heritage and the protection of the environment. Urban plans at the city level shall be consistent with urban plans at the provincial level, urban plans at the provincial level shall be consistent with urban plans at the national level, and urban plans at the regional level shall be consistent with urban plans at the national level, and shall take into account the adverse impacts of climate change and adopt adequate measures to adapt to such adverse impacts.

(Based on the Urban Plans Law (1999) of Lao PDR – (Art. 4))

2.3 Housing development policies

“The State shall encourage the construction of houses that have designs and technical specifications and use materials which minimize, and are adaptable to, the adverse impacts of climate change and vice versa.”

(Based on Law of Housing (2005) of Vietnam – (Art. 6))

2.4 Contents of state management of urban planning

“Propagating and disseminating information and providing education with regard to the law on urban planning including, information on the impacts of climate change on urban centres and vice versa”

“Providing for the training of human resources and research in and the application of science and technology to, urban planning activities including, training, research and applications related to the minimizing of and adaptation to the adverse impacts of climate change”

(Based on the Law on urban planning (2009) of Vietnam – (Art. 13))

2.5 Basis of urban plans

“Approved strategies and master plans for socio-economic development and for defense and security maintenance, plans for protection of the environment and biodiversity and to minimize and adapt to, the adverse impacts of climate change and the impact of the master plan on the national system of urban centers, regional construction planning and higher-level urban plans already approved.”

(Based on the Law on urban planning (2009) of Vietnam – (Art. 24))

2.6 General plans of centrally run cities

“A general plan of a centrally run city shall indicate its development objectives , population size, land area and the basic components of the social and technical infrastructure of the city, the development model adopted, development requirements of the space of the inner city area and of the suburbs, including underground space, the system of the technical infrastructure facilities, strategic environmental assessment measures to minimize and adapt to the adverse impacts of the environment, especially climate change, priority investment programs and resources for implementation of the plan..”

(Based on the Law on urban planning (2009) of Vietnam – (Art. 25))

2.7 Zoning plans

"A zoning plan shall indicate the use and functions for each lot of land, the principles of organization of space, architecture and landscape for the entire planned area, norms on population, land use and technical infrastructure for each street block, provision of social infrastructure facilities corresponding to the demands for those services, provision of a network of technical infrastructure facilities in each street appropriate to each stage of development of the urban center, and a strategic environmental assessment of the urban centre, including measures to minimize and adapt to the adverse impacts of the environment, especially climate change."

(Based on the Law on urban planning (2009) of Vietnam – (Art. 28)).

2.8 Planning for renovation and refurbishment of urban centers; development of new urban quarters and new trunk roads in urban centers

"When planning renovation and refurbishment of an urban center, it shall be necessary to evaluate the current use of land and social and technical infrastructure facilities in the centre and assess the cultural, social and environmental conditions of the urban center, including measures to minimize and adapt to the adverse impacts of climate change, in order to formulate renovation plans for the economical and efficient exploitation of land in the urban centre, for ensuring the necessary social and technical infrastructure and for preserving and promoting the identity, space, architecture and landscape of the urban center."

(Based on the Law on urban planning (2009) of Vietnam – (Art. 31))

2.9 Details of an urban design

"..... The urban design of a urban design plan shall indicate the construction height for each work, the distance to be maintained by each work from the street line and from the crossroad, the colors, materials, forms and details of architecture of each work, the arrangement of public trees, garden yards, street trees and water surfaces and shall identify the designs which can minimize and adapt to the adverse impacts of climate change"

(Based on the Law on urban planning (2009) of Vietnam – (Art. 33))

2.10 Contents of a regulation on management according to urban plan or urban design plan

*"A regulation on management according to the general plan shall contain the following principal contents:
..... Design measures to minimize and adapt to the adverse impacts of climate change."*

(Based on the Law on urban planning (2009) of Vietnam – (Art. 35))

2.11 Contents of urban technical infrastructure planning

"Urban transport planning shall indicate land funds reserved for transport construction and development, locations and sizes of key works, organization of the urban transport system on the ground, overhead and underground, the scope of protection and corridors for traffic safety and identify measures to minimize and adapt to the adverse impacts of climate change."

- *"Base height and urban surface water drainage planning shall indicate areas favorable for construction in each area and urban center, main basins for water drainage and areas where construction shall be prohibited or restricted, standard construction at ground floor level, network for surface water drainage and key works, and measures for preventing and mitigating damage caused by natural disasters, especially damage caused by climate change."*

(Based on the Law on urban planning (2009) of Vietnam – (Art. 37))

2.12 Content of strategic environmental assessment

"The content of strategic environmental assessment of an urban plan covers:

.... Comprehensive solutions for preventing, reducing and mitigating adverse environmental impacts and the making of environment monitoring plans especially plans to monitor the impacts of climate change."

(Based on the Law on urban planning (2009) of Vietnam – (Art. 39))

2.13 Contents of evaluation of urban planning tasks and urban plans

"Evaluation of urban planning tasks covers:

.....Compliance of urban planning tasks with socio-economic development and defense and security requirements, measures for the protection of the environment, including measures for minimizing and adapting to the adverse impacts of climate change as well as compliance with higher-level urban planning;"

(Based on the Law on urban planning (2009) of Vietnam – (Art. 43))

2.14 Review of urban planning

"Urban planning shall be periodically reviewed and evaluated in the course of implementation so as to ensure its prompt adjustment in response to changing socio-economic developments and developments in the area of climate change."

(Based on the Law on urban planning (2009) of Vietnam – (Art. 46))

2.15 Conditions on adjustment of urban planning

"A key project of national importance is one which significantly affects urban land use, the environment, the ability to minimize and adapt to the adverse impacts of climate change and spatial and architectural layout"

(Based on the Law on urban planning (2009) of Vietnam – (Art. 47))

2.16 Principles of adjustment of urban planning

" Making adjustments based on an analysis and assessment of the current conditions, clearly indicating requirements for urban renovation and refurbishment and proposing adjustments to norms on land use and on the organization of space, architecture and landscape in each area and measures for renovating the network of technical and social infrastructure facilities in response to development requirements and for ensuring the ability to minimize and adapt to the adverse impacts of climate change"

(Based on the Law on urban planning (2009) of Vietnam – (Art. 48))

2.17 Types of adjustment of urban planning

Overall adjustment of an urban plan shall meet practical requirements, comply with the trends in socio-economic development and future trends in urban development, improve the quality of the living environment, infrastructure and landscape of the urban center, and not cause adverse impacts on the environment and ecosystems, ensure the ability of the urban centre to minimize and adapt to the adverse impacts of climate change and ensure that ongoing investment projects in the urban centre are not significantly affected.

(Based on the Law on urban planning (2009) of Vietnam – (Art. 49))

3. MANAGEMENT

3.1 Protection of Resorts and immobile objects

“The Government shall provide legal measures, facilities and services for protecting, preserving and promoting the amenities of resorts and any immovable property which is of archeological, historical, cultural, aesthetic or technical interest. The legal measures shall include measures for adaptation to the adverse impacts of climate change on such resorts and immovable property.”

(Based on the Law of Country Planning, Urbanization and Construction (1994) of the Kingdom of Cambodia – (Art. 10))

3.2 Authorization of surveys and explorations

“All explorations or surveys which are likely to have an effect on the archaeological heritage of the country shall require prior authorization by the Government. The Government shall require a detailed study on the possible adverse impacts of climate change on such archaeological heritage and an identification of appropriate adaptation measures.”

(Based on the Law of Country Planning, Urbanization and Construction (1994) of the Kingdom of Cambodia – (Art. 11))

3.3 Prohibition on construction

“All individuals and organizations as well as public authorities shall be prohibited from carrying out any construction on public lands as defined hereunder:

...areas considered to be vulnerable to climate change. In such areas construction shall be permitted only after the adverse impacts of climate change on the proposed construction have been identified and adequate measures have been taken to ensure that the proposed construction can adapt to such adverse impacts.

(Based on the Law of Country Planning, Urbanization and Construction (1994) of the Kingdom of Cambodia – (Art. 12))

3.4 Requirements on housing development in urban centers

“Compliance with socio-economic development and urban construction planning and provisions of law and other requirements relating to population distribution, urban beautification and architecture, protection of the landscape and environment, construction specifications and standards, including environmental standards and requirements for minimizing and adapting to the adverse impacts of climate change.”

“Incorporating in housing development projects in accordance with the law, provision for the conduct of proper tests before being put to use the systems for power supply and water supply and drainage, fire prevention and fighting and environmental sanitation, including systems to assess impacts of the project on the environment and climate change and its capacity to minimize and adapt to the adverse impacts of climate change”

(Based on Law of Housing (2005) of Vietnam – (Art. 24))

3.5 Requirements on housing development in rural areas

“Compliance with legal provisions relating to planning of construction in residential areas, architecture, construction specifications and standards, and standards relating to land use, environmental protection, minimizing and adapting to the adverse impacts of climate change and for ensuring the formation of sustainable rural units and sustainable rural development.”

(Based on Law of Housing (2005) of Vietnam – (Art. 25))

3.6 Requirements on urban planning

“To give effect to the contents of the master plan on the national system of urban centers and related regional plans, to comply with the objectives of the strategy and master plan for socio-economic development and for the maintenance of defense and security, to protect the environment and take measures to adapt to the adverse impacts of climate change, to ensure consistency with branch development plans within urban centers, to ensure publicity and transparency in giving effect to the master plan and harmonization of the interests of the nation, communities and individuals.”

“To protect the environment and prevent the occurrence of catastrophes affecting the community, minimize and adapt to the adverse impacts of climate change, improve the landscape and conserve cultural and historical relics, local customs and values, through strategic environmental assessment in the course of urban planning.”

(Based on the Law on urban planning (2009) of Vietnam – (Art. 6))

4. RIGHTS AND DUTIES

4.1 Rights and Duties of the Ministry of Communication, Transport, Post and Construction

The Ministry of Communications, Transport, Posts and Construction shall have the following rights and duties:

.....to take into account the adverse impacts of climate change and to take adequate measures to adapt to such adverse impacts.

(Based on the Urban Plans Law (1999) of Lao PDR – (Art. 34))

4.2 Housing development policies

“The State shall encourage the construction of houses that have designs and technical specifications and use materials which minimize, and are adaptable to, the adverse impacts of climate change and vice versa.”

(Based on Law of Housing (2005) of Vietnam – (Art. 6))

Chapter 11 - HEALTH

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

Cambodia, Vietnam and Lao PDR will all experience the serious adverse impacts of climate change on human health. In Cambodia, it has been estimated that vector borne diseases, particularly malaria and dengue, will become more widespread. Poverty and lack of adequate health care facilities for treatment make poor people more vulnerable to these impacts. In Vietnam, extreme weather conditions will affect the elderly and those suffering from certain diseases. The rise in temperature will create an environment which is conducive to the spread of tropical diseases such as malaria, dengue and Japanese encephalitis. Further, the threats to food security, with the diminishing of agricultural returns will make certain sectors of the population susceptible to hunger and malnutrition.

Cambodia has focused on the prevention of vector borne diseases. It will introduce and expand measures to reduce malaria through early diagnosis and treatment. Specific measures include distribution of pyrethroid treated mosquito nets in high risk areas. Health education programmes will also be enhanced and these will focus on low cost preventive measures such as hygiene and destruction of mosquito breeding sites. Other measures include production of biopesticides, strengthening malaria surveillance programmes, development of health care centres and provision of safe water in high risk areas. Vietnam is taking steps to improve socio-economic conditions in remote and poor areas. It will promote public awareness on climate change and on health and sanitation so that individuals can take steps to protect themselves. National programmes will be developed to monitor high risks of infection and spread of disease so that they can be effectively contained. In this regard, implementing strict quarantine regulations at the borders of the country will also be addressed.

Several adaptation measures have been identified in the case of Lao PDR. These include to raise public awareness in regard to sanitation measures, prevent and treat waterborne diseases, improve the quality of potable water to reach acceptable standards, improve reporting

systems on epidemic diseases and adapt the capacity of epidemic disease surveillance systems to adapt to climate change. Lao PDR is also focusing on improving information reporting systems on epidemic diseases and expanding epidemic disease analysis laboratories at the regional level in response to flood and drought areas. It will also improve the capacity of the epidemic disease surveillance system and expected programmes and activities to adapt to climate change.

Cambodia does not have a specific law on health and health care.

The *Law on Health Care* of Lao PDR sets out the framework in relation to the organization, activities, management and control of health care in order to ensure that all citizens have access to health care services and to develop modern health care services. The Ministry of Health and health divisions at provincial and district levels will be responsible for the administration of health care services. The rights and duties of the Ministry have been set out including conducting research on the policy and the strategic plan for the management of health care services for submission to the government. A proposed statutory revision addressing the issue of climate change would also require it to include research on the adverse impacts on health arising from climate change and the corresponding adaptation measures. Further, the rights and duties of Health Divisions include drawing up plans, programmes of action, and detailed projects for the administration of healthcare services. In doing so, these divisions will have to take into account the adverse impacts of climate change on health and corresponding adaptation measures when drawing up its plans, programmes or projects. Suggested changes to the *Law on Hygiene, Disease Prevention and Health Promotion* will also require the health sector to take into account the adverse impacts of climate change when carrying out its functions under this law.

In Vietnam the *Law on Peoples' Health Protection (1989)* will as a principle, promote advocacy and improvements in health education and sanitation as well as a clean living and natural environment and ecosystem ensuring appropriate standards in regard to labour, food and water. It is the responsibility of the State to promote these

objectives. The Ministry of Health is responsible for implementing activities under the law and it has been proposed that the Ministry should be also undertake a legal obligation to manage and protect the living environment and the natural environment and ecosystems conditioning the life of the people and the inspection and implementation of regulations on environmental protection and ecosystems. A new chapter has been introduced into the law relating to the protection of the living environment, natural environment and the ecosystem surrounding living areas. Education on these issues, including the impact of climate change on health, will also be provided for. The Ministry of Education and Training and the Ministry of Natural Resources and the Environment will co-ordinate these activities

The *Law on Prevention and Control of Infectious Diseases (2007)* has as its principles to combine technical and medical measures with social

and administrative measures in preventing and controlling infectious diseases. A special focus has been introduced into the law on impacts of changing climatic conditions on the process of formation and spread of infectious diseases. The Law is also based on the principle of co-ordination and social mobilization in the prevention and control of infectious diseases and the integration of activities to prevent and control such diseases into socio-economic development programmes. Here too, a suggested provision focusing on the problem of climate change refers especially to activities to minimize the impacts of climate change and adapt to the adverse impacts. Further, State policies on prevention and control also require attention to be directed to the impacts of climate change on the spread of disease. Sanitation and ensuring a clean water supply and water resources for domestic purposes has also been highlighted.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

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1. GENERAL PROVISIONS

2. PRINCIPLES

2.1 Principles of prevention and control of infectious diseases

"The primary goal of preventing infectious diseases shall be achieved by the dissemination of information, education, communication and surveillance and by combining technical and medical measures with social and administrative measures in preventing and controlling infectious diseases. Special attention shall be paid to the impacts of climate change on the causation and spread of infectious diseases"

"To organize inter-branch coordination and social mobilization for the prevention and control of infectious diseases and to integrate activities for the prevention and control of infectious diseases into socio-economic development programmes, including activities to minimize and adapt to the adverse impacts of climate change"

(Based on Prevention and control of infectious diseases (2007) of Vietnam – (Art. 4))

2.2 State policies on prevention and control of infectious diseases

"Strengthening education and promoting the dissemination of information on the impacts of climate change on the causation and spread of infectious diseases and supporting studies and projects on climate change, including research projects to minimize and adapt to the adverse impacts of climate change and on the impacts of climate change on the causation and spread of infectious diseases."

(Based on Prevention and control of infectious diseases (2007) of Vietnam – (Art. 5))

3. MANAGEMENT

3.1 Implementing measures to protect living and natural environment and ecosystems around the living environment of people

1 -The Ministry of Health shall, in coordination with the Ministry of Environment, determine the matters, including impacts of climate change, that shall be taken into account in preparing Environmental Impact Assessments in respect of development plans and the standards for the protection and improvement of the living environment, the natural environment and ecosystems found in the living environment of the people, to ensure the good health of the people.

2 -People's Councils and the People's Committees at all levels shall be responsible for promoting, implementing, and monitoring and inspecting the implementation of plans for the protection and improvement of the living environment, the natural environment and ecosystems, in their respective areas.

3 -State agencies, organizations, and individuals shall implement measures to protect and improve the living environment, the natural environment and ecosystems in the living environment and shall notify the competent authorities when they detect activities that damage the living and natural environment and ecosystems in their respective areas, to enable prompt action to be taken to prevent such activities."

(Based on the Law on peoples' health protection (1989) of Vietnam – (Ch 2a (Art. 4))

4. IMPACTS OF CLIMATE CHANGE

4.1 Impacts of climate change on health

1. *Temperature-related morbidity and mortality, including but not restricted to cold- and heat-related illnesses, respiratory and cardiovascular illnesses and increased occupational health risks.*
2. *Effects on health of extreme weather conditions, including but not restricted to, damaged public health infrastructure, injuries and illnesses, social and mental health problems and stress due to disasters and occupational health hazards.*
3. *Effects on health of air pollution, including but not restricted to, continuing exposure to outdoor and indoor air pollutants and allergens, asthma and other respiratory diseases, heart attacks, strokes and other cardiovascular diseases, and cancer .*
4. *Effects on health of water- and food contamination, including but not restricted to, enteric diseases and poisoning caused by chemical and biological contaminants.*
5. *Vector-borne diseases, including but not restricted to, changed patterns of disease caused by bacteria, viruses and other pathogens carried by mosquitoes, ticks and other vectors*
6. *Effects on health of exposure to ultraviolet rays, including but not restricted to, skin damage, skin cancer, cataracts, and disturbed immune function.*
7. *Increased vulnerabilities of certain sections of the population in rural and urban communities, including but not restricted to, seniors, children, chronically ill people, low income and homeless people, differently abled persons and farmers.*
8. *Socio-economic impacts on community health and well-being, including but not restricted to, loss of income and productivity, social disruption, diminished quality of life, increased costs of health care and lack of institutional capacity to deal with disasters*

(Based on the Law on peoples' health protection (1989) of Vietnam – (Ch. 2a (Art. 2))

4.2 Assessing the impact of the environment and climate change on people's health

"The Ministry of Health shall, in coordination with the Ministry of Environment, assess the impacts of the environment and climate change on peoples health in each region. After such assessment, the Ministry shall formulate measures to reduce the impacts of the environment and climate change on peoples health in each such region and assist people of each such region to adapt to changes in the environment, including climate change."

(Based on the Law on peoples' health protection (1989) of Vietnam – (Ch. 2a (Art. 3))

5. RIGHTS AND DUTIES

5.1 Rights and Duties of the Ministry of Health

The Ministry of Health shall have the following rights and duties:

.....to formulate policies and the strategic plans for the management of health-care services, including policies and plans for adapting to the adverse impacts on health resulting from climate change, for submission to the government for consideration

(Based on the Health Law of Lao PDR – (Art. 55))

5.2 Rights and duties of the health divisions

Every health division shall have the following rights and duties:

.....to draw up its own programmes of action and detailed projects for the administration of health-care services in the division, including projects for adaptation to the adverse impacts on health resulting from climate change, on the basis of the policies, plans and projects formulated by the Ministry of Health.

(Based on the Health Law of Lao PDR – (Art. 56))

5.3 Rights and Duties of Agencies in Charge of Administering and Monitoring Hygiene, Disease Prevention and Health Promotion

Agencies in the health sector, with the approval of the Ministry of Health, have the right and duty to determine the necessary policies, plans, rules and technical standards relating to hygiene, disease prevention and health promotion, including measures to adapt to the adverse impacts of climate change on public health and to supervise their implementation at all levels of the sector as well as in coordination with other concerned sectors, to monitor and assess the effectiveness of such policies, plans, rules and technical standards, nationwide.

(Based on the Law on Hygiene, Disease Prevention and Health Promotion of Lao PDR - (Art. 41))

5.4 Responsibilities of the State

".....The Ministry shall be responsible for managing and protecting the living environment and the natural environment and ecosystems, affecting the life of the people and for monitoring the enforcement of regulations for the protection of the environment and ecosystems taking into account the adverse impacts of climate change and measures for adapting to such impacts."

(Based on the Law on peoples' health protection (1989) of Vietnam – (Art. 3))

6. SANITATION

6.1 Sanitation of clean water supply and water resources for domestic purposes

"..... Peoples Committees at all levels shall make provision for the maintenance of proper sanitation and the prevention of contamination of water sources used for daily life and shall create conditions for the supply of clean water without adversely affecting the environment."

(Based on Prevention and control of infectious diseases (2007) of Vietnam – (Art. 14))

6.2 Sanitation in construction

".....State agencies, organizations and individuals shall ensure that proper sanitation is provided in construction in compliance with environmental standards and measures to minimize the impacts of climate change and adapt to the adverse impacts of climate change"

(Based on Prevention and control of infectious diseases (2007) of Vietnam – (Art. 17))

6.3 Other sanitation activities for preventing infectious diseases

"...State agencies, organizations and individuals shall take measures -

- (a) to keep clean their places of residence, public places, places of production and business and means of transport;*
- (b) to treat industrial waste and garbage;*
- (c) to ensure the maintenance of proper sanitation, in accordance with the relevant legal provisions, with a view to preventing the causation and spread of infectious diseases;*
- (d) to assess the impacts of the environment and climate change on the causation and spread of infectious diseases, and the ability of such agencies, organizations and individuals to minimize and adapt to the adverse impacts of climate change*

..... Every person shall be responsible for practicing personal hygiene to prevent the causation and spread of infectious diseases and for complying with the prescribed environmental standards for minimizing and adapting to the adverse impacts of climate change"

(Based on Prevention and control of infectious diseases (2007) of Vietnam – (Art. 19))

7. EDUCATION

7.1 Education on environment protection.

The health agency in association with environmental, cultural, educational, sports, mass media and social organizations shall be responsible for formulating and providing programmes for education of the people on the importance of the environment for human health, the protection and improvement of the living environment, the natural environment and ecosystems and the impact of the environment, especially climate change, on human life and health.

Ministry of Education shall, in coordination with the Ministry of Environment, formulate education programmes on the protection of the living environment, the natural environment and ecosystems, and the impact of the environment, especially climate change, on human life and health.

(Based on the Law on peoples' health protection (1989) of Vietnam – (Art. 2))

7.2 Contents of information, education and communication on prevention and control of infectious diseases

"..... Impacts of human activities on climate change and the impacts of climate change on the causation and spread of infectious diseases"

(Based on Prevention and control of infectious diseases (2007) of Vietnam – (Art. 9))

Chapter 12 - BIODIVERSITY

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

Biodiversity in the three project countries is at serious risk from climate change. Scientists have recently discovered 163 hitherto unknown species in the Greater Mekong Region (which includes Cambodia, Lao PDR and Vietnam), which are now at risk of extinction due to climate change. While some species will be able to adapt to changing climate, others will not, and the report warns that "rare, endangered and endemic species like those newly discovered are especially vulnerable because climate change will further shrink their already restricted habitats."⁴² In Vietnam, there will be an increase in the extinction of certain plant and animal species, including aloe wood, boswood, textured wood and Siadora Vietnamese. Further, seawater intrusion caused by sea level rise will reduce the habitats of freshwater organisms. In Cambodia and Lao PDR, frequent floods and droughts impact on the environment affecting its rich biodiversity. Cambodia's economy is largely dependent on agriculture and its biodiversity and natural resources, and the loss of this diversity will have serious negative impacts on its development process.

The National Biodiversity Strategy and Action Plan 2002 of Cambodia notes that mitigation and adaptation measures themselves may impact adversely on biodiversity and this is an issue that must be borne in mind. In this regard, the strategic objectives or indicators include integration of biodiversity conservation and sustainable concerns into the National Climate Change Action Plan and to take into account development objectives of the country while preparing response measures to address climate change impacts on biodiversity. Cambodia has also emphasised community participation in biodiversity conservation strategies, including equitable gender representation. In Vietnam, the national action plan on biodiversity up to 2010 includes among its specific goals, the conservation and development of terrestrial

biodiversity, biodiversity conservation and development in wetlands, coastal areas and agricultural biodiversity, sustainable use of biological natural resources and raising state management capacity in biodiversity and biosafety. An important measure taken in Lao PDR is to conduct research and select seeds of plant species suitable for flood and drought prone areas which can be used in forest plantations and reforestation.

Cambodia has a *Law on Biosafety* which provides for the implementation of the precautionary approach on biosafety and the prevention of adverse impacts on the biodiversity of Cambodia which may be caused by the transboundary movement, development, handling, transfer, use, storage and release of living modified organisms. The proposed changes to this law states that its objectives are to consider the impact of climate change on biodiversity and natural resources including those caused by transboundary movements and the development and release of living modified organisms and vice versa. It must also take into account the risks to human health and the contribution, if any, to climate change and identify appropriate adaptation measures. Further provisions relate to the approval to be obtained for engaging in any activity or operation concerning living modified organisms, risks assessment and penalties. All these provisions reiterate the concerns regarding climate change.

There is no relevant law in Lao PDR.

Biodiversity conservation in Vietnam is covered by the *Law on Biodiversity (2008)*. It contains principles for the conservation and sustainable development of biodiversity which calls for harmoniously combining conservation with the rational exploitation and use of biodiversity in order to eradicate hunger and poverty. The suggested changes include protecting the environment and ecosystems and adapting to climate change. Conservation of biodiversity includes the rearing, planting and care of species on the list of endangered, precious and rare species prioritized for protection and the long term preservation and storage of genetic specimens. The law enumerates State policies and responsibilities in this regard. Specific provision has been made for biodiversity conservation and planning under which a national master plan

⁴² http://www.panda.org/what_we_do/where_we_work/greatermekong/news/?174681/New-species-discovered-in-the-Greater-Mekong-at-risk-of-extinction-due-to-climate-change

on biodiversity conservation will be formulated. There will also be biodiversity conservation planning for provinces and centrally run cities. Other provisions have been for the conservation and sustainable development of species, which includes the protection of species on the list of endangered, precious and rare species prioritized for protection. Control of invasive alien species has also been addressed. Another important area dealt with by the law is the conservation and sustainable development of genetic resources, which includes the management

of and access to genetic resources and the sharing of benefits arising from them and the storage and preservation of genetic specimens. Provisions have also been included on the issue of genetically modified organisms. Other suggested changes to this law in the context of climate change include to formulate a national master plan on biodiversity conservation which will be based on the results of a general impact assessment of climate change on biodiversity. Biodiversity conservation plans at lower levels will also be required to address this issue.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

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1. GENERAL PROVISIONS

1.1 The objectives of the law

"The objectives of the law are to:

....a) consider the impact of climate change on biodiversity and natural resources, including impacts caused by transboundary movement and the development, handling, transfer, use, storage and release of living modified organisms.

... b) take into account the risks to human health and the contribution, if any, to climate change, made by living modified organisms and to identify appropriate measures for adaptation to the adverse impacts of climate change"

(Based on the Law of Biosafety of the Kingdom of Cambodia – (Art. 1))

1.2 Technical terms

"Technical terms used in this law shall have the following meaning:

".....raising public awareness of the possible impacts on climate change and of the use of living modified organisms being impacts which are presently not fully known due to the limited understanding of biotechnology"

(Based on the Law of Biosafety of the Kingdom of Cambodia – (Art. 2))

1.3 Application of the law

"This law shall apply to the import and export, contained use, intentional introduction into the environment, use as food or feed or the processing of living modified organisms that may have adverse effects on the conservation and sustainable use of biological diversity, also taking into account of their risks to human health and impacts on climate change and the measures necessary to prevent or eliminate such risks and impacts.."

(Based on the Law of Biosafety of the Kingdom of Cambodia – (Art. 3))

2. PRINCIPLES, POLICIES AND PLANS

2.1 Principles for the conservation and sustainable development of biodiversity

".....harmoniously combining conservation with the rational exploitation and use of biodiversity, using conservation and the rational exploitation and use of biodiversity as an instrument for the eradication of hunger, the alleviation of poverty, the protection of the environment and eco systems and for adapting to the adverse impacts of climate change"

(Based on the Law on Biodiversity (2008) of Vietnam – (Art. 4))

2.2 State policies on the conservation and sustainable development of biodiversity

"Ensuring funds for a basic survey, observation and inventory of biodiversity and the building of related databases, the planning of biodiversity conservation, assessing the impact of climate change on biodiversity, giving material and technical support to conservation zones and biodiversity conservation facilities set up by the State and facilitating people's participation in formulating and implementing biodiversity conservation plans."

(Based on the Law on Biodiversity (2008) of Vietnam – (Art. 5))

2.3 Formulation of a national master plan on biodiversity conservation

"The formulation of a national master plan on biodiversity conservation shall be based on the following:

..... Results of the environmental impact assessment of climate change on biodiversity;"

(Based on the Law on Biodiversity (2008) of Vietnam – (Art. 8))

2.4 Contents of a national master plan on biodiversity conservation

"The national master plan on biodiversity conservation shall include the following:

.....Evaluation of natural and socio-economic conditions, an environmental impact assessment on biodiversity, especially the impact of climate change on biodiversity, the current status of biodiversity; plans on land use and the development of branches, regions and localities; and resources for the implementation of the master plan."

(Based on the Law on Biodiversity (2008) of Vietnam – (Art. 9))

2.5 Formulation of biodiversity conservation plans for provinces and centrally run cities

"The formulation of biodiversity conservation plans for provinces and centrally run cities shall be based on the following:

..... an assessment of the environment impact, especially the impact of climate change, on the biodiversity in the province or centrally run city in which a conservation zone is planned to be established."

(Based on the Law on Biodiversity (2008) of Vietnam – (Art. 12))

2.6 Contents of a conservation zone establishment project

"..... Current status of natural ecosystems in the proposed conservation zone and studies on environmental impact, especially the impact of climate change on such ecosystems, species on the list of endangered and rare species prioritized for protection and other species of fauna and flora, landscapes and locations of unique natural beauty."

(Based on the Law on Biodiversity (2008) of Vietnam – (Art. 21))

2.7 Formulation and appraisal of national-level conservation establishment projects

"The procedure for the formulation of a project for the establishment of a national level conservation zone is as follows:

.....a) an investigation and assessment of the biodiversity situation in the proposed conservation zone and the environmental impact, especially the impact of climate change on the ecosystem of the proposed conservation zone, according to the criteria for conservation zones specified in Articles 17, 18, 19 and 20 of this Law and based on such assessment, the formulation of a project for the establishment of the conservation zone."

(Based on the Law on Biodiversity (2008) of Vietnam – (Art. 22))

3. MANAGEMENT

3.1 Approval of Ministry

“Every legal or natural person who proposes to conduct any activity or operation involving the contained use, intentional introduction into the environment, use as food or feed or the processing, of living modified organisms in the country shall obtain the approval of the Ministry of Environment prior to receiving authorization to conduct such activity or operation by the relevant competent authority.

Every legal or natural person conducting any activity or operation involving living modified organisms under this law shall comply with the standards and measures for managing and controlling the risks identified in the risk assessment process provided for under Chapter V. The assessment shall include an assessment of the impact of such activity or operation on climate change and identify the measures required to be taken to adapt to the adverse impacts of climate change.”

(Based on the Law of Biosafety of the Kingdom of Cambodia – (Art. 4))

3.2 Conformity with laws and regulations

“Every legal or natural person conducting any activity or operation involving living modified organisms covered by this law shall ensure that the contained use, intentional introduction into the environment, use as food or feed, the processing or the import and export of living modified organisms is conducted in compliance with the provisions of this law and all sub-decrees implementing this law and shall take full account of the risks to climate change of these activities and operations and their adverse long term effects.”

(Based on the Law of Biosafety of the Kingdom of Cambodia – (Art. 5))

3.3 Risk Assessment

“All imports of living modified organisms into the country for introduction into the environment shall be subject to a risk assessment including an assessment of the risks of such imports to climate change and approval of the Ministry of Environment prior to application to the relevant competent authority for an import permit.”

(Based on the Law of Biosafety of the Kingdom of Cambodia – (Art. 11))

3.4 Written certificate from state of export

Every legal or natural person who proposes to import a living modified organism for use as food or feed or for processing shall submit to the Ministry of Environment a written certification issued by the competent national authority of the State of export attesting to the accuracy of the information provided in the certification in respect of the living modified organism proposed to be imported. The written certification shall clearly identify the impacts, if any, on climate change resulting from the import and use of such living modified organism.

(Based on the Law of Biosafety of the Kingdom of Cambodia – (Art. 14))

3.5 Ministry responsibilities regarding risk assessment

“The Ministry of Environment shall ensure that appropriate risk assessments are conducted in respect of all activities and operations related to living modified organisms that require its prior approval under this law. The appropriate risk assessments shall include assessments of the risks to climate change resulting from the use of the living modified organism.”

(Based on the Law of Biosafety of the Kingdom of Cambodia – (Art. 20))

3.6 Decisions to establish national-level conservation zones

"A decision to establish a national-level conservation zone shall provide for the following-:

..... Adaptation measures which enable species of fauna and flora in the conservation zone to adapt to climate change".

(Based on the Law on Biodiversity (2008) of Vietnam – (Art. 23))

3.7 Reporting on the current status of conservation zones' biodiversity

"The report on the current status of biodiversity in a conservation zone shall contain the following information:

... An assessment of the impact of climate change on such biodiversity;"

(Based on the Law on Biodiversity (2008) of Vietnam – (Art. 33))

3.8 Basic surveys, scientific research and management of information and data on biodiversity

".....The State shall invest in making an assessment of environmental impact, especially, the impact of climate change, on biodiversity and shall formulate measures to support the conservation of affected species and facilitate their adaptation to the adverse impacts of climate change"

(Based on the Law on Biodiversity (2008) of Vietnam – (Art. 71))

3.9 Biodiversity reports

The Biodiversity report is part of the national environmental report and shall contain the following information:

..... The current status of and changes occurring in major natural ecosystems and the impact of climate change on such ecosystems and biodiversity in general.."

(Based on the Law on Biodiversity (2008) of Vietnam – (Art. 72))

3.10 Finances for biodiversity conservation and sustainable development

"Funds allocated from the state budget for biodiversity conservation and sustainable development shall be used for the following purposes:

..... Conducting basic surveys on biodiversity and assessing the environmental impacts, especially the impact of climate change, on biodiversity;"

(Based on the Law on Biodiversity (2008) of Vietnam – (Art. 73))

Chapter 13 - FORESTS

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

Forests in all three project countries are projected to be seriously affected by changing climatic conditions. In Cambodia, it is estimated that climate change would have an impact on forest productivity and biodiversity as the areas of wet forests would decrease, moist forests would increase and dry forests would remain the same. Lao PDR has the largest intact forest cover in South East Asia and its forests and watershed areas provide food and livelihoods for local communities. They also act as buffers against soil erosion and floods for infrastructure such as roads and hydroelectric dams. However, during the last 50 years a growing population and development pressures have decreased Lao PDR's forest cover from 70% to 40%, and if this trend is not reversed it is estimated to dwindle to 31% by 2020. This will also make the country more vulnerable to climate change. In Vietnam, salt water intrusion caused by sea level rise will cause a decrease in mangrove forests and adversely affect indigo forests and those planted on sulphated land. Changes will occur in the boundary distribution of both primary and secondary forests. Further, temperature increase and droughts will raise the risk of forest fires and the spread of plant diseases and pests.

Specific measures taken in Cambodia to adapt to climate change include establishing forest plantations and encouraging the use of unproductive land for forest planting. Further, protected areas will be conserved and in this regard appropriate legal and policy frameworks, protected area management plans and an effective monitoring system will be established. Community participation in protected area management will also be strengthened. Programmes to rehabilitate protected forests through natural re-generation techniques have also been planned and the sustainable use of forest resources has been emphasized. As forest dependent communities will be among the sections of the population most affected by climate change, Lao PDR has identified income diversification and alternative livelihoods for such communities as an important measure to be addressed. It will also continue the programme

to eradicate the slash and burn system of agriculture. In Vietnam, re-forestation has been cited as an important measure. This includes replanting on bare lands or hills and promoting the regeneration of forests. Protecting natural forests and regulating exploitation of these areas is a related strategy. Timber processing will be enhanced and the use of non-wood alternatives will be promoted, thus relieving the pressure on a valuable natural resource. Other measures are to prevent forest fires and establish a seed bank of valuable tree species. Further, selecting and developing plant varieties that can adapt to future environmental conditions has also been identified as an important measure.

The Cambodia *Forestry Law* defines the framework for the management, harvesting, use, development and conservation of forests in Cambodia. The objective of the law is to ensure the sustainable management of forests for their social, economic and environmental benefits including the conservation of biological diversity and cultural heritage. The law applies to all forests whether natural or planted except for flooded forests. Designated government entities are entrusted with the task of managing forests. The law makes provision to ensure public participation in any government decision that may impact upon citizens, livelihoods of local communities and forests resources. There is also a specific section on customary user rights and the management of community forests and private forests. The law may be further strengthened to address climate change concerns by introducing proposals to provide environmental and social impact assessment in regard to any major forest ecosystem related activity that may cause adverse impacts on society and the environment, taking into account the impacts of climate change. The National Forest Management Plan will also address these concerns. The *Cambodia Sub Decree on Community Forestry* has as its objectives to facilitate community management of forest resources to preserve the communities' culture, traditions and cultural and traditional use of forest resources while giving due consideration to the impact of climate change. It has been proposed that a further objective should be included to enable citizens to understand the benefits and importance of forest resources to mitigate climate change and the measures required to adapt to the adverse impacts of climate change through direct involvement in

the conservation and management of forest resources. Further specific measures have also been incorporated to give effect to this policy.

The *Forestry Law* of Lao PDR determines the basic framework for the sustainable management, preservation, development and use of forest resources and a new amendment would also require taking into account the impacts of climate change. This includes promoting the regeneration and increase of forest resources, which aims to balance nature and make forests stable sources of living conditions for the people. The principles of protection, development and utilization of forests and forestlands would also be implemented according to specified principles and it is proposed that this should also include ensuring adaptation to the adverse impacts of climate change. The Forest and Forest Resource Development Fund which is used for specific activities will also be required to support these objectives with a new requirement that it be also used for measures to adapt to the impacts of climate change on forests and forest resources.

The *Vietnam Law on Forest Protection and Development (2004)* provides for the management, protection, development and use of forests (hereinafter referred collectively to as forest protection and development) and forest owners' rights and obligations. The government exercises State management over forest protection and development. According to this Law, forest protection and development activities must ensure sustainable development in all aspects. It is proposed that this provision be further strengthened to also ensure the ability to redress the adverse impact of environment including adaptation to the adverse impacts of climate change on forests. Chapter II of the Law relates to forest protection and development planning and plans. It is proposed that such planning must be based on the assessment of adverse impacts on the environment, including adaptation to the adverse impacts of climate change on forest development.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

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1. GENERAL PROVISIONS

1.1 The objectives of the Sub-Decree

".....To establish procedures to enable Communities to manage, use and benefit from forest resources, whilst preserving their culture and their traditional uses of forest resources and giving due consideration to the impacts of climate change on forest resources and the improvement of their livelihoods;

.....To provide opportunities for Community Forestry Communities to participate in reforestation programmes including, programmes for adapting to the adverse impacts of climate change and the rehabilitation and conservation of natural resources, forests and wildlife.

.....To enable citizens to understand and recognize the benefits and importance of forest resources for mitigating climate change and for adapting to the adverse impacts of climate changes and to promote their engagement in forest resources management, protection and conservation;"

(Based on Sub Decree on Community Forestry of Kingdom of Cambodia – (Art. 2))

1.2 Terminology

"Sustainable Use is the use of forest resources in a way that will ensure the availability of that resource for future generations in a manner that would help to prevent climate change in the future.

Sustainable harvest rates are the amount of forest resources that may be harvested by a Community within a specified period, set by the Community Forestry Management Committee and approved by the Forestry Administration. Such rates shall be set on the basis of the concept of sustainable use and take into account the effects of such harvests on climate change"

(Based on Sub Decree on Community Forestry of Kingdom of Cambodia – (Art. 5))

1.3 Objectives

"The objective of this law is to ensure the sustainable management of forests for their social, economic and environmental benefits including, the conservation of biological diversity and cultural heritage while taking into account the impacts of climate change"

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 1))

2. PRINCIPLES, POLICIES AND PLANS

2.1 Community Forestry Management Plan

".....The Community Forestry Management Plan shall take in to account the adverse impacts of climate change resulting from the unsustainable use of forests and forestry resources"

(Based on Sub Decree on Community Forestry of Kingdom of Cambodia – (Art. 29))

2.2 The National Forest Management Plan

"The National Forest Management Plan shall have the following components:

- ...a review of the physical, environmental and social factors impacting on forest resources at all levels of the Forest Administration, taking into account, in particular, the impacts of climate change,"*
- ...an assessment of the adverse impacts of climate change on forest resources*
- ... adaptation measures to address the adverse impacts of climate change.*
- research programs for the development of forest technologies and sciences and to investigate, in particular, the adverse impacts of climate change on forests and forest resources."*

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 9))

2.3 Forest protection and development principles

"Forest protection and development activities shall ensure sustainable economic and social development, environmental protection and defense and security maintenance, be in conformity with the socio-economic development strategy and forestry development strategy, comply with national and local forest protection and development plans, ensure the ability to mitigate the adverse impacts on the environment, including adaptation to the adverse impacts of climate change on forests and comply with the forest management regulation issued by the Prime Minister."

(Based on the Law on Forest Protection and Development (2004) of Vietnam – (Art. 9))

2.4 Amendment of forest protection and development plans

"The amendment of forest protection and development plans shall be based on the following:

- assessment of the adverse impacts of environment, including adaptation to the adverse impacts of climate change on forest development "*

(Based on the Law on Forest Protection and Development (2004) of Vietnam – (Art. 14))

2.5 Contents of forest protection and development plans

"The contents of forest protection and development plans shall include:

-An assessment of progress in the implementation of forest protection and development planning and plans in the preceding period, a forecast of the demands for forests and forest products in the succeeding period and an assessment of the adverse impacts of climate change on forests and measures to adapt to such impacts whilst increasing forest development.*

(Based on the Law on Forest Protection and Development (2004) of Vietnam – (Art. 15))

2.6 Adjustment of forest protection and development planning and plans, establishment of forests

"The adjustment of forest protection and development planning and plans shall be based on the following:

-the occurrence of adverse environmental impacts on forests which can not be adequately redressed by current forest protection and development planning and plans.."*

(Based on the Law on Forest Protection and Development (2004) of Vietnam – (Art. 14))

3. MANAGEMENT

3.1 Use of forest resources

"Communities under a Community Forest Agreement may harvest, process, transport and sell forest products and NTFPs in accordance with the following conditions

.....where there are significant changes in the condition of the forest or its ecosystem resulting from over harvesting, the relevant community shall take into consideration the likely impacts on climate change caused by the over harvesting."

(Based on Sub Decree on Community Forestry of Kingdom of Cambodia – (Art. 12))

3.2 Role of the Community Forestry Management Committee

".....conduct programmes for local and neighboring communities to raise awareness about the importance of forests and community forests in improving their livelihoods, mitigating climate change and adapting to the adverse impacts of climate change"

(Based on Sub Decree on Community Forestry of Kingdom of Cambodia – (Art. 21))

3.3 Environmental and Social Impact Assessment

".....in compliance with the Code of Forest Management and the Environmental Protection and Natural Resources Management Law, an Environmental and Social Impact Assessment shall be prepared in respect of every major activity affecting a forest ecosystem that is likely to have adverse impacts on society and the environment, including the impacts of climate change."

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 4))

3.4 Shifting cultivation

"The divisions of the Forestry Administration shall be authorized to regulate and control shifting cultivation activities that are a part of the community forest management plan..... Shifting cultivation activities shall be prohibited in natural intact forests in Permanent Forest Reserves.

The Forest Administration shall take into consideration the adverse impacts of climate change on shifting cultivation activities of indigenous people.

The Forest Administration shall also take action to prevent any activities that are likely to contribute to climate change."

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 37))

3.5 Management of Community Forests

".....The guidelines on the management of Community Forests shall be determined by regulations issued by the Ministry of Agriculture, Forestry and Fisheries.....

..The guidelines shall include measures to address the impacts of climate change resulting from improper management and unsustainable use of community forests by the community"

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 43))

3.6 Rules on tree plantations

"The Ministry of Agriculture, Forestry and Fisheries shall issue regulations setting out the rules regarding tree plantations in order to encourage individuals to plant and maintain tree plantations. The regulations shall indicate the importance of tree plantations in mitigating climate change and in adapting to the adverse impacts of climate change."

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 46))

3.7 Incentives

"The Ministry of Agriculture, Forestry and Fisheries may provide incentives to individuals and communities, who carry out good forest management practices that contribute to the creation of a green environment or plant trees of high quality or in great numbers."

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 47))

3.8 Conservation of wildlife

"The Ministry of Agriculture, Forestry and Fisheries shall, on a proposal of the Forestry Administration, issue regulations determining the criteria for inclusion of species in each category of wildlife and shall in consultation with the Ministry of Environment, prepare a separate list of endangered and rare species. This list may vary for the different regions of the country. In preparing such list, the Ministry shall also take into account the impact of climate change on species of wildlife, especially on endangered and rare species, resulting from legal and illegal hunting that cause changes in forest ecosystems."

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 48))

4. RIGHTS AND DUTIES

4.1 Roles and duties of Community Forestry members

...participate in conserving, protecting and planting forests to ensure the sustainability of forest resources and the environment; and in educating people about the importance of forest resources and community forests in preventing and minimizing adverse environmental, social and economic impacts of climate change.

(Based on Sub Decree on Community Forestry of Kingdom of Cambodia – (Art. 10))

4.2 Rights of secondary users

Secondary users shall have the right to access and use a Community Forest in compliance with Community Forest Management Plans and Community Forestry Regulations.

Every community shall encourage the conduct of studies and research to determine the adverse impacts of climate change on forests and forest resources resulting from over extraction

(Based on Sub Decree on Community Forestry of Kingdom of Cambodia – (Art. 14))

4.3 Duties of Forestry Administration

"..... promote the study of the impacts of climate change on different types of forests and formulate appropriate measures for adaptation to the adverse impacts of climate change,

.....prepare and implement the National Forest Management Plan at each level of the Forestry Administration. The plan shall include appropriate measures to minimize the economic, social and environmental impacts of climate change as well as measures for adaptation to the adverse impacts of climate change"

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 7))

4.4 Customary User Rights

" action shall be taken to encourage the exercise of traditional forestry user rights by local communities, for their role in contributing to sustainable forest management and in mitigating the impacts of climate change"

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 40))

5. ENFORCEMENT

5.1 Prohibited acts

"Guidelines to determine areas for forest fire control and forest fire prevention and the creation of Forest Fire-Fighters Committees shall be determined by regulations issued by the Ministry of Agriculture, Forestry and Fisheries, and shall be implemented in all forest areas. Such guidelines shall take into consideration the increasing vulnerability of forests to forest fires arising from climate change"

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 36))

5.2 Forestry offences and penalties

"..... considered the import of invasive species that destroy forest ecosystems or soil quality, resulting in climate change and loss of biodiversity"

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 99))

6. FINANCIAL PROVISIONS

6.1 Royalties and premiums on forest products & by-products

"The Minister of Agriculture, Forestry and Fisheries may reduce or waive the royalties and premiums payable on any forest products and by-products collected from a Permanent Forest Reserve, for the purpose of encouraging the efficient use of such forest products and by-products or where such collection is for scientific purposes .In deciding to grant such reduction or waiver, the Minister shall have regard to the impact of such collection on climate change.

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 53))

6.2 Payment of Royalties and premiums

*“Every person who has a permit authorizing him or her to harvest forest products and by-products shall pay all royalties and premiums payable under the permit, prior to transferring his or her rights under the permit to **a third party.***

....Such royalties and premiums shall include environmental service charges and the cost of redressing any environmental damage resulting from harvesting activities.”

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 56))

6.3 Tree Planting

The Forestry Administration shall implement appropriate measures for forestry development by providing extension services and education in forestry, by encouraging individuals, communities and people to plant and protect forests, by providing the necessary technical assistance for these purposes and by issuing certificates to persons participating in tree planting programmes for the protection of the environment and the mitigation of the impact of climate change.”

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 59))

6.4 Reforestation and National Forestry Development Fund

“This fund shall be used only for the following activities;

.... For raising awareness of the impacts of climate change and damage to the environment, resulting from the unsustainable management, and over exploitation, of forest resources”

(Based on the Forestry Law of Kingdom of Cambodia – (Art. 64))

Chapter 14 – ENERGY

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

The impacts of climate change on water resources would have consequences for energy use in Cambodia, Lao PDR and Vietnam. Glacial melt in the Himalayas and lack of rainfall may reduce the potential for hydropower in the long term. In 2003 Vietnam's hydropower generation was only 24% of the exploitable potential. Its energy efficiency is also low.

In regard to adaptation measures, Cambodia has considered programmes in regard to mitigation options in the energy sector including renewable energies, improved cooking stoves, energy efficiency building codes and tax relief for renewable energy and mass transit. Lao PDR has identified rural electrification through renewable energy as an important aspect of adaptation. It will also promote biogas use in order to reduce greenhouse gas emissions. Other measures taken are assessing small scale hydropower potential and de-centralizing energy supplies through solar home systems in rural households. In Vietnam, adaptation measures include diversifying fuel sources and giving priority to exploitation of domestic fuel sources. In the case of electricity generation, the focus is to exploit the full potential of hydropower and ensure environmentally clean technology when using oil and coal. Emphasis has also been given to renewable energy, particularly wind, solar radiation, biomass and small hydropower and also to increasing efficiency of energy exploitation, transmission and economical use of energy.

The Cambodian *Electricity Law* covers all activities related to the supply and use of electricity. The issue of climate change has been incorporated into the law with a proposed provision which states that the use of electricity should take into account the impacts of climate change as well as adaptation measures. The objective of the law is to establish favourable conditions for these activities and a proposed amendment would require authorities to take into account the promotion of the use of renewable energy and the introduction of environmentally sound technology to reduce greenhouse gas emissions. Renewable energy will be given particular priority and projects in this regard will be facilitated. The

Petroleum Regulations also require a contractor to submit information to the Ministry of Industry regarding, among others, measures to be taken to adapt to the adverse impacts of climate change.

The *Energy Law 1997* of Lao PDR determines the regime for the administration, production, transmission and distribution of electricity, including import and export through the use of natural resources potential, which will contribute to the implementation of national socio-economic development plans and upgrade the living standards of the people. In order to also address climate change issues it has been proposed that a further function should be to take into account the impacts of climate change and the measures required to adapt to its adverse impacts. The law also requires that the undertaking of electricity projects shall ensure economic efficiency and shall also take into account of environmental impacts. Other proposals require taking measures to adapt to the adverse impacts of climate change and for investors to specifically address the issue of adaptation to climate change in the assessment reports.

The *Electricity Law (2004)* of Vietnam, deals with all aspects of electricity development, planning and marketing. Electricity development policies include to develop electricity in a sustainable manner, satisfying demands for electricity energy to further peoples' lives and socio-economic development and thus contribute to the maintenance of national defence, security and energy security. Climate change concerns have been incorporated into the law by the inclusion of a provision which also makes environmental protection and reduction of climate change impacts an additional objective. Electricity development, planning and investment measures must also take these factors into consideration. The Law also has provision for policies to encourage and promote electricity savings and emphasizes economy in electricity generation, transmission, distribution and use. The *Law on Atomic Energy (2008)* has provision for State policy to invest in atomic energy activities. The proposed changes seek to ensure the protection of the environment and ecosystems and provide for measures for adaptation to climate change impacts. A master plan will be formulated in this regard incorporating these criteria. Specific measures to give effect to these policies have been incorporated into the law.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

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1. GENERAL PROVISIONS

1.1 Purpose of the law

"...This law applies to all activities related to the supply of, the provision of services relating to and the uses of electricity and other associated activities in the power sector

....the use of electricity shall take into account its impacts on climate change and the measures required to be taken to adapt to the adverse impacts of climate change."

(Based on the Electricity Law of the Kingdom of Cambodia – (Art. 1))

1.2 Function of the Law on Electricity

The function of the Law on Electricity shall be to provide for a system for regulating the production, transmission and distribution of electricity (including its export and import), in conformity with the implementation of the national socio- economic development plan and taking into account the impacts of climate change and measures necessary to adapt to such the adverse impacts.

(Based on the Energy Law (1997) of Lao PDR – (Art. 1))

2. PRINCIPLES, POLICIES AND PLANNING

2.1 Principles of operation

"The objective of this law is to create:

.... favorable conditions for investment in, and the commercial operation of, the electric power industry including the grant of subsidies for the generation, installation, supply and consumption of renewable energy, with the object of the promoting the use of renewable energy and the introduction of the environmentally friendly technology, to reduce green house gas emissions"

(Based on the Electricity Law of the Kingdom of Cambodia – (Art. 2))

2.2 Policies, strategies, planning of power sector

"Restructuring and privatization of public utilities and encouraging private sector participation in the management of public utilities, including the encouragement of private sector companies to engage in the generation, installation, supply and consumption of renewable energy and giving preference to such investments wherever possible.

(Based on the Electricity Law of the Kingdom of Cambodia – (Art. 4))

2.3 Electricity development policies

"To expedite the exploitation and use of new sources of energy including renewable energy for electricity generation ensuring stability, safety and economy, efficient services, environmental protection and reduction in the impacts of climate change and thereby contributing to the maintenance of national defense and security as well as energy security."

(Based on the Electricity Law (2004) of Vietnam – (Art. 4))

2.4 Electricity development planning

“Electricity development plans shall be formulated and approved for use as a basis for investment in electricity development and shall be amended to adapt to changing socio-economic conditions and to avoid adverse effects on the environment and ecosystems including, the adverse impacts of climate change.

The national electricity development plans shall be formulated on the basis of the national socio-economic development strategy and the national strategy for the protection of the environment and ecosystems and adaptation to climate change.”

The local electricity development plans shall be formulated on the basis of the local socio-economic development strategies and shall be in conformity with plans for the protection of the environment and ecosystems and adaptation to the effects of climate change as well as with national electricity development plans and other relevant plans”

(Based on the Electricity Law (2004) of Vietnam – (Art. 8))

2.5 Policies and measures to encourage and promote electricity savings

The State shall support and encourage electricity savings with the following policies:

..... Encouraging the manufacture or the import of products on the lists of electricity-saving products and equipment and of technological chains imported for manufacture of electricity-saving products by applying preferential tax rates to such products and equipment, provided that such products and equipment do not adversely affect the environment and ecosystems, minimize the impacts of climate change and support adaptation to the adverse impacts of climate change.

Provide preferential loans from the Development Assistance Fund and the Scientific and Technological Development Fund to investment projects that apply the results of scientific research and technological development to the manufacture of electricity-saving products or to promote electricity savings, provided that such products do not adversely affect the environment and ecosystems, will minimize the impacts of climate change and support adaptation to the adverse impacts of climate change.

(Based on the Electricity Law (2004) of Vietnam – (Art. 13))

2.6 The State policies in regard to atomic energy

“....To invest in and to encourage organizations and individuals, foreign organizations and individuals and international organizations to invest in atomic energy activities for socio-economic development, whilst ensuring the protection of the environment and ecosystems and providing measures for adaptation to the adverse impacts of climate change.

To encourage investment in developing nuclear power, building physical and technical infrastructure, training human resources, conducting scientific research and developing technology for developing nuclear power, whilst ensuring compliance with standards for the protection of the environment and ecosystems and with measures for adaptation to the adverse impacts of climate change.”

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 5))

3. MANAGEMENT

3.1 Licenses for supply of power

"Every power service supplier who generates or imports renewable energy or who achieves energy efficiency in the use of energy shall be entitled to a reduced licence fee."

(Based on the Electricity Law of the Kingdom of Cambodia – (Art. 5))

3.2 Licensing of electrical power utilities

"Every Licensee shall comply with all the conditions set out in the license, the rules and regulations adopted by the Authority and the laws of the country including, laws regarding environmental protection, safety, health, taxation and electricity system performance, protection and standards."

(Based on the Electricity Law of the Kingdom of Cambodia – (Art. 42))

3.3 Reports and Information

"The Contractor shall submit to the Ministry of Industry the following reports and information concerning petroleum operations undertaken by him or her:

...report on the possible impact of the operations resulting in environmental pollution including impacts on climate change and measures that are required to be taken to adapt to the adverse impacts of climate change and explain the effects of a possible oil spill from such operation and develop a contingency plan to respond to oil spills and other environmental harm that may occur in the course of such operations.

... Environmental impact assessment report"

(Based on Petroleum Regulations of the Kingdom of Cambodia – (Art. 30))

3.4 Environmental Protection

After the survey, the agreement on the scale of the project and the construction and expansion of the electricity facility, the electricity business undertaking shall ensure economic efficiency and assess and take into account the impacts of its activities on the environment and ecosystems and shall adopt measures to adapt to such adverse impacts, including adverse impacts resulting from climate change.

(Based on the Energy Law (1997) of Lao PDR – (Art. 6))

3.5 Environmental Impact Assessment

Along with the feasibility study, the investor shall undertake an environmental impact assessment which shall consist of the following:

.....an assessment of the adverse impacts of climate change resulting from the proposed activities of the project and identify the measures that are necessary to adapt to such adverse impacts.

(Based on the Energy Law (1997) of Lao PDR – (Art. 14))

3.6 Economy in electricity generation

“Electricity-generating units shall select advanced electricity-generating technologies with high efficiency and shall use optimal modes of operating electricity-generating equipment to save fuels and other sources of energy used for electricity generation thereby ensuring national energy security provided that, the electricity generating technology and equipment used do not adversely affect the environment and ecosystems will minimize the impact of climate change and support adaptation to the adverse impacts of climate change.”

(Based on the Electricity Law (2004) of Vietnam – (Art. 14))

3.7 Economy in electricity transmission, distribution

“The systems of electricity transmission lines and transformer stations shall conform to advanced techno-economic parameters and standards and be operated at optimal levels in order to ensure a stable, safe and constant supply of electricity, minimize loss of electric energy and ensure that the electricity transmission and distribution system does not adversely affect the environment and ecosystems, will minimize the impacts of climate change and support adaptation to the adverse impacts of climate change.”

(Based on the Electricity Law (2004) of Vietnam – (Art. 15))

3.8 Economy in electricity use

“Organizations and individuals using electricity for production shall have the responsibility:

“To rationalize the manufacturing process by using technologies and equipment which save electricity, prevent adverse effects on the environment and ecosystems, minimize the adverse impact of climate change and adapt to the adverse impacts of climate change.

Organizations and individuals that manufacture or import lighting, air-ventilating equipment, air conditioners, water pumps, water heaters, escalators, lifts and other equipment required for use in daily life shall comply with advanced electricity-consuming standards so as to reduce the use of electricity and promote electricity economy, ensure the protection of the environment and ecosystems, minimize the adverse impacts of climate change and adapt to the adverse impacts of climate change”

(Based on the Electricity Law (2004) of Vietnam – (Art. 16))

3.9 Operation of, administration of transactions on, the electricity markets

“Major regulations on transaction activities on the electricity markets include:

.....monitoring contraventions, inquiring into complaints about electricity-trading activities and support services in electricity markets and resolving disputes relating to activities and services that adversely affect the environment and ecosystems and have impacts on climate change”

(Based on the Electricity Law (2004) of Vietnam – (Art. 21))

3.10 Eligible subjects and conditions for granting, amending or supplementing electricity activity licenses

Organizations and individuals shall have the right to be granted electricity activity licenses or to have their electricity activity licenses amended or supplemented if they satisfy the following conditions:

.... Having feasible projects or schemes for electricity activities which do not adversely affect the environment and ecosystems or have adequately considered the impacts on the environment and ecosystems, especially the impacts of climate change, of the proposed activities and have incorporated measures for adapting to such adverse impacts."

(Based on the Electricity Law (2004) of Vietnam – (Art. 32))

3.11 Application for grant, amendment or supplementation of electricity activity licenses

"..... The report assessing the adverse impacts on the environment of the proposed electricity activity including, adverse impacts due to climate change and contain measures to redress the adverse impacts on the environment and adapt to the adverse impacts of climate change which have been approved by the competent state agency.

(Based on the Electricity Law (2004) of Vietnam – (Art. 33))

3.12 Plans on assurance of safety and security, protection of the environment and ecosystem and plans for responding to incidents during transportation

Organizations and individuals transporting radioactive material shall formulate and implement plans on safety and security assurance and for protection of the environment and ecosystems that satisfy the following requirements:

..... To devise plans for protection of the safety of persons directly involved in the transportation and other related persons, to check the radioactive contamination of packages in places where such packages are packed and of warehouses and vehicles, to compile and preserve checking dossiers and to devise plans for the protection of the environment and ecosystems and measures for redressing any damage caused to the environment;

.....In case of an incident during transportation, to issue a warning to inhabitants in areas around the site of the incident and to forecast possible adverse environmental impacts, especially the adverse impacts of climate change, resulting from the incident and to recommend measures for adapting to such impacts.

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 62))

3.13 Responsibilities of organizations and individuals involved in transportation

.....Responsibilities of consignors:

.... To pay compensation and be legally responsible for damage caused to property, people's health and the environment and for other damage caused by the leakage of radioactive material.

.....Responsibilities of transporters

To pay compensation, and be legally responsible for damage caused to property, people's health and the environment and for other damage caused by the leakage of radioactive material.

.....Responsibilities of consignees

To pay compensation, and be legally responsible for damage caused to property, people's health and the environment and for other damage caused by the leakage of radioactive material.

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 63))

3.14 License application dossiers

"An application for a license to perform radiation jobs shall include the following documents:

...safety assessment or safety analysis report for each specific radiation job and a environmental impact assessment report for each such job,

...Process of quality assurance, measures to minimize and redress adverse environmental impacts, especially the adverse impacts of climate change, resulting from the performance of such radiation job."

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 76))

3.15 Withdrawal of licenses

"The licenses of Organizations and individuals to perform radiation jobs may be withdrawn in the following cases:

.....They have seriously violated the provisions on safety and security conditions or have caused serious adverse effects on the environment and ecosystem in performing the radiation job;

.....They have violated the provisions relating to safety and security conditions and protection of the environment and ecosystems when performing the radiation job and have failed to remedy the damage caused by such violations within the period specified by the competent state agencies;

...They have been administratively reprimanded for violations of the provisions relating to the safety and security conditions and protection of the environment and ecosystems for a second time within a period of twelve months;"

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 79))

4. RIGHTS AND DUTIES

4.1 Obligations of Concessionaires

Electricity enterprises holding concessions have the following obligations:

.....to monitor the adverse impacts of climate change resulting from their activities and to adopt such measures as are necessary to adapt to such adverse impacts.

(Based on the Energy Law (1997) of Lao PDR – (Art. 18))

4.2 Rights and obligations of electricity-generating units

"The electricity-generating units shall have the following obligations:

....To compensate and be legally responsible for damage to people's health, the economy or the environment resulting from their activities."

(Based on the Electricity Law (2004) of Vietnam – (Art. 39))

4.3 Rights and obligations of electricity-transmitting units

"The electricity-transmitting units shall have the following obligations:

.....To draw up plans for investment in development of the electricity transmission grids, to invest in the development of electricity transmission grids to meet the electricity transmission demands under the electricity development plan provided that such development shall not be inconsistent with plans for the protection of the environment and ecosystems and have in place adequate measures to redress adverse environmental impacts, especially the adverse impacts of climate change, to invest in electricity-measuring or counting equipment as well as support equipment, unless otherwise agreed upon with electricity-generating units, electricity-distributing units or consumers of electricity;

....To compensate and be legally responsible for damage caused to people's health, the economy or the environment"

(Based on the Electricity Law (2004) of Vietnam – (Art. 40))

4.4 Rights and obligations of electricity-distributing units

"The electricity-distributing units shall have the following obligations:

To ensure the safe, stable and reliable operation of the electricity grids and electricity distributing equipment a manner that is in compliance with plans for the protection of the environment and ecosystems and shall have in place adequate measures to redress adverse environmental impacts, especially, the adverse impacts of climate change;

....To compensate, and be legally responsible for damage caused to people's health, the economy or the environment"

(Based on the Electricity Law (2004) of Vietnam – (Art. 41))

4.5 Rights and obligations of the national electric system-regulating unit

....To compensate and be legally responsible for damage caused to people's health, the economy or the environment"

(Based on the Electricity Law (2004) of Vietnam – (Art. 42))

4.6 Rights and obligations of specialized electricity consultancy units

"To apply the country's regulations and techno-economic and environmental standards related to electricity planning and construction investment consultancy. When applying foreign regulations and standards, the prior approval of the competent state agency shall be obtained.

To apply advanced calculating technologies and methods in order to:

- (a) formulate electricity development planning projects and dossiers,*
- (b) produce documents on investment in construction of electricity works*

appropriate to the requirements of modernization in the field of electricity generation, transmission and distribution, with a view to raising economic efficiency and ensuring safety and reliability in investment in the construction of electricity works and to ensuring the electricity work's ability to adapt to environmental impacts, especially the impacts of climate change, in compliance with national strategies and plans for protecting the environment and ecosystems and adapting to the adverse impacts of climate change;"

(Based on the Electricity Law (2004) of Vietnam – (Art. 45))

4.7 Rights and obligations of big electricity-using customers

"Consumers using large quantities of electricity shall have the following obligations:

.....To ensure compliance with-

- (a) the technical standards and safety requirements of electrical appliances and connected equipment, and*
- (b) the relevant standards for the protection of the environment and ecosystems and for reduction of the impacts of climate change,*

for connection to national electricity transmission grids"

(Based on the Electricity Law (2004) of Vietnam – (Art. 47))

5. FINANCIAL PROVISIONS

5.1 Tariffs

"The electricity tariffs approved by the Authority shall;

.....take into account the costs of service and other appropriate differences between categories of customers and types of service provided, any subsidies provided by the Government to subsidize any customer or category of customers provided that, no Government policy shall prevent a licensee from exercising any rights granted to him or her by the license to disconnect any public or private consumer for failure to meet his or her payment obligations under any contract or the approved terms and conditions of service."

(Based on the Electricity Law of the Kingdom of Cambodia – (Art. 48))

5.2 Electricity development policies

"To expedite the exploitation and use of new sources of energy including renewable energy for electricity generation ensuring stability, safety and economy, efficient services, environmental protection and reduction in the impacts of climate change and thereby contributing to the maintenance of national defense and security as well as energy security."

(Based on the Electricity Law (2004) of Vietnam – (Art. 4))

6. INTERNATIONAL COOPERATION

6.1 Electricity purchase and sale with foreign countries

"The electricity purchase and sale with foreign countries through the national electric system shall comply with the following principles:

.... Comply with the relevant techno-economic standards, environmental and ecosystems standards and regulations for the management and operation of the national electric system;

Consumers using electricity in border regions may buy electricity directly from foreign countries without going through the national electric system but shall ensure compliance with the relevant electrical safety and environmental protection standards and other relevant legal provisions."

(Based on the Electricity Law (2004) of Vietnam – (Art. 28))

7. ATOMIC ENERGY

7.1 The National Council for Atomic Energy Development and Application and the National Council for Nuclear Safety

".....The National Council for Atomic Energy Development and Application is a body whose function is to advise the Prime Minister on strategies and policies on the development and application of atomic energy and on plans for atomic energy research, development and use whilst ensuring compliance with standards for the protection of the environment and ecosystems and with measures for adaptation to the adverse impacts of climate change."

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 9))

7.2 International cooperation in the domain of atomic energy

".....The State shall create conditions for organizations and individuals, foreign organizations and individuals and international organizations to cooperate in atomic energy activities for socio-economic development, whilst ensuring compliance with standards for the protection of the environment and ecosystems and with measures for adaptation to the adverse impacts of climate change."

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 11))

7.3 Planning on atomic energy development and application

".....A master plan for the development and application of atomic energy shall be formulated in conformity with the strategy for socio-economic development, the strategy on the application of atomic energy for peaceful purposes, the strategy for the protection of the environment and ecosystems and measures for adaptation to climate change. The master plan shall include criteria for protecting the environment and ecosystems and adapting to the effects of climate change"

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 13))

7.4 Atomic energy research, development and application

The State shall formulate scientific research and technological development programs providing for the application of atomic energy to socio-economic development, whilst ensuring compliance with standards for the protection of the environment and ecosystems and with measures for redressing environmental damage and for adaptation to the adverse impacts of climate change."

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 17))

7.5 Reports on radiation job safety assessment

"A report on radiation safety assessment shall be prepared for each activity involving radiation and shall contain the following:

..... Assessment of the impacts of the activity on the environment and ecosystems and the measures necessary for redressing the environmental damage caused by the activity and for adaptation to the adverse impacts of climate change."

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 19))

7.6 Responsibilities of heads of organizations or individuals licensed to perform radiation jobs

"...To compensate and be legally responsible for damage caused to people's health, the economy or the environment"

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 26))

7.7 Reports on safety analysis and reports on safety assessment of radiation facilities

"... A report on safety assessment shall contain the following:

A safety analysis when the facility is put into operation including an assessment of the impacts of the operation of the facility on the environment and ecosystems and measures for redressing any environmental damage caused by the operation and for adaptation to the adverse impacts of climate change."

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 35))

7.8 Reports on safety analysis and reports on safety assessment of nuclear facilities

".....Nuclear facilities shall make reports on safety analysis and assessments of environmental impact when applying for licences for construction or for changing the scale and scope of operation of the facility or for terminating its operation or for operating research nuclear reactors or nuclear power plants.

.Nuclear facilities shall make reports on safety assessment and assessments of environmental impact when applying for licenses or renewal of licenses to perform radiation jobs specified in Article 18 of this Law, other than for the operation of research nuclear reactors or nuclear power plants."

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 39))

7.9 Safety inspection of construction or change in operation scale and scope of research nuclear reactors

".....The radiation and nuclear safety agency shall, in cooperation with the environmental inspector, conduct a safety inspection and shall determine the environmental impacts of the construction or change in the scale and scope of operation of a research nuclear reactor and may request the investor to suspend or temporarily stop the construction if it detects any detail of the reactor under construction which is different from the design or if it considers that such construction or change in the scale or scope of operation will have adverse impacts on the environment.

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 42))

7.10 Inspection of installation test operation and pre-handover test of safety of research nuclear reactors

"..... The radiation and nuclear safety agency shall, in cooperation with the environmental inspector, organize and conduct a safety inspection of the installation, test operation and pre-handover test, of a research nuclear reactor..."

"The radiation and nuclear safety agency conducting an inspection under Clause 1 of this Article in cooperation with an environmental inspector may request the investors in the reactor to supply documents and report on the following-"

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 43))

7.11 Operation of nuclear power plants

"The radiation and nuclear safety agency together with the environmental inspector shall evaluate reports on test operation results and reports on safety analysis of a nuclear power plant and shall require the National Council for Nuclear Safety to assess the results of the evaluation and to issue a license for the operation of the nuclear power plant."

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 50))

7.12 Reports on the actual state of safety and environmental impact assessment of nuclear power plants

"Organizations operating nuclear power plants shall make reports on the actual state of safety of the power plant and an assessment of the environmental effects of the power plant in accordance with the contents specified in Clause 2, Article 20 of this Law and shall send them to the radiation and nuclear safety agency in accordance with the following provisions:"

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 54))

7.13 Handling of results of safety inspection and assessment of nuclear power plants

"When the environment inspector observes that the operation of a nuclear power plant is adversely affecting the environment and ecosystems, he or she shall request the radiation and nuclear safety agency to enforce the relevant legal provisions to ensure the safety of the nuclear power plant."

(Based on the Law on Atomic Energy (2008) of Vietnam – (Art. 55))

8. ENFORCEMENT

8.1 Prohibited acts in electricity activities and electricity use

"contravening the regulations on safety in electricity generation, transmission, distribution and use and adversely affecting the environment and ecosystems."

(Based on the Electricity Law (2004) of Vietnam – (Art. 7))

Chapter 15 – MINING

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

In Cambodia, droughts and floods will affect productivity and industry performance in the mining sector. Although current greenhouse gas emissions are minimal, the industry will be compelled to take mitigatory measures which will increase costs. Lao PDR is a country vulnerable to natural disasters brought about by climate change, the north being prone to drought and the south to floods. Both conditions will impact upon the mining industry. There is potential to increase mining activity in the country but it would be faced with constraints in doing so as a result of regulatory measures to control emissions. Vietnam is faced with a similar scenario.

Cambodia will take regulatory measures to safeguard the industry which is essential to the development of the country. Lao PDR will formulate studies in regard to adaptation and promote measures to improve the efficiency of the mining industry. It will support this with regulatory measures to maintain and develop the industry, ensure quality, health and safety, control unbridled exploitation and harvesting and ensure sustainable mining practices for the further development of the country. It will also control environmental degradation that would follow the implementation of mining schemes. Vietnam will explore further measures to improve the efficiency of the industry and adapt to climate change. It will also establish and develop regulatory measures in regard to the industry and guide it to ensure health and safety and maintain a balance between mining activities and environmental protection.

In Cambodia the *Law on Mineral Resource Management and Exploitation* has as its purpose to determine the management and exploitation of mineral resources, the operation of mines and all activities relating to mining operations in Cambodia. Proposed changes in regard to climate change will add as an objective that due consideration must be given to the adverse impacts of climate change resulting from mining operations and exploitation of minerals. This statutorily recognizes that the mining sector is one

which has such adverse impacts. The objectives will be implemented by various provisions, for example, requiring license holders to recognize this factor and take measures accordingly. They will also be monitored by officials appointed by the Minister. Penalties will also be enforced for environmental damage.

In LAO PDR, the purpose of the *Mineral Law (2008)* which sets out the framework by which mineral resources will be exploited will be amended to include adaptation to the adverse impacts of climate change as one of the factors to be taken into account. Such framework must be consistent with gradual economic growth, industrialization and modernization, sustainable mineral development and improving living conditions of people. Conditions for investing in mining activities will include assessment of climate change impacts and adaptation measures including mitigating environmental and social impacts. The latter has been specifically emphasized. The Ministry of Energy and Mines will oversee the application of the law and regulate mining activities in this regard.

The Vietnam, the *Law of Minerals (1996, amended 2005)* sets out principles for mineral activities including prospecting, exploration, mining and processing of minerals. It states that mineral resources must be protected, mined and used reasonably, economically and efficiently and must satisfy the requirements for stable socio-economic development both in the short term and the long term. A proposed revision incorporates the issue of climate change into the law by stating that mining activities shall also minimize climate change impacts, mitigate those impacts and adapt to the adverse impacts. The State will be required to establish policies on managing, protecting and sustainably using mineral resources while, at the same time, protecting the environment and ecosystems, among others, and ensuring adaptation to climate change. The interests of people in the areas where mining takes place and protection of the environment in mining activities, has also been addressed and the obligations of those allowed to prospect for minerals have been set out. The *Law on Petroleum (1993, amended 2000, 2008)* is based on similar principles.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

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1. GENERAL PROVISIONS

1.1 Objectives of the law

"...in the application of this law, due consideration shall be given to the adverse impacts of climate change resulting from operations for the exploration and over exploitation of mineral resources.

...proactive and reactive measures shall be taken in carrying out operations for the exploration and exploitation of mineral resources to prevent adverse impacts on the environment and climate change arising from such operations."

(Based on Law on Mineral Resource Management and Exploitation of the Kingdom of Cambodia – (Art. 1))

1.2 Purpose of the Law

The Mineral Law sets out the principles and provisions for the management, preservation and utilization of minerals and mineral resources and provides for the regulation of mining activities to ensure efficient prospecting, exploration, mining and processing of minerals, in conjunction with protection of the environment, including adaptation to the adverse impacts of climate change, and in conformity with the national socio-economic development plan, in order to create conditions for economic growth, industrialization, and modernization.

(Based on the Mineral Law (2008) of Lao PDR – (Art. 1))

1.3 General principles

"...The State shall encourage nationals and foreign organizations and individuals to invest capital and technology in conducting petroleum activities subject to the condition that they respect the country's independence, territorial integrity and national security, avoid causing adverse effects on the environment and ecosystems, including the adverse impacts of climate change, by the conduct of such activities and comply with the laws of the country..

(Based on the Law on Petroleum (1993, amended 2000, 2008) of Vietnam – (Art. 2))

2. PRINCIPLES, POLICIES AND PLANS

2.1. Principles for mineral activities

Activities of prospecting, exploration, mining and processing of minerals shall comply with the following principles:

..... the exploration, mining, processing and use of minerals shall comply with the master plan approved by the competent state body and with legal provisions and measures that ensure safety and labor hygiene, the protection of the environment and ecosystems, mitigation of climate change and adaptation to the adverse impacts of climate change and protection of the landscape and of historical and cultural sites. There shall also be created conditions to strengthen and develop mining infrastructure to improve the living conditions of persons living in localities where minerals are mined and processed and to ensure national defense and security, social order and safety.

..... Ensure safe mining and processing practices that take into account and minimize, adverse environmental impacts, especially the impacts of climate change, while complying with legal provisions for protecting the environment and ecosystems and for minimizing the impacts of climate change.

(Based on the Law of Minerals (1996, amended 2005) of Vietnam – (Art. 3a))

2.2 Policy of the state on minerals

".....The State shall encourage investment in and grant preferential treatment to mining projects engaged in on-site processing of minerals in areas with difficult socio-economic conditions, to projects applying modern techniques and technology or protecting the environment and ecosystems or maximizing the recovery of valuable minerals or producing metal and metal alloy products or products of high socio-economic value and to projects for processing imported minerals for domestic use or export. It shall be a condition for the grant of preferential treatment that such projects adopt measures to adapt to adverse environmental effects, especially the impacts of climate change, resulting from their mining activities."

(Based on the Law of Minerals (1996, amended 2005) of Vietnam – (Art. 5))

3. MANAGEMENT

3.1 Monitoring

"The Minister shall appoint competent officials to monitor the implementation of this law.

..... the powers and duties of the officials appointed to monitor, inspect and prepare reports on all activities relating to the exploration, exploitation and mining of mineral resources and on research and analysis relating thereto, shall be prescribed in a sub decree. These duties shall include the duty to monitor and report on the adverse impacts of these activities on the environment and on climate change and the adaptation measures."

(Based on Law on Mineral Resource Management and Exploitation of the Kingdom of Cambodia – (Art. 23))

3.2 Conditions for Investors in Prospecting and Exploration

Basic conditions for investing in projects for prospecting and exploring for minerals shall be as follows:

....Shall have had experience in prospecting and exploration for minerals, including experience in adapting to the adverse impacts of climate change resulting from prospecting and exploration and shall have staff with the technical capacity to implement such project.

(Based on the Mineral Law (2008) of Lao PDR – (Art. 35))

3.3 Conditions for Investors in Prospecting and Exploration

Basic conditions for investing in projects for prospecting and exploring for minerals shall be as follows:

....Shall have had experience in prospecting and exploration for minerals , including experience in adapting to the adverse impacts of climate change resulting from prospecting and exploration and shall have staff with the technical capacity to implement such project.

(Based on the Mineral Law (2008) of Lao PDR – (Art. 35))

3.4 Obligations of Mining Business Operator

The obligations of a mining business operator shall be:

.....to use effective anti-pollution technology, adopt measures for adaptation to the adverse impacts of climate change, and to provide tools, equipment and facilities to workers in the mine that ensure their safety and health.

(Based on the Mineral Law (2008) of Lao PDR – (Art. 66))

3.5 Management, protection and use of mineral resources

"The State shall adopt policies for the management, protection and the rational economical and effective use of mineral resources, whilst protecting the environment and ecosystems while ensuring national defense and security, labor safety and labor hygiene in mining activities and compliance with measures to adapt to the adverse impacts of climate change."

(Based on the Law of Minerals (1996, amended 2005) of Vietnam – (Art. 4))

3.6 Interests of the people in localities where minerals are mined or processed

"Organizations or individuals licensed to mine or process minerals shall have the responsibility to conduct their mining and processing activities concurrently with the construction of infrastructure to protect and rehabilitate the environment, ecology and land in the localities in which such activities are being conducted, to protect the environment and redress damage caused to the environment, to avoid any activity that may contribute to climate change and take measures for adaptation to the impacts of climate change in accordance with the approved feasibility study report and to give priority to the recruitment of local labor for mining and related activities."

(Based on the Law of Minerals (1996, amended 2005) of Vietnam – (Art. 7))

3.7 Exploration projects

"Exploration projects shall prepare a document setting out the schedules of work, the volume of work, the technology proposed to be used, measures to ensure labor safety, labor hygiene and protection of the environment and ecosystems in the course of conducting exploration activities, the estimated exploration costs and the costs of redressing any damage caused to the environment and ecosystems by the exploration activities. The document shall be evaluated by the State Mineral Administration before the issue of an exploration licence."

(Based on the Law of Minerals (1996, amended 2005) of Vietnam – (Art. 28))

3.8 Feasibility study report relating to mining, mine design

"...To minimize damage caused to mineral and other resources, to protect the environment, ecology and the mining infrastructure, in the course of conducting such mining activities, and be liable for any damage caused to the environment and ecosystems by the conduct of such mining activities and to pay compensation for such damage"

(Based on the Law of Minerals (1996, amended 2005) of Vietnam – (Art. 52))

3.9 Tenets of State management of minerals

"The State management of minerals includes:

.....Formulating strategies, plans and policies for the protection and the rational, economical and efficient use of mineral resources, for the reduction of environmental impacts, especially the impacts of climate change on mineral resources, for the protection of the environment and ecosystems and for the development of the mineral mining and processing industry;

.....Applying measures to protect mineral resources and to reduce environment impacts, especially impacts of climate change, on mineral resources, the environment and ecosystems in the mineral area;"

(Based on the Law of Minerals (1996, amended 2005) of Vietnam – (Art. 54))

3.10 Petroleum activities

“Organizations and individuals conducting petroleum activities shall use advanced techniques and technologies and shall comply with relevant laws for protection of natural resources, the environment and ecosystems, for providing safety for humans and property and for minimizing the impacts of climate change and adapting to the adverse impacts of climate change”

(Based on the Law on Petroleum (1993, amended 2000, 2008) of Vietnam – (Art. 4))

3.11 Conducting other activities

The Government may permit organizations and individuals to conduct scientific research relating to the prospecting, exploring and exploiting of minerals and natural resources other than petroleum within the area covered by a petroleum contract in accordance with the relevant legal provisions. The activities so permitted shall not interfere with or cause harm to petroleum activities conducted in such area or adversely affect the environment and ecosystems of such area.

(Based on the Law on Petroleum (1993, amended 2000, 2008) of Vietnam – (Art. 10))

3.12 Petroleum contracts

“A petroleum contract shall be in conformity with the model contract issued by the Government and shall have the following principal contents:

.....Responsibility to protect the environment and ecosystems and to ensure safety, while conducting petroleum activities;

.....Responsibility to use advanced techniques and technologies in conducting petroleum activities to ensure the ability to adapt to the adverse impacts on the environment, especially the impacts of climate change, which may result from the conduct of such activities.”

(Based on the Law on Petroleum (1993, amended 2000, 2008) of Vietnam – (Art. 15))

4. ENVIRONMENTAL PROTECTION

4.1 Environment and Social protection

In order to prevent or mitigate adverse environmental and social impacts, an investor in a business relating to minerals shall have:

....proper plans for environmental protection, including measures for adaptation to the adverse impacts of climate change, and for the resettlement of people who suffer harm from the carrying on the business.

(Based on the Mineral Law (2008) of Lao PDR – (Art. 61))

4.2 Protection of the environment in mineral activities

“ Organizations and individuals permitted to conduct mining activities shall use appropriate technology, equipment and materials and observe the relevant provisions of the law on environmental protection in order to minimize the adverse impacts on the environment caused by such activities and shall rehabilitate the environment, ecology and the land after the termination of each stage of such activity, and shall also adopt measures to redress the environmental impacts, especially the impacts of climate change, resulting from such activities.”

(Based on the Law of Minerals (1996, amended 2005) of Vietnam – (Art. 16))

4.3 Environmental and social protection

"Organizations and individuals conducting petroleum activities shall formulate schemes for protection of the environment and ecosystems and for minimizing the impact of such activities on climate change and shall have in place measures to adapt to the adverse impacts of climate change, to eradicate the causes of pollution and to control the effects of pollution.."

(Based on the Law on Petroleum (1993, amended 2000, 2008) of Vietnam – (Art. 5))

5. RIGHTS AND DUTIES

5.1 Duties of license holders

"Every license holder or subcontractor shall be responsible for the proper conduct of operations for the exploration and exploitation of mineral resources in compliance with the following conditions:

.....take into account, the long-term impacts of the operation on the environment and climate change, undertake studies to assess and monitor the adverse impacts of the operation on the environment and climate change and take adequate measures to redress damage caused to the environment and the adverse impacts on climate change, which have been caused by the operation."

(Based on Law on Mineral Resource Management and Exploitation of the Kingdom of Cambodia – (Art. 21))

5.2 Rights and Duties of the Business Operators related to the Study of Geological and Mineral Deposit Data

An operator engaged in the exploration and study of geological and mineral deposit data shall have the following rights and duties:

.....To ensure safety during mineral prospecting and exploration operations including, protection from the adverse impacts of climate change

(Based on the Mineral Law (2008) of Lao PDR – (Art. 63))

5.3 Rights and Duties of the Ministry of Energy and Mines

In the regulation of mining operations, the Ministry shall have the following rights and duties:

.....To conduct scientific and technical research on geology and mining including, research on the adverse impacts of climate change on mining and the measures necessary to adapt to such impacts and to establish a network of national statistics and information centres relating to geology and mining.

(Based on the Mineral Law (2008) of Lao PDR – (Art. 85))

5.4 Duties and Rights of Provincial/ capital level Department of Energy and Mines

For the monitoring of mining operations in the province, the provincial department of energy and mines shall have the following rights and duties:

To review the mining operations in the province including, the adverse impacts of climate change resulting from such operations and to provide technical comments and proposals, including measures for adaptation to the adverse effects of climate change, to the Ministry of Energy and Mines for its consideration.

(Based on the Mineral Law (2008) of Lao PDR – (Art. 86))

5.5 Obligations of organizations, individuals allowed to prospect for minerals

"Organizations or individuals allowed to prospect for minerals shall have the following obligations:

.....To protect the environment and ecosystems and to ensure labor safety and labor hygiene, in the course of conducting mineral prospecting activities

.... To pay compensation for any damage caused by the conduct of such mineral prospecting activities, and be liable for any damage caused to the environment and ecosystems by the conduct of such mineral prospecting activities"

(Based on the Law of Minerals (1996, amended 2005) of Vietnam – (Art. 23))

5.6 Obligations of the organizations, individuals licensed to mine minerals

"Organizations or individuals licensed to mine minerals shall have the following obligations:

... To extract the minerals with minimum damage to the environment, protect mineral resources, adopt measures to reduce environmental impacts, especially, impacts of climate change resulting from such mining activities, ensure labor safety and hygiene in the course of conducting such mining activities, apply measures to protect the environment and ecosystems in accordance with the approved evaluation report on environmental impact;

.....To be liable for any damage caused to the environment and ecosystems as a result of such mining activities and to pay compensation for such damage

..... To create favorable conditions for the conduct of scientific research, with the permission of the State, within the mining area, to allow, with the permission of the competent authorities, the construction and transportation of water pipelines, power transmission lines and communications lines across the mine, provided that, the rights and interests of the organizations or individuals holding mining licenses and measures for the protection of the environment, ecosystems and biodiversity in the mining area are not affected.;"

(Based on the Law of Minerals (1996, amended 2005) of Vietnam – (Art. 33))

5.7 Obligations of organizations or individuals holding full extraction licenses

"...To minimize damage caused to mineral and other resources, to protect the environment, ecology and the mining infrastructure, in the course of conducting such mining activities, and be liable for any damage caused to the environment and ecosystems by the conduct of such mining activities and to pay compensation for such damage"

(Based on the Law of Minerals (1996, amended 2005) of Vietnam – (Art. 52))

5.8 Obligations of a contractor

A contractor shall have the following obligations:

.....To undertake measures for the protection of the environment and ecosystems and for ensuring safety in the conduct of petroleum activities as well as measures for responding effectively to the adverse impacts on the environment and ecosystems, including the adverse impacts of climate change, resulting from the conduct of petroleum activities."

(Based on the Law on Petroleum (1993, amended 2000, 2008) of Vietnam – (Art. 30))

6. ENFORCEMENT

6.1 Indemnification

The holder of a license shall indemnify the owners of lands within or outside the area covered by the licence against damage caused to their lands by the licensee's mining operations, whether such damage is accidental or anticipated. The indemnification shall include indemnification for damage caused to the environment and land quality caused by such operation as well as for the impacts on climate change resulting from such operation.

Further studies shall be carried out to determine and assess the nature and extent of the long term impacts of such mining operations on the environment and on climate change.

(Based on Law on Mineral Resource Management and Exploitation of the Kingdom of Cambodia – (Art. 25))

6.2 Offences

"...Every person who discloses State secrets on mineral resources, conducts mining activities without a licence, interferes with the protection of mineral resources, contravenes legal provisions relating to the protection of the environment and ecosystems, obstructs the licensed mining activities of other organizations or individuals, obstructs the examination and inspection of minerals or contravenes any other provision of this Law shall, depending on the gravity of the contravention, be subject to an administrative sanction or a penalty and in case of damage or loss caused by the contravention, shall be subject to payment of compensation in accordance with the provisions of law."

(Based on the Law of Minerals (1996, amended 2005) of Vietnam – (Art. 64))

Chapter 16 - COASTAL AND MARINE AREAS

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

Vietnam will be particularly affected by the impacts of climate change on coastal and marine areas of the country. For example, the Mekong and Red River deltas are projected to be inundated by sea level rise. It has been estimated that one metre of sea level rise will affect about 10% of the population and about 10% of GDP would be lost. The sectors most affected by sea level rise and salt water intrusion have been cited as agriculture (cultivation, livestock, aquaculture and fishery), sea and coastal ecological systems, water resources (surface and ground water), residential space, energy, infrastructure, industrial zones and community health care. Increasing temperatures would cause the destruction of coral reefs. It would also cause some species to move northwards, thus changing the vertical distribution of aquatic life. Sea level rise resulting from global warming will have a serious impact on Cambodia's coastal zone, in particular on low-lying areas. The salt farms in the coastal zone will be severely damaged as they are located in low-land areas and this will lead to a serious decline in salt production. This will have resulting negative impacts on employment and other socio-economic conditions in these areas. Underground water salinisation and seawater intrusion are already common problems in coastal areas.

Cambodia will take measures to address sea level rise in coastal areas and formulate a comprehensive adaptation policy in this regard in the context of integrated coastal zone management. Specific measures include developing computer based information systems including information gathered from surveys, assessments and observations, increasing public awareness of the impacts of sea level rise and identifying potential donors who will assist the country in adaptation measures. Co-operation frameworks will also be established to further training, technology transfer, surveillance of the impacts of sea level rise and experience sharing. In addition, Cambodia is preparing to implement

the coastal zone climate change adaptation plan with support of UNEP.

The coastal and marine zones in Vietnam have been cited as one of the sectors most vulnerable to the effects of climate change and the level of adaptability is yet unclear. However, some specific measures to be taken include upgrading sea and river mouth dikes and building new ones to contain sea level rise. Another important measure that has been identified is managing population growth rates and organizing new resettlement areas to address the population displacement effects in the coastal areas resulting from rises in sea level. Protective measures will also be taken in regard to extreme weather conditions along the coast. Coastal infrastructure will need to be protected against sea level rise and rising temperatures.

There are no laws on coastal and marine areas in Cambodia.

The *Vietnam Maritime Code (2005)* provides for maritime shipping activities and applies to activities related to the use of seagoing vessels for economic, cultural, social, sport, public service and scientific research purposes. However, military vessels, fishing vessels and some others are excluded from its ambit. The Code regulates crews, seaports, marine navigable channels, ocean shipping, marine navigation safety and security and other activities. It has been proposed that prevention of environmental pollution should also be included in this list in the context of climate change concerns. In the section entitled "Principles of Maritime Shipping" the law provides that maritime shipping must ensure economic efficiency and a proposed amendment requires it to ensure improvement and development of the environment and green house gas emission reduction as well as adaptation to climate change. Prohibited acts in regard to maritime shipping will also include acts that cause environmental pollution. It has been further proposed that in order to obtain the necessary certification, all seagoing vessels must show that they minimize environmental pollution and greenhouse gas emissions and this requirement is also included throughout the law.

SECTION II - DRAFT LEGAL PROVISIONS TO FACILITATE ADAPTATION TO CLIMATE CHANGE

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1. GENERAL PROVISIONS

1.1 Scope of regulation

"This Code provides for maritime shipping activities and covers-

- (a) seagoing vessels,*
- (b) crews of sea going vessels,*
- (c) seaports,*
- (d) marine navigable channels,*
- (e) marine navigation safety and marine navigation security of sea going vessels,*
- (f) green house gases emission reduction and adaptation to climate change by sea going vessels, and*
- (g) other activities related to the use of seagoing vessels for economic, cultural, social, sporting, public service and scientific research purposes"*

(Based on the Vietnam Maritime Code (2005) – (Art. 1))

2. MANAGEMENT

2.1 Principles of maritime shipping

".....Maritime shipping shall ensure economic efficiency in combination with protection and improvement of the environment, reduction of green house gas emissions, adaptation to climate change, sustainable development and the preservation of natural landscapes in a sustainable manner."

(Based on the Vietnam Maritime Code (2005) – (Art. 5))

2.2 Registry of Vietnamese seagoing vessels

"Local seagoing vessels shall be inspected, classified and granted technical certificates of marine navigation safety, marine navigation security, environmental pollution prevention and greenhouse gas emissions reduction by the local Registry or by foreign registries authorized by the Transport Minister, in accordance with the relevant provisions of law or with treaties to which the Republic is a contracting party.

The Transport Minister shall prescribe standards applicable to all sea going vessels, including standards relating to marine navigation safety, marine navigation security, prevention of environmental pollution and reduction of green house gas emissions and also provide for the registration of all seagoing vessels."

(Based on the Vietnam Maritime Code (2005) – (Art. 23))

2.3 Certificates and documents of seagoing vessels

.....Seagoing vessels shall have seagoing-vessel registration certificates, certificates of marine navigation safety, marine navigation security, environmental pollution prevention and of green house gas emissions reduction in accordance with the relevant provisions of law or with treaties to which the Republic is a contracting party.

.....Certificates of marine navigation safety, marine navigation security, environmental pollution prevention and green house gas emissions reduction shall indicate their respective periods of validity. Any such period may be extended for not more than ninety days if the seagoing vessel is unable to call at the designated place for inspection but its technical conditions still ensure marine navigation safety, marine navigation security, environmental pollution prevention and green house gas emissions reduction. This extended period shall expire immediately upon the seagoing vessel's arrival at the designated port for inspection.

.....Where they have grounds to believe that a seagoing vessel has failed to ensure marine navigation safety, marine navigation security, environmental pollution prevention or green house gas emissions reduction, the maritime inspectorate and port authorities shall be entitled to suspend the operation of such seagoing vessel and conduct, or require the Registry to conduct, a technical inspection of such seagoing vessel notwithstanding the fact that such seagoing vessel has a certificate of marine navigation safety, marine navigation security, environmental pollution prevention or green house gas emissions reduction, as the case may be ."

(Based on the Vietnam Maritime Code (2005) – (Art. 26))

3. ENFORCEMENT

3.1 Prohibited acts in maritime shipping

"..... Causing environmental pollution and high rates of greenhouse gas emissions."

(Based on the Vietnam Maritime Code (2005) – (Art. 10))

Chapter 17 – FISHERIES AND AQUACULTURE

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

The fisheries sectors in countries such as Vietnam, Lao PDR and Cambodia will be affected by climate change. Sea level rise will affect coastal land use and coastal fisheries including shrimp farms in Cambodia and Vietnam with long coastlines. It is also predicted that floods and drought will affect inland and freshwater fisheries in all three countries. The latter problem will particularly affect Lao PDR where it is predicted that the adverse impacts of climate change on fisheries will severely affect the livelihoods of those engaged in this sector. Floods would potentially cause the destruction of fishing boats and other equipment, thus limiting the opportunities to engage in fishing. On the other hand, it has also been recognised that floods may increase the availability of fish. In Vietnam, it is predicted that the rise in seawater temperatures will cause the number of sub-tropical fish which have a high commercial value, to decrease and the number of tropical fish, which have low commercial value to increase. There is also a strong likelihood that some species of reef fish will become extinct. The destruction of phyto-plankton will cause a decline in plankton on which animals feed. As a result, fish will migrate to other areas and their size and weight will diminish.

Some specific adaptation measures have been recommended in the case of Cambodia. Infrastructure development upstream, which together with climate change will pose significant threats to fisheries, needs to be addressed. Reducing stress on the ecosystem by over fishing should be avoided and therefore measures to ensure sustainable fisheries need to be implemented. Diversifying livelihoods will cushion communities dependent upon fisheries from the impacts of climate change on fisheries and open up alternative economic options for them. Further, it has been noted that fishing communities in Cambodia have coped with climate variability and have developed adaptation strategies over time which can be further used and facilitated. Lao PDR has taken several measures to mitigate climate change impacts on its fisheries sector and has formulated the Disaster Management

Strategic Plan. The country's strategies include building embankments for flood protection, developing public irrigation systems to combat drought and provide permanent livelihoods for the local people, expansion of irrigation systems to prevent floods and droughts, and establish an irrigation development plan by 2020. Vietnam has taken measures such as research on the migration patterns of fish species, developing aquaculture in species that are adaptable to high water temperatures, increasing the depth of fish ponds and lakes to create suitable temperatures and mitigating the effects of rapid evaporation from water surfaces, altering farming patterns in some wet areas from rice monoculture to fish-rice rotation systems, developing brackish water aquaculture along the coastlines of central Vietnam to create alternative livelihoods with minimal impact on agricultural land and constructing back-up dikes behind sea dikes to create belt zones between agricultural land and the sea.

The purpose of the Fisheries Law of Cambodia is "to establish a framework for management, protection, conservation, utilization, exploitation, inundated-reforestation, and development of fisheries to ensure sustainability of the fishery resources -for the- interest of society, the economy and environment in accordance with the national fisheries policy." The Fishery Administration, which is a government authority under the Ministry of Agriculture, Forestry and Fisheries manages all fisheries activities. Chapter 4 of the law relates to sustainability of fishery management and sets out principles to further this objective. The Law further provides that the management, conservation and development of fisheries shall be included in a long term plan. Some specific provisions relate to, for example the management of protected inundated areas, the management of aquaculture and mariculture, and the formation of fishery communities.

It has been proposed that the Cambodia Fisheries Law should include a provision among its purposes establish a framework for the management, protection, conservation and exploitation of fisheries in a sustainable manner so as to serve the interests of the country, and, in addition, which takes into account the impacts of fisheries on climate change on the one hand and the impact of climate change on fisheries,

on the other. The Fishery Administration shall have the authority to carry out these objectives and its duties will include to integrate climate change concerns into fishery management policies, plans and programmes. Protection of coral and indigenous species of fish and changes to ecosystems resulting from activities such as aquaculture and mariculture will also be provided for.

The Vietnam *Law on Fisheries (2003)* applies to fisheries activities of both Vietnamese and foreigners on the land, islands, internal waters and the marine territory of Vietnam. Ownership of aquatic resources is vested in the people under the management of the State. The Law sets out the principles for fishery activities which are to ensure economic efficiency and to protect the environment and natural landscapes. The State will also adopt policies to ensure the sustainable development of fisheries. The law also sets out several prohibited acts in relation

to fishery activities and other chapters relate to the protection and development of aquatic resource and principles for their exploitation. There are also specific provisions on aquaculture development planning.

The proposed changes include incorporation of adaptation to the adverse impacts of climate change in the principles governing fisheries activities and adaptation as an important aspect of sustainable development of fisheries. Specific provisions suggested relate to the protection of habitats of aquatic resources and the obligations of those exploiting those resources. These include preventing environmental pollution and ensuring adequate measures for adaptation to the adverse impacts of climate change. Those engaged in aquaculture activities are also obliged to reduce the emission of greenhouse gases and implement policies and laws relating to climate change adaptation.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

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1. GENERAL PROVISIONS

1.1 The purpose of this law

"The purpose of this law shall be to establish a framework for management, protection, conservation, utilization, exploitation, inundated-reforestation, and development of fisheries to ensure sustainability of fishery resources to serve the interests of society, the economy and the environment, in accordance with national fisheries policy and taking into account, the need to protect and conserve fishery resources and flooded forests from over exploitation resulting in changes in ecosystems and climate change, including sea level rise ."

(Based on the Fisheries Law of the Kingdom of Cambodia – (Art. 1))

2. PRINCIPLES, POLICIES AND PLANS

2.1 Principles of fishery activities

" ... to ensure economic efficiency in association with the protection, reproduction and development of aquatic resources and with the protection of the environment, natural landscapes, ecosystems and biodiversity and in conformity with measures to adapt to the adverse impacts of climate change; ..."

(Based on Law on Fisheries (2003) of Vietnam – (Art. 4))

3. MANAGEMENT

3.1 Fishery administration

"....the Fishery Administration shall have authority to carry out the sustainable management, conservation and development of fishery resources in the country, taking into account the adverse impacts of climate change on fishery resources and the required adaptation measures."

(Based on the Fisheries Law of the Kingdom of Cambodia – (Art. 8))

3.2 Management of Fishery Domains

"...the Fishery Administration may conduct scientific and technical research in fishery areas for the conservation, management and development of fishery resources, including the identification of species that have become vulnerable due to changes in the ecosystems of fish and water as a result of climate change."

(Based on the Fisheries Law of the Kingdom of Cambodia – (Art. 20))

3.3 Mari-culture

"...in granting of such licenses account shall be taken of the impacts of aquaculture in reducing indigenous species whilst increasing exotic or alien species and the consequential changes in the ecosystem"

(Based on the Fisheries Law of the Kingdom of Cambodia – (Art. 57))

3.4 Import of aquatic fauna or flora seed

“Aquatic fauna or flora seeds for the purpose of aquaculture or mariculture operations shall not be imported except with the permission of the Fishery Administrator who shall, in deciding whether or not to grant such permission, take into account the adverse impacts of the imported fauna and flora seeds on the reduction of indigenous species, the increase of exotic or alien species and the consequential changes to the ecosystem.”

(Based on the Fisheries Law of the Kingdom of Cambodia – (Art. 62))

3.5 Sustainable development of fisheries

“...The State shall develop the fisheries economy in conformity with fishery sector development planning, national and local level socio-economic development planning and policies for ensuring sustainable development as well as with measures for adapting to the adverse impacts of climate change...”

(Based on Law on Fisheries (2003) of Vietnam – (Art. 5))

3.6 Protection of habitats of aquatic resources

“...Organizations and individuals conducting fishery or other activities which affect the habitats, migration or reproduction of aquatic species shall comply with the provisions of this Law, the laws on environmental protection and water resources and other relevant provisions of law as well as with measures for adaptation to the adverse impacts of climate change.”

(Based on Law on Fisheries (2003) of Vietnam – (Art. 7))

3.7 Aquaculture conditions

“Organizations and individuals engaged in aquaculture shall satisfy the following conditions:

.....Aquaculture activities shall not be carried out in a manner that causes adverse effects on the environment and ecosystems or results in the release of excessive emissions of greenhouse gases.”

(Based on Law on Fisheries (2003) of Vietnam – (Art. 24))

3.8 Recovery of sea surface areas assigned or leased for aquaculture

“The State may recover the whole or part of any sea surface area assigned or leased for aquaculture in the following cases:

...The State requires the sea surface area for public, defense or security purposes.

...The persons using the sea surface area for aquaculture have polluted the environment and ecosystems of such sea surface area.”

(Based on Law on Fisheries (2003) of Vietnam – (Art. 29))

3.9 Building and transformation of fishing ships

"Organizations and individuals engaged in aquaculture shall satisfy the following conditions:

.....Aquaculture activities shall not be carried out in a manner that causes adverse effects on the environment and ecosystems or results in the release of excessive emissions of greenhouse gases."

(Based on Law on Fisheries (2003) of Vietnam – (Art. 24))

3.10 Axial aquatic product marketplaces

"...the provincial level People's Committees shall approve the regulations on the management of axial aquatic-product marketplaces and shall provide for the management and operation of such market places and ensure the maintenance of environmental sanitary conditions in such marketplaces".

(Based on Law on Fisheries (2003) of Vietnam – (Art. 42))

3.11 Processing of aquatic products

"Aquatic product-processing establishments shall ensure compliance with the following conditions:

... maintenance of proper environmental sanitation conditions in and prevention of environmental pollution at such establishments."

(Based on Law on Fisheries (2003) of Vietnam – (Art. 43))

3.12 Contents of the State management over fisheries

"...Implementing measures for adaptation to the adverse impacts of climate change in the fisheries sector"

(Based on Law on Fisheries (2003) of Vietnam – (Art. 51))

4. RIGHTS AND DUTIES

4.1 The duties of Fishery Administration

"...integrate concerns about climate change into the fishery resource management policies, plans and standards."

(Based on the Fisheries Law of the Kingdom of Cambodia – (Art. 9))

4.2 Obligations of aquatic resource-exploiting organizations and individuals

".....To prevent environmental pollution and ensure the adoption of adequate measures for adaptation to the adverse impacts of climate change."

(Based on Law on Fisheries (2003) of Vietnam – (Art. 21))

4.3 Obligations of organizations and individuals engaged in aquaculture

"... To reduce the emission of greenhouse gases

.....To comply with measures for adaptation to the adverse impacts of climate change"

(Based on Law on Fisheries (2003) of Vietnam – (Art. 26))

4.4 Obligations of organizations and individuals using sea surface for aquaculture

Organizations and individuals using a sea surface area for aquaculture shall, in addition to the obligations prescribed in Article 26 of this Law, have the following obligations:

".....To comply with measures for adaptation to the adverse impacts of climate change in the aquaculture sector."

(Based on Law on Fisheries (2003) of Vietnam – (Art. 31))

5. ENFORCEMENT

5.1 Prohibited acts

"A. A prohibition shall be imposed on:

- 1. fishing or any form of exploration for coral;*
- 2. the possession, buying, selling, transporting and stocking of coral;*
- 3. entering or anchoring in a coral reef area in such a manner as would damage or destroy the coral in that area;*
- 4. destruction of coral by any other activity.*

B. The above activities shall not be carried on except with special permission from the Fishery Administration .In granting such permission the Fishery Administration shall take into account the effects of such activities on the coral reef which can result in changes in marine eco-systems giving rise to climate change and sea level rise.

(Based on the Fisheries Law of the Kingdom of Cambodia – (Art. 55))

5.2 Monitoring, Control and surveillance

The Fishery Administrator shall be responsible for negotiation of agreements on regional and international cooperation for monitoring, control and surveillance of fisheries resources including, cooperation in the monitoring and surveillance of the adverse impacts of climate change on fishery resources of the region and may provide for joint or reciprocal action in this regard. The agreements shall come into force following approval by the Government.

(Based on the Fisheries Law of the Kingdom of Cambodia – (Art. 80))

Chapter 18 - TOURISM, SPORT AND RECREATION

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

Climate change will affect tourism activities in all three project countries. In Cambodia it has been predicted that sea level rise will threaten beach resorts and sea sports. Floods and droughts too will have adverse impacts on tourism as well as on recreation activities. Health problems created by vector borne diseases will also have repercussions on the tourist industry. A similar scenario has been predicted for Lao PDR where it has been estimated that heavy rain fall, extreme droughts, floods and tropical storms would impact on tourist activity and the provision of services essential to tourism such as, transport, supply of water and fish supplies. Ecotourism will be affected if hasty development of protected areas, under pressure, as against carefully planned growth, is undertaken. Such development would in turn threaten the very environment that could sustain the ecotourism industry.

As a response to climate change, Cambodia will develop a national strategy to combat sea level rise in coastal areas and take action to minimise its impacts. It will develop computer-based information systems covering the results of surveys, assessments and observations to further this goal. It will also rehabilitate water storage structures and irrigation canals, build dikes and water control structures, strengthen dwellings and other coastal infrastructure against windstorms etc., improve water management for multiple uses including, tourist and recreational purposes and protect and develop water resources as a necessary adjunct to the development of tourism. Lao PDR will take measures to prevent and control floods and protect the scenic beauty of protected areas for leisure and research. It will also draw up a policy and strategy framework for tourism and eco-tourism.

The Cambodian Parliament has already enacted the Tourism law which is available only in the

national language (Khmer). Unofficial translation of laws is not permitted in Cambodia.

The Tourism Law (2005) of Lao PDR states that its purpose is to determine the framework to establish and regulate tourism and to promote, develop and extend cultural, historical and nature tourism in sustainable ways. It also sets out the State policy toward tourism, the obligations of individuals and organizations in promoting tourism, the rights and duties of various entities in this regard and establishes a National Tourism Fund. The National Tourism Authority is the focal point for tourism development in the country.

The changes proposed to this law to address climate change include, to add to its purposes, transforming tourism in the country into a modern industry to contribute to national environmental protection including from the adverse impacts of climate change. The National Tourism Authority and concerned agencies and local authorities at all levels and inspection authorities are also to be charged with this duty. The State will create conditions to develop and promote tourism taking account of the adverse impacts of climate change and appropriate adaptation measures. Further, tourism planning is required to take into account the adverse impacts of climate change and adaptation measures in the sector. The National Tourism Fund will also be required to conduct research on the adverse impacts of climate change and appropriate adaptation measures.

The Vietnam *Law on Tourism (2005)* provides for tourism resources and activities including the rights and obligations of tourists, organizations and individuals engaged in the tourism business and in related activities. Its stated purpose includes to develop sustainable tourism in line with master plans while ensuring socio-economic development and environmental protection, develop cultural, historical and eco-tourism and promote the values of tourism resources. In this regard, tourism development policies and the framework of tourism development plans have also been set out. The participation of local communities in tourism development is also provided for.

In the proposed changes to this law it is noted that “climate change is a global issue that affects us all” and the “influence of climate change in tourism is a consequence of climate change on subjects related to tourist and tourism activities.” Tourism development policies will require that the

adverse impacts of climate change be taken into consideration. In this regard, the rights of local communities in tourism development have also been recognized. It is recognized that the tourism environment must also be protected so that it will have the capacity to adapt to climate change.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

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1. GENERAL PROVISIONS

1.1 Purpose

This Law on Tourism sets out the principles and provisions for regulating all activities related to tourism with the object of promoting, developing and extending cultural and nature tourism in a sustainable way, of transforming the tourism industry into a modern industry, of protecting tourism resources from the adverse environmental effects, including the adverse impacts of climate change and of promoting mutual understanding and peace.

(Based on the Tourism Law (2005) of Lao PDR – (Art. 1))

1.2 Interpretation of terms

"In this Law, the following terms are construed as follows:

....."Climate change" means changes in climate patterns resulting in extreme weather events such as heat waves, floods, storms, droughts and bushfires .

.....'Influence of climate change on tourism' is the impact of climate change on tourists and tourism activities."

(Based on the Law on Tourism (2005) of Vietnam – (Art. 4))

2. PRINCIPLES, POLICIES AND PLANS

2.1 State Policy towards Tourism

.....The State shall promote tourism by-

(a) creating conditions favourable for investment in tourism;

(b) protecting the rights and interests of individuals and organizations, both local and foreign, who invest in the development and promotion of tourism, taking into account the adverse impacts of climate change on tourism and the measures necessary to adapt to such adverse effects.

(Based on the Tourism Law (2005) of Lao PDR – (Art. 4))

2.2 Obligations of Individuals and Organisations

..... Individuals and organizations shall have the obligation to promote tourism by contributing to the preservation, protection, and promotion of culture, national traditions, arts, literature, handicrafts, tourism resources, and natural resources, taking into account the adverse impacts of climate change on such resources and the measures necessary to adapt to such adverse effects.

(Based on the Tourism Law (2005) of Lao PDR – (Art. 5))

2.3 Principles of Planning

Tourism planning shall be based on the following basic principles:

.....take into account the adverse impacts of climate change on tourism and vice versa and the measures necessary to adapt to such adverse effects.

(Based on the Tourism Law (2005) of Lao PDR – (Art. 52))

2.4 Principles of Tourism Development

"To develop sustainable tourism in conformity with master plans and other plans taking into consideration the adverse impacts of climate change on tourism, to ensure harmony between socio-economic development and environmental protection, to give priority to the development of cultural and historical tourism and eco-tourism in key regions and to preserve, conserve and enhance the value of tourism resources."

(Based on the Law on Tourism (2005) of Vietnam – (Art. 5))

2.5 Tourism development policies

"The State shall provide incentives and give preferential treatment in the allocation of land, finance and credit to foreign and domestic individuals and organizations investing in the following fields:

....Protection and enhancement of tourism resources and the environment taking into account the adverse impacts of climate change on such resources.

..... Organizing environment-friendly tour programs to promote the natural beauty of the country.

The State shall allocate finances for the preparation of plans for the development of tourism, support investment in building infrastructure in tourist cities, tourist resorts and tourist spots, support publicity for promotion of tourism, the protection and enhancement of tourism resources, the protection of the environment, research relating to tourism resources, the application of science and technology to the development of tourism and training and development of human resources in tourism, taking into account the adverse impacts of climate change on tourism and tourism resources."

(Based on the Law on Tourism (2005) of Vietnam – (Art. 6))

2.6 Principles of protection and development of tourism resources

"Tourism resources shall be protected, enhanced and rationally exploited for sustainable tourism development, taking into account the possible adverse impacts of climate change on tourism and tourism resources."

(Based on the Law on Tourism (2005) of Vietnam – (Art. 15))

2.7 Principles for formulation of tourism development plans

"....Assurance of national sovereignty, defense, security, social order and safety and a consideration of possible adverse impacts of climate change on tourism and tourism resources."

(Based on the Law on Tourism (2005) of Vietnam – (Art. 18))

2.8 Contents of tourism development plans

"The contents of a master plan for tourism development shall include:

..... Assessment of adverse environmental impacts and measures for protecting both tourism resources and the environment and for adapting to the possible adverse impacts of climate change on tourism and tourism resources."

(Based on the Law on Tourism (2005) of Vietnam – (Art. 19))

3. PROTECTION OF THE ENVIRONMENT

3.1 Protection of the tourism environment

"The natural and human environment shall be protected, enhanced and developed with a view to ensuring a green, clean, safe, secure and civilized tourism environment with the capacity to adapt to the adverse impacts of climate change.

Tourists, local communities and other organizations and individuals shall assist in protecting and preserving landscapes, the environment, national cultural identity and indigenous customs and practices, refrain from activities that may contribute to global warming and climate change and conduct themselves in a courteous and civilized manner, in order to promote tourism and the image of the country."

(Based on the Law on Tourism (2005) of Vietnam – (Art. 9))

4. MANAGEMENT

4.1 Participation of local communities in tourism development

"Local communities shall have the right to participate in and enjoy the benefits of tourism activities, be responsible for preserving tourism resources and the local cultural identity and for ensuring security, safety, social order and a clean environment, in order to promote tourism, taking into account the adverse impacts of climate change on tourism activities."

(Based on the Law on Tourism (2005) of Vietnam – (Art. 7))

4.2 Scope of State administration of tourism

".....To conduct surveys and an evaluation of tourism resources in order to formulate master plans for the development of tourism and to identify, tourist resorts, tourist spots, tourist routes and tourist cities, as well as tourist activities that may contribute to global warming and climate change and the adverse impacts of climate change on tourism and tourism resources"

(Based on the Law on Tourism (2005) of Vietnam – (Art. 10))

4.3 Survey of tourism resources

"The State administrative agency in charge of tourism at the central level shall be principally responsible for, and shall coordinate with relevant State administrative agencies and provincial-level Peoples Committees in-

- (a) surveying, evaluating and classifying tourism resources ,*
- (b) formulating tourism development master plans,*
- (c) identifying and promulgating tourist resorts, tourist spots, tourist routes and tourist cities, and*
- (d) identifying the possible adverse impacts of climate change on tourism and tourism resources."*

(Based on the Law on Tourism (2005) of Vietnam – (Art. 14))

4.4 Management of tourist resorts

"The scope of management of tourist resorts shall include:

Protection of tourism resources and assurance of environmental hygiene, social order and safety and measures for adaptation to the possible adverse impacts of climate change on tourism and tourism resources"

(Based on the Law on Tourism (2005) of Vietnam – (Art. 28))

4.5 Management of tourist spots

"....Protection and development of tourism resources and ensuring environmental sanitation and the adoption of measures for adaptation to the possible adverse impacts of climate change on tourism and tourism resources"

(Based on the Law on Tourism (2005) of Vietnam – (Art. 29))

4.6 Management of tourist routes

"..... Assurance of security and order and the protection of landscapes and environment along, tourist routes, and measures for adaptation to the possible adverse impacts of climate change on such landscapes and environment"

(Based on the Law on Tourism (2005) of Vietnam – (Art. 30))

4.7 Criteria for recognition as a tourist city

"A city that satisfies the following criteria shall be recognized as a tourist city:

..... Having a comprehensive infrastructure including physical and technical facilities to meet the diverse requirements of tourists, having trained manpower to meet the demands of tourism development and having adequate measures in place for adaptation to the possible adverse impacts of climate change on the tourism resources"

(Based on the Law on Tourism (2005) of Vietnam – (Art. 31))

4.8 Conditions for doing tourist accommodation business

"Organizations and individuals intending to carry on the business of providing accommodation to tourists shall comply with the following conditions:

..... Adopt measures, for-

- (a) ensuring the security and safety and the environmental sanitation of the tourist accommodation establishment,*
- (b) adapting to the possible adverse impacts of climate change on such establishment and*
- (c) preventing and extinguishing fires in such establishment, in compliance with the relevant provisions of law regulating tourist accommodation establishments."*

(Based on the Law on Tourism (2005) of Vietnam – (Art. 64))

5. RIGHTS AND DUTIES

5.1 Rights and Duties of the National Tourism Authority

The National Tourism Authority shall have the following rights and duties:

.....to take into account the adverse impacts of climate change on tourism and to adopt adequate measures to adapt to such adverse impacts.

(Based on the Tourism Law (2005) of Lao PDR – (Art. 69))

5.2 Rights and Duties of Concerned Agencies

Local authorities at all levels that have functions related to tourism shall coordinate with the National Tourism Authority and the Ministry within their respective areas of authority to ensure the growth and expansion of the tourism industry and shall, in doing so, take into account the adverse impacts of climate change on tourism and the measures necessary to adapt to such adverse impacts.

(Based on the Tourism Law (2005) of Lao PDR – (Art. 72))

5.3 Rights and Duties of Inspection Authorities

The tourism inspection authorities shall have the following rights and duties:

.....to take into account the adverse impacts of climate change on tourism and the measures necessary to adapt to such adverse effects.

(Based on the Tourism Law (2005) of Lao PDR – (Art. 74))

5.4 Rights of tourists

“.....To receive information on the impacts of climate change on tourist resorts and tourist spots and to contribute to measures for adaptation to the adverse impacts of climate change on tourism”

(Based on the Law on Tourism (2005) of Vietnam – (Art. 35))

5.5 Rights and obligations of organizations and individuals doing tourist accommodation business

“.....To take measures to ensure environmental sanitation, food hygiene and equipment safety in the tourist accommodation establishment, to comply with regulations for the prevention and extinguishing of fires in such establishment, to ensure the safety of the life, health and property of tourists staying in such establishment and to ensure the adoption of measures for adaptation to the adverse impacts of climate change on such establishment.”

(Based on the Law on Tourism (2005) of Vietnam – (Art. 66))

5.6 Rights and obligations of organizations and individuals doing business in development of tourist resorts and tourist spots

"...To manage, protect and preserve tourism resources and the environment, to ensure security, order and safety in such tourist resorts and tourist spots and to adopt adequate measures for adaptation to the adverse impacts climate change on such tourist resorts and tourist spots."

(Based on the Law on Tourism (2005) of Vietnam – (Art. 68))

5.7 Rights and obligations of tourist guides

"...to .Promote environment-friendly tour programs, and to abstain from and discourage activities that may contribute to causing climate change"

(Based on the Law on Tourism (2005) of Vietnam – (Art. 76))

6. ENFORCEMENT

6.1 Purpose of the Fund

The National Tourism Fund shall be established for the development and promotion of tourism in particular, for developing the human resources and facilities required for tourism, for promoting the advertising and marketing of tourism, for performing obligations towards international organizations relating to tourism of which the State is a member and for the conduct of research on the adverse impacts of climate change on tourism and the measures necessary to adapt to such adverse effects.

(Based on the Tourism Law (2005) of Lao PDR – (Art. 60))

6.2 Prohibited acts

".....Causing harm to national sovereignty, national interests, defense, security, social order and safety, cultural traditions, the environment, biodiversity and ecosystems."

(Based on the Law on Tourism (2005) of Vietnam – (Art. 12))

Chapter 19 - CULTURAL AND HISTORICAL HERITAGE

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

Historical sites in Cambodia, Vietnam and Lao PDR will all be affected by climate change. There are concerns regarding impacts on world heritage sites in Cambodia such as Angkor Wat and areas of Tonle Sap Lake and Cardamom Mountain range. Similar concerns have been raised in Vietnam and Lao PDR where national protected areas and places of cultural and historical significance including several declared World Heritage Sites by UNESCO, such as hoi An and Cu Lao Cham, are at risk. Since these countries are heavily dependent on tourism as a source of revenue, adverse impacts on heritage and other sites will have impacts on their economies as well.

Cambodia is taking steps to mitigate the impacts of climate change on heritage sites through policy, legislation and regulation. It will establish appropriate legal and policy frameworks, adequate management plans and effective monitoring systems for conservation and protection of protected areas and areas of cultural and historical significance. It will also strengthen enforcement of the relevant laws and encourage community participation in the management of these sites. Lao PDR will formulate policies to protect and conserve sites of historical and cultural significance and will also strengthen the laws relating to these areas. Vietnam will establish policy guidelines and relevant legislation for the protection and conservation of places of cultural and historical importance.

The *Cambodian Law on the Protection of Cultural Heritage 1996*, states that its purpose is to protect national cultural heritage and cultural property in general against illegal destruction, modification, alteration, excavation, alienation, exportation or importation. It has been proposed that these purposes should also include protecting them

from the adverse impacts of climate change. The law applies to movable and immovable cultural property, whether publicly or privately owned, whose protection is in the public interest. Designated agencies will be responsible for policy formulation and implementation in this regard. It has also been proposed that the *Law on Establishing Protected Cultural Zones in the Siem Reap/Angkor Region and Guidelines for their Management dated May 28, 1994* require that "The guideline formulated under this law shall take into account the adverse impacts of climate change on unsustainable development within the area as well as activities that can contribute to adverse impacts on the environment including those that could contribute to climate change and thereby adversely affect the cultural and natural heritage." The management of natural resources will include such provisions as raising awareness of the people of the possible adverse impacts of climate change on heritage sites as a result of the destruction of natural resources.

There are no laws relating to cultural and historical sites in Lao PDR.

The *Vietnam Law on Cultural Heritage (2001)* deals with both intangible and tangible cultural heritage having historical, cultural or scientific value. All cultural heritage underground, on the mainland, on islands, in inland waters and marine territory are covered by this law. The State exercises the unified management over cultural heritage which belongs to the people and all individuals and organizations have the duty to protect this heritage. The suggested changes include recognizing that changing climate and weather patterns caused by climate change will have significant adverse impacts on its culture and heritage thereby providing a legal basis for the adopt policies and laws to address this problem. Other changes include obligations on organisations and individuals to protect the country's cultural heritage from the adverse impacts of climate change and State management of cultural heritage to also take this requirement into consideration.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

The draft legislative provisions cover the following matters:

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1. GENERAL PROVISIONS

1.1 Purpose of the Law

"The purpose of this law shall be to protect national cultural heritage and cultural property in general from illegal destruction, modification, alteration, alienation, exportation or importation including, the protection of such cultural heritage and cultural property from the adverse impacts of climate change and the adoption of measures to adapt to such adverse impacts.

(Based on the Law on Protection of Cultural Heritage 1996 of the Kingdom of Cambodia – (Art. 1))

1.2 Meaning of terms and expressions

"Climate change means changes in climate patterns resulting in extreme weather events such as heat waves, floods, storms, droughts and bushfires which have significant adverse effects on culture and heritage."

(Based on the Law of Cultural Heritage (2001) of Vietnam – (Art. 4))

2. PRINCIPLES, POLICIES AND PLANS

2.1 Guidelines

"The guideline formulated under this law shall take into account the adverse impacts of climate change resulting from unsustainable development within the area as well as activities that can contribute to the causing of adverse impacts on the environment, including activities that could contribute to the causing of climate change."

(Based on Law on Establishing Protected Cultural Zones in the Siem Reap/Angkor Region and Guidelines for their Management Dated May 28, 1994 of the Kingdom of Cambodia – (Art. 7))

2.2 Guidelines on water management

"The following guidelines are provided regarding water management:

a. All protected cultural sites:

- Undertake the partial restoration of the old hydraulic structures and water management systems by the development of water systems taking into account the impact of climate change on water resources resulting in periodic water shortages and the need to adopt adaptation measures, including new and improved systems of management, to ensure water supply throughout the year for irrigation works and consumption."*

Based on Law on Establishing Protected Cultural Zones in the Siem Reap/Angkor Region and Guidelines for their Management Dated May 28, 1994 of the Kingdom of Cambodia – (Art. 14))

2.3 State policies on cultural heritage

"The State shall adopt policies for protecting and promoting national values and cultural heritage in order to encourage people's appreciation of their cultural heritage, contribute to the socio-economic development of the country, and to encourage domestic and foreign organizations and individuals to contribute to, or provide financial support for the protection and promotion of national values and cultural heritage, including their protection from the adverse impacts of climate change"

(Based on the Law of Cultural Heritage (2001) of Vietnam – (Art. 9))

3. MANAGEMENT

3.1 Management of natural resources

The following guidelines are provided regarding the management of natural resources:

a. All protected cultural sites:

- To raise awareness of the people on the possible adverse impacts of climate change on the temple resulting from the destruction of natural resources and required adaptation measure.

Based on Law on Establishing Protected Cultural Zones in the Siem Reap/Angkor Region and Guidelines for their Management Dated May 28, 1994 of the Kingdom of Cambodia – (Art. 16))

3.2 State management of cultural heritage

“State management of cultural heritage includes:

..... Organizing and conducting activities for the protection and promotion of national values and cultural heritage having regard in particular, to the possible adverse impacts of climate change on cultural heritage and educating the public on policies and legislation on cultural heritage”

(Based on the Law of Cultural Heritage (2001) of Vietnam – (Art. 54))

3.3 The State culture and information inspectorate

The State culture and information inspectorate whose function is to inspect and protect cultural heritage, has the following duties:

..... To monitor the adverse impacts of climate change on national values and cultural heritage and to recommend measures to mitigate or adapt to such adverse impacts.

(Based on the Law of Cultural Heritage (2001) of Vietnam – (Art. 66))

4. RIGHTS AND DUTIES

4.1 Rights and obligations of organizations and individuals

“Organizations and individuals shall have the following rights and obligations:

.... To protect cultural heritage against the adverse impacts of climate change”

(Based on the Law of Cultural Heritage (2001) of Vietnam – (Art. 14))

Chapter 20 - FINANCE, PLANNING AND MANAGEMENT

SECTION I - OVERVIEW OF THE EXTENT OF VULNERABILITY AND THE SUGGESTED CHANGES TO THE CURRENT LEGAL FRAMEWORK

Cambodia, Lao PDR and Vietnam have consistently reiterated that their contribution to climate change is negligible and they are the victims of climate change rather than the polluters. Yet, all three countries have committed themselves to both adaptation and mitigation measures and to contributing fully to reversing climate change. However, this will inevitably place a heavy burden on them. In Cambodia, the need to respond to the impacts of climate change has placed strains on current financial allocations. Similarly, in Lao PDR the need to incorporate mitigation concerns in the planning and development process has been acknowledged. However, there are budgetary constraints in the implementation of the National Adaptation Programme of Action (NAPA). Vietnam faces the same situation, as enabling activities to adapt to climate change requires significant funding at all levels.

All three project countries are hampered by such factors as poverty and lack of adequate infrastructure in formulating and implementing adaptation strategies. Cambodia will strengthen revenue administration and introduce additional revenue raising measures in order to acquire the resources to strengthen, improve and implement plans for adaptation measures. Lao PDR will implement the National Adaptation Programme of Action and the Disaster Management Strategic Plan. In order to take adaptation measures it will have to garner support from various bilateral and multilateral funding sources. Vietnam will provide government funding as well as obtain funding from donors in order to implement projects.

In Cambodia the *Law of Investments* governs all investment projects of both Cambodian citizens and foreigners. To provide the necessary basis for climate change concerns it has been proposed that the law should be applied with due regard to the need to prevent or mitigate the risks to climate change resulting from such investment, as well as the adverse effects of climate change on the investments. The Cambodian government will make available incentives to encourage investments in such fields as environmentally sound projects to promote environmental

sustainability, human health and sustainable economic growth, by avoiding or minimizing the adverse impacts of climate change on society.

In Lao PDR the *State Budget Law 2006* defines the principles, regulations and measures in planning, implementing, evaluating and auditing the State budget. Its objectives in this regard are to achieve a stable national financial system with the aim of constructively contributing to sustainable growth and national socio-economic development. According to the State budget policy, socio-economic development includes human resources development, public administration, construction of important infrastructure, scientific research, use and development of technology to produce goods and services and eradication of poverty. State budget expenditures are classified by sections and it is proposed that in order to incorporate climate change concerns into this law it should provide that budget classifications will include adaptation to the adverse impacts of climate change.

In Vietnam the *State Budget Law (2002)* notes that State budget expenditure includes spending on socio-economic development. It has been proposed that climate change concerns be incorporated to promote protection of the environment and ecosystems and adaptation to climate change. Further proposals provide a basis for determining such expenditures. The central budget and the budgets of local administrative bodies at all levels shall be entitled to include a reserve of between 2% and 5% of total expenditure for spending on matters dealing with natural calamities including climate change adaptation measures. The tasks and powers of the National Assembly which includes deciding on important national projects and works with investments from the State budget sources, will, it is proposed, also have the power to decide the budget for critical national climate change adaptation programmes. The *Investment Law (2005)* provides, among others, for investment activities for business purposes, state management of investment in Vietnam and offshore investment. Proposed changes to this law will provide that domains entitled to investment preferences include study on global warming and climate change as well as reduction of environmental pollution, awareness raising on climate change and measures to adapt to and mitigate climate change impacts.

SECTION II - DRAFT LEGISLATIVE PROVISIONS FOR SUPPORTING ADAPTATION TO CLIMATE CHANGE

The draft legislative provisions cover the following matters:

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1. GENERAL PROVISIONS

1.1 General provisions

"This law applies to all investment projects in the country in which investments have been made by citizens or foreigners. It shall be applied in such a manner as will prevent or mitigate risks to climate change resulting from the carrying on an investment project as well as the adverse impacts of climate change on such project."

(Based on the Law of Investments of the Kingdom of Cambodia – (Art. 1))

2. INVESTMENT

2.1 Investment incentives

*"The Government shall provide incentives to encourage investments in important fields such as the following.
..... investment in environmentally sound projects that ensure environmental sustainability for promoting human health and sustainable economic growth, by preventing or minimizing the adverse impacts of climate change."*

(Based on the Law of Investments of the Kingdom of Cambodia – (Art. 5))

2.2 Domains entitled to investment preferences

".....use of technologies to prevent or mitigate the effects of global warming and climate change"

(Based on the Investment Law (2005) of Vietnam – (Art. 27))

2.3 Subjects and conditions of investment preferences

"...The grant of investment preferences referred to in Clause 1 of this Article shall apply to new investment projects as well as to existing investment projects which expand the scale of their operations or raise their technical capacity or business capability or renew their technology or raise their product quality or reduce environmental pollution or take measures to raise awareness on climate change or adopt measures to mitigate or adapt to the adverse impacts of climate change."

(Based on the Investment Law (2005) of Vietnam – (Art. 32))

3. BUDGETARY PROVISIONS

3.1 State budget expenditures by sectors, programmes and projects

In addition to the classification of the budget as provided for by Article 18 of this law, expenditures in the State budget shall be classified according to sectors, programmes and projects as follows:

..... Classification by sectors: education, health, economic, socio-cultural, science, environment including adaptation to the adverse impacts of climate change, public administration, national defense and security, social welfare, and other sectors;

(Based on the State Budget Law (2006) of Lao PDR – (Art. 23))

3.2 State budget expenditure

"....Expenditure from the State budget includes expenditure on socio-economic development, including expenditure on protection of the environment and ecosystems and adaptation to the adverse impacts of climate change, on ensuring national defense and security, on maintaining the state administrative machinery, on the granting of aid and other expenditure authorized by law."

(Based on the State Budget Law (2002) of Vietnam – (Art. 2))

3.3 The central budget's expenditure tasks shall include

"The central budget's expenditure tasks shall include"

. Expenditure on supplements to local budgets.

... Expenditure on science and technology, environmental protection, adaptation to the adverse impacts of climate change and other non-commercial activities managed by central agencies;"

(Based on the State Budget Law (2002) of Vietnam – (Art. 31))

3.4 State budget estimation

".....The annual State budget estimates shall be prepared on the basis of the tasks assigned to the State for socio-economic development, environmental protection, adaptation to the effects of climate change and defense and security maintenance.

.....The expenditures in the budget estimates for socio-economic development, environmental protection and adaptation to the adverse impacts of climate change as well as for defense and security maintenance shall be based on the State's policies and objectives on these subjects. With regard to development investment expenditure, the estimates thereof shall be based on the investment plans, programs and projects already approved by the competent authorities, ensuring an adequate supply of capital in keeping with progress in the implementation of such programs and projects. For current expenditure, the estimates thereof shall be based on sources of revenues from taxes, charges and fees and shall be in compliance with the criteria and norms set by the relevant competent State agencies. For debt repayments, the estimates thereof shall be based on the debt repayment obligations of the estimating year."

(Based on the State Budget Law (2002) of Vietnam – (Art. 37))

4. FUNDS

4.1 Reserve funds for environmental protection and climate change

"The expenditure estimates of the central budget and the budgets of the local administration at all levels may include a reserve of between two and five percentum of their respective total expenditures for spending on the prevention and combating of fires and other natural calamities, protection of the environment and ecosystems including, adaptation to the adverse impacts of climate change, the performance of important defense and security tasks and other urgent tasks for which no provision or no adequate provision has been made in the expenditure estimates."

(Based on the State Budget Law (2002) of Vietnam – (Art. 9))

CHAPTER 21- CONCLUSIONS

Al Gore in his recent publication *Our Choice- A Plan to Solve the Climate Crisis* states “Even though we are inherently vulnerable to the desire for short-term gratification and even though we usually have an ingrained preference for short-term actions, those preferences can be and often are overridden by an innate and powerful desire to do right by those to whom we feel some connection.” In many ways, the action taken by the Governments of Cambodia, Lao PDR and Vietnam in collaborating with UNEP to review national laws and regulations with a view to aligning them with the current and future requirements of adaptation to the adverse impacts of climate change – despite severe resource constraints and preoccupation with other more immediate national challenges- is a demonstration of what Al Gore calls the “innate and powerful desire to do right by those to whom we feel some connection.” This publication seeks to take the lessons learned from this pioneering engagement to a wider global audience.

The urgency of taking action to improve preparedness and response strategies to cope with the impacts of future climatic conditions has been recognized by political leaders and scientists throughout the world without exception. However, national efforts in this direction seem currently limited to a few piecemeal measures at policy and legal development. This project, which focused on the impacts of climate change on seventeen critical sectors of national activity and developed legal formulations to facilitate appropriate response measures may be viewed as one of the earliest efforts at developing a holistic, integrated and cohesive policy and regulatory framework to address adaptation to climate change.

These policy and legal formulations could serve as a tool for similar action by other countries, in particular developing countries, to strengthen their respective adaptation policies and legal frameworks. The continuing support of UNEP to strengthen the capacity of developing countries to develop their policy and legal frameworks for adaptation would be a significant and tangible contribution towards effectively addressing one of the principal global challenges of the climate crisis, namely, adaptation to the adverse impacts of climate change. Such policy and legal formulations would also serve as a vehicle for directing the required human, technological

and financial resources for adaptation and enhance public awareness and participation.

The following are some of the principal benefits that are expected to flow from the development of national legal frameworks for adaptation, and which may be considered by a wide range of developing countries while devising their climate change policies and strategies.

ROLE OF STRENGTHENED ADAPTATION LAWS AND REGULATIONS IN CRAFTING NATIONAL CLIMATE STRATEGIES AND POLICIES

It is common knowledge that enactment of national legislation including amendment of existing laws and regulations is not undertaken lightly by governments. Usually this involves an elaborate and often time-consuming process of consultation among various government institutions including Ministries, departments and agencies concerned with various aspects of the subject matter and at times non-governmental institutions and a careful examination of their financial and budgetary implications by the Ministries in charge of the subjects of finance and planning. These processes are generally initiated pursuant to decision of the Cabinet of Ministers. It must be expected that national efforts to further strengthen existing laws and regulations to enable these to support the development and implementation of measures for adaptation to climate change will also follow such established procedures and is therefore likely to be a slow, elaborate, time-consuming process involving the participation of a broad cross section of key stakeholders. This position was reiterated by the National Teams of Cambodia, Lao PDR and Vietnam throughout the implementation of the Project. They nevertheless participated in this work with the full backing of their respective governments, convinced that the process of legal review was important as it could contribute to initiating national processes with the engagement of all relevant stakeholders to develop appropriate policies, programmes and projects and regulatory mechanisms to determine the precise nature and extent of the adverse impacts of climate change and corresponding measures for adaptation and to develop and implement appropriate national responses based on these findings.

The enthusiastic support given to the project by the governments of the three Project Countries as well as all the senior officials and other stakeholders who participated in what turned out to be a laborious, exacting and time consuming review of a large number of national laws and regulations and the national consensus on the proposed changes that was forged through inter-ministerial consultations, has raised expectations that the outcome of the review and the suggested legal changes would form a sound basis for the future work in these three countries for the development and implementation of national, regional, provincial and local measures for adaptation to the adverse impacts of climate change. The outcome is also likely to constitute the cornerstone of international cooperation with United Nations agencies and bodies and others, in the area of climate change.

This is borne out by the fact that at the Second Consultative Meeting on Strengthening Adaptation Law in Cambodia, Lao PDR, Vietnam held under UNEP auspices on 1-2 February 2010 in Bangkok the participants from the three Project Countries agreed on the following measures to further advance the outcome of the Project at national level in the three Project Countries through activities that could support adaptation to climate change:

a) The National Teams would work closely with line Ministries and policy makers in advancing and operationalising, as appropriate, the work done by them in regard to suggested improvements in the legal and regulatory mechanisms in the area of adaptation.

b) The national teams will communicate to UNEP their requests for further support from UNEP for developing and implementing projects, based on the work carried out under this Project, so that tangible benefits could accrue in the area of adaptation to climate change to the three project countries.

Based on this experience, it seems possible to draw some important conclusions relating to the nexus between policy and law. While it is true that, as Agenda 21 confirms, "Laws and regulations suited to country-specific conditions are among the most important instruments for transforming environment and development policies into action" the corollary seems equally borne out by the actions of the three project countries and the actions of developed and developing countries mentioned below, that legal directives have the capacity to, and usually does, trigger the further expansion and development of the

basic policies on which the legal provisions are based, which in turn lead to the development and implementation of tangible measures in furtherance of the stated goals.

The new Climate Change Law of the Philippines which established a Climate Change Commission that is empowered to recommend legislation, policies, strategies, programs on and appropriations for climate change adaptation and mitigation and other related activities underscores the importance of legislation in promoting the development of appropriate policies and further laws and regulations for achieving the goals of adaptation to climate change. As pointed out in Chapter 3, similar institutional mechanisms with comparable mandates have been established in Indonesia and is being planned in the Republic of Korea

Furthermore, a survey of some of the innovative actions taken by several developed and developing States, towards realizing the goals of environmental protection, conservation of natural resources, mitigation of climate change and adaptation to the adverse impacts of climate change also appear to have their genesis in new legal rights and obligations that were incorporated in relevant national laws and regulations.⁴³ The following are some examples.

- **Energy**

(Biofuels, Wind energy, Solar energy, Phased closure of nuclear facilities and enhancing renewable energy component, Energy efficiency. Some of the laws in which these matters have been dealt with are: *The Renewable Energy (Electricity) Act 2000 of Australia, Eco-Power Act 2002 of Austria, The Renewable Energy Law 2006 of China, The Act on the Promotion of Use of Renewable Sources 2005 of the Czech Republic, Draft Climate Change Bill 2007 of the United Kingdom and the Draft Renewable Energy Bill of India*)

- **Climate Change**

Emissions Trading, CDM initiatives on carbon sequestration, phasing out polluting industries, mitigation and adaptation measures. Some of the laws in which these matters have been dealt with are: *Climate Change Act of October 2009 of the Philippines, Framework Law on Green Growth Bill of the Republic of Korea, Presidential Decree No. 46 of 2008*

⁴³ Green Breakthroughs - Solving Environmental Problems Through Innovative Policies and Laws, UNEP 2008

by which a National Council for Climate Change was established in Indonesia, New Zealand's the Climate Change Response Act 2002, Japan's Law concerning the Promotion of Measures to Cope with Global Climate Warming and the proposed Law to Combat Climate Change of China)

- **Biodiversity and Forestry**

Community forestry, Forest conservation and sustainable use of forest products, ecosystems management, peoples' participation in reforestation, preservation of cultural diversity. Some of the laws in which these matters have been dealt with are: *The Land Act, 1999 and The Village Land Act, 1999 of Tanzania, Biodiversity Law of Costa Rica, Forest Conservation and Development Act of Guyana, The Panchayats (Extension to the Scheduled Areas) Act (1996) India and the Law Introducing a Protection Regime for the Collective Knowledge of Indigenous Peoples Derived from Biological Resources- 2002 of Peru)*

- **Ecotourism**

The following are some laws which have been recently enacted that have as their objectives the promotion of ecotourism: *Kwazulu-Natal Nature Conservation Management Act (No. 9 of 1997), Fisheries and Coastal Resources Act (S.N.S. 1996, c. 25).Canada, Tourism Incentives Law of Costa Rica, Tourism Law of Ecuador and the Tourism Law of Chile*

WAYS IN WHICH THE LEGAL PROVISIONS COULD SUPPORT DEVELOPMENT AND IMPLEMENTATION OF MEASURES FOR ADAPTATION TO THE ADVERSE IMPACTS OF CLIMATE CHANGE

The following are some of the ways in which the draft legal provisions contained in this Guidebook would provide a legal basis for taking a wide variety of action at national, provincial and local levels to address climate change issues, in particular, adaptation to the adverse impacts of climate change.

1. Inclusion of the phrase “*taking into account the requirements of adaptation to the adverse impacts of climate change*” in key provisions of laws that provide a legal basis for interpreting the law in the context of climate change.

2. Establishment/strengthening of institutional measures to address adaptation issues.
3. Encouraging and promoting internal consultations and collaboration among national, provincial and local agencies in addressing climate change issues.
4. Development/strengthening of strategies, policies, programmes and projects focusing on adaptation to climate change.
5. Integrating climate change considerations in national development programmes and projects.
6. Securing budgetary allocations and funds from national and international sources for adaptation activities.
7. Enhancing rights and duties among various stakeholders in regard to actions need to take into account the adverse impacts of climate change as well as those that contribute to climate change.
8. Enhancing capacity building and technology transfer on climate change matters
9. Incentives and other economic instruments to promote action on addressing climate change, including taking adaptation measures.
10. Environmental impact assessment to include assessment of impacts of climate change.
11. International cooperation.

The following is a brief survey of the manner in which these objectives could be pursued through the use of appropriate legal provisions.

1. ***Inclusion of the phrase “taking into account the requirements of adaptation to the adverse impacts of climate change” in key provisions of laws that provides a legal basis for interpreting the law in the context of climate change.***

Incorporation of climate change considerations in the objectives and purposes of a law will provide a legal basis for the interpretation of the law in the context of considerations relating to climate change, unless the specific provisions are such as to exclude such consideration. Such provisions could be incorporated in the articles dealing with general provisions, objectives, principles or definitions. Legal provisions are often susceptible of several meanings. Over time courts have developed rules of interpretation

to resolve these ambiguities. Including climate change concerns in an objects or principles clause would put to rest any doubts about the purport of a provision in the law and will enable the courts to give a purposive construction to the provision. This is sought to be achieved in Vietnam's Law on dikes by the inclusion of the words ".....Ensuring sustainable development and effective adaptation to climate change" and "to take appropriate measures for adaptation to the impacts of climate change, to ensure sustainable management of the environment by the proper management of natural resources, to prevent forest degradation contributing to climate change and to encourage the use of forests as carbon sinks" to the article dealing with Principles.

Similarly, the scope of the Vietnamese law on Biodiversity has been extended to cover climate change by the simple expedient of adding the words "taking into account the impacts of climate change" so that the article on Objectives would read as follows: "The objective of this law shall be to ensure the management and conservation of biodiversity, and the sustainable use of natural resources, in protected areas, taking into account the impacts of climate change."

This mechanism has been used extensively by the three Project Countries to extend the scope of their national laws to cover sustainable management of natural resources taking into account climate change considerations and as well as to develop and implement strategies, policies, programmes and projects in a manner that takes full account of climate change considerations, including adaptation to climate change.

Other examples are the principles of fisheries activities included in the law on Fisheries of Vietnam. "To ensure economic efficiency concurrently with the protection and development of aquatic resources and with the protection of the environment, natural landscapes, ecosystems and biodiversity and in conformity with measures to adapt to the adverse impacts of climate change," and the provision in the Cambodian law on the Protection of Cultural Heritage 1996, setting out the purposes of the law, viz. "The purpose of this law shall be to protect national cultural heritage and cultural property in general from illegal destruction, modification, alteration, alienation, exportation and importation, including the protection of such cultural heritage and cultural property from the adverse impacts of climate

change and the adoption of measures to adapt to such adverse impacts."

2. Establishment/strengthening of institutional measures to address adaptation issues.

While the addition of climate change including adaptation to the mandate of existing institutions such as ministries, departments and agencies through appropriate amendments to existing laws is a relatively simple way of providing the necessary institutional framework for the management of climate change, two Asian countries, Indonesia and the Philippines have established separate laws by which they have established new institutions and invested them with an extensive mandate to address all climate change matters in a holistic and integrated manner.

As explained in Chapter 3, the Philippines Law establishes a Climate Change Commission attached to the Office of the President of the Philippines which is empowered to recommend legislation, policies, strategies, programs on and appropriations for climate change adaptation and mitigation and other related activities. Its mandate also includes international cooperation, promoting multi-stakeholder engagement to prevent and reduce the adverse impacts of climate change and, at the same time, maximize the benefits of climate change as well as institutionalizing government initiatives to achieve coordination in the implementation of plans and programs to address climate change in the context of sustainable development and disaster management.

A similar institutional arrangement has been established in Indonesia chaired by the President of the Republic of Indonesia and comprising several Ministers in charge of the sectors dealing with climate change issues and its mandate is similar to that of the Philippines Climate Change Commission. There are other bodies with more limited mandates but with a broad supervisory and advisory range. Under the Vietnamese law on public health, "the Ministry shall be responsible for managing and protecting the living environment, the natural environment and ecosystems affecting the lives of the people, and for the enforcement of regulations for the protection of the environment and ecosystems."

Another example is the Vietnamese National Council for Atomic Energy Development and Application, whose function is to advise the Prime Minister "on the strategies and policies on the development and application of

atomic energy and on plans for atomic energy research, development and use, whilst ensuring compliance with standards for the protection of the environment and ecosystems and with measures for adaptation to the adverse effects of climate change." A single authority consisting of all bodies concerned with the environment will certainly enable the adoption of an integrated approach to climate change.

3. Encouraging and promoting internal consultations and collaboration among national, provincial and local agencies in addressing climate change issues

The pervasive nature of the impacts of climate change on various dimensions of a country's economy, environment and society demands a very high level of collaboration among ministries and agencies at national and local levels for the development and implementation of appropriate adaptation measures. For example, the impacts on water, irrigation, agriculture, forestry, natural resource conservation and sustainable use, disaster management are so closely interconnected that nothing short of collective action among the ministries and agencies entrusted with the management of these sectors is likely to yield meaningful results. Promoting close consultation, cooperation and collaboration among national and local institutions in the development of strategies, policies, and measures for addressing climate change and their effective implementation is therefore one of the major benefits that could be achieved through legal reforms.

It will be recalled that the Philippines and Indonesian climate change laws expressly mandate their respective Climate Change Commissions to enlist the participation of national and local governments, businesses, nongovernment organizations, local communities and the public to prevent and reduce the adverse impacts of climate change and, at the same time, maximize the benefits of climate change. The draft legislative provisions proposed for promoting such cooperative action reads as follows: In implementing the present law, the Ministry shall conduct consultations with other concerned ministries and where necessary the Government shall set up a joint commission for coordinating activities among the Ministries concerned and for addressing issues arising from the adverse effects of climate change.

Other examples are afforded by Article 4 of the Urban Plans Law 1999 of Lao PDR "Urban planning shall be conducted systematically and

in collaboration with all concerned sectors, local administrations and the people....Urban plans at the city level shall be consistent with urban plans at the provincial level, urban plans at the provincial level shall be consistent with urban plans at the national level, and urban plans at the regional level shall be consistent with urban plans at the national level, and shall take into account the adverse impacts of climate change and adopt adequate measures to adapt to such adverse effects."

Article 14 of the Vietnamese law on Tourism states that "The State administrative agency in charge of tourism at the central level shall be principally responsible for, and coordinate with relevant state administrative agencies and provincial level Peoples Committees in, surveying, evaluating and classifying tourism resources, for the formulation of tourism development master plans, for identifying and promulgating tourist resorts, tourist spots, tourist routes and tourist cities, and for identifying the possible adverse impacts of climate change on tourism and tourism resources. Consultation is especially important in federal or quasi-federal jurisdictions. Environment can be a subject assigned to the centre or to the devolved unit or to both the centre and the devolved units, as in Sri Lanka. Efforts must be made to ensure uniformity of approach to climate change, by both the centre and the devolved units. In Australia, where some aspects of environment are within the legislative competence of the States, the centre has used its treaty making power to secure a degree of uniformity.

4. Development or/ strengthening of strategies, policies, programmes and projects focusing on adaptation to climate change

It is evident that most of the laws dealing with the management of sectors that are vulnerable to the impacts of climate change such as, Water, Agriculture, Health, Forestry, Coastal Zones, etc. were enacted long before climate change became a central global and national concern. Consequently, there is an urgent need to integrate climate change considerations in the interpretation, application and implementation of these laws. The legal review process underscored the importance of doing this to enable these laws to address the impacts of climate change.

Accordingly, the national teams incorporated several provisions in their sectoral laws to promote the integration of climate change

considerations in national policies, strategies, programmes and projects in almost every sector through provisions such as: “Formulate the policy on water resources management, conservation and development taking into account the specific requirements and demands of each zone”; “The State shall adopt policies for the protection of the environment, ecosystems and biodiversity, including policies providing for effective adaptation to climate change and for the sustainable development of the country”; “To formulate and direct the implementation of the strategy, policies and plans for the protection, exploitation, use and development of water resource”; “The prevention, combating and control of the harmful effects of water and the adverse impacts of climate change on water resources.”

The legislative proposals founded on the proposals made by the country teams but applicable more widely, have been included in this publication. Some examples of provisions integrating climate change concerns into national policies are “The State shall ensure that road transport is maintained in a manner that is orderly and safe and ensures environmental protection, emissions reduction, adaptation to the adverse effects of climate change and sustainable development “ (Based on Article 4 of the Law on Road Traffic, Vietnam). “Duties of Fisheries Administrator... to integrate concerns about climate change into fisheries resource management policies, plans and standards” (Based on Article 9 of

the Fisheries Law, Cambodia). “The State shall adopt policies for the management, protection and the rational, economical and effective use of, mineral resources, whilst protecting the environment and ecosystems, and ensuring national defense and security, labour safety and labour hygiene in mining activities and compliance with measures to adapt to the adverse impacts of climate change.” (Based on Article 4 of the Law on Minerals, Vietnam). “The State encourages the application of advanced sciences and technologies, and the training of human resources, for the development of a modern railway system whilst taking into account the need to protect the environment and adapt to the adverse impacts of climate change.” (Based on Article 5 of the Law on Railways, Vietnam)

The inclusion of climate change concerns in the statutory provisions relating to the policies on water, land use etc., enables an affected person to challenge in the courts any deviations in the implementation of these policies.

5. Integrating climate change considerations in national development programmes and projects

Closely connected with the above nexus between law and policy, is the integration of climate change considerations in national development plans, programmes and projects. Legal provisions aimed at achieving this

Some examples of this type of provisions are the following:

- “Planning of airports and airfields shall take into account the national socio-economic development strategy, environmental protection laws, policies formulated to respond to the adverse effects of climate change, sustainable development policies, defense and security concerns, development plans of the transport sector and of other sectors and localities, and trends in the development of international civil aviation.”;
- “Natural resource use planning shall be integrated with natural resource conservation planning, including conservation of the environment and ecosystems and the avoidance of uses that contribute to global warming and climate change.”;
- The National Protected Area Strategic Management Plan shall include, inter alia, the following: “Utilizing natural resources rationally and economically, using energy economically and efficiently, developing clean and renewable energies, promoting waste reduction, and reuse and recycling, with a view to reducing green house gas emissions, mitigating climate change and adapting to the adverse impacts of climate change.”;
- The National Protected Area Strategic Management Plan shall include, inter alia, the following: “Utilizing natural resources rationally and economically, using energy economically and efficiently, developing clean and renewable energies, promoting waste reduction, and reuse and recycling, with a view to reducing green house gas emissions, mitigating climate change and adapting to the adverse impacts of climate change.”;
- “To formulate and direct the implementation of the strategy, policies and plans for the protection, exploitation, use and development of water resource having regard to the prevention, combating and control of the harmful effects of water and the adverse impacts of climate change on water resources”.

- *“The relevant authority shall have the duty to prepare a development master plan for that region and shall submit such master plan to the Council of Ministers for its approval. The master plan shall take into account the adverse impacts of climate change on the region and identify appropriate measures for adaptation to those adverse impacts”*
- *“The competent authorities shall not approve investment projects in electricity which have adverse impacts on the environment and ecosystems, and projects that do not provide measures to redress the damage to the environment and ecosystems or to adapt to the adverse impacts of climate change”.*
- *“The contents of a master plan for tourism development shall include... an assessment of adverse environmental impacts and measures for protecting both tourism resources and the environment and for adapting to the possible adverse impacts of climate change on tourism and tourism resources.”*

integration enjoins ministries agencies and institutions engaged in the development and implementation of development plans and programmes to ensure that adequate consideration is given to current and prospective impacts of climate change in the formulation and implementation of development plans and programmes.

The inclusion of climate change concerns in the statutory provisions relating to projects and programmes, enables a court, on the application of an affected party, to restrain acts committed in the course of implementing the project or programme which could have adverse impacts on climate change.

6. Securing budgetary allocations and funds from national and international sources for adaptation activities

Some of the suggested draft legal provisions provide a platform for mobilizing and investing resources to develop for the offer of valuable land, tax and other incentives for the

commencement of hi-tech activities with a view to affording a leading role for high technologies in scientific and technological development for among other things environmental protection, adaptation to climate change and sustainable development as well as for the collection and dissemination of information on the possible adverse impacts of climate change on protected areas and related adaptation measures. They also provide incentives to encourage investments in environmentally safe projects that ensure environmental sustainability for promoting human health and sustainable economic growth, by preventing or minimizing the adverse impacts of climate change and in regard to land, for example, enlarging forest area in order to prevent floods, absorb carbon dioxide and adapt to the adverse effects of climate change. Yet other provisions provide expressly for budgetary allocations for protection of the environment and ecosystems and adaptation to the adverse impacts of climate change.

Reference to budgetary provision for adaptation to climate change in the law itself strengthens the

The following are some provisions providing for budgetary allocations to meet climate change concerns:

- *“Environmental protection funds shall be used for the following activities...funding projects relating to scientific and technological research on environmental protection or for monitoring the implementation of environmental protection legislation or for the identification of the adverse impacts of climate change on the environment and the measures necessary to adapt to such adverse impacts*
- *“Funds allocated from the State budget for biodiversity conservation and sustainable development shall be used for the following purposes....conducting basic surveys on biodiversity and assessing the environmental impacts, especially the impacts of climate change, on biodiversity.”*
- *“Expenditure from the state budget includes expenditure on socio-economic development, including expenditure on protection of the environment and ecosystems and adaptation to the adverse impacts of climate change, on ensuring national defense and security, on maintaining the state administrative machinery and on granting of aid and other expenditure authorized by law”.*
- *“The National Tourism Fund shall be established for the development and promotion of tourism, and in particular, for developing the human resources and facilities required for tourism, for promoting the advertising and marketing of tourism, for performing obligations to international organizations relating to tourism of which the country is a member, and for the conduct of research on the adverse impacts of climate change on tourism and the measures necessary to adapt to such adverse impacts.”.*

hand of the administrator. In the absence of such a provision, the administrator will have to decide between a multiplicity of competing claims and the environment is generally accorded a low priority. It also ensures accountability. The administrator will have to demonstrate that he has spent the funds for the purposes for which they were allocated.

The review process would also help the project countries to focus on areas in which further investments are necessary to undertake adaptation activities in the seventeen sectors in respect of which the applicable laws have been examined. These areas may be the subject of future projects and programmes that are developed in collaboration with international financial institutions such as the World Bank, the Global Environmental Facility and the Asian Development Bank as well as UN agencies and bodies such as UNDP, UNEP, UNIDO and others. This was one of the conclusions of the Second Consultative Meeting where the participants agreed that the national teams will communicate to UNEP their requests for further support from UNEP for developing and implementing projects, based on the work carried out under this Project, so that tangible benefits could accrue in the area of adaptation to climate change to the three project countries.

7. Enhancing rights and duties among various stakeholders in regard to actions need to take into account the adverse impacts of climate change as well as those that contribute to climate change

The review of national sectoral laws showed conclusively that none of the laws obliged institutions, officials or citizens to take climate change considerations in particular, possible adverse impacts of climate change into account in the implementation of the laws and regulations. The growing evidence of the potentially devastating consequences of climate change makes it imperative for everyone to be vigilant of these prospects and to take every possible action to minimize the adverse impacts and to plan and implement measures for adaptation. The legal review process provides a timely opportunity to achieve this objective.

Command and control legal regimes are not very successful in changing behaviors or achieving desired outcomes. It is now accepted that engaging as many stakeholders as possible in the implementation of a law is the key to its success. As climate change affects everyone, the involvement of as many people as possible in meeting its challenges cannot be overemphasized.

The following is a sampling of possible legal formulations:

- *"Both farmers and the government agencies shall take into account the adverse impacts of climate change on the irrigation system and take appropriate measures to ensure that the people can use water from the system for agriculture and other purposes, both during the wet and dry seasons";*
- *"The Nature Protection and Conservation Administration shall have the following principal duties:to take appropriate action to prevent possible adverse impacts of climate change on protected areas and to manage such protected areas in a sustainable manner so that they would not contribute to climate change and ensure that its management and conservation is consistent with the relevant procedures and regulations as well as with measures providing for adaptation to the adverse impacts of climate change on such areas.";*
- *The Ministry shall issue regulations on the levels of toxins or hazardous substances that may be contained in hazardous waste which is required to be destroyed in order to protect human health and the environment and to conserve bio-diversity. In determining such levels the Ministry shall take into account the impacts the release of such toxins or hazardous substances into the atmosphere will have on climate change.";*
- *"Every person generating hazardous wastes shall submit quarterly reports on the wastes generated by him or her to the Ministry. The report shall include possible impacts of such waste on human health and the environment including the contribution that the storage, treatment and elimination of such waste may make to climate change and, and the identification of appropriate adaptation measures".*

8. Enhancing capacity building and technology transfer on climate change issues

Awareness of the way in which climate change impacts on individuals and society is an absolutely essential pre-requisite for engaging relevant stakeholders in taking effective action to minimize the adverse impacts of climate change through adaptation. Closely linked to this imperative is to promote education, research and training of various groups of stakeholders such as officials engaged in the planning and implementation of development programmes, enforcement officers, inspectors in identifying possible climate change impacts, appropriate adaptation measures and their effective implementation as well as transfer of technology.

The current legal framework dealing with resource management, planning and plan implementation does not focus on this area of research, training and capacity building, which can be rectified through the introduction appropriate legal provisions to the relevant sectoral laws.

Capacity building of officials charged with the implementation of environmental laws is an essential prerequisite for the success of the legal framework for the protection of the environment. Implementation requires special knowledge and skills for which adequate provision should be made in the relevant laws.

Some of the suggested provisions read as follows:

"The state shall invest in, and support, studies on climate change scenarios to plan and manage water resources and to reduce the risk of natural disasters".

"Detailed studies shall be carried out when providing land for construction purposes, with particular focus on the impacts of the proposed construction on climate change and vice versa."

"Vietnamese citizens shall be comprehensively educated about the environment and its connection with climate change, with a view to raising awareness of the benefits of environmental protection and the measures necessary to respond to the adverse effects of climate change;"

" To educate and raise awareness, in coordination with the concerned ministries and local government authorities, among national stakeholders on ozone depleting substance issues, including the impact of ozone depleting substances on global warming and climate change and the formulation and implementation of appropriate measures for adaptation to the adverse effects of climate change .measures for adaptation to the adverse impacts of climate change."

"To strengthen capacity of the technical staff for controlling and monitoring the import, export and use of ozone depleting substances, raising awareness of the technical staff on the effects of ozone depleting substances on global warming and climate change and assisting in the formulation and implementation of appropriate measures for adaptation to the adverse impacts of climate change";

"The transfer of technology shall be encouraged where the technology satisfies one of the following requirements ... promotes the reuse and recycling of wastes and ... promotes high efficiency and the saving of energy and natural resources."

9. Incentives and other economic instruments to promote action on addressing climate change, including taking adaptation measures

Countries use a wide range of approaches and mechanisms for environmental management including addressing the impacts of climate change, which include command and control and related regulatory instruments as well as incentive-based economic instruments. The economic instruments include measures such as pricing which is used as a means of achieving sustainable use of natural resources; pollution charges such as effluent charges, user charges, product charges and administrative charges;

marketable permits; subsidies; deposit refund schemes where products or some part of it are reused or recycled; and other enforcement incentives. Some of these could be used effectively to phase out activities that contribute to climate change and as incentives to promote action for addressing the impacts of climate change including adaptation.

These economic instruments can be used for a dual purpose- to discourage activities that contribute to climate change and to reward activities that prevent adverse impacts on the environment or adapt to the adverse impacts of climate change.

The following are among some of the legal provisions that support the application of economic instruments and incentives for adaptation to climate change.

- *“The Government may grant a reward or incentives to those who engage in research, or develop new technologies or install modern equipment, that will contribute to the reduction of pollution and the improvement in water quality, and increase water use efficiency, including research on climate change impacts on water resources and the identification of appropriate adaptation measures to prevent adverse effects on the environment”;*
- *“Income tax exemption for any entity which transfers technology which saves energy, provides clean energy, reduces emissions and is adaptable to climate change”;*
- *“Every organization, household and individual, who or which releases emissions into the environment, in violation of the provisions of any law, shall be liable to an environmental tax.”;*
- *“Environmental protection funds shall be used for the following activities:Projects relating to scientific and technological research on environmental protection, management, monitoring, implementation of other environmental protection legislation and identification of the adverse impacts of climate change and the development of appropriate adaptation measures”;*
- *“Income tax exemption for any entity which transfers technology which saves energy, provides clean energy, reduces emissions and is adaptable to climate change”;*
- *“Every organization, household and individual, who or which releases emissions into the environment, in violation of the provisions of any law, shall be liable to an environmental tax”;*
- *“Funds allocated from the state budget for biodiversity conservation and sustainable development shall be used for the following purposes:..... Conducting basic surveys on biodiversity and assessing the environmental impacts, especially the impact of climate change, on biodiversity;”;*
- *“The Ministry of Agriculture, Forestry and Fisheries may provide incentives to individuals and communities, who carry out good forest management practices that contribute to the creation of a green environment or plant trees of high quality or in great numbers.”*

10. Environmental impact assessment to include assessment of impacts of climate change

Environmental impact assessment (EIA) is one of the most effective instruments for aligning development projects with adequate prevention against threats of serious or irreversible environmental damage. It also incorporates the principle that where there are threats of such environmental damage, the lack of full scientific certainty shall not be used as a reason for postponing measures to prevent environmental degradation.

Furthermore, the fact that these environmental assessments are subject to the review of Courts, also ensures that the process and outcome of such assessments conform to principles of natural justice as well as the fundamental principles of

international environmental law such as the precautionary principle, intergenerational equity and the polluter pays principle. The growing body of jurisprudence on this subject clearly establishes EIA as one of the most effective tools for securing effective environmental management.

The legal review process has strongly underscored the extension of the principles of environmental impact assessment to cover threats of the anticipated impacts of climate change and to incorporate measures to adapt to such threats.

The EIA should be extended to all activities that have impacts on the environment. These assessments should also be accessible to the public, so that the possible effects of the activity assessed will be in the public domain and thus be susceptible to challenge in the courts.

The legal provisions that seek to secure a more comprehensive assessment of threats and risks including those arising from climate change include the following.

- *".....The Environmental Impact Assessment report and monitoring mechanisms shall include a description of possible long term impacts on climate change resulting from the proposed activities and appropriate measures for the mitigation of, and adaptation to, such possible long term effects.";*
- *" The Provincial or Urban authority that is responsible for the proposed project, has the following duties:.....To ensure that the Environmental Impact Assessment report includes a review of all possible impacts of the project on climate change and the measures proposed for mitigation of, and adaptation to ,the adverse impacts of climate change.";*
- *"The Ministry of Environment shall review the Environmental Impact Assessment report...and shall disclose its findings and recommendations to the project proponent and the Project Approval Ministry or Institution...The recommendations shall include measures for mitigating, and adapting to, the adverse impacts of climate change.";*
- *The project proponent shall prepare a full report of the EIA within six months, in accordance with the requirements in Chapter 3 and 4 of this sub-decree.....the report shall include a description of the possible long-term impacts of the project on climate change and measures that are to be adopted for mitigating, and adapting to, the adverse impacts of climate change.";*
- *"The focus of Environmental Impact Assessment Reports shall include other projects that may have potential risks of adverse environmental impacts, including risks of contributing to global warming and climate change"*

11. International cooperation

International cooperation occurs at two levels in regard to climate change issues. Firstly, cooperation with global and regional organizations within and outside the United Nations system including international financial institutions in order to promote alignment with global and regional initiatives for obtaining a better understanding of climate science and the precise nature, extent, severity and frequency of the impacts of climate change on national economic, environmental and social conditions and possible measures for addressing these within the country's economic and social

circumstances as well as to secure the necessary financial and technological support.

The second, is to achieve regional cooperation for addressing climate change impacts which are of a regional nature, such as those relating to trans-boundary water resource management, coastal and marine resource management and disaster management.

On becoming a party to a treaty or convention relating to the environment, a country is required to pass domestic legislation to give effect to its obligations under the treaty or convention. This ensures uniformity of environmental legislation in the countries that are party to the treaty or

convention. The treaty or convention will also have provision requiring the country to report to the competent authority its progress in implementing its obligations under the treaty or convention. This mechanism ensures continuous monitoring and also enables the country to keep pace with international developments in the environmental field.

Legal provisions that promote such cooperation include the following:

- *“Encourage and facilitate collaboration with relevant agencies, the private sector, beneficiary groups, NGOs and International Organizations with a view to addressing climate change impacts”;*
- *“The Ministry shall encourage and facilitate the optimum and effective use of the (International River Basin) for all activities including navigation and transport, consistent with the governing principles of any regional agreement relating to the International River and taking into account, the impacts of climate change on the resources of the International River Basin.”;*
- *“The State shall encourage and facilitate cooperation with other countries, organizations and individuals with regard to the survey, protection, exploitation, use and development of water resources including adaptation to climate change, the training of personnel, scientific research on water resources including climate change and the prevention, combating and overcoming the harmful effects of water”;*
- *“The government shall support international relations and cooperation with other countries and international environmental protection agencies, in order to attract assistance, exchange technical knowledge, [and] train and upgrade the capacity of employees in the area of advanced scientific and technological research; the government shall also participates in international activities in the prevention and remediation of environmental problems, and implement obligations under international conventions and agreements on the environment to which the country is a party such as the United Nations Framework Convention on Climate Change”.*

The recommendations emerging from this Project may be summarized as follows:

FOLLOW-UP BY UNEP ON STRENGTHENING NATIONAL LEGISLATION FOR ADDRESSING CLIMATE CHANGE ISSUES

1. Capacity building on formulation of national legislation and policies on adaptation to climate change

UNEP should consider making available to a wider global audience, especially those in developing countries, the outcome of the project, in particular the Guidebook on National Legislation for Adaptation to Climate Change, so that other countries too could engage in similar national legislation review processes and lay a strong foundation for taking measures to adapt to the impacts of climate change, making best use of the experience in the project countries. UNEP may wish to consider organizing regional or sub-regional workshops with the participation of senior officials dealing with climate change policy development and legal drafting so that they

could acquire a better understanding of the work carried out within the Project and the legislative processes underlined in the Guidebook, which could facilitate the development eventually, of a global network of policy and legal formulations that would significantly accelerate global action on adaptation to climate change.

2. Synergetic effect of elaborating adaptation-related laws and regulations for similar initiatives with CDM, REDD, technology transfer, etc., and environmental law at large

The 2006 UNFCCC Nairobi Framework on CDM mandates UNEP and the partner agencies to help developing countries, especially those in sub-Saharan Africa, to improve their level of participation in the Clean Development Mechanism (CDM) and enhance the CDM's geographical scope. The elements of the Nairobi Framework include building capacity in developing CDM project activities and enhancing the capacity of Designated National Authorities to become fully operational. One of the most effective ways of accomplishing the objectives of the Nairobi Framework is to help

developing countries to develop the necessary policy and regulatory framework that sets out in clear terms the institutional framework, procedures and processes for the development and implementation of CDM projects, criteria for and indicators of decision-making and the rights and duties of the various stakeholders involved in the process, including resolution of disputes and taxation, ownership of land, foreign investment and repatriation of profits, insurance, labour and liability and compensation. Most developing countries have Designated National Authorities established by administrative order or regulations while a few, like the Philippines and South Africa have detailed regulations dealing with the development of CDM projects, the approval process and their implementation. The Philippine's Administrative Order No 2005-17 on Rules and regulations governing the implementation of Executive Order 320/2004 designating the DENR as the National Authority for the CDM, deals extensively with the following matters: Policy, principles, objective, scope and definition of terms; Structure, powers and functions of the DNA, the CDM national approval process and other miscellaneous provisions. UNEP may wish to carry out a capacity building programme for developing countries under the mandate given it by the Nairobi Framework to help develop a draft of a comprehensive regulation that countries may wish to use as a reference document in the development of their own country-specific CDM regulations.

Decision 4/CP.15 of REDD adopted at the fifteenth session of the Conference of Parties of the UNFCCC, requested developing country Parties to identify drivers of deforestation and forest degradation and the means to address them and to establish robust and transparent national forest monitoring systems and, if appropriate, sub-national systems as part of national monitoring systems which also provide estimates that are transparent and consistent, as far as possible accurate, and that reduce uncertainties, and results are available and suitable for review as agreed by the COP. Indonesia has announced that it has begun the review of forestry department decrees 30, 36 and 68 which is aimed at removing rules that overlap or clash and could see the creation of a new authority to monitor REDD in Indonesia. The implementation of REDD+ at national level will require a regulatory framework that focuses on a number of issues in areas such as forestry, governance, environment and preservation of social infrastructure including strengthening forest tenure reforms, mapping of lands, and recognition of rights to ecosystem services,

protection of rights of forest communities, alignment with national development processes, improving forest governance; and developing the necessary institutional structures and monitoring and verifications systems including the related transfer of technology and dispute resolutions mechanisms. UNEP could make a significant contribution to this process by carrying out a pilot project engaging countries with special interest in REDD+ implementation to benefit from the experience of Indonesia in developing a regulatory framework for REDD+ which amalgamates and further develops the existing legal framework.

Technology transfer is a key component of the successful implementation of the UNFCCC. It was decided at COP 15 that in order to step up action on the development and transfer of technology, governments intend to establish a new technology mechanism to accelerate development and transfer in support of action on adaptation and mitigation. All three project countries have incorporated new provisions in the relevant national sectoral laws and regulations to provide a legal basis for the transfer of technology. In Vietnam, the Prime Ministerial Decision on approval of the National Target Program to respond to climate change provides specifically that Vietnam will effectively implement measures to mitigate green house gas (GHG) emissions with sufficient finance support and technology transfer from developed countries as well as other international funding sources. The Decision also requires the completion by 2010 of the review of current legislation and policy system, and assess the current way of addressing climate change in the State's legal documents and policies; develop, supplement and perfect the legal document system, mechanisms and policies to ensure the legal basis for activities to respond to climate change. The current project has facilitated the completion of this review process.

3. Inter-agency collaboration on capacity building on development of national legal regimes for adaptation to climate change and other issues relating to climate change.

UNEP should provide leadership to leveraging the outcome of this project with other United Nations organizations and bodies and funding agencies, in particular, the UNFCCC and its Adaptation Fund, GEF, UNDP, the World Bank and Regional Development Banks, so that the outcome of this Project and the global capacity building programme that UNEP may institute to

promote the formulation of a global network of adaptation policies and related legislation could be used as one of the principal avenues for channeling new and additional funds for adaptation, such as those that are being made available under the GEF and the Adaptation Fund.

Guidebook on National Legislation for Adaptation to Climate Change

ISBN: 978-92-807-3188-0

Job Number: DEL/1232/NA

www.unep.org

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