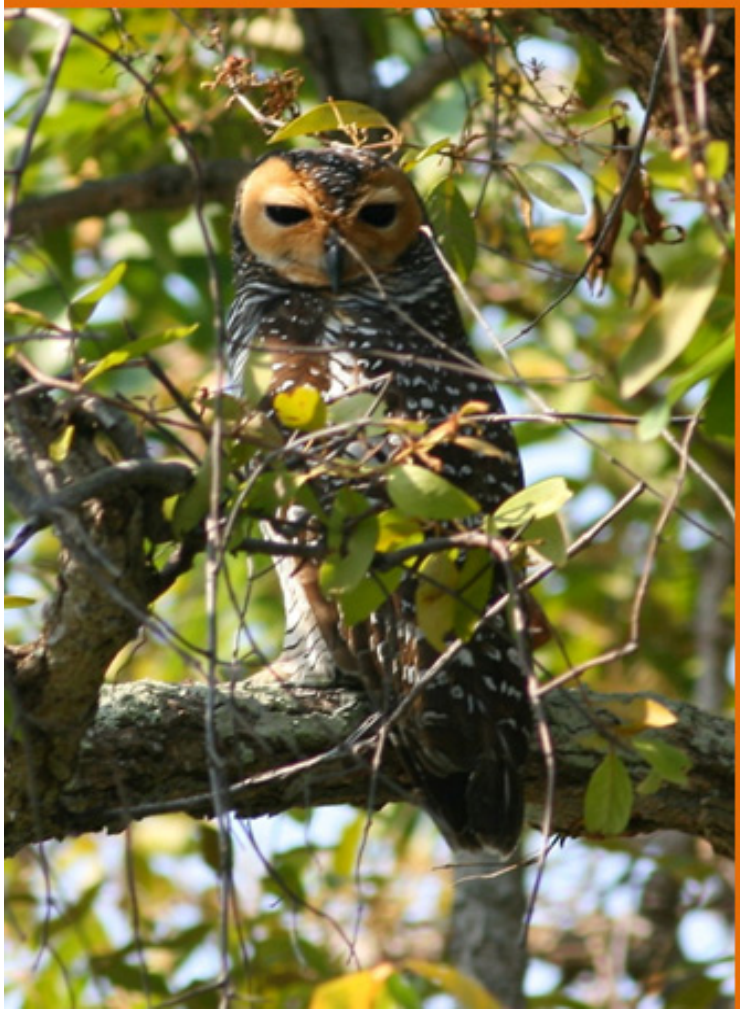




NATIONAL SUSTAINABLE DEVELOPMENT STRATEGY FOR CAMBODIA



On behalf of the
Royal Government of Cambodia

August 2009



NATIONAL SUSTAINABLE DEVELOPMENT STRATEGY FOR CAMBODIA



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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AIT	Asian Institute of Technology
ASEAN	Association of South East Asian Nations
CDM	Clean Development Mechanism
CFCs	Chlorofluorocarbons
CH ₄	Methane
CMDGs	Cambodia's Millennium Development Goals
CO	Carbon Monoxide
CSES	Cambodia Socio-Economic Survey
CSR	Corporate Social Responsibility
DF	Dengue Fever
EDC	Electricity Du Cambodge
EIAP	Environmental Impact Assessment Process
ESP	Education Strategy Plan
GDP	Gross Domestic Product
GMS	Greater Mekong Sub-region
HIV/AIDS	Human Immunodeficiency Virus-Acquired Immune Deficiency Syndrome
IDGs	International Development Goals
IMF	International Monetary Fund
IOs	International Organizations
IPM	Integrated Pest Management
JICA	Japan International Cooperation Agency
JPOI	Johannesburg Plan of Implementation
M & E	Monitoring and Evaluation.
MAFF	Ministry of Agriculture, Forestry and Fisheries
MDG(s)	Millennium Development Goal(s)
MIME	Ministry of Industry, Mines and Energy
MLMUPC	Ministry of Land Management, Urban Planning and Construction
MoE	Ministry of Environment
MoEF	Ministry of Economy and Finance
MoP	Ministry of Planning
MRC	Mekong River Commission
MRE	Mine Risk Education
N ₂ O	Dinitrogen Monoxide

NCSD	National Council for Sustainable Development
NGOs	Non-Governmental Organizations
NO ₂	Nitrogen Dioxide
NORAD	Norwegian Agency for Development Co-operation
NO _x	Nitrogen Oxides
NPC	National Preparatory Committee
NR	National Road
NSDP	National Sustainable Development Plan
NSDS	National Sustainable Development Strategy
NSDSAP	National Sustainable Development Strategy and Action Plan
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
PM	Particulate Matter
POPs	Persistent Organic Pollutants
REAP	Renewable Electricity Action Plan
RETA	Regional Technical Assistance
RGC	Royal Government of Cambodia
RWSS	Rural Water Supply and Sanitation
SD	Sustainable Development
SDMS	Sustainable Development Management System
SEDP	Socio Economic Development Plan
SME	Small and Medium Enterprise
SO ₂	Sulfur Dioxides
SO _x	Sulfur Oxides
SSDS	Sub-regional Sustainable Development Strategy
t/ha	Ton per Hectare
TB	Tuberculosis
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNEP RRC.AP	United Nations Environment Program, Regional Resource Center for Asia and Pacific
UNEP	United Nations Environment Program,
UNGASS	United Nations General Assembly's Special Session
USD	United States Dollar
UXO(s)	Unexploded Ordnance(s)
VOC	Volatile Organic Compound
WB	World Bank
WSSD	World Summit on Sustainable Development

FOREWORD

Foreword from H.E. Dr. Mok Mareth, Minister of Ministry of Environment, Royal Kingdom of Cambodia

The United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992 produced core result of the Agenda 21, which called upon countries to formulate and adopt the National Sustainable Development Strategy (NSDS) to build integrated strategies between the various sectors, which are economic, social and environmental policies and plans. Based on this treaty, the Kingdom of Cambodia requested UNEP to support development of the National Sustainable Development Strategy (NSDS) in 5th July 2006.

The Royal Kingdom of Cambodia has a diverse culture and one of the global biodiversity hotspot. The Royal Kingdom of Cambodia is a relatively under-developed province in the country but has made significant progress in economy, society, population, resources and environment sectors. However, Cambodia still facing urgent sustainable development challenges including high rate of poverty, environmental degradation, and uncontrolled exploitation of natural resources. Recognizing these problems, the country developed a very comprehensive document in a participatory process that is foreseeing and recommended some practical arrangements for sustainable pathways.

The NSDS document provides a conceptual framework for formulation of the comprehensive sustainable development strategy for the Royal Kingdom of Cambodia. The manual reviews the status, trends and the key challenges of sustainable development in the Royal Kingdom of Cambodia. A mechanism for the participatory process for NSDS has been proposed. The means of implementation mechanisms as well as monitoring and evaluation process towards achieving the strategic objectives in the Royal Kingdom of Cambodia has also been included. The existence of this document also increases the opportunity of green technology and green policy establishment, which are necessary for the development of sustainable life of Cambodia. Furthermore, this document will also be a driving force for innovation, establishment of new businesses and industries and also employment opportunities across the country; which in turn could improve the country's condition.

The strategies recommended in this document would serve as a guideline for the policy development in the Cambodia's strategic planning for sustainable development. The Ministry of Environment of the Royal Government of Cambodia would like to express gratitude for all contribution to the development of this study and would look forward for the continuous commitment from all stakeholders in achieving sustainability at all levels.

Message from Dr. Young Woo Park, Director of Regional Office for Asia and the Pacific, United Nations Environment Programme.

The Royal Kingdom of Cambodia has made commitment to the Johannesburg Plan of Implementation (JPOI), which called upon countries to start developed their national strategies by 2005. In 2009, the Royal Kingdom of Cambodia has established their national sustainable strategy, which consists of integrated economic, social, and environmental aspects of sustainable development that should be pursued in accordance with the country's national priorities.

The main objective of the Royal Kingdom of Cambodia NSDS (National Sustainable Development Strategy) is to systematically develop the country in an integrated, planned and holistic manner. The Royal Kingdom of Cambodia's NSDS has successfully integrated all four pillars of sustainable development, which are environmental, economic, social and cultural spectrum. Better understanding of the dynamics of these four pillars and effectively integrating these into the development process will always help to find pragmatic and effective solutions for the development problems in better ways.

The NSDS for the Royal Kingdom of Cambodia is a joint effort of all participating expert agencies and government to establish vision and goals of sustainable development with innovative approaches. Therefore, it is necessary to established a strong network between the people of Cambodia and stakeholders and also acquire support from the government in order to achieve a comprehensive sustainable development. From this document the goals and objectives of the Royal Kingdom of Cambodia can be derived and to be followed in near future by development of the action plan. We believe that this Plan will be a guiding document for transforming the country with a high quality of human life through balanced progress in economic, social and environmental conditions.

UNEP ROAP and NSDS Project Secretariat at the AIT/UNEP RRC.AP expresses deep appreciation to the national project team for the effort in developing the document and the Royal Government of Norway for the technical and financial support and cooperation in the consultation process for NSDS project in Cambodia. We believe the document will serve as a guideline to the society of the Royal Kingdom of Cambodia interested in the success of the sustainable development of Cambodia and its neighbouring countries.

EXECUTIVE SUMMARY

INTRODUCTION

Cambodia is predominantly dependent on its rich and diverse natural resource base for its present and future socio-economic development. It has an abundance of natural resources, particularly inland fishery resources, diverse mineral deposits in addition to its vast biological diversity. However, high population growth and increasing economic demands by this growing population have exerted ever increasing pressure on these resources. The social and economic demands, manifested through natural resource harvesting, can contribute to a gradual depletion of the national resource base, possibly having an adverse effect on future development.

The NSDS is a long-term strategy for sustainable development integrating the social, environmental and economic dimensions into a cohesive and holistic approach. The overall goal of the NSDS is to ensure environmental sustainability, human wellbeing and social development as alongside the development of a prosperous economy. Ultimately, the NSDS gives guided direction towards long-term sustainable development and a strong mandate for cross-sectoral coordination and cooperation. The NSDS also contributes to a shift of the development paradigm, favoring a holistic approach that integrates all dimensions of development, including the environment and natural resources.

In recent years, the RGC has developed some laws, policies, strategies and plans in order to cope with the protection and management of natural resources for the development of the economy and society in a more sustainable manner. However, up to now there has not existed a long-term comprehensive strategy integrating the core dimensions of sustainable development.

In September 2006, the RGC organized an Inception Workshop for starting the formulation process of the NSDS. The NSDS initiative was prepared and launched with the assistance from the ADB, UNEP and the Norwegian Ministry of Foreign Affairs. After more than one year of formulation and consultations the final draft was presented for submission to the government for approval in 2008.

The three overall goals of the strategy give direction for the future development of Cambodia. They are:

- People's wellbeing and social development
- Sustainability of the national resources and environment
- Sustainable economic sector and infrastructure

Each overall goal has several sub-goals with visions, objectives, targets, indicators and strategic measures, all of which are described under 'Strategic Areas for Sustainable Development in Cambodia'.

The Government's long term vision for sustainable development to 2030 is:

- to achieve a socially cohesive, educationally advanced, and culturally vibrant Cambodia without poverty, illiteracy and ill health, and where all Cambodians live in harmony free of hunger, inequity, exclusion, and vulnerability, and where all citizens are able to reach their full potential in their chosen vocations to contribute to further progress of the country and for an increasingly higher standard of living;
- to have a sustainable society that ensures the long term sustainability of the natural resources and the environment on which all

economic activities rely upon, and to develop sustainable economic, social and infrastructural activities without negative environmental and social impacts.

The vision and overall goals for sustainable development have to be integrated into all policies, plans and projects of the various sectors, and in the daily life of all Cambodians. Sustainable development is a mission for every person in the country.

STRATEGIC AREAS FOR SUSTAINABLE DEVELOPMENT IN CAMBODIA

People's Wellbeing and Social Development

An ultimate goal of sustainable development is people's wellbeing and social development. This indicates freedom from poverty, guaranteed human rights, personal security, good health and a well educated population who experience gender equality and equity as a basis for social and economic progress as the dominant lifestyle of all people. Hunger, poverty, and a lack of a social safety net for poor and disadvantaged groups are recognized to be morally unacceptable, socially divisive, unsafe

and economically wasteful for people's wellbeing and social development.

For people's wellbeing and social development the following goals are proposed:

- Poverty alleviation and food security
- Good health
- Well educated people
- Gender equality
- Zero victims of landmines and UXOs

Environmental Sustainability

In Cambodia, environmental problems have been a serious concern since the early 1990s and they are recognized to cause significant socio-economic pressures on the future of the country. Some of the problems have been solved by the government and responsible institutions with involvement of the civil society.

Illegal logging and forest destruction, land clearing for agricultural purposes, hunting of wildlife including rare and endangered species and environmental impacts caused by industry, agriculture, urbanization, tourism and other sectors are the primary causes of Cambodia's degrading environment.

Moreover, the improper disposal and burning of solid and hazardous wastes cause serious local and national environmental concerns, and it is recognized to contribute to regional/global environmental problems such as climate change, acid deposition, depletion of the ozone layer, not to mention having an increasingly adverse effect on human health.

The challenge for Cambodia is to ensure environmental sustainability. Essentially, this equates to *protecting the quality of the environment and the natural resources* in order to maintain the productive and reproductive functions along with the diversity of species in the long-term.

The ultimate goal is to achieve wellbeing and happiness not only for this generation but for many future generations to come. In order to ensure environmental sustainability into the future, the following environmental quality objectives (goals) are proposed for Cambodia to be achieved within one generation (2030):

- Productive land resources
- Rich forest resources
- High quality ground- and surface water resources
- Rich fish resources
- Functional wetlands
- Sustainable marine- and coastal environment
- Rich biodiversity

- Limited influence on the climate
- Protected ozone layer
- Clean air
- Non-toxic environment
- Good living environment
- Efficient use of non-renewable resources
- Efficient use of natural resources and limited waste generation
- Efficient energy production
- Limited impact from natural disasters

Sustainable Sector Development

A long-term and sustainable income for the Cambodian people can be secured through the growth of economic activities which are socially and environmentally sustainable. This growth is to be based on good education, good health, gender equality and equity as well as a high quality of the natural resources and environmental protection while producing food, energy, raw materials and environmental services on a long term.

In order to ensure the development of sustainable economic activities and infrastructure following goals have been proposed:

- Sustainable land use and agriculture
- Sustainable forestry
- Sustainable water resources management
- Sustainable fishery
- Sustainable mining
- Private sector and sustainable business development
- Sustainable tourism
- Sustainable transportation
- Sustainable energy
- Sustainable water supply and sanitation
- Solid waste management

IMPLEMENTATION OF THE NSDS

Implementation of the NSDS will require the strong commitment from the Royal Government of Cambodia. It will also require new and/or modified institutions, new positions, new and existing laws and related statutes, changed focus on the priorities of national development, reallocation of financial and manpower resources and a gradual shift from immediate goals to the longer term.

One major prerequisite for sustainable development is 'good governance', which requires reducing dramatically the level of corruption, speeding up decentralization and ensuring the participation by all major groups, not just an elite few. For implementation of the country's NSDS, the following institutional arrangements are proposed:

- Formalization of the NSDS under Leadership of the RGC
- Formation of an Inter-Ministerial Steering Group/Committee
- Establishment of a Coordination Secretariat
- National Forum on SD
- National Council on SD

- Creation of a Sustainable Development Management System
- Implementation by sectors and localities
- SD through planning and budgetary processes
- Development and diffusion of the right instruments for change
- SD at the provincial and local levels
- International cooperation

The NSDS is a long-term strategy that gives direction to all sectors. Therefore, the NSDS has a close relation to the Rectangular Strategy and the National Strategic Development Plan (NSDP) as well as to Cambodia's MDGs. The content of the NSDS is proposed to be fully integrated with the next NSDP (2011-2015). Thus, it will constitute the National Sustainable Development Plan (NSDP) for the next five years and onward. For implementation of the NSDS, some recommendations are given as follows:

- Sustainable development should be adopted as an overarching national goal

- RGC should commit itself to fully integrate NSDS concepts and actions into the national planning and budgeting process
- The next five year plan should be the National Sustainable Development Plan (NSDP 2011-2015), integrating long-term sustainability objectives and measures from the NSDS
- NSDS management policies, or sustainable sector policies, should be drawn up by all government ministries, departments, statutory bodies, government owned companies and others which utilize or manage natural, environmental and social resources.
- Public participation in policy formulation and action planning for SD should be actively encouraged and facilitated
- Transparency and accountability should be promoted in the NSDS process, with sole institutional responsibility for management of NSDS components
- Key principles of the NSDS and the implementation requirements should be enacted through legislation and specified in laws and statutes in order to ensure effective NSDS implementation
- SD legislation should make provision for the establishment of a funding mechanism for implementation of NSDS related programs and projects.

In addition, a government action plan based on the NSDS should be proposed and implemented in three interval periods; short-term (2008-2010), medium term (2008-2015) and long term (2008-2030).

MONITORING AND EVALUATION

In order to measure progress towards sustainable development, there is a need for good indicators providing clarity on whether the direction of development is proceeding in the correct way and at the appropriate rate of speed. These indicators should be used by each sector to reflect sustainable sector development. They will also be used for measuring overall progress towards a sustainable society. The proposed sustainable development indicators are divided into four distinct sections:

- Indicators for People's Wellbeing and Social Development
- Indicators for Sustainability of Natural Resources and the Environment
- Indicators for Sustainable Economic Sectors and Infrastructure
- Indicators for Good Governance and Implementation of SD

The proposed indicators should be integrated with the existing system of Cambodia's MDGs in order to create one coherent system of monitoring and evaluation on sustainable development in the country.

CONCLUSION

The Royal Government of Cambodia is confident that the commitment and cooperation from stakeholders, including key government institutions (from national to local level), civil society, NGOs, the general public, private partnerships, countries in the region and international donors and organizations will

lead to a successful implementation of the NSDS in which intended goals, objectives and measurable targets can be reached to reduce poverty and to enhance the overall wellbeing of the Cambodian people on the long-term.



PART 1 |

INITIATIVE AND PROCESS

1.1 BACKGROUND

Cambodia's National Sustainable Development Strategy (NSDS) is based on a comprehensive approach that covers the priority social, economic and environmental issues facing the country. The NSDS gives direction for the future development of Cambodia in accordance with its commitments from the World Summit on Sustainable Development (WSSD) in Johannesburg 2002.

The strategy defines a long-term vision and contains concrete goals, objectives and strategic measures achieving sustainable development in several key core areas. The

NSDS specifies the institutions, policy instruments, tools and processes that are necessary to carry out the process of change towards sustainable development. The strategy also includes indicators for continuous monitoring and evaluation of progress over time. The shift towards sustainable development will call for broad participation by government institutions and major groups in Cambodia and will build on public participation. For this reason the NSDS has been formulated through a participatory consultation process.

1.1.1 NSDS Participatory Process

The NSDS document has been developed through the collection of relevant policies, strategies and plans along with other relevant documents from government institutions and stakeholders in order to analyze the data related to economic development, social equity and environmental protection.

The development of the NSDS initially started in September 18-19, 2006 with the conduction of

a National Inception Workshop at Sunway Hotel in Phnom Penh Municipality, Cambodia. The Ministry of Environment (MoE) of Cambodia organized and hosted the workshop with technical support from UNEP RRC.AP and ADB.

The participants of the inception workshop represented governmental institutions, non-governmental organizations (NGOs) and international organizations (IOs) involved in

sector development, economy, planning, environmental protection and natural resources management. Resource persons were invited from government agencies, UNEP RRC.AP and ADB (international and domestic consultants).

During the first and second national consultation workshops, which were held in February and June 2007, comments from stakeholders were discussed and further collated to the first and second draft of the NSDS. This participatory process was very helpful in not only eliciting views and opinions of a broad range of stakeholders, but it was also useful in helping the participants to look at the goals more broadly and to connect them with their own sector or particular perspective.

The draft NSDS was also discussed extensively in an Expert Workshop held in December 2007, and through on-going inter-ministerial

consultations and meetings involving representatives from various governmental ministries such as: MoE, MoEF, MoP, MAFF, MLMUPC, MIME. These meetings also included participation from non-governmental organizations, international organizations, academic and private sectors. The participating stakeholder groups shared their comments and suggestions, and the final document reflects all the inputs from the consultation process as well as inputs from international experts reviewing the document.

With guidance from UNEP, the NSDS has been compiled in consistence with the Royal Government of Cambodia's policies and strategies aimed at developing the socio-economy in accordance with regional and global goals for sustainable development.

1.2 SUSTAINABLE DEVELOPMENT OUTLOOK

1.2.1 Global Sustainable Development Outlook

The United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992 resulted in the Rio Declaration, Agenda 21 (the global program for sustainable development) and conventions on climate change and biodiversity as well as establishing principles for the sustainable management of forests. Agenda 21 called upon countries to adopt a NSDS that should harmonize various sectors and the economic, social and environmental policies and plans operating in the country. At Rio the important role indicators play in helping countries to make informed decisions concerning sustainable development was recognized, and therefore countries, international organizations and non-governmental organizations were called upon to develop such indicators.

In 1997, the *United Nations General Assembly's Special Session (UNGASS)* made a new call to countries to formally develop an NSDS by 2002 in order to show their commitment to implement Agenda 21. This meeting also reaffirmed that the NSDS is an important mechanism for countries to achieve sustainable development.

During the last decade, *International Development Goals (IDGs)* have been formulated and agreed on by the international community at different UN conferences. IDGs set targets for implementation of sustainable development within a specific timeframe. One of the seven goals is the implementation of a NSDS by 2005. These goals were later merged into the Millennium Development Goals (MDGs).

In 2000, the *UN Millennium Declaration* was adopted by 147 heads of states and governments, reaffirming their commitments to the principles of sustainable development and other provisions to Agenda 21. In March 2002, governments gathered in Monterrey for the International Conference on Financing for Development, where they also endorsed the MDGs. The MDGs comprise eight goals, with one of eight goals looking to ensure environmental sustainability. Here, countries are called upon to integrate the principles of sustainable development into their national policies and programs and to reverse the loss of environmental resources. The World Bank (WB), the International Monetary Fund (IMF), the members of the Development Assistance Committee of the Organization for Economic

Co-operation and Development (OECD), and many other agencies has since adopted these Millennium Development Goals.

The preparatory process in Asia and the Pacific for the World Summit on Sustainable Development (WSSD) in Johannesburg 2002 revealed the fact that very few countries in the region have prepared an NSDS. Lack of an integrated approach has been identified as one of the main hindrances for achieving sustainable development.

However, over the past decade most of the countries in the region have formulated policies and programs for economic growth, social welfare and environmental conservation. Some of them have been prepared on the basis of national needs while many have been formulated under the influence of international financial institutions and by requirements of global conventions. These policies are mostly disjointed and have not effectively integrated the principles of sustainable development; i.e. integration of economic growth, social equity and environmental protection.

1.2.2 Regional SD Outlook

The regional cooperation within the *Greater Mekong Sub-region (GMS) Economic Cooperation Program* has resulted in numerous contributions to local sustainable development. Cambodia's report to WSSD stated that, after nearly 10 years of GMS cooperation, the key accomplishments are: 1) completion of infrastructure projects worth 2 billion USD, 2) building of trust and confidence among the member countries, and 3) the use of flexible activity-based approaches coming from the non-institutional nature of the GMS with a minimum of protocols and bureaucracy.

In December 2001, a GMS agreement was signed by the Governments of Cambodia, Laos, Myanmar, Thailand, Vietnam and China. In this agreement the six countries agreed and made their commitment to the ADB-assisted *10-year development strategy* in order to facilitate a cross-the-border movement of people and goods. The agreement incorporated several projects including; flood control, human resource development, economic corridors,

In 2002, the *Johannesburg Plan of Implementation* called upon countries to take immediate steps to make progress in the formulation and elaboration of an NSDS, and to begin their implementation by 2005. To this end, strategies should be supported through international cooperation, taking into account the special needs of developing countries, in particular the least developed countries. These strategies are to integrate economic, social and environmental aspects of sustainable development and should be pursued in accordance with each country's national priorities.

Given the commitments to Agenda 21, the MDGs and the Johannesburg Plan of Implementation (JPOI), there is an urgent need for all the countries in the region to develop a NSDS with country specific targets and indicators. The purpose of the NSDS is to provide a mechanism that will translate the country's goals and aspirations for sustainable development into concrete policies and actions to meet the targets.

enhancement of private sector participation and strategic environmental framework.

In July 2003, the project "National and Sub-Regional Sustainable Development Strategy and Action Plans towards Mainstreaming Sustainable Development in the Decision Making Process" was finalized by the Norwegian Agency for Development Cooperation (NORAD), with cooperation from the Asian Institute of Technology and the UNEP Regional Resource Centre for Asia and the Pacific (UNEP RRC.AP). The purpose of the project was to strengthen the capacity of and assist national governments in formulating their National Sustainable Development Strategy and Action Plan (NSDSAP) towards mainstreaming sustainable development in the decision making process. The project had the following specific objectives:

- Build capacity at the national and sub-regional levels towards formulation of NSDS and sub-regional sustainable development strategies (SSDS) respectively through a participatory process;

- Assist in guiding the establishment/strengthening of a multi-stakeholder's platform, at the national and sub-regional level to bring all the relevant stakeholders, such as government, business and civil society, to a common platform in order to prepare as well as implement the NSDS and the SSDS.

In 2005, an agreement was made between AIT/UNEP RRC.AP and the Asian Development

Bank (ADB) to implement *the Regional Technical Assistance Project* (ADB RETA 6198) in cooperation with GMS countries on "Capacity Building for Promoting Sustainable Development in the GMS". The main objective of the project was to build capacity of GMS countries for integrating social, economic, and environmental objectives into existing planning mechanisms for sustainable development on both national and sub-regional levels.

1.2.3 Sustainable Development in Cambodia

In November 1998, Samdech Akka Moha Sena Padei Techo Mr. Hun Sen, Prime Minister of the Kingdom of Cambodia presented the Royal Government Platform for the period 1998-2003 to the National Assembly where he spelled out the directions for domestic-, defense-, foreign-, economic- and social policies. The main objectives of the government's economic policy were aiming at promoting sustainable development, maintaining macro-economic stability and fostering sustainable natural resources management.

The RGC additionally developed other priority issues including decentralization, rural development, reduced population growth, food security, health and education, which all were within the framework of sustainable development.

The National Preparatory Committee (NPC) was established by a decision of Samdech Akka Moha Sena Padei Techo Mr. Hun Sen, Prime

Minister of the Kingdom of Cambodia, to facilitate the national preparations of the WSSD 2002 in Johannesburg. The functions of the NPC were to:

- Undertake and submit to Government a forward-looking national assessment of the government's sustainable development initiatives for eventual preparation by the government to the WSSD; and
- Undertake national preparations for the WSSD Regional Ministerial Level Preparatory Committee meeting hosted by the Royal Government of Cambodia (Cambodia's Report to WSSD).

In September 2006, Cambodia organized an Inception Workshop for starting the formulation process of the NSDS. After more than one year of formulation and consultation workshops the final draft was presented and later submitted to the government for approval during 2008.

1.3 PROBLEMS AND CHALLENGES

Cambodia is predominantly dependent on its natural resource base for its current and future socio-economic development. It has an abundance of rich natural resources, particularly extensive forests and associated forest-products, fertile soils, dependable water resources, rich inland fishery resources, diverse mineral deposits in addition to its biological diversity. However, high population growth and increasing economic demands by this growing population have exerted ever increasing pressure on these resources than before.

Increasing consumption of natural resources and environmental pollution including water, soil and the atmosphere are causing high potential risks and hazards to the public health and the environment, and are jeopardizing the long-term economic development of the country. Land conflicts and trans-boundary problems also contribute to the pressure on the environment. Cambodia also faces many problems related to social and human development stemming from poverty. Hunger is also an urgent problem that needs to be addressed.

1.3.1 Problems

Some of the problems to be addressed are listed below

- Land use is a complicated issue and difficult to manage and control in some provinces and cities. Small agricultural plots, land-poor and/or landlessness farmers present a serious problem that affects rural people whose life is dependent on agricultural livelihoods, but have no land to use.
- Degradation of forests and loss of biodiversity due to various aspects of illegal logging, land clearing and hunting of rare/endangered species are factors that cause not only environmental problems but also creates adverse impacts on the socio-economic development, especially in local communities
- Scarcity of water for domestic uses (especially drinking water) and for irrigation is being experienced by a large number of Cambodians, especially in rural and remote areas.
- Economic sectors like mining, industry, energy, water supply and tourism development are facing many environmental problems requiring urgent effective solutions in order to ensure long-term sustainable development.
- Sustainable management of natural resources and the environment is still limited because of inadequate policies, legislation and lack of human resources and action plans in government institutions.
- Gender issues are found in both public and private sectors. For example, there is less proportion of women to men in high government or private sector positions, and women commonly have less opportunity to pursue higher education than men.
- Cambodian children and youth remain unequal in their opportunity to receive quality education. Moreover, education for girls and women is not balanced in comparison with education for boys and men.
- Although information on public health issues (especially HIV/Aids and other infectious diseases) is broadly disseminated, the public's participation and practice still does not reach the planned targets.
- The effort to eliminate trans-boundary movements of drugs, hazardous waste and products with low quality or expired date needs to be strengthened through regional and bilateral cooperation.

One key obstacle in combating problems effectively is the limited coordination between various sectors. Today, each sector develops its strategies and plans independently and tries to solve problems within its own narrow mandates and limits. However, most environmental, social and economic problems cannot be solved within one sector only, but requires cooperation and coordination across sector borders.

1.3.2 Need of a National Sustainable Development Strategy

In order to effectively combat poverty, social stress and environmental degradation, there is a need for a long term comprehensive strategy and improvement on the coordination and management capacity within the government sector. Therefore, a NSDS is of crucial importance for the RGC in order to ensure environmental sustainability, human wellbeing and social development in addition to development of a sustainable economic sector and infrastructure. In this respect, the NSDS

gives direction towards sustainable development and a strong mandate for cross-sector coordination and cooperation. The NSDS also contributes to a general shift of the development paradigm favoring a holistic approach that integrates all dimensions of development, including the environment and natural resources.

Furthermore, Cambodia's effort to change direction towards a sustainable society needs to be based on a multi-stakeholder process, with

participation from a diverse range of stakeholders. Parties that are to be involved in this process include the various government ministries, the provincial and local government bodies, public institutions, the business sector, NGOs, the civil society and local communities. Within this process there is also a need for

cross-sector development policies and action plans coupled with an implementation mechanism that cuts across sectors and agency boundaries in order to integrate environmental and social considerations into both public and private decision-making and within local communities.

1.3.3 Three Overall Goals

For Cambodia's sustainable development there are three overall goals that give direction for the future development of the country. The three overall goals are:

- People's wellbeing and social development
- Sustainability of the national resources and environment

- Sustainable economic sector and infrastructure

Each overall goal has several sub-goals along with accompanying visions, objectives, targets, indicators and strategic measures, all of which are described in Part 2 - Strategic Areas for Sustainable Development in Cambodia.

1.4 PRINCIPLES FOR SUSTAINABLE DEVELOPMENT

Living sustainably means to seek harmony with nature and with other people. People must not take more from nature than nature's ability to re-generate those products (the yield) and the use of natural resources must be shared among people in a reasonable and equitable way. The extraction of natural resources must be done in a non-destructive manner and by transparent means in order to care for the future of our mother land. This means that we need to adopt lifestyles and development paths that respect and work within nature's limits.

Our future development depends to a large extent on how we invest in managing our ecosystems so to receive the appropriate and adequate services for realizing poverty reduction and other national development goals. By incorporating an ecosystem services

approach, both poverty and environmental goals can be met, and where health of the ecosystems is understood to directly link with the good health of the people, underlining the fact that all long-term development depends on the ecosystems capacity to deliver goods and services. For instance, marine and coastal ecosystems deliver immense food resources in addition to recreational and environmental services to both people living near coastal areas and to society at large.

At the same time, we should make use of the many benefits of which modern technology provides, especially regarding energy and resource efficiency. The NSDS provides a new approach to the future, not a return to the past. It is a sustainable way based on experiences from the past and from other countries.

1.4.1 Definition of Sustainable Development

In Cambodia, the terms "sustainable development" and "sustainability" frequently appear in development policy and planning documents, including the Environmental Strategic Plan. However, "sustainable development" or "sustainability" is not officially defined in Cambodia and there are misconceptions as to the meaning of the terms. Among stakeholders who attended the NSDS national consultation workshops there were some misconceptions; firstly, "sustainable" was

understood as synonymous with "viable" as in "financially viable" or "macro-economic stability"; secondly, "sustainable development" was understood as synonymous with the environmental and natural resources sector only; and thirdly, "sustainable development" was understood as a simple combination of several sector concerns.

One central definition of sustainable development was given by the World

Commission on Environment and Development in the report *Our Common Future* (1987). The report states:

"Humanity has the ability to make development sustainable – to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs".

Another definition is stated in Principle 1 of the Rio Declaration:

"Human beings are at the centre of concerns of sustainable development. They are entitled to a healthy and productive life in harmony with nature".

The three main dimensions of sustainable development are often described as follows:

- (i) Economic development;
- (ii) Social equity; and
- (iii) Environmental protection and conservation. Economic development refers to the wellbeing of the people and eradication of poverty. Social equity includes access to basic needs such as

health, education, human security and rights, gender equality, distribution of benefits and access to resources across the society. Environmental protection and conservation aims to maintain and protect natural resources to support the socio-economic development as well as minimizing impacts on the physical and biological resources.

Some development plans in Cambodia already contain principle elements of Agenda 21, such as incorporating the three domains of economy, environment and society. The Socio-Economic Development Plan 2001-2005, SEDP II, contains three development objectives (the Three Pillars) expressed as follows:

- Economic growth that is broad enough to include sectors where the poor derive a livelihood.
- Social and cultural development.
- Sustainable natural resource use and sound environmental management

1.4.2 Integration of Three Pillars

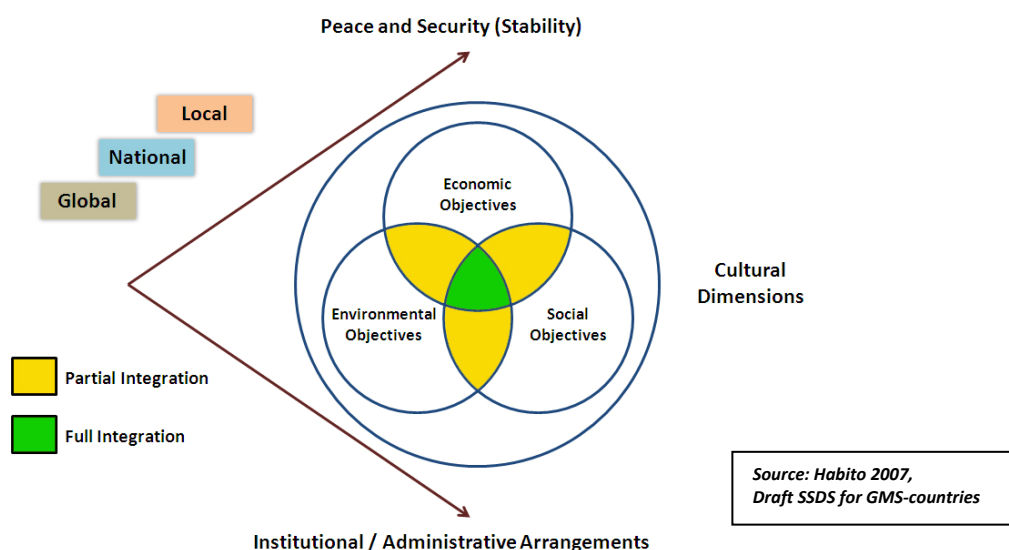


Figure 1: Sustainable development will entail integration of objectives where possible and making trade offs between objectives where integration is not possible

Even though a policy or plan may contain the three aspects or pillars of sustainable development, the challenge is to integrate them in an effective way so as to achieve sustainable development. Sometimes, only

partial integration is possible, while in other situations full integration is achieved. See Figure 1 for a model of how this integration should be conceived.

1.4.3 Guidelines for Sustainability

In the process towards sustainable development some guidelines for sustainable development can be used (see the boxes below). The guidelines cover important aspects

of environmental, social and economic sustainability and can be used as checklists when formulating policies, action plans or projects.

Guidelines for Environmental Sustainability

For achieving sustainable development it is crucial to maintain long-term sustainable ecological systems and a stable climate in order to supply society with the raw materials and environmental services that it needs. In order to build a sustainable society, the following aspects of environmental sustainability should be considered:

1. Use of Renewable Energy and Raw Materials

A sustainable society should rely on resources that are renewed and regenerated on a long-term basis. Renewable resources are bio-energy, solar-, wind-, and hydro-energy, and raw materials that have originated from plants and animals. Freshwater is defined as both a renewable and non-renewable resource. The annual surface run-off of rain-fed streams and rivers is a renewable resource, while very deep underground water is a non-renewable resource in a human time perspective.

2. Preserve the Ecosystem's Productivity and Biodiversity

A primary condition for sustainable yields of renewable raw materials and products such as timber, fish, grain and freshwater is the preservation of ecosystems with a high productivity and rich biodiversity. Destruction of productive ecosystems and loss of biodiversity through land-use modification, over-harvesting, pollution or other loads on the environment are not allowed in a sustainable society.

3. Minimise the Use of Non-Renewable Resources

A restricted use of non-renewable resources will prevent resource scarcity in the future society. The use of fossil fuels (oil, coal, and fossil gas) should also be restricted to avoid an increased concentration of carbon dioxide in the

atmosphere, thus preventing global climate change. Also toxic metals such as mercury, cadmium and lead accumulating in plants, animals and human beings must not be spread into the environment. Only strictly closed material cycles in society are allowed in order to prevent the spreading of these substances.

4. Use Energy, Raw materials and Products Efficiently

The best way to save natural resources for future generations is to practice an efficient use of energy, raw materials and products in society. In addition, a reduction of the flow of material through society will also lead to a prevention of pollution and waste generation, with advantages for the environment. Efficient resource use is a profitable method of environmental protection.

5. Produce and Use Environmentally Sound Products

The environmental impact and energy consumption during a product's life cycle (from cradle to grave) should be low. In order to prevent accumulation of persistent and toxic substances that harm the environment, products should exclude substances not easily degradable in nature (persistent organic compounds and heavy metals). A product should also have a long life-span with a capacity to deliver well-being services over a long period of time.

6. Close the Material Cycles in Society

Products which have served their planned or perceived 'use time' should be reused or recycled within the techno-sphere in order to reduce the exploitation of virgin materials and to reduce the load on the environment. Examples of products for recycling are paper, glass, metals, plastic, electronics, cars and tyres. If possible, non-composite products should be used,

because they are easier to de-manufacture before they enter a new product cycle.

7. Insert Rest-products and Substances into Nature's Cycles

Products used in society will, after various recycling loops, sooner or later enter the environment. In order to function as building bricks in the built-up of new resources in nature, the return of rest products and substances have to be done in a suitable way which means; in the right amount, at the right place and in the right time. Examples of rest products and substances to insert back to nature's cycles are sludge, ash, compost, carbon dioxide,

nitrogen and phosphorous. Environmental sustainability requires all human activities to be in harmony with nature's cycles, with their function and rhythm.

8. Create a Healthy and Good Living Environment

A healthy and good living environment is characterised not only by the absence of harmful air and water pollution and noise, but quality of life aspects such as open space, green areas and innovative and cultural environments. A healthy living environment also means a good working environment.

Guidelines for Social Sustainability

In order to build a sustainable society following aspects of social sustainability should be considered:

- Peace and stability
- Human basic needs
- Human rights
- Democracy
- Transparency
- Public participation
- Good health
- Education and lifelong learning
- Equality and equity (gender, race, religion, social class, age)
- Social safety nets
- Local culture and traditions
- Sustainable consumption pattern /lifestyle

Guidelines for Economic Sustainability

In order to build a sustainable society, the following aspects of economic sustainability should be considered:

- Enabling climate for economic development
- Creation of enterprises
- Income generation activities and jobs (micro-credits etc)
- Well managed public service-and tax system (schools, education, social welfare etc)
- User-based fees financing infrastructure systems (water, sanitation, energy, solid waste etc)
- Re-distribution of income to disadvantaged groups
- Social responsible companies (ecological, social & economic sustainability, good working conditions)
- Public procurement as an instrument for sustainable market development (economy, social and environment)

1.4.4 Mainstream Horizontal Goals

From a practical point of view sustainable development is about mainstreaming horizontal goals within daily core activities (vertical goals). For instance, when a restaurant serves coffee it should be coffee produced without pesticides and negative impacts on the soil and water environment (organic coffee). The coffee plantation should also be healthy and provide good working conditions for the workers along

with a good salary and a good learning environment with democratic decision-making procedures in the workplace. The same kind of mainstreaming should take place at the restaurant in order to take part in sustainable development. Achieving sustainable development mainstreaming of environmental and social issues is critically important in all sectors of society and in every kind of activity.

1.4.5 Create a Sustainable Society

Although the RGC promotes livelihood development, people still face adverse poverty and local communities sometimes have no choice but to put more pressure on the environment and the natural resource base in order to meet their basic needs for survival. In order to change this unsustainable pattern we need a development approach that is both people centered, concentrating on improving the human conditions, and nature centered, with conservation and maintaining the variety and productivity of nature. People and nature are both essential parts of one indispensable process towards sustainable development.

The Cambodian NSDS is a strategy giving direction for creation of a sustainable society with real improvements of people's quality of life in urban and rural areas through socio-economic development in a sustainable way, and where the environment and natural

resources are protected and conserved for today's and future generations. The commitment of creating a sustainable society in Cambodia is based on the following common guiding ideas:

- The most important issues we face, poverty, natural resources and environmental degradation, are strongly interlinked and therefore our actions must be mutually supportive and aimed at a common goal.
- The changes we must make, in the way we live and develop, will be fundamental and far reaching. They will demand our full dedication.
- No single group can succeed in sustainable development by acting alone. The task will be easier if we work together.
- Vision and Mission

1.5 VISION AND MISSION

1.5.1 Overall Vision to 2030

The Royal Government's long-term vision to 2030 is:

- to achieve a socially cohesive, educationally advanced, and culturally vibrant Cambodia without poverty, illiteracy and ill health, and where all Cambodians live in harmony free of hunger, inequity, exclusion, and vulnerability, and where all citizens are able to reach their full potential in their chosen vocations to contribute to further

progress of the country and for an increasingly higher standard of living.

- to develop a sustainable society which ensures the long term sustainability of the natural resources and the environment on which all economic activities rely upon, and to develop sustainable economic, social and infrastructure activities without negative environmental and social impacts.

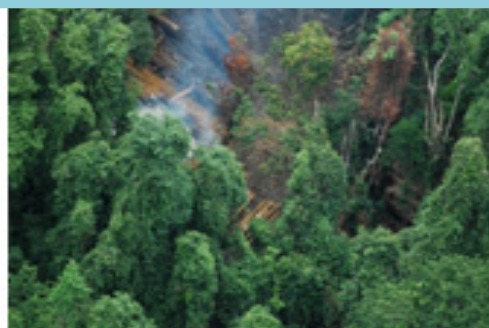
1.5.2 A Mission for All

In order to implement sustainable development, every ministry, every provincial and local government and every major stakeholder group must mainstream environmental sustainability and people's wellbeing into their core activities. The mission for each ministry and government institutions on various levels is therefore to define their

significant horizontal goals (environment, health, learning environment, gender equality and equity etc) and to find ways to integrate these goals into their own policy, plans and projects. Private enterprises, organizations and local communities also have the same mission to accomplish.



PART 2 | STRATEGIC AREAS FOR SUSTAINABLE DEVELOPMENT IN CAMBODIA



2.1 PEOPLE'S WELLBEING AND SOCIAL DEVELOPMENT

The ultimate goal of sustainable development is the people's wellbeing and happiness. This equates with freedom from poverty, upholding basic human rights, ensuring personal security and good health for all people. The current situation of hunger and poverty is recognized to be morally unacceptable, socially divisive, unsafe and economically wasteful.

Sustainable social development in Cambodia also means a well educated people who experience gender equality and equity as a basis for poverty alleviation and social and economic progress. A social safety net for poor

and disadvantaged groups is another major component in sustainable social development. The cultural identity and traditions of the country can also play an important role in creating wellbeing for the Cambodian people in the future.

The RGC is fully aware of the importance of investing in improving the quality of its human capital towards creation of a knowledge-based society in Cambodia. Therefore, the quality of education needs to be enhanced and access to education at all levels must be ensured and equitable.

2.1.1 Poverty Alleviation and Food Security

Analysis of Situation

Cambodia's recent economic growth performance over the past ten years has been encouraging; nevertheless widely prevalent rural poverty highlights the continued challenges that the country faces. Even though poverty incidence remains high, the 2004 Cambodia Socio-Economic Survey (CSES) suggests that there has been a significant improvement in the poverty situation over the last 10 years; poverty incidence have declined from an estimated 47 percent in 1994 to 35 percent in 2004. This is mainly attributable to

the robust economic growth occurring during this period.

In general, poverty remains largely a rural phenomenon, where more than 90 percent of the poor live. According to the 2004 CSES data, the poverty incidence in rural areas averages about 40 percent of the total population, reaching close to 60 percent in some regions. Furthermore, a large majority of the Cambodian population, close to 85 percent, still resides in rural areas. Achieving major gains in reducing

overall poverty will require a significant reduction in rural poverty.

The country's total number of poor people is 4.4 million and 93.4 percent of the poor live in the rural areas while 6.2 percent live in the urban areas (0.3 million), with 15,000 poor people estimated to be living in urban Phnom Penh. The poverty rate in Cambodia was 35.9 percent in 2004 while the population living under the food poverty line was 19.7 percent. The share of the total population that has no residential and/or agricultural production land is 12 percent.

This shows that the fight against poverty in Cambodia must focus on both urban and rural development and increased productivity of the urban and rural economy in order to accelerate the growth of people income and opportunities. In order to eradicate hunger the contribution from the agriculture, forestry, fishery, industrial and tourist sectors are of major importance.

The RGC has officially announced the urgent need for poverty alleviation. To accomplish this goal, the RGC has affirmed its commitment to make an intensive and sustainable national effort to free Cambodia from poverty.

Current Policy and Strategies

Currently, the main policy and strategies related to poverty alleviation and hunger eradication include the following:

- Government Rectangular Strategy
- Sub-Decree on Establishment of Inter-Ministerial Committee for Coordinating of Quality-safety of Products and services
- Sub-decree on Food Hygiene for Human Consumption
- Sub-Decree on establishment of National Codes Committee
- Cambodia Millennium Development Goals Report 2003
- A poverty profile of Cambodia 2004
- NSDP 2006-2010

Vision to 2030

The vision for Cambodia in relations to poverty and hunger is as follows:

"All Cambodians live in a society without hunger and poverty based on an economic

development where social and environmental sustainability is a prerequisite for economic activities and poverty reduction".

Objectives and Targets

In order to achieve this future condition, the following objective and associated targets are proposed.

Objective 2.1.1.1: *Eradicate Extreme Poverty and Hunger*

- Target A. Halve, between 1993 and 2015, the proportion of people whose consumption is less than the national poverty line.
- Target B. Achieve, by 2020, full and productive employment and decent work for all, including women and young people.
- Target C. Halve, between 1993 and 2015, the proportion of people who suffer from hunger.

Indicators

The indicators identified in *Part 4: Monitoring and Evaluation, Poverty Alleviation and Food Security*, page 52, are to be used for measuring

progress towards the objective and the related targets.

Proposed Strategic Measures

In order to eradicate poverty and hunger, a number of measures need to be carried out. Some of the most important strategic measures include the following:

- Achieve the target of food security and nutrition improvement among food-insecure households in Cambodia at the national and local level;
- Increase food availability from various sectors such as agricultural and livestock production, forest and forest sub-products and fisheries, and enhance food security through actions to reduce risks and carry out disaster mitigation;
- Make investments in infrastructure such as rural roads, irrigation, domestic water supply and sanitation in order to increase food security and nutrition in poor and food-insecure rural communities;
- Establish credits for farmers with a relatively reasonable interest rate
- Increase the access to food and fulfill basic needs in poor communities by increasing the household's employment and income and entitlement to social safety benefits;
- Improve the efficiency in food utilization and reduce malnutrition, morbidity and mortality especially among women and children
- Strengthen the institutional and legislative framework for the purpose of poverty reduction;
- Mainstream poverty reduction in all relevant strategies, policies and plans especially in the agriculture-, forestry- and fishery sector and in development of micro-enterprises;
- Introduce land reforms in order to give landless people land tenure along with rights for fishing and use of forest products and other natural resources;
- Promote community based sustainable natural resource management;
- Promote increased productivity in the agriculture sector and diversification of income generating activities in rural areas.

2.1.2 Good Health

Analysis of Situation

Absence of good health is both a cause and consequence of poverty. For various historic reasons Cambodia's vital health indices are quite low. This is due in large part to inadequate capacity in the health sector and lack of adequately trained manpower.

In many families and communities there is limited awareness and knowledge on essential illness prevention and care practices, especially in relation to the survival of young children. Issues such as: breastfeeding, growth promotion, newborn care, skilled attendance at births; availability of family planning services; multi-sectoral response; and public and private partnership in Tuberculosis (TB) control are some of the most important issues that most families have little to no capacity to control. Additionally, some people are not aware of, or pay less attention to, various kinds of disease

outbreaks, such as HIV/AIDS, avian flu and other preventable infectious diseases.

Major gaps have been found in the health sector, particularly in the access, management and responsiveness of responsible institutions. These include:

- (i) Limited access to safe abortion services;
- (ii) Unavailability of emergency obstetric care services;
- (iii) Limited integration of HIV/AIDS into reproductive health services; (iv) limited involvement of males in family health care, particularly in reproductive health; (v) limited involvement of the community in prevention of the spread of diseases; and (vi) insufficient coordination and collaboration with the

civil society. There is also an insufficient use of free-of-charge-service for TB diagnosis and treatment, as well as insufficient TB/HIV control activities.

There is still a long way to go before reaching satisfactory levels of the health status in Cambodia, particularly in reducing maternal mortality and infant mortality rates. Poor household sanitation is recognized as occurring

in poor communities and squatter settlements, and this is a major cause of negative human health impacts. Dengue and malaria diseases, for instance, often occurred to children and other people due to either a carelessness/limited use of dipped mosquito nets or low coverage of treatment of household water jars.

Current Policy and Strategies

The current policy and strategies related to health are as follows:

- Government Rectangular Strategy
- Health Strategic Planning
- A poverty profile of Cambodia 2004
- NSDP 2006-2010
- Cambodia Millennium Development Goals
- Public Investment Program 2001-2003

Vision to 2030

The vision for good health in Cambodia is as follows:

"Cambodia has a population with a good physical and mental health without illness,

based on public awareness on health prevention and an equitable high quality health care sector reaching all people of the country".

Objectives and Targets

In order to achieve the vision, the following objectives and targets are proposed:

Objective 2.1.2.1: *Ensure good health in Cambodia through health prevention and a high quality health care sector reaching all people in Cambodia in an equitable way*

Objective 2.1.2.2: *Improve Maternal Health*

Objective 2.1.2.3: *Reduce Child Mortality*

Objective 2.1.2.4: *Combat HIV/AIDS, malaria, dengue fever, tuberculosis and other diseases*

- **Target A.** Achieve, by 2015, public awareness on health prevention for all Cambodians and cover 50 percent of the people with health care services
- **Target B.** Reduce by two-thirds, between 1990 and 2015, the maternal mortality rate
- **Target C.** Reduce by three-quarters, between 1990 and 2015, the under five mortality rate
- **Target D.** Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it, and all communities get aware on how to avoid and/or protect their health from the outbreak of avian flu
- **Target E.** Achieve, by 2015, universal access to reproductive health
- **Target F.** halt by 2015 and begin to reverse the spread of HIV/AIDS
- **Target G.** Halt by 2015 and begin to reverse the incidence of malaria, Dengue Fever (DF), TB and other major diseases.

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Good Health, pages 52-53*, are based on the revised MDG

monitoring framework recommended by the Inter-Agency and Expert Group on MDG indicators in 2007.

Proposed Strategic Measures

In order to achieve good health for the population of Cambodia a number of measures need to be carried out. Some of the strategic measures to be taken include the following:

- Promote health service coverage and utilization for all Cambodians;
- Enhance the accessibility and affordability of key essential health services to the people, especially the poor (both urban and rural areas);
- Provide information, improve participation and empower the poor to

make informed choices on health issues based on public awareness of disease prevention and illness;

- Combat HIV/AIDS, DF, TB, malaria, and avian flu through special programs;
- Make targeted efforts for reducing the child mortality rate and to improve maternal health;
- Promote investments in safe water supply and sanitation in local communities.

2.1.3 Well-Educated People

Analysis of Situation

Education is universally accepted as a basic human right and prerequisite for socio-economic development. It is recognized as a key tool to alleviate poverty as well as in support of environmental sustainability. However, the financial resources and facilities for improving education, and the institutional and human resource capacity for planning, management and technical coordination are still limited especially with respect to human resources.

One problem related to low levels of education is the need by poor families for their children's labor in making enough money for subsistence survival rather than letting them attend school. The nutrition status among children is also low due to the fact that their families are poor and have not enough food to feed their children. Furthermore, many of families still perceive that education is more important for boys than for girls.

Another key issue is related to the inadequate professional development training for teachers, especially for female teachers. The teaching workforce has a limited capacity to effectively meet the needs of all students, especially those required by students at local level, including students with disabilities or ethnic minorities. The classrooms and educational facilities are inaccessible for students with disabilities. Moreover, most students are lacking knowledge on sexual harassment which leads to socially incorrect behavior. Segregation and poor discipline in school cause a situation where the quality of the education is jeopardized or out of control.

In responding to the Government's intentions, high quality education specific instruments need to be established with firm support from the Government.

Current Policy and Strategies

The current policy and strategies related to education are as follows:

- Education Strategy Plan (ESP) 2004-2008
 - a) *Primary and Lower Secondary Policy*
 - b) *Upper Secondary Policy*
 - c) *Higher Education Policy*
 - d) *Non-Formal Education and Adult Literacy Policy*
 - e) *Youth Training Skill Policy*
 - f) *Pre-service teacher training and staff development policy*
- Government Rectangular Strategy
- A poverty profile of Cambodia 2004
- Cambodia Millennium Development Goals
- NSDP 2006-2010

Vision to 2030

The vision for education and public awareness in Cambodia is as follows:

"Cambodia has a well educated population stemming from a high quality education system, starting from the primary school up to the

university level, which ensures all children, boys and girls, from the whole country receive a good and equal opportunity to a better life with job and income".

Objectives and Targets

In order to achieve this vision, the following objectives and targets are proposed.

Objective 2.1.3.1: *Achieve Universal Nine-Year Basic Education*

Objective 2.1.3.2: *Give Students Access to University Studies*

Objective 2.1.3.3: *Integrate Sustainable Development issues in the School Curriculum and Enhance Public Awareness on SD issues*

- **Target A.** Ensure all children complete primary schooling by 2010, and nine year basic schooling by 2015
- **Target B.** Eliminate, by 2010, gender disparity in nine year basic education
- **Target C.** Give, by 2020, a substantial part of the students access to university level studies
- **Target D.** Integrate, by 2010, sustainable development issues in the school curriculum on various levels
- **Target E.** Carry out, by 2010, a communication program on sustainable development in order to raise the public awareness on SD

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Well-Educated*

People, page 53, are to be used for measuring progress towards the objectives and targets.

Proposed Strategic Measures

In order to achieve a well educated people based on a high quality education system, a number of measures need to be carried out. Some of the strategic measures to be taken are as follows:

- Formulate a policy and action plan on "education for all" from the primary

school to the university level in order to achieve a good human resource development;

- Formulate a program for wide attendance of poor children and youths/students at all educational levels;

- Carry out activities to facilitate attendance of girls at lower, secondary and higher levels of education;
- Develop together with schools on various levels a school curriculum where SD issues are integrated;
- Formulate a communication program for raising the public awareness on SD in the country.

2.1.4 Gender Equality

Analysis of Situation

The Royal Government of Cambodia gives a high priority to women as they are the very foundation of Cambodia's society and economy. The Strategic Plan for women, "Nearby Rattanak", (meaning "women are precious gems") is aiming at providing Cambodian women with faith, value and hope in their lives through gender mainstreaming in all activities of society.

A major concern is to bring about an equitable and stable gender balance (between men and women, boys and girls) with respect to access to goods and services, in participation and in receiving benefits from the development process at all levels, and in all sectors such as the general workforce, education and health care.

One obstacle in mainstreaming gender equality is limited information on reproductive health and sexuality for adolescent females and males, especially the lack of "youth-friendly" information. Traditional cultural beliefs still strong, including traditional gender roles, social

norms and reproductive health with regards to pregnancy, delivery and breastfeeding.

Gender inequality in relation to education for girls and women is not balanced with that of men. The same unequal pattern is shown when it comes to participation in social affairs. Therefore the number of women is limited in decision-making forums and in strategic management positions, in addition to financially powerful positions. Women commonly get lower salary and benefits than men for the same work. Another problem that exist is violence against women along with limited implementation of legal protection for women.

In addition, the health and nutrition status for women and children is not responding according to their requirements. For example, awareness and education about HIV/AIDS at local levels is still low. Gender imbalance is also at the root of poverty, especially in women headed households (widows). All this shows that the gender mainstreaming process in Cambodia is proceeding forward slowly.

Current Policy and Strategies

The current policy and strategies related to gender equality are as follows:

- Nearby Rattanak I Strategy
- Nearby Rattanak II Strategy
- Government Rectangular Strategy
- A poverty profile of Cambodia 2004
- Cambodia Millennium Development Goals
- NSDP 2006-2010

Vision to 2030

The vision for gender equality in Cambodia is as follows:

"Cambodia is a society with gender equality and where women have equal rights and the same

opportunities as men with regards to education, decision making, high level positions, salary, nutrition, health and freedom from violence, and where women contribute actively in the economic, social and environmental

development of Cambodia for the long-term wellbeing of people".

Objectives and Targets

In order to achieve this vision, the following objectives and targets are proposed.

Objective 2.1.4.1: *Ensure Gender Equality and Empowerment of Woman*

- **Target A.** Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015.
- **Target B.** Eliminate gender disparities in wage employment in all economic sectors.
- **Target C.** Eliminate gender disparities in public institutions.
- **Target D.** Reduce significantly all forms of violence against women and children.

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Gender Equality,*

page 53, are to be used for measuring progress towards the objectives and targets.

Proposed Strategic Measures

In order to ensure gender equality and empowerment of women, a number of crucial measures need to be taken into account and carried out. These include the following:

- Ensure the legal protection and promotion of women's activities and women's presence at all levels of society, including capacity building and awareness raising for women;
- Change social attitudes that discriminate against women;
- Mainstream gender equality in national and local policies and programs in order to increase the number of women in decision and policy making and support the coordination of all gender work among donors;
- Develop and provide for victim's care and rehabilitation;
- Contribute to poverty reduction through economic empowerment of women, especially poor and disabled women including young women who are unemployed;
- Ensure that women, girls and veterans receive full rights in education and skills training at all levels to become active human resources in society.

2.1.5 Zero Victims of Landmines and UXOs

Analysis of Situation

Large tracts of arable land contain dangerous landmines and unexploded ordnance (UXO) stemming from the conflicts of the past four decades. These munitions routinely claim lives and limbs of both humans and animals. Landmines and UXOs are not only a humanitarian problem, but also have significant social and economic implications, particularly on land distribution and the security of poor farming households in remote areas. The Mine Clearing program has been in operation for a

number of years but much work still remains to be done.

Landmines and explosives are remnants from the war, and the provision of land mines after clearance is unfair. Most people living in landmine-affected areas commonly have very limited living standard because their farmlands and activities are threatened by dangerous mines. There are some Mine Risk Education (MRE) activities carried out, but local awareness promotion still requires the avoidance of high risk areas and hazard from mines and UXOs. On

the other hand, local health center development dealing with this problem is still

inadequate.

Current Policy and Strategies

The current policy and strategies related to landmines and UXOs include:

- Sub-decree on Mine Clearance
- Mine Ban Treaty
- Law to Prohibit the Use of Anti-personnel Mines

- Government Rectangular Strategy
- A poverty profile of Cambodia 2004
- Cambodia Millennium Development Goals
- NSDP 2006-2010

Vision to 2030

The vision for mines and UXOs in Cambodia is as follows:

"Cambodia has cleared all land mines and UXOs, and the number of new victims is zero,

while former victims get comprehensive assistance for integration into society and for a life".

Objectives and Targets

In order to achieve this vision, the following objectives and targets are proposed:

Objective 2.1.5.1: *Move towards zero impact from landmines and UXOs*

Objective 2.1.5.2: *Eliminate humanitarian and socio-economic impacts resulted from landmines and UXOs by 2015*

- **Target A.** Achieve, by 2010, less than 200 victims of land mines and UXOs, and by 2015, zero victims
- **Target B.** Clear, by 2015, 100 percent of all high/medium/ low suspected areas
- **Target C.** Develop, by 2008, a comprehensive victim assistance framework

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Zero Victims of Landmines and UXOs*, page 54, are to be used

for measuring progress towards the objectives and targets.

Proposed Strategic Measures

In order to achieve zero victims of landmines and UXOs, several; key measures need to carry out as follows:

- Incorporate mine action into the national development plans;

- Develop an appropriate framework for victim assistance and clearance of landmines, UXOs and follow-ups;
- Increase the clearance rate and target;
- Rationalize the distribution of mine clearance capacities.

2.2 SUSTAINABILITY OF THE NATURAL RESOURCES AND ENVIRONMENT

2.2.1 Environment For Development

A current metaphor of the United Nations is “Environment for Development”, which emphasizes the fundamental role that the environment plays in social and economic development. A society cannot survive without its natural resources and environment. People need rice, vegetables and fish for their daily living, including fresh air to breathe and clean water to drink. Human beings also need a good climate and protective ozone layer for survival. Therefore, we need rich natural resources and a healthy environment that can deliver the

products and services we need as human beings.

The challenge is to *protect the quality of the environment and the natural resources* in order to maintain the productive functions in a long-term. In other words, environmental protection must economize scarce resources in order to achieve wellbeing and happiness, not only for this generation but for many future generations.

2.2.2 Environmental Problems in Cambodia

Analysis of Situation

In Cambodia environmental problems presented a serious concern during the 1990s, and they are currently recognized to cause major pressure on the future development. Some of these problems have been solved by the government and responsible institutions, with involvement of the civil society, while other problems still need to be mitigated such as:

- illegal logging and forest destruction
- land clearing for agricultural purposes
- hunting of wildlife including rare and endangered species
- increased use of pesticides and chemical fertilizers in the agriculture sector
- improper disposal and burning of solid and hazardous wastes
- contribution to regional and global environmental problems such as climate change and the depletion of the ozone layer
- various environmental and human health impacts caused by sector development such as industry, agriculture, urbanization, tourism and other sectors
- hydropower dam constructions at upstream countries

The various environmental problems stated above are a result of many constraints. First, the understanding and strong commitment on environmental protection and natural resources management is still required including the capacity building and institutional strengthening at national and local levels to develop and/or improve a specific environmental policy, legal and technical framework. Second, some roles and responsibilities of the government institutions are overlapping and unclear in their practical application. Third, technical assistance coupled with technology transfer, such as treatment technology and engineering services for waste management, is limited in Cambodia. Therefore, improper waste disposal and management is commonly found in some urban and town areas that may pose high risks and hazards to human health and the environment. Fourth, environmental networking for exchanging information and experiences among countries in the region is still improving, including its relevance to collaboration,. Fifth, investment and expenditure for environmental protection and conservation by public and private sectors is still limited and this has not widely been taken into account yet.

One major constraint is the lack of environmental objectives for Cambodia which

could give guidance towards environmental sustainability. In order to ensure a long-term quality and function of the environment and

the natural resources, Cambodia needs to adopt a number of environmental quality objectives.

Current Policy and Strategies

The current policy and strategies related to the protection and management of the environment and natural resources include the following:

- Law on Environmental Protection and Natural Resources Management
- Sub-Decree on Water Pollution Control
- Sub-Decree on Solid Waste Management
- Sub-decree on Environmental Impact Assessment Process (EIAP)

- Sub-Decree on Air Pollution and Noise Disturbance
- The National Environment Action Plan (1998 – 2002)
- Environmental Management Strategy Plan (EMSP) 2004-2008
- Government Rectangular Strategy
- A poverty profile of Cambodia 2004
- Cambodia Millennium Development Goals
- NSDP 2006-2010

Vision to 2030

The vision for the environment and natural resources in Cambodia is as follows:

"Cambodia has rich natural resources, a rich biodiversity in accordance with global

environmental requirements and a high quality environment that ensures long-term production and supply of products and environmental services to the people of Cambodia."

Objectives and Targets

In order to achieve this vision for Cambodia's environment, the following objectives and targets are proposed.

Objective 2.2.1: *Ensure environmental sustainability in Cambodia through activities directly aligned with and supporting a system of Environmental Quality Objectives linked to Goal 7 in Cambodia's MDGs*

Objective 2.2.2: *Ensure environmental sustainability in all sectors of society through information,*

guidelines, laws and regulations, economic instruments, monitoring and evaluation, etc

- **Target A.** Develop, by 2010, a system for Environmental Quality Objectives that protects and conserves the richness of Cambodia's natural resources and the environment
- **Target B.** Achieve, by 2013, sector policies, plans and projects to abide by the environmental sustainability in all sectors of society
- **Target C.** Reach, by 2030, the environmental quality objectives in Cambodia (within one generation)

2.2.3 Environmental Quality Objectives

Environmental Quality Objectives for Cambodia cover all categories and areas of natural resources and environmental issues. The objectives are to be implemented by all stakeholders, aiming at giving a direction for environmental sustainability in all sectors of society. These objectives will be achieved by 2030.

The environmental quality objectives should be achieved within one generation, which means by 2030. For each objective, short and medium term targets should be developed as along with relevant and measurable indicators in order to monitor progress towards this “generation-objective”. In some cases, sub-objectives need to be developed in order to cover essential quality aspects of the environment. Below is a proposed interim set of environmental quality objectives for Cambodia:

- 2.2.3.1 *Productive Land Resources*
- 2.2.3.2 *Rich Forest Resources*
- 2.2.3.3 *High Quality Ground- and Surface Water Resources*
- 2.2.3.4 *Rich Fish Resources*

- 2.2.3.5 *Functional Wetlands*
- 2.2.3.6 *Sustainable Marine- and Coastal Environment*
- 2.2.3.7 *Rich Biodiversity*
- 2.2.3.8 *Limited Influence on the Climate*
- 2.2.3.9 *Protected Ozone Layer*
- 2.2.3.10 *Clean Air*
- 2.2.3.11 *Non-Toxic Environment*
- 2.2.3.12 *Good Living Environment*
- 2.2.3.13 *Limited Use of Non-Renewable Resources*
- 2.2.3.14 *Efficient Use of Natural Resources and Limited Waste Generation*
- 2.2.3.15 *Limited Impact from Natural Disasters*

The environmental quality objectives are to be linked to Goal 7 “Ensure Environmental Sustainability” in Cambodia’s Millennium Development Goals (CMDGs).

In Appendix 1 the environmental quality objectives are presented with important sub-issues to be further developed.

2.2.4 Indicators for Environmental Sustainability

Indicators for monitoring progress of achievements with respect to the environmental quality objectives should be based on the DPSIR approach, or variations upon that approach, in order to get a good structure of the monitoring system. ‘D’ means *Drivers* behind the pressure on the environment; ‘P’ means the *Pressure* on the environment; ‘S’ means the *State* of the

environment; ‘I’ means *Impacts* on the environment; ‘R’ means *Response* in order to reduce the pressure or improve the environment. Proposed indicators presented below are to be used for measuring progress towards the objectives and targets. When the system for environmental quality objectives has been fully developed, some of the indicators may be amended or changed.

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Sustainability of the Natural Resources and Environment*, page 54,

are to be used for measuring progress towards the objectives and targets.

2.2.5 Strategic Measures for the Environment

Some major strategic measures proposed to effectively manage, conserve and protect Cambodia’s environment and natural resources are as follows:

- Promote environmental awareness and improve the knowledge base at the national and local level in order to achieve the commitment required for

the perspective “environment for development” to be fully adopted;

- Promote formal and non-formal environmental education curriculums and programs;
- Develop a system of environmental quality objectives and indicators as the key instrument for ensuring environmental sustainability in Cambodia;
- Make use of the prevention principle, polluter pay principle and precautionary principle;
- Ensure the integration of environmental sustainability into all sectors of society;
- Require an Environmental Impact Assessment (EIA) for major sector developments and projects;
- Minimize urban noise, water and air pollution and improve the management of liquid and solid wastes, including hazardous waste;

- Strengthen and promote the managerial capacity for management of protected areas and biodiversity;
- Promote sustainable land use and integrated coastal zone management;
- Promote a participatory approach in minimizing climate change;
- Promote the development of environmental technology and investments;
- Improve the management and maintenance of Tonle Sap Ecosystem;
- Improve international cooperation on environmental and natural resource management in terms of bilateral, sub-regional and regional context;
- Implement all international environmental conventions ratified by the RGC
- Promote the application of CDM, green growth/development for sectoral development;
- Urge the use of fuel oil according to the quality standard, including to promote its alternative use.

2.3 SUSTAINABLE ECONOMIC SECTORS AND INFRASTRUCTURE

A long-term and sufficient income for the Cambodian people has to be ensured through economic growth activities which are socially and environmentally sustainable. This growth is based on good education, good health, gender

equality and equity as well conservation of the rich biodiversity, and natural resource based, thus sustaining an environment can produce food, energy, raw materials and environmental services in the long-term.

2.3.1 Sustainable Land Use and Agriculture

Analysis of Situation

Land reform is a crucial tool to increase agricultural production by providing titles and security of land tenure to poor people, especially rural farmers that are legally occupying land. Many poor people have no land, little land, or poor land, to earn a living from due to rapid population growth and economic development, demobilization of soldiers and family breakdowns. These conditions cause a high demand for land ownership.

The historical legacy of past land policy has left contemporary Cambodian society confronted with a number of problematic issues regarding land-use. Most private land-owners do not have titles and the title issuance by systematic land registration is complicated and slow. Furthermore, the systematic land registration is not altogether transparent.

The application of relevant laws and procedures is not sufficient for effective land-use management. A land assay system is not in

place, primarily due to inadequate human resources, budget and relevant equipment. Delineation and demarcation of state land and administrative boundaries are not clearly or properly managed after the process of transition, which has led to accelerated land grabbing and destruction of primary forest. Conflicts regarding land property have occurred in different areas between the poor themselves, between poor and the rich, and with local authorities. Most of such cases are solved by decisions of the Government or local authorities.

Another important issue beside titles and ownership of land is the unsustainable use of land. Inappropriate land-use includes such practices as shifting cultivation along with recent economical forest plantation which exacerbates land degradation along with other pressures on the environment and biodiversity. The usual pattern is, that when the land

resources are degraded, farmers and local communities find additional or new careers or occupy other land areas illegally.

A third issue of importance centers around the fact that large tracts of arable land are still covered with dangerous land mines and UXOs dropped during the Vietnam-American war and the civil war that followed. These explosives routinely claim lives and limbs of both humans and animals.

The lack of land-use planning is one of the major obstacles for sustainable development nationwide. As information and education on land matters, land rights and land-use is still limited, public works, infrastructure investments and urbanization are mostly carried out without any sort of master plan being developed before the construction or other development activities are started.

Current Policy and Strategies

The current policy and strategies related to land use and agriculture are as follows:

- Land Law
- Strategy of Land Policy Framework (Interim paper)
- Policy Paper on Social Land Concessions in Kingdom of Cambodia
- Sub-Decree on Social Land Concession
- Sub-decree on Community Forestry Management
- The Sub-Decree on Sporadic Land Registration
- Sub-Decree on the Procedures to establish Cadastral Index Map and Land Register
- The Law on Commune Administration
- The Law on Environmental Protection and Natural Resources Management
- Government Rectangular Strategy
- A poverty profile of Cambodia 2004
- Cambodia Millennium Development Goals
- Sub-Decree on state land management
- NSDP 2006-2010
- Law on Forestry
- Law on Fishery

Vision to 2030

The vision for sustainable land use and agriculture in Cambodia is as follows:

"Cambodia has a sustainable use of land resources based on sustainable land-use

planning, secured land tenure for the rural poor and sustainable agriculture practices (feeding the people) without land degradation or other negative environmental impacts".

Objectives and Targets

In order to achieve the vision, the following objectives and targets are proposed.

Objective 2.3.1.1: *Secure land tenure for the rural poor*

Objective 2.3.1.2: *Increase the productivity of the agriculture sector and other income generating activities in rural areas*

Objective 2.3.1.3: *Ensure the use of sustainable agriculture practices*

Objective 2.3.1.4: *Ensure sustainable land use planning in all provinces*

- **Target A.** Achieve, by 2015, a secure land tenure for all rural poor in the country.
- **Target B.** Achieve, by 2015, an increase of the national rice yield to 2.4 t/ha and 50 percent increase of non-agriculture income generating activities in rural areas.
- **Target C.** Achieve, by 2015, sustainable agricultural practices (IPM or organic agriculture) in 20 percent of the agricultural land.
- **Target D.** Achieve, by 2015, a sustainable land use planning in 50 percent of the provinces.

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Sustainable Land Use and Agriculture, page 56*, are to be used for

measuring progress towards the objectives and targets.

Proposed Strategic Measures

In order to achieve a sustainable land-use and sustainable agriculture, many measures need to be carried out. Some strategic measures to be taken are as follows:

- Improve land tenure security, the land market and reduce land disputes;
- Promote land reforms in order to ensure sustainable access to land resources for poor farmers ;
- Create possibilities for the poor households to have land for residence/family farming;

- Improve the state's land-use policy-making and planning;
- Formulate a comprehensive land-use planning policy and pilot projects for sustainable land-use planning including housing, resettlement and plantation issues;
- Formulate a policy and action plan for sustainable agriculture, including organic agriculture, integrated pest management and the use of new environmentally friendly technology.

2.3.2 Sustainable Forestry

Analysis of Situation

Forests provide many significant resources, functions and services including providing many primary and secondary economic products, recreational opportunities, wildlife habitat, water and soil conservation, a filter for pollutants in addition to absorbing CO₂ and producing oxygen. Forests also support

employment and traditional uses by the people in addition to supporting biodiversity. There is a general concern over the human impact on forest health and the natural processes of forest growth and regeneration. A major threat to the forest resources has been increased through illegal logging activities and

inappropriate forest sub-product collection including a land clearing for agriculture and ownership.

The volume of logging in the forests increased dramatically in the early 1990s because it was one of the major sources of income for many rural people as well as revenue for different factions. However, illegal logging and other human pressures that deplete the forest areas have noticeably decreased or stopped in many areas as people are now more often complying with regulations and policy. Also, some serious cases were tried in the courts.

As a matter of fact, rural people are often directly dependent on the forest and its products for their living, including the wildlife resources. Due to limited enforcement of legal instruments, some communities try to encroach into the National Parks and Protected Areas for their own purposes. The collaboration and coordination among ministries, NGOs and local authorities is still required and needs to be improved.

Some communities and ethnic minorities have shown little interest in participating in forest and biodiversity management activities. There is also a limited motivation and participation from the private sector and governmental

institutions to carry out forest planting and reforestation, especially indigenous species. This limited interest leads to a lack of forest demarcation and forest classification, coupled with a lack of a transparent monitoring process in order to follow up the sustainability of forest exploitations. One constraint to sustainable forest management is the limited awareness on forestry issues such as efficient use of forest products, value-adding, extension and forest seedling (nurseries), supply of services to communities and infrastructure for the local forestry administration.

In order to restore and further develop the forestry sector, the RGC has issued a number of programs, policies, orders and proclamations aimed at eliminating the anarchy in the sector and to move towards sustainable forest management. One approach for achieving a sustainable forestry sector (decided by the government in 2003) is community forest management. This is where the local community takes responsibility for sustainable forest management itself with the support from the Forest Administration and the supply and income from forest products can help to reduce the people's poverty.

Current Policy and Strategies

The current policy and strategies related to forestry are as follows:

- Law on Forestry
- Sub Decree on Community Forestry Management
- Statement of Royal Government on Forest Policy
- Sub-Decree on State Forest Land Management
- Sub-Decree on Forest Land Classification and Administration
- Law on Environment Protection and National Resources Management
- Royal Decree on the Creation and Designation of Protected Areas
- Government Rectangular Strategy
- Cambodia Millennium Development Goals
- A poverty profile of Cambodia 2004
- NSDP 2006-2010

Vision to 2030

The vision for a sustainable forestry sector in Cambodia is as follows:

"Cambodia possesses rich forests that cover a large part of the country and the forests are well protected and managed in a sustainable way in order to produce a good climate, rich

biodiversity, valuable environmental services, sustainable timber production, energy resources and non-timber products for the rural communities who manage the forests to a large extent".

Objectives and Targets

In order to achieve the vision, the following objectives and targets are proposed.

Objective 2.3.2.1: *The forest cover of Cambodia shall be minimum 60percent of the land area and be managed in a sustainable way with participation of the local community.*

Objective 2.3.2.2: *Protected areas and national parks shall cover a minimum of 3.3*

million hectares and each area shall have a plan for conservation and management.

- **Target A.** Achieve, by 2015, a forest cover of minimum 60 percent which is managed in a sustainable way with participation of the local community.
- **Target B.** Achieve, by 2015, 3.3 million hectares of protected areas and national parks with plans for conservation and management and resources for operation.

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Sustainable*

Forestry, page 56, are to be used for measuring progress towards the objectives and targets.

Proposed Strategic Measures

In order to achieve the planned forest coverage, proper protected areas and national parks management and to implement a sustainable forestry in Cambodia, there are a number of measures that need to be carried out. Some of the strategic measures to be taken are as follows:

- Formulate a sustainable forest management policy that includes protection of the biodiversity and endangered species as well as community forestry as a sound, transparent and locally managed activity;

- Promote sustainable forestry management and access to forestry resources for rural poor people stemming from the forestry management reform;
- Ensure maximum participation from the private sector local communities in forest conservation and management framework for sustainable development;
- Train local communities, the private sector and local forest administrators in sustainable forest management

2.3.3 Sustainable Water Resource Management

Analysis of Situation

Water resources are a crucial component of the nation's environment and natural resource base. As a part of the GMS, Cambodia possesses a vast array of water resources, in particular the Mekong River and the Tonle Sap lake system, both which provides the basis for the country's fisheries, irrigated agricultural production, domestic and industrial water supply, hydro-electric potential and navigation. Even with abundant fresh water resources such as rivers, streams, lakes, and aquifers, some parts of Cambodia still suffer from seasonal drought which adversely affects agricultural production. Construction and improvement of irrigation facilities are an important priority as along with flood protection dykes for periods of flooding and sea protection dykes to protect against storm surges and rising sea level.

However, there is limited institutional and manpower capacity and funds at the national and sub-national levels for implementing the National Policy on Water Resources Management and to get participation of farmers in the operation and maintenance of irrigation facilities. Other obstacles to effective water resource management include the gaps in the government's capacity to control inappropriate settlements and use of flood management embankments. The limited community awareness of flood management results in excavating of channels through embankments and other destructive activities on the flood management infrastructure.

Another problem is the limited information for weather forecasting as well as information on flood hydrology, river geomorphology, bank erosion locations and floodplain sediments, rainfall forecasts, drought and flood warnings. The main causes behind this lack of information are insufficient monitoring and observation stations and no reliable real-time data transmission system for flood forecasting, drought monitoring and public weather information.

The environmental concerns related to water resources are related primarily to water pollution in urban areas by untreated waste water from domestic and some industrial sources containing high concentration of bacteria and toxic substances. Increased use of pesticides and chemical fertilizers in the agricultural sector presents a major threat to water quality and aquatic life. Another water-related environmental issue of concern is future dam construction for hydropower dams along the Mekong river system and its tributaries. The construction of these dams could cause serious impacts on the hydrological regime of the country's water resources resulting in serious effects on human settlements and natural resources such as in the Tonle Sap ecosystem and hydrologic system.

Current Policy and Strategies

The current policy and strategies related to water resource management are as follows:

- Law on Water Resources Management
- MRC strategies plan 2006-2010
- Government Rectangular Strategy
- A poverty profile of Cambodia 2004
- Cambodia Millennium Development Goals
- Sub-Decree on Water Pollution Control
- Sub-Decree on Solid Waste Management
- NSDP 2006-2010

Vision to 2030

The vision for sustainable water resources management in Cambodia is as follows:

"Cambodia has a sustainable use of water resources based on integrated water resource management that ensures a proper quantity

and quality of water for key sectors such as fisheries, water supply, irrigation, hydropower, transportation, tourism, recreation, waste water treatment and good ecosystem functions".

Objectives and Targets

In order to achieve the vision, the following objectives and targets are proposed.

Objective 2.3.3.1: *Ensure sustainable water resource management and an effective use of water in various sectors (both quantity and quality)*

Objective 2.3.3.2: *Reduce the effects of flooding and droughts by a combination of*

preventive and adaptation measures

- **Target A.** Achieve, by 2015, an irrigated area of 30percent of the rice cultivated area of the country.
- **Target B.** Achieve, by 2015, a sustainable water resources management plan for all watersheds including flooding and drought issues.
- **Target C.** Achieve, by 2015, an effective use of water in all sectors of society in terms of both quantity and quality.

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Sustainable Water Resource Management, pages 56-57*, are to be

used for measuring progress towards the objectives and targets.

Proposed Strategic Measures

For achieving a sustainable water resources management and effective use of water, some strategic measures need to be carried out. These will include:

- Ensuring a sufficient irrigation system is in place in order to increase the irrigable and rain-fed cropland and appoint an independent regulator to ensure efficient implementation and protection of the interests of private operators and consumers;

- Promoting sustainable (integrated) water resources management planning in the watersheds of the country with cooperation between related provinces;
- Taking measures to prevent and limit the impacts of natural disasters such as flooding and droughts;
- Promoting effective use of water in all sectors of society (both quantity and quality).

2.3.4 Sustainable Fishery

Analysis of Situation

Fishery plays a crucial role in supporting the national economy as well as supplying food for the Cambodian people in their daily livelihood. The fishery sector contributes around 5-10

percent of GDP and fish makes up 40- percent of the animal protein intake for rural people. The fish catch from the Tonle Sap Lake represents about 60 percent of the total

commercial fish catch of the country. His Excellency Dr. Mok Mareth, Senior Minister, Minister for the Environment, has described the Tonle Sap Lake (or Great Lake) as the “heart and soul of the people of Cambodia”.

However, the fish stock is under threat by direct and indirect factors, including over-fishing, destructive fishing practices, destruction of fish habitats, increased sedimentation, water pollution and impacts by up-stream dam development.

Some obstacles for a sound fishery include:

- (i) insufficient information on fishing lot boundaries in relation to protected areas;

- (ii) limited enforcement of the fishery policy and regulations;
- (iii) limited community experience in fishery management;
- (iv) unclear size of fishing lots, and illegal use of prohibited fishing gear and fishing activities during the fish-spawning period. Furthermore, due to low acceptance of limited fish yields to support their livelihood, local fishermen do other jobs including extraction from inundated forests, production of fuel-wood and charcoal or hunting of waterfowl and wildlife.

Current Policy and Strategies

The current policy and strategies related to fisheries include the following:

- Fishery Law
- Royal Decree of Community Fisheries
- Sub Decree of Community Fisheries

- Agricultural Sector Strategic Development Plan 2006-2010
- Government Rectangular Strategy
- A poverty profile of Cambodia 2004
- Cambodia Millennium Development Goals
- NSDP 2006-2010

Vision to 2030

The vision for a sustainable fishery sector in Cambodia is as follows:

"Cambodia has abundant fish resources, including a huge diversity of fish species that provide the people of Cambodia with a protein rich food resource harvested through a

sustainable fishery with fishing rights for communities, especially the poor, non-destructive fishing practices and productive habitats for reproduction and growth of fish populations".

Objectives and Targets

In order to achieve this vision, the following objectives and targets are proposed.

Objective 2.3.4.1: *Ensure access to fishery resources for the rural communities, especially the poor*

Objective 2.3.4.2: *Ensure the use of sustainable fishery practices*

- **Target A.** Achieve, by 2010, access to fishery resources for the poor through a fishery reform policy.
- **Target B.** Achieve, by 2015, the use of sustainable fishery practices in 70 percent of the fishing waters of the country.

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Sustainable Fishery*,

page 57, are to be used for measuring progress towards the objectives and targets.

Proposed Strategic Measures

In order to achieve a sustainable fishery, certain strategic measures need to be carried out and taken as follows:

- Strengthening fishery reform policy to give equal access to fishery resources for the rural poor;
- Formulate a sustainable fishery policy and action plan for the country;
- Empower local communities and private sector, including community fisheries, aqua culturists, and fish processors in order to develop and sustainable manage fisheries resources;
- Promote sustainable fishery practices on national and local levels of government and in communities;
- Promote conservation of fish resources and endangered fish species;
- Develop fishery institutions and their infrastructure;
- Increase research activities in both inland and marine fisheries;
- Promote environmentally friendly aquaculture development;
- Allocate appropriate budget for developing the fishery sector infrastructure;
- Improve the livelihoods of poor people by enhancing their capacity to more effectively use the fish resource after capture in order to add value.

2.3.5 Sustainable Mining

Analysis of Situation

A study of the Ministry of Industry, Mine and Energy (MIME) indicates that there are approximately 133 economic mineral deposits distributed across Cambodia, including metals, precious metals, gemstones, coal, construction materials and industrial minerals.

So far there is a limited regulation, norm or standard to fully implement the existing Law on Management and Exploitation of Mineral Resources. Therefore, mining exploration and exploitation have been carried out with few restrictions at the designated concession sites. However, some mining activities have been required to conduct an environmental impact assessment (EIA) before extraction could proceed. Unfortunately, without the strong and comprehensive mining regulations and standards, some mining operations have caused severe impact to downstream water courses and the surrounding communities from severe water pollution and a resulting decline of the overall aquatic biodiversity. This in turn has a big effect on economic livelihoods and social harmony. The problems stems from short-term thinking regarding profits rather than long-term environmental concerns.

Currently, there are several challenges and constraints for improving mining activities in Cambodia. For example, there is still a very limited capacity within the responsible institutions stemming from a lack of relevant instruments and facilities to monitor and control mining operations. The means of transportation to operational sites is also limited. An additional problem is that the awareness on health and safety issues is quite low among workers and other affected people. Therefore, the people within the communities around or downstream of mining operations are facing serious health risks.

A new priority development initiative to greatly enhance the national economy, and strongly supported by the RGC, is the exploration and exploitation of petroleum reserves. However, because of the recentness of the petroleum finds, Cambodia does not currently have any specific regulations for managing petroleum exploitation and the surrounding environment. Moreover, the expertise within government institutions is limited as well.

Current Policy and Strategies

The current policy and strategies related to mining are as follows :

- Law on Management and Exploitation of Mineral Resources
- Sub-Degree No 72, on The Environment Impact Assessment Process
- Government Rectangular Strategy
- A poverty profile of Cambodia 2004
- Cambodia Millennium Development Goals
- Investment Law
- NSDP 2006-2010

Vision to 2030

The vision for a sustainable mining sector in Cambodia is as follows:

“Cambodia has abundant mineral resources and a sustainable mining sector that is exploiting minerals without destruction of nearby human

settlements and landscapes, and without causing serious health and environmental impacts; and which economizes the scarce mineral resources and promotes recycling of metals”.

Objectives and Targets

In order to achieve this vision, the following objectives and targets are proposed.

Objective 2.3.5.1: *Eliminate illegal mining and reduce environmental and health impacts from mining activities, including avoiding the destruction of nearby human settlements and landscapes*

Objective 2.3.5.2: *Conduct mineral exploitation in a sustainable manner in*

compliance with national laws and international agreements and conventions

- **Target A.** Achieve, by 2015, a significant reduction of harmful health and environmental impacts from mining activities in Cambodia.
- **Target B.** Achieve, by 2015, a mineral exploitation in a sustainable manner complying with national and international standards.

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Sustainable Mining,*

page 57, are to be used for measuring progress towards objectives and targets.

Proposed Strategic Measures

In order to achieve a sustainable mining sector, a number of measures need to be carried out. Some recommended strategic measures to be taken are as follows:

- Stop all illegal mining activities;
- Establish a mineral and mining policy with specific regulations for human health and safety, environmental protection and natural resources conservation;
- Promote environmentally sound technology for mining so as to minimize impacts on human health and settlements, the environment and the landscapes;
- Restrict the exploration and exploitation of any kind of mineral

mining that doesn't comply with national and international laws, agreements and conventions;

- Reclaim and rehabilitate affected mining sites to international standards.

2.3.6 Private Sector and Sustainable Business Development

Analysis of Situation

The private sector is considered as the prime driver of economic growth in Cambodia, while the government plays a role as strategist, guider and manager of the development process, and facilitator in creating an enabling the conducive climate for private investment and enterprise development. In order to establish a long-term positive economic climate for trade and investment for the private sector, various reforms are currently being undertaken by the RGC in the legal and judicial sector, in public administration and in the rehabilitation of basic infrastructure.

In Cambodia, experience in trade systems and the capacity of government officers in this field is being developed steadily, step by step. Cross-

border trade and transportation facilities for goods, however, are still insufficient. The cost for export- and import clearance is high and takes too long a time. The information on new markets is still inadequate. Furthermore, there is a general lack of support for women doing business in remote areas.

The financial and banking sector of Cambodia is being developed gradually and currently plays a significant role in economic growth. Cambodia is still a cash-based economy to a large extent, with most private sector growth being financed by personal funds or by borrowings from other available sources. However, the sector has been undergoing reforms and is making steady progress.

Current Policy and Strategies

The current policy and strategies related to private sector development include the following:

- Private Sector Development and Foreign Investment Law
- Government Rectangular Strategy

- A poverty profile of Cambodia 2004
- Cambodia Millennium Development Goals
- NSDP 2006-2010

Vision to 2030

The vision for the private sector and sustainable business development in Cambodia is as follows:

"Cambodia has a growing private sector producing goods and services for domestic

needs and for export and the operations, and is carried out in a sustainable way with minimum environmental and social impacts to meet the requirements on sustainability from consumers on the market and the legal authorities".

Objectives and Targets

In order to achieve this vision, the following objectives and targets are proposed.

Objective 2.3.6.1: *Promote private sector and financial sector reform*

Objective 2.3.6.2: *Promote sustainable business development*

- **Target A.** Achieve, by 2015, a significant increase of private enterprises in Cambodia contributing to reduction of poverty in the country.
- **Target B.** Achieve, by 2015, a significant increase of financial

institutions and instruments in the market for private sector development.

- Target C. Achieve, by 2020, a significant proportion of private

enterprises carrying out their business operations in accordance with sustainable business principles and criteria.

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Private Sector and Sustainable Business Development, page 57*, are

to be used for measuring progress towards the objectives and targets.

Proposed Strategic Measures

To effectively achieve private sector and sustainable business development a number of measures need to be carried out. Some of the key strategic measures to be taken are as follows:

- Strengthen and promote the private sector and attract investments through the application of a legal framework for enterprises that enables an economic climate with fair competition, transparency, accountability and predictability;
- Support poverty alleviation in Cambodia through the strengthening of private sector development and financial sector reform;
- Accelerate export-led growth and diversification of the economy;
- Promote sustainable business development, including cleaner technology, safe and environmentally friendly products and corporate social responsibility (CSR).

2.3.7 Sustainable Tourism

Analysis of Situation

Cambodia has a rich cultural heritage and abundant natural resources, and the Royal Government of Cambodia has given a high priority to the development of the tourism sector. Tourism is regarded as a non-emission industry that is friendly to the environment and provides income generation and job opportunities, especially to local communities.

In the past decade until present, tourism has played a very important part in the rebuilding of the Cambodian economy. Since 1998, the number of tourists coming to Cambodia has been steadily growing with an annual increase of 25- 30 percent of tourist arrivals.

The primary goals of the RGC's tourism policy include increased tourists arrivals, increased number of staying days by tourists, an increased amount of money spent in the country by each visitor and a good diversification of tourism destinations. In addition, conscious efforts are to be made to

ensure benefits of tourism goes to people living in the vicinity of tourist destinations in order to reduce poverty and to improve their livelihoods.

Today, the public and private sector infrastructure and coordination of tourism is insufficient and this is affecting tourists in some areas. This sometimes leads to a negative perception of safety issues among them. Some action plans for tourism development have been implemented inadequately due to limited budget and human resources.

In order to ensure an improved and appropriate tourism service delivery in a sustainable way, there is a need for a comprehensive monitoring and management program assessing the level of visitor satisfaction and implementing priority actions. In this area, attention should be paid to how tourism can promote a sense of national identity and pride among Cambodian people, how job opportunities for the poor can be

created and how the natural and cultural heritage can be protected and interpreted. Therefore, a sustainable tourism approach for

mitigating and eliminating negative social, economic and environmental impacts from tourism development is crucially needed.

Current Policy and Strategies

The current policy and strategies related to tourism are as follows:

- Government Rectangular Strategy
- A poverty profile of Cambodia 2004
- Cambodia Millennium Development Goals
- NSDP 2006-2010

Vision to 2030

The vision for a sustainable tourism sector in Cambodia is as follows:

“Cambodia has a sustainable tourism sector providing long-term and sustainable jobs and income to local people while minimizing

negative socio-cultural, environmental and economic impacts, and which is based on active participation and cooperation between the government, the tourism industry and the local communities”.

Objectives and Targets

In order to achieve this vision, the following objectives and targets are proposed.

Objective 2.3.7.1: *Ensure sustainable tourism development in Cambodia that provides long-term and sustainable jobs and income while minimizing negative socio-cultural, environmental and economic impacts*

- **Target A.** Achieve, by 2010, 3 million international tourists and stimulate activities for domestic tourists.
- **Target B.** Achieve, by 2010, a tourism revenue exceeding US\$ 1,500 million into the current economy of Cambodia and avoid economic leakages from this revenue.
- **Target C.** Achieve, by 2010, 400,000 locals employed by tourism ventures, and which makes an equitable distribution of tourism benefits, especially to the rural poor communities throughout the country.
- **Target D.** Achieve, by 2015, a significant proportion of the tourism sector in Cambodia applying sustainable tourism principles and criteria.

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Sustainable*

Tourism, page 57, are to be used for measuring progress towards the objectives and targets.

Proposed Strategic Measures

In order to achieve a sustainable tourism sector, a number of strategic measures need to be carried out and taken as follows:

- Promote the tourism sector for contribution to an improved living standard of people in-line with the government's poverty reduction programs;
- Provide job opportunities and income to local communities through tourism development, especially for females who head families;

- Promote the public and private sector to reach a united view on sustainable tourism and develop master plans for sustainable tourism for key tourism destinations in Cambodia;
- Promote eco-tourism with local products, conservation of historical sites and ecosystems, and promotion of cultural heritage and family values.

2.3.8 Sustainable Transportation

Analysis of Situation

A transportation network connecting all corners of the country is like the ‘arteries’ that transform the country into an integrated economy and critical for overall economic growth throughout the entire country. Transportation plays a pivotal role in contributing to poverty reduction and economic development by fostering integration of domestic markets and facilitating trade and services whilst enabling integration with the other ASEAN member countries and the international community.

However, currently the provision of transport services in Cambodia is not equally distributed or of equal quality. So far, the improvement of the road network does not cover the entire country. However, many roads are now under rehabilitation and reconstruction, such as the main national roads (NR 1-7), as well as the key road links to neighboring countries which form part of the ASEAN road network. There is also a separate rural road policy focusing on the establishment of a strategic tertiary network linking district centers in order to improve accessibility to isolated communities and border areas. Aside from Phnom Penh city (where much has been done to rehabilitate all

types of roads), most of the provinces and cities are unable to repair and construct roads by themselves due to their limited budgets.

In looking at other areas, transportation by air and water is recognized as very important in contributing to national economic development, especially within the sphere of tourism development. However, up to now these modes of transportation have slowly developed and the railway system is little used, even though all three areas (air, water and rail) are strongly supported by the current Royal Government.

An emerging problem within the transport sector is the increased use of motor vehicle (most of them are second hand type) in Phnom Penh and other urban areas, creating a recent Cambodian urban problem - traffic jams. Besides the time and inconvenience that it causes people, it also contributes to ambient air pollution, increasing CO₂ emissions leading to global warming and climate change, and other environmental problems. These kinds of problems can be avoided through development of a long term strategy for sustainable transportation.

Current Policy and Strategies

The current policy and strategies related to transportation are as follows:

- Rural Road Strategy
- Railway Transport Strategy
- Government Rectangular Strategy
- A poverty profile of Cambodia 2004
- Cambodia Millennium Development Goals
- NSDP 2006-2010
- Law on Land Traffic

Vision to 2030

The vision for sustainable transportation sector in Cambodia is as follows:

“Cambodia has an efficient transportation system covering the entire country, with highly safe roads, reliable and safe railway and water transportation for people and goods, efficient

public transportation in cities and rural centers using environmentally friendly vehicles such as buses driven by renewable fuels, bicycles and electrical motorbikes for local transportation, in order to meet peoples need of affordable and safe transportation services”.

Objectives and Targets

In order to achieve this vision, the following objectives and targets are proposed.

Objective 2.3.8.1: *Improve the road network of Cambodia*

Objective 2.3.8.2: *Ensure a sustainable transportation system with safe, efficient, affordable and environmentally friendly modes of transportation covering the whole country*

- **Target A.** Achieve, by 2010, upgrading of 4,100 km of primary and secondary roads and repair and maintain other main roads.
- **Target B.** Achieve, by 2012, upgrading of the main sea port and Phnom Penh port, two main railroad lines, and inland waterways, particularly the Mekong and Tonle Sap rivers.
- **Target C.** Achieve, by 2020, a transportation system which is based on environmentally friendly modes of transportation, vehicles and fuels.

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Sustainable Transportation, pages 57*, are to be used for

measuring progress towards the objectives and targets.

Proposed Strategic Measures

In order to achieve sustainable transportation a number of strategic measures need to be carried out as follows:

- Rehabilitate and reconstruct main national roads throughout the country in order to improve the access to a land transport system in Cambodia;
- Formulate a strategy for sustainable transportation in Cambodia for railways, public buses and water transports with environmentally friendly fuels or based on non-polluting modes of transportation;
- Provide a safe and an efficient transportation system at reasonable costs within cities, towns, and rural communities, with priority being given to the sustainable mobility of people;
- Improve the use of existing transportation related infrastructure, institutions, and operational performances;
- Build roads/railroads links to neighboring countries that facilitates and bridges the opening of international trade and tourism;
- Increase revenues from the transport sector in order to increase the cost sharing of maintenance and development;
- Strengthen the institutional capacity for planning and management of sustainable transportation;

- Promote the participation of the private sector in financing transport infrastructure development;
- Encourage the development of main roads at the provincial level through decentralization.

2.3.9 Sustainable Energy

Analysis of Situation

Based on the understanding of the great usefulness of power and electricity in the daily life of people and as a crucial catalyst for economic development, the RGC regards the energy sector as extremely important and has initiated some programs to develop the energy sector. Currently however, activities aimed at promoting the energy sector are still limited. A recent survey showed that the use of energy by most Cambodians is almost entirely based on their natural resources. Over 84 percent of the primary energy consumption in the country is provided by fuel wood and charcoal. Unfortunately, the domestic use of fuel wood and charcoal commonly creates severe environmental problems due to forest logging and indoor/outdoor air pollution.

The use of electricity is limited in Cambodia, where less than 9 percent of rural households have access to a grid-electricity service. Those people who use small diesel-fueled generators and rechargeable batteries have paid very high unit prices for this electricity. In most urban areas other than Phnom Penh Municipality, high capacity generators are being used within

industrial and hotel premises due to unaccessibility to the grid-line or high expenditure for electricity use.

Rural electrification in Cambodia is developing in many districts and provinces supported by the Government, other donors and the participation of the private sector. However, the state electricity company (EDC) alone cannot meet the increasing electricity demand, especially for the demand coming from rural areas.

Cambodia has tremendous potential to produce electricity from hydro-power, but currently there are few hydro-electric dams built in the country. Several key challenges or obstacles have played a pivotal role in the energy sector, such as finance, policy and regulations. In recent years there has been some participation from the private sector to assist the government with develop in the energy sector. Many companies from both local and from abroad are collaborating in the investment of power generation, transmission and distribution systems.

Current Policy and Strategies

The current policy and strategies related to energy are as follows:

- Renewable Electricity Action Plan 2002–2012 (REAP)
- Energy Sector Strategy
- Government Rectangular Strategy
- Cambodia Millennium Development Goals
- NSDP 2006-2010

Vision to 2030

The vision for a sustainable energy sector in Cambodia is as follows:

“Cambodia has rich renewable energy resources such as biomass, biogas, hydropower, solar- and wind energy resources which are used in an

efficient and environmentally sustainable way in order to fulfill all people’s and sectors’ needs of energy services, using a demand side management approach”.

Objectives and Targets

In order to achieve this vision the following objectives and targets are proposed.

Objective 2.3.9.1: *Meet the energy demand of all urban and rural communities and the growing economic sector by sustainable domestic power generation, transmission and distribution system*

Objective 2.3.9.2: *Ensure the use of renewable energy resources in the energy system*

Objective 2.3.9.3: *Ensure high energy efficiency in the energy system by applying demand side management*

- **Target A.** Achieve, by 2020, 100 percent of villages get access to electricity services and by 2030, 70 percent of rural households get access to reliable and good quality electricity services.
- **Target B.** Achieve, by 2020, a widespread use of renewable energy including biogas up to 30 percent in urban and rural areas instead of fuel-wood and charcoal use

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Sustainable Energy*,

page 57-58, are to be used for measuring progress towards the objectives and targets.

Proposed Strategic Measures

In order to achieve a sustainable energy system several measures need to be carried out. Some of these strategic measures to be taken are as follows:

- Formulate a policy and action plan for a sustainable energy system in Cambodia based on renewable energy, energy efficiency and demand side management;
- Promote the use of local natural resources for energy supply based on environmental sustainability, least-cost options and equitable access to electricity services;
- Encourage the exploration and development of environmentally and socially acceptable energy resources needed for the supply to all sectors of the Cambodian economy.

2.3.10 Sustainable Water Supply and Sanitation

Analysis of Situation

Cambodia has tremendous water resources available within the country such as the Mekong, Tonle Sap and Bassac rivers and their tributaries, streams, canals and lakes. There is also an abundance of ground water resources. These vital water resources have multi-functions and support Cambodia's needs and sector development. Unfortunately however, water supply and sanitation at present do not respond to consumer demands, especially with respect to the rural demand.

Less than half of the rural households in Cambodia have access to safe and clean water. It is one of the main reasons for increasing incidences of diarrhea and parasites that are a major concern in rural and remote areas. Most of the people who live in rural, and some urban, areas have to divert their time and labor to collect water. This reduces their productive time and other activities. In addition, most of the rural and urban poor are unable to pay for the water use. In this case, the cost for water

supply and sanitation in urban and rural areas needs to be covered.

Extraction of large a volume of groundwater in urban areas without any assessment and control by responsible institutions might also lead to changes in groundwater flows as well as consequences for the soil stability with regards to construction and urban development.

The supply of safe water for domestic use in both urban and rural areas is limited. This is partly due to the insufficiency of legal framework for managing safe water use. There are also limited budgets for rehabilitation, construction of safe water supply infrastructure, human resources management and techniques for maintenance of water

production systems and sanitation. In addition, there are several factors that reduce private water investors' confidence in the water supply system, such as insufficient legal framework, lack of provision and protection of water sources to ensure the sustainability of regularity in the water supply and sanitation.

Access to a sustainable water supply and sanitation for all people of Cambodia is very important in fighting poverty and for the general wellbeing of communities, as well as for the overall social and economic development of the country. For this reason, there is a need to expand water supply and sanitation services throughout the entire country in complying with the environment sustainability.

Current Policy and Strategies

The current policy and strategies related to energy are as follows:

- Water Supply and sanitation policy for town and urban areas
- Law on Environmental Protection and Natural Resources Management
- Sub Decree on Water Pollution Control

- Sub Decree on Solid Waste Management
- Government Rectangular Strategy
- A poverty profile of Cambodia 2004
- Cambodia Millennium Development Goals
- NSDP 2006-2010

Vision to 2030

The vision for sustainable water and sanitation in Cambodia is as follows:

"Cambodia supplies all people in rural and urban areas with safe water and sanitation in order to ensure a good health and wellbeing for people and a clean environment".

Objectives and Targets

In order to achieve this vision, the following objectives and targets are proposed.

Objective 2.3.10.1: *Ensure all Cambodian people a safe water supply and sanitation for good health, wellbeing and a good environment based on a legal framework and long term financial system for the services*

Objective 2.3.10.2: *Halve, by 2015, the proportion of people without sustainable*

access to safe drinking water and basic sanitation

- **Target A.** Achieve, by 2010, access to safe drinking water for 40 percent of the rural population and 74 percent of the urban population, and by 2015, 50 percent of the rural population and 80 percent of the urban population
- **Target B.** Achieve, by 2010, access to improved sanitation for 20 percent of the rural population and 67 percent of the urban population, and by 2015, 30

percent of the rural population and 74 percent of the urban population

- Target C. Apply the drinking water quality standard for safe water supply in rural and urban areas.

Indicators

The proposed indicators identified in *Part 4: Monitoring and Evaluation, Sustainable Water Supply and Sanitation*, page 58, are to be used

for measuring progress towards the objectives and targets.

Proposed Strategic Measures

In order to achieve a sustainable water supply and sanitation, a number of measures need to be carried out. Some of the strategic measures to be taken are as follows:

- Provide good quality and adequate quantities of safe water supply and sanitation to consumers consistent with their ability and willing to pay and meet the requirements of poor people;
- Promote private participation in water supply and sanitation services based on

the policy of completion and transparency, and promote market competition in order to respond to consumer demand;

- Provide capacity on technical, economic and financial aspects to water and sanitation service providers;
- Reduce Official Development Assistance (ODA) financed water supply and sanitation in a long-term perspective.

2.3.11 Solid Waste Management

Analysis of Situation

As the nation develops and economic conditions improve the population becomes more demanding for materials for various purposes. This translates into increased generation of waste and changed composition of waste. The composition of waste has dramatically changed in the last 10-20 years. Previously, much of the waste generated was biodegradable organic waste, but today a larger percentage is non degradable. Solid waste falls into three categories: 1) domestic, 2) industrial and 3) hospital wastes.

Only in provincial towns and cities is the solid waste formally collected. The responsibility for waste management is taken on by the provincial/municipal Department of Public Works and Transportation under the supervision of the environmental development. With the exception of Phnom Penh Municipality, Siem Reap, Sihanoukville, and Battambang, where solid waste is collected regularly, solid waste collection and services in all other urban areas of Cambodia is commonly unreliable with irregular. occurred. Solid waste services have been privatized in Phnom Penh

Municipality and some other provinces successfully.

In Cambodia, there are no sanitary operated landfill sites. Instead, what exist in many locations are open dumpsites, usually with no regulations and safe guards. Technically sound sites for waste storage are rare except for a sanitary landfill in Phnom Penh Municipality (Landfill Stoeung Meanchey) earlier supported by JICA. This has been due primarily to ineffective waste management and limited public awareness. The Ministry of Environment has requested that the local authorities identify suitable sites for local waste storage.

A number of informal recyclable waste/material collection systems are operating in Phnom Penh Municipality and in some urban areas. This system relies on collecting, buying, or scavenging recyclable materials from households and commercial premises. Informal waste pickers collect recyclable materials and sell them to junkshops. These materials are subsequently put through some simple processing before exporting to other countries.

Current Policy and Strategies

The current policy and strategies related to solid waste are as follows:

- Sub-Decree on Solid Waste Management
- Government Rectangular Strategy
- A poverty profile of Cambodia 2004

- Cambodia Millennium Development Goals
- Law on Environmental Protection and Natural Resources Management
- Sub Decree on Water Pollution Control
- NSDP 2006-2010

Vision to 2030

The vision for solid waste management in Cambodia is as follows:

“Cambodia has a solid waste management system which is based on the 3Rs (Reduce, Reuse and Recycle solid waste) in order to economize with natural resources and to

minimize the environmental impacts caused by waste generation (especially hazardous waste); the solid waste management system gives jobs and income for people without serious impacts on waste workers health”.

Objectives and Targets

In order to achieve this vision, the following objectives and targets are proposed.

Objective 2.3.11.1: *Establish an efficient solid waste management system built on the 3Rs (Reduce, Reuse and Recycle solid waste) providing jobs and income to people*

without serious health and environmental impacts

Target A. *Achieve, by 2015, an appropriate solid waste management system in 75 percent of the urban areas and 50 percent of the rural areas of the country.*

Indicators

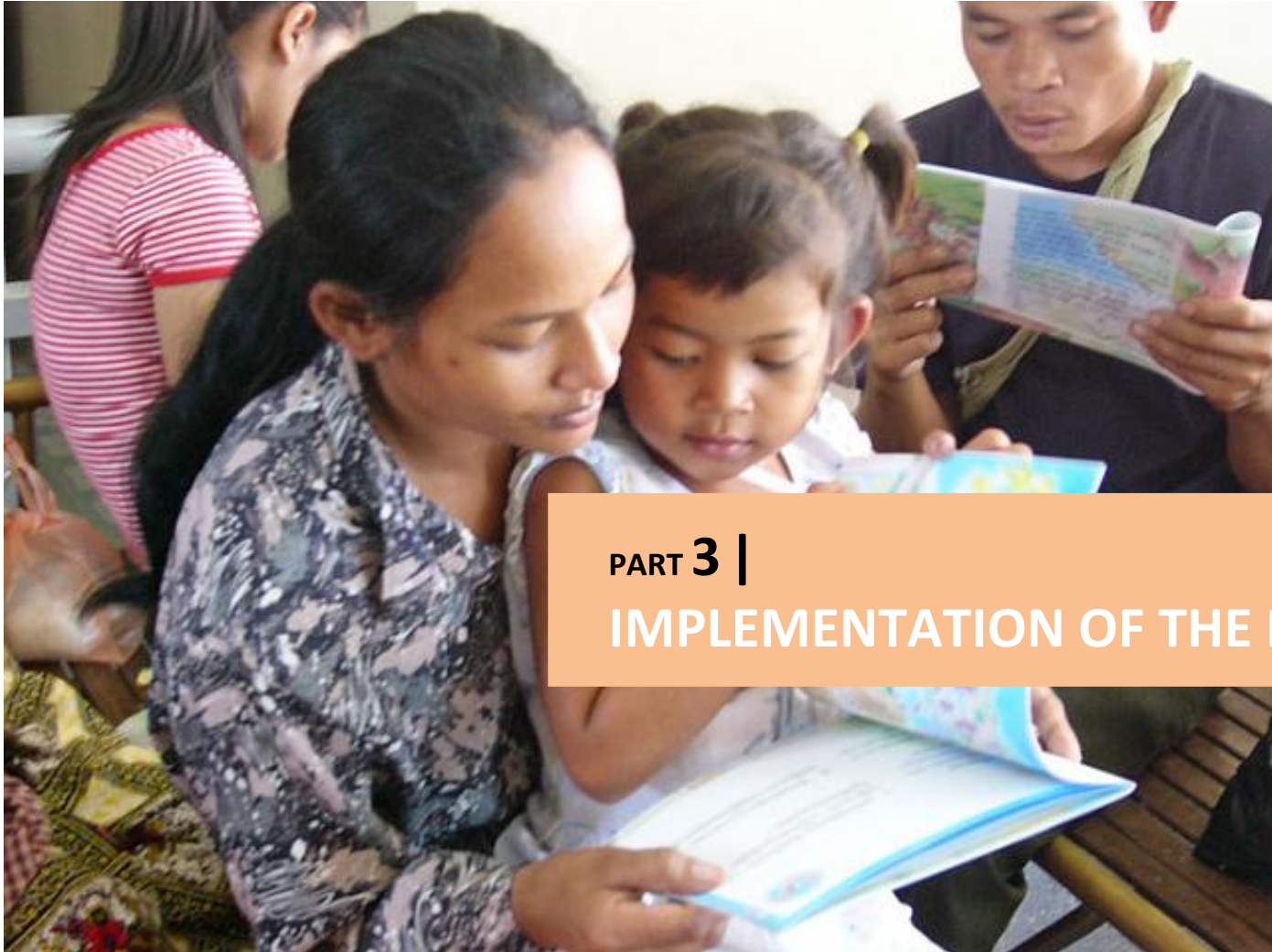
The proposed indicators identified in 4: *Monitoring and Evaluation, Solid Waste Management, page 58*, are to be used for

measuring progress towards the objectives and targets.

Proposed Strategic Measures

In order to achieve solid waste management systems a number of measures need to be carried out. Some of the strategic measures to be taken are as follows:

- Promote the establishment of appropriate solid waste management systems in both urban and rural areas emphasizing on the reduced generation of waste, reuse of products and recycling of materials;
- Promote cooperation between the government, community and privates sector in solid waste management including poor scavengers;
- Promote the use of recycled products such as compost for soil improvement and paper, metal and plastic for material recovery in the industry;
- Ensure a safe system for handling and disposal of hazardous waste
- Raise the public awareness on solid waste issues and recycling;
- Train all kinds of waste dealers involved directly or indirectly in the system, including the scavengers;
- Ensure appropriate dumpsite/landfill is installed in towns.



PART 3 |

IMPLEMENTATION OF THE NSDS

Implementation of the NSDS will require the firm commitment of the RGC. It will require new and/or modified institutions, new positions, new and existing laws and related statutes, and changed focus on the priorities of national development, reallocation of financial and manpower resources and a gradual shift from immediate goals to the longer term. Implementation of the NSDS also need the firm commitment and cooperation from key

stakeholders, including government institutions (from national to local level), civil society, NGOs, the general public, private businesses and international donor organizations in order to have a successful result towards the intended goals, objectives and measurable targets in reducing poverty and enhancing the overall wellbeing of all Cambodians.

3.1 GOOD GOVERNANCE FOR SUSTAINABLE DEVELOPMENT

One of the most important preconditions for achieving sustainable socio-economic development considering the wellbeing of the people, equity, equal opportunity, social justice and environmental sustainability is good governance. Good governance needs wide participation, sharing of information, openness, transparency, accountability, equality, inclusiveness and strict rule of law. Accordingly, the four reform areas for good governance in Cambodia are:

1. fighting corruption
2. legal and judicial reforms
3. public administration reform, including decentralization and deconcentration
4. reform of the armed forces especially demobilization

3.1.1 Fighting Corruption – a Necessity for SD

Corruption is recognized as a major obstacle to the possibility for achieving sustainable development in Cambodia, as it is in the rest of the world. It makes the playing field for economic factors and actors unpredictable and uneven and deters much needed domestic and foreign investment. If corruption is prevalent, it can lead to increased costs, rendering Cambodia less competitive and making the country lose important opportunities for growth and development. It also jeopardizes cooperation within the various government sectors and with the key stakeholders needed for sustainable development.

In order to combat corruption within the public and private administration, the RGC needs to continue to pursue a holistic, participative, transparent and sustainable approach in addressing the root causes of corruption. Although progress has been made in some areas, other efforts are facing many challenges.

A variety of actions, including reforms and behavioral changes, are needed to combat

corruption. A "*culture of service*" whereby the public administration acts truly as an instrument of efficient, effective, speedy and impartial service to all Cambodians is very much needed. A priority goal of the RGC is to reduce corruption significantly by 2010 and to strengthen education, publication and dissemination of legal and related materials.

The strategy for drastic reduction and elimination of corruption will follow a three-pronged approach – 1) enforcement, 2) prevention and 3) public/private support and education. The RGC is determined to take concrete actions that strike at the root causes of corruption by ensuring predictability, enhanced transparency and clear accountability in all sectors, including their actions.

Currently there are requirements on specific legislation for the fighting of corruption such as the Law on Anti-Corruption; the Law on Inspection; the Law on Complaint; the Law on Defamation of Citizen; and the Law on Public Administration.

3.1.2 Decentralization and Deconcentration – A Part of Sustainable Development

An important prerequisite for sustainable development is decentralization and deconcentration; a bottom-up perspective where local people and stakeholders can influence and take responsibility for their own present as well as their future. Crucial to strengthening democracy at the grass roots level is participatory local development in improving and delivering as many public services as are possible at the commune level. A key priority in this area is the building and strengthening of local management capacity and providing a reasonable level of financial resources.

Grass root level development can best proceed by identification and prioritization of local needs at the local level. As such, based on the overall goals outlined in the NSDS and NSDP, each commune, district and province can

prioritize their own needs and try to achieve them using increasing funds made available to them through block grants and other support mechanisms such as tax sharing and ownership of revenues generated through local level taxes. In this perspective it is important to have an efficient public administration who acts as a coordinator and catalyst of the process with the many stakeholders involved. According to the Public Administration Reform, the goal is to make the administration a potent instrument of public policy and enable it to be more effective, efficient, neutral, transparent and responsive, and to serve people better. With this foundation in place, the task ahead is to deepen and broaden the reform processes in order to target poverty reduction and making development sustainable.

3.1.3 Participation by Major Groups

Sustainable development is the mission of the entire population of Cambodia, including political parties; the national, provincial and local governments; authorities at all levels, ministries, sectors and agencies; businesses; social organizations; NGOs, civil society and local communities.

To achieve sustainable development, all relevant groups and people must be mobilized to the highest possible extent to assist with identifying problems and needs, expressing ideas, creating future visions, setting priorities, proposing goals and actions and to carry out implementation of sustainable socio-economic activities and environmental protection. Participation of these major groups will also include their assistance and support in monitoring and evaluation.

Long-term cooperation has to be based on mutual trust and commitments between the various parties involved even though they play different roles in society. A primary condition for this process is that people's access to information must be ensured and the role of all

groups, especially women, youth and ethnic minorities, has to be strengthened in relation to the decision-making process and in project implementation. For a successful outcome, the government should:

- Encourage and facilitate for the operation of NGOs and the civil society;
- Develop a forum(s) and lines of communication to facilitate private sector and general public consultations with Government, in a meaningful manner;
- Ensure that Government is 'transparent' in its NSDS policy, management and actions;
- Actively promote the awareness and implementation of the NSDS nationwide.

In order to strengthen the role of NGOs in SD matters, one option is to reorganise the National Trust for Cambodia for implementation of the NSDS as an independent body (an NGO) responsible for its own affairs and run by its members. It would receive Government grants for SD based on its management performance.

3.2 INSTITUTIONS AND RESPONSIBILITY

The role of the RGC is to ensure the implementation of the NSDS in Cambodia in a

sound and effective manner, based on good governance and broad cooperation at all levels.

3.2.1 Sustainable Development on the National Level

The national level plays a crucial role in setting the overall agenda and formulating the NSDS for the nation, as well as managing financial resources and instruments for change. One critical factor for effective implementation of the NSDS is the leadership and the appropriate

institutional and administrative structures that have sufficient resources at hand to do the job, including regular monitoring and assessment of the NSDS implementation. An effective NSDS management mechanism for sustainable development on the national level is needed.

3.2.1.1 NSDS Under Leadership of the RGC

Sustainable development is an overarching goal for the whole society of Cambodia. A major concern of Cambodia is whether sustainable development can truly be achieved or not. For this reason, the NSDS is to be adopted and implemented under the leadership of the RGC.

The NSDS is a long-term strategy that gives direction to the other sectors. Therefore the NSDS has a close relation to the Rectangular

Strategy and the NSDP as well as to Cambodia's MDGs. The content of the NSDS should be integrated into the next NSDP (2011-2015), which should be the NSDP for the next five years and onward. This would make NSDP more complete as an over-arching development plan for Cambodia including long term sustainability objectives. Major country-wide scale related activities to achieve NSDS are taken into

account and will be carried out accordingly. These include the following:

- Adopt the sustainable development as an overarching national goal;
- Fully integrate NSDS concepts and actions into the national planning and budgeting process;
- Integrate the next national five year plan (or the NSDP 2011-2015) with long term sustainability objectives and measures from the NSDS;
- NSDS management policies or sustainable sector policies will be drawn up by all government ministries, departments, statutory bodies, government owned companies and others which utilize or manage natural, environmental and social resources;
- Strengthen and promote public participation in policy formulation and action planning for SD;
- Transparency and accountability to promote the NSDS process with sole institutional responsibility for management of NSDS components;
- Enact key principles of the NSDS and the implementation requirements in the legislation to ensure effective NSDS implementation;
- Prioritise SD legislation to make provision for the establishment of a funding mechanism for implementation of NSDS related programs and projects.

3.2.1.2 Inter-Ministerial Steering Group/Committee

Implementation of the NSDS requires involvement from all ministries and sectors, meaning that, an inter-ministerial steering group or committee with representatives from relevant ministries should coordinate and follow-up the implementation of the strategy on behalf of the RGC. A national-level action plan for SD will be formulated by RGC based on the NSDS which give mandates and

responsibilities for SD implementation to the various sectors and localities. The action plan is also an instrument for identifying priorities for international cooperation and support.

In order to carry out the SD responsibility each ministry should dedicate a NSDS management unit which coordinates SD activities within the respective ministry.

3.2.1.3 Coordination Secretariat

For daily coordination and dissemination of information on the progress of the NSDS, the inter-ministerial steering group/committee requires a coordinating secretariat that consists of officers from core ministries such as the Ministry of Planning, Ministry of Environment,

Ministry of Economy and Finance, and other involved ministries. Officers of the secretariat will be appointed by their own ministry as a duty within their normal assignment, full time or part time.

3.2.1.4 National Forum on Sustainable Development

The participation of key stakeholder groups in the process of sustainable development is of crucial importance. For this reason there must a forum where all of the relevant groups can meet, discuss and find innovative solutions together for the sustainable development of Cambodia. One option is to create a multi-stakeholder National Forum on SD which is a meeting place for all relevant groups to participate. The National Forum should play the

role of an advisory forum to the RGC on SD matters through the Inter-Ministerial Steering Group / Committee and the Secretariat. The National Forum could preferably be divided into various sub-forums focusing on specific SD issues such as poverty reduction, sustainable energy development, sustainable agriculture, education and public awareness and local sustainable development, etc.

3.2.1.5 National Council on Sustainable Development

Another option in order to involve the civil society, NGOs and the business sector, together with the government sector, is to create a National Council on Sustainable Development (NCSD) which is a more formalized institution than a forum. NCSDs have been established in over 100 countries of the world. A multi-stakeholder NCSD is a venue for broad SD cooperation and the role is advisory. Formal decisions cannot be taken due to the NCSDs

mixed nature. Real decisions need to be taken in the government and in each member organization respectively.

Establishment of a NCSD is more advanced and complicated than a National Forum on SD. Therefore, a recommendation is to start with a National Forum on SD combined with the Inter-Ministerial Group/Committee and to consider establishment of a NCSD after some years.

3.2.1.6 Sustainable Development Management System

In order to coordinate and follow up with the NSDS implementation, a management system is required. For this purpose a Sustainable Development Management System (SDMS) should be set-up and used by the Inter-Ministerial Steering Committee and Secretariat. One part of the system is the government's Action Plan based on the NSDS. An action plan

will be proposed and implemented in three interval periods; short-term (2008-2010), medium term (2008-2015) and long term (2008-2030). Another part of the SDMS will be the utilization of specific indicators for monitoring and evaluation of progress towards SD.

3.2.1.7 Implementation by Sectors and Localities

The implementation of the NSDS has to be carried out by many ministries, provincial and local governments, local communities, as well as NGOs, businesses and civil society organizations. This requires clear mandates and support from the RGC / Inter-Ministerial Steering Committee to ministries, agencies, provincial and local governments on how they can contribute towards implementation of the

NSDS. For this assignment, sectors and localities need support for capacity building and for assistance in setting up participative processes in their own sector, or on their own level, together with relevant stakeholders. One important task for the Inter-Ministerial Steering Committee and Secretariat would be to give information, guidance and support to the various sectors and localities.

3.2.1.8 Sustainable Development through the Planning and Budget process

The measures proposed in the NSDS and its related Action Plan should be combined with measures proposed in sector processes identified by each ministry, along with those processes adopted by provincial and local governments. In order to successfully implement SD, actions need to be integrated in each sector's or localities own planning and budgetary process. In some cases, it may be funds available for pilot projects or for special programs with earmarked funds for a certain

purpose that can contribute to the effective implementation of the NSDS. In order to create good SD practices throughout the country, an SD fund could be set up for supporting innovative projects aligned with and contributing the country's sustainable development. Each sectors needs to formulate a sector policy and action plans for sustainable development, as well as modify, as is appropriate, existing planning procedures.

3.2.1.9 Instruments for Change

Many instruments for change can be used by the national government in order to steer and promote effective actions towards sustainable development. Some instruments for change to be used are:

- information and communication for raising public awareness;
- environmental education and dissemination at all levels;
- environmental norms and standards;
- new laws and regulations including pollution payer principle;
- innovative and effective use of economic instruments (fees, taxes & subsidies);
- supporting SD research projects;
- establishment of an SD fund (with grants for small scale SD projects) ;
- set-up of micro-credit schemes for poor communities;
- ensuring community-based natural resources management;
- dissemination of SD good practices;
- creating eco-labeling systems for products;
- establishment of certification systems (for sustainable management of natural resources);
- enabling and supporting partnerships between stakeholders;
- securing clean development mechanism (CDM) with foreign countries;
- indicators for monitoring and evaluation of progress towards sustainable development;
- green growth/development promotion and application.

For some issues there is a current, and in some cases urgent, need for new or amended legislation and/or use of various regulatory instruments. Several reports have been prepared on issues of urgency and recommendations should be implemented or alternative policies and strategies should be adopted, whichever is most appropriate. Cambodia's Law on Environmental Protection and Natural Resources Management should be evaluated and new legislation or extensive amendment to existing legislation should be considered.

The status and management of the natural resources like forestry, fisheries, land, protected areas and water resources will need to be reviewed by key ministries, with a view to provide effective conservation of ecological and geomorphologic values as well as nationally significant archaeological sites including tourism potentials.

Before introduction of non-native species of plants and animals to the country, the entry screening procedures and guidelines need to be reviewed and upgraded. There is also a need of wildlife values to be elevated within the public community through publication of appropriate materials and through the use of awareness campaigns to educate the people and promote sustainable alternatives. Furthermore, total trade bans should be placed on known endangered and threatened species.

The key ministries will also carefully examine the benefits of becoming a signatory member to international conventions and agreements, and apply the concepts and actions determined by WSSD and other international meetings. It will also be necessary to cooperate strongly with all levels of stakeholders.

3.2.2 Sustainable Development on the Provincial and Local Levels

All provincial and local authorities are directly involved in directing socio-economic development and utilization of natural resources in order to serve benefits to their own localities and have insight about environmental impacts. Thus, SD must be strongly coordinated and the process owned by

local communities. This concept is parallel to the government policy towards the application of decentralization and deconcentration. Provincial and local authorities are also in the best position to conduct planning for sustainable development in their own localities.

Furthermore, provinces and local areas must properly assess and take advantage of their comparative advantages to develop and create their own strengths to meet the domestic and foreign material and product demand on the open market. This requires broad cooperation on the local level in order to succeed.

The policy and framework instrument most often used for implementing sustainable development on the provincial and local levels are Provincial Agenda 21 and Local Agenda 21. Agenda 21 involves local people and stakeholders in a development process where problems, needs and priorities are identified as a basis for policy formulation, action planning and implementation of projects and activities.

Implementing a Local Agenda 21 requires broad cooperation between governmental institutions, the business sector, the civil society and the local community in order to achieve common goals.

In Cambodia there exist the need for raising the public awareness on environment and sustainable development issues and approaches coupled with strengthening the knowledge and skills capacity of government staff, local authorities and stakeholders so that they have to ability to formulate and implement sustainable development on the provincial and local level in accordance with the NSDS.

3.3 INTERNATIONAL COOPERATION

There are many reasons and opportunities for international cooperation on sustainable development. In the case of Cambodia, the main ways that international cooperation can occur include:

- implementation of international agreements on sustainable development and environmental conventions to which Cambodia is a signatory member;
- capacity building and support for implementation of the NSDS;
- international financial and technological support for poverty reduction;
- combating global environmental problems such as climate change, depletion of the ozone layer, biodiversity and desertification issues and so on;
- assistance for transfer of environmentally sound technology;
- cooperation on research and monitoring on environment and sustainable development issues;

- cooperation in the GMS region and participation in UN committees for sustainable development;
- cooperation on the interception and phasing out environmental transboundary issues;
- cooperation on combating HIV/AIDS, sex-traffic and outbreak disease, including anti-drugs.

For an effective implementation of the country's NSDS there is a need to raise public awareness as well as strengthened capacity on SD among governmental institutions and major groups in Cambodia. Training is needed to be carried out both on the national level as well as the provincial and local levels in order to get started with formulation and implementation of SD in different sectors and localities. One factor of major importance is to find an effective mechanism for cooperation, management and coordination between sectors and stakeholders, including effective instruments for communication, monitoring and evaluation.

3.3.1 International Support Project

The first project under the NSDS is selected to be in support of institutional and human capacity development along with support for implementation of the NSDS in Cambodia. International financial and technical support will be required. This project is projected to be running for a duration time of around 4-5 years, with a project budget of 4-6 million US dollars. The budget should not cover investments, but training, technical assistance, pilot project implementation, cooperation forums, information and communication activities and research studies etc. Some of the project's main components should be:

- Institutional building and cooperation mechanisms
- Sector- and local implementation of SD
- Information, communication and education
- Research and SD Indicators

From current assessments, there are a large number of potential projects in different sectors and on various levels to be carried out

in the coming years in order to support sustainable development in Cambodia. These projects would be complementary to the above mentioned “umbrella project” on SD.

Cambodia is fortunate that international donor and other international institutions and organizations can play a positive role in assisting the implementation of Cambodia's NSDS. The possibility of ‘kick-starting’ Cambodia's NSDS with foreign assistance should be an integral part of the Strategy. Many projects can be proposed by relevant institutions and stakeholders for future implementation of the NSDS. Priority projects suitable for international financial and technical assistance can be extracted from each sector included in this document as well.

However, it will be first necessary for the RGC to show its commitment to environmental management and sustainable socio-economic development by adopting the NSDS and initiating the necessary measures and actions in a constructive and positive manner.



PART 4 |

MONITORING AND EVALUATION

4.1 INDICATORS FOR SUSTAINABLE DEVELOPMENT

In order to measure progress towards sustainable development there is a need for good system indicators that point the country in the right direction for developing sustainably, and which are measurable and responsive to strategies and actions in a timely manner. Listed below are proposed indicators related to the various sectors and fields of interest for sustainable development in Cambodia. The indicators can be used within each sector to reflect sustainable sector development, but can also be used for measuring the overall progress towards a sustainable society. In the latter case the number of indicators can be reduced to a few core indicators.

The proposed indicators reflect the objectives and targets in the NSDS and are divided in four sections:

- Indicators for People's Wellbeing and Social Development
- Indicators for Sustainability of Natural Resources and the Environment
- Indicators for Sustainable Economic Sectors and Infrastructure
- Indicators for Good Governance and Implementation of SD

The proposed indicators need to be integrated within the existing system of Cambodia's MDGs in order to get one coherent system of

monitoring and evaluation of sustainable development in the country. Some of the proposed indicators are already indicators within the CMDG system while others need to be inserted there.

The constraint in using indicators is (i) lack of a permanent mechanism for collecting data, monitoring and its evaluation; (ii) lack of reliable data, for instance the information about the forest coverage in Cambodia differs a lot between government institutions and NGOs.

A close cooperation between professional stakeholders in data collection such as the office of general statistics, public surveys (socio-

economic and demographic data), universities and NGOs have to strengthen and improve. In order to make the data as reliable as possible an independent organization such as the office of general statistics could play a role as verifier and auditor. During a period of time a project with capacity building on indicators could be carried out targeting the office of general statistics and other key government institutions and NGOs, in order to build a reliable indicator system for sustainable development in Cambodia. This project should be supported by an international organization.

4.1.1 Indicators for People's Wellbeing and Social Development

Many of the proposed indicators for people's wellbeing and social development can be found in Cambodia's MDGs. There are also several

new proposed indicators that are derived from the newly revised MDGs in the UN system.

Poverty Alleviation and Food Security

- People with consumption less than the national poverty line consumption level (%)
- Share of poorest quintile in national consumption (%)
- Poverty gap ratio
- Working children aged between 5-17 (%)
- Growth rate of GDP per person employed
- Employment to population ratio
- Proportion of employed people living below national poverty line
- Proportion of own-account and contributing family workers in total employment
- Population below the food poverty line (%)
- Prevalence of underweight children under five year age (%)
- Proportion of population below minimum level of dietary energy consumption

Good Health

- Proportion of the people with sufficient awareness on health prevention (%)
- Proportion of people who get health care services (%)
- Under five mortality rate (%)
- Infant mortality rate (%)
- Proportion of 1 year-old children immunized against measles (%)
- Maternal mortality rate (%)
- Proportion of births attended by skilled health personnel (%)
- Contraceptive prevalence rate (%)
- Adolescent birth rate (%)
- Antenatal care coverage (%)
- Unmet need for family planning (%)
- HIV prevalence among population aged 15-24 years (%)
- Condom use by population engage in high risk sex (%)
- Proportion of population aged 15 -24 years with comprehensive correct knowledge of HIV/AIDS (%)

- Ratio of school attendance of AIDS orphans to school attendance of non-orphans aged 10-14 years (%)
- Proportion of population with advanced HIV infection that has access to antiretroviral drugs (%)
- Incidence and death rates associated with malaria (%)
- Proportion of children under 5 sleeping under insecticide-treated bed nets (%)
- Proportion of children under 5 with fever who are treated with appropriate anti-malaria drugs (%)
- Incidence, prevalence and death rates associated with tuberculosis (%)
- Incidence, prevalence and death rates associated with dengue fever (%)
- Proportion of tuberculosis cases detected and cured under directly observed treatment short course (%)

Well Educated People

- Net admission rate - primary level (%)
- Net enrolment ratio in primary education (%)
- Net enrolment ratio in lower secondary education (%)
- Proportion of 6-14 year olds not attending school (%)
- Children survival rate from grade 1 to 5 (%)
- Children survival rate from grade 1 to 6 (last yr or primary) %
- Children survival rate from grade 1 to 9 (%)
- Literacy rate among 15-24 years old (%)
- Ratio of girls to boys in primary education (%)
- Ratio of girls to boys in lower secondary education (%)
- Proportion of students at university level studies (%)
- Proportion of schools on various levels with SD in the curriculum (%)
- Share of the population that knows the basic concept of SD (% of population)

Gender Equality

- Ratio of girls to boys in upper secondary school (%)
- Ratio of females to males in tertiary education (%)
- Ratio of literate females to males 15-24years old (%)
- Ratio of literate females to males 25-44 years old (%)
- Female share in wage employment in agriculture (%)
- Female share in wage employment in industry (%)
- Female share in wage employment in service sector (%)
- Proportion of seats held by woman in national assembly (%)
- Proportion of seats held by woman in Senate (%)
- Proportion of female Ministers (%)
- Proportion of female Secretaries of State (%)
- Proportion of female Under Secretaries of State (%)
- Proportion of female provincial governors (%)
- Proportion of female deputy provincial governors (%)
- Proportion of seats held by woman in commune councils (%)
- Population aware that violence against women is wrong behavior and considered a criminal act (%)
- Domestic violence cases counseled by qualified personnel (%)

Zero Victims of Landmines and UXOs

- Annual number of civilian casualties recorded (%)
- Cleared high/medium/low suspected areas (%)
- Number of landmine/UXO victims receiving assistance package and who are integrated into society

4.1.2 Indicators for Sustainability of Natural Resources and the Environment

There are a number of environmental indicators that can be used to reflect the state of the environment, the pressure on the environment and response actions for improvement of the environment. However, effect SD related environmental indicators need to have direct policy relevance. This means that they should provide information about progress in meeting objectives and targets in specific policies or strategies. They should also be analytical sound

and measurable with available data of good quality.

Currently there are no specific environmental quality objectives adopted in Cambodia. For this reason the environmental indicators proposed below are general indicators which can be revised later when environmental quality objectives have been developed. The selected environmental indicators are related to Goal 7 “Environmental Sustainability” in the Cambodia’s MDGs.

Productive Land Resources

- Proportion of land degradation (%)
- Proportion of vulnerable farmed areas (%)
- Proportion of agricultural areas with high use of pesticides and chemical fertilizers (%)

Rich Forest Resources

- Proportion of area covered by forest (%)
- Proportion of protected forest areas (%)
- Ratio of actual to sustainable harvest (%)
- Proportion of forest area converted to other land use (%)

High Quality Ground- and Surface Water Resources

- Proportion of total water resources used (%)
- Proportion of protected water areas (%)
- Proportion of water areas seriously polluted (%)

Rich Fish Resources

- Proportion of fish stocks within safe biological limits (%)
- Proportion of fish stocks contaminated by Persistent Organic Pollutants (POPs) and heavy metals (%)

Functional Wetlands

- Proportion of area covered by wetlands (Tonle Sap and river basins etc) (%)

Sustainable Marine- and Coastal Environment

- Proportion of environmentally affected marine and coastal areas (%)
- Proportion of untreated wastewater disposed into the coast and ocean area (%)
- Coverage of wetland-, mangrove-, coral reefs- and other valuable habitats (%)
- Proportion of coastal watersheds, ocean- and island areas managed according to the ecosystem based approach (mentioned in the JPOI 2010 Target) (%)

Rich Biodiversity

- Proportion of terrestrial and marine areas protected (%)
- Proportion of species threatened with extinction (%)

Limited Influence on the Climate

- CO₂ emissions, total, per capita and per \$1 GDP (tons)
- Emissions of other greenhouse gases; CH₄, CFCs, N₂O etc (tons)

A Protected Ozone Layer

- Consumption of ozone depleting substances (CFCs, etc)
- Recovery rate of CFCs

Clean Air

- Number of days the concentration of NO₂, SO₂, CO, PM, VOCs exceed the international standard, outdoors in urban areas and indoors in communities
- Emission levels of SO_x and NO_x causing acidification (tons)

Non-Toxic Environment

- Generation of hazardous waste (tons)
- Area of land contaminated by hazardous waste (hectare)
- Use of pesticides and heavy metals (tons)
- Concentration of POPs and heavy metals in food and human tissues and blood

Good Living Environment

- Proportion of urban population living in slums (%)
- Proportion of rural population living in poor environments (%)

Limited Use of Non-Renewable Resources

- Use of fossil fuels; oil, coal and fossil gas (tons)
- Use of scarce metals (tons)

Efficient Use of Natural Resources and Limited Waste Generation

- Water consumption per GDP (tons/GDP)
- Energy use per GDP (kwh/GDP)
- Raw material consumption per GDP; timber, fish, rice, metals (tons/GDP)
- Generation of solid waste, various fractions (tons)
- Recovery rate of solid waste in various fractions (%)

Limited Impact from Natural Disasters

- Proportion of healthy mangroves along the coastal area (%)
- Proportion of barren land without trees and plants (%)

4.1.3 Indicators for Sustainable Economic Sectors and Infrastructure

Indicators for sustainable development in the economic sectors (including infrastructure) cover situational information within this sector along with information that reflects

improvements in legal rights of people to natural resources and the development of “sustainable practices” in each sector.

Sustainable Land Use and Agriculture

- Secure land tenure for rural poor (% of rural poor)
- Rice yield (t/ha)
- Non-agriculture income generating activities in rural areas (% increase)
- Sustainable agricultural practices (% of the agricultural land)
- Sustainable land use planning (% of the provinces)

Sustainable Forestry

- Forest cover (% of total area)
- Community forestry management (% of forest area)
- Certified Sustainable Forestry (% of forest area)
- Number of endangered species in the forests
- Protected areas (million hectare)
- Existence of plans for conservation and management in protected areas (% of protected areas)
- Number of rangers in protected areas and number of rangers per area
- Proportion of reforested areas (%)

Sustainable Water Resources Management

- Areas affected by flooding and droughts respectively (% of land area)
- Irrigated area (% of the rice cultivating area)
- Sustainable water resources management plans (% of watersheds with such plans)
- Protected water areas (% of water areas receiving protected status)

- Number of water areas affected by pollution from domestic and industrial sources
- Agriculture areas with intense use of pesticides and chemical fertilizers (% of agricultural land)

Sustainable Fishery

- Fishing lots released to poor local communities (% of total lots)
- Number of community based fisheries
- Sustainable fishery practices (% of the fishing areas that have such practices)
- Fish catches and aquaculture production (tons/ year)
- Fish catch per fishing effort (kg/effort)
- Fish consumption (kg/ year x person)

Sustainable Mining

- Proportion of illegal mining activities in relation to all mining activities (%)
- Proportion of mining activities causing serious health and environmental impacts (%)
- Proportion of mining activities complying with national and international standards (%)

Private Sector and Sustainable Business Development

- Number of private enterprises in Cambodia, total and by sector
- Share of economic contribution from private enterprises to Cambodia's GDP (%)
- Proportion of capital available for private sector development (%)
- Proportion of private sustainable businesses complying with sustainable business principles and criteria in Cambodia (%)

Sustainable Tourism

- Number of international tourists (tourist per year)
- Number of domestic tourists (tourists per year)
- Number of people employed in tourism related work (employees per year)
- Tourism revenue in Cambodia (USD per year)
- Proportion of sustainable tourism activities out of all tourism activities (%)

Sustainable Transportation

- Proportion of the country covered with roads of acceptable standard (%)
- Proportion of the population with access to affordable public transportation services (%)
- Proportion of environmentally friendly modes of transportation (%)

Sustainable Energy

- Proportion of rural and urban household with electricity (%)
- Proportion of renewable energy in the power system (Target is 2% in 2010 and 10% in 2020)

- Use of fossil fuels; oil, coal and fossil gas in the national energy system including transport (%)
- Energy use per capita is 80kwh by 2010 and 200kwh by 2020
- Energy use / GDP; and in sectors (kwh/GDP)

Sustainable Water Supply and Sanitation

- Proportion of rural population with access to safe drinking water (%)
- Proportion of urban population with access to safe drinking water (%)
- Proportion of rural population with access to improved sanitation (%)
- Proportion of urban population with access to improved sanitation (%)
- Proportion of water works achieving the drinking water quality standard (%)

Solid Waste Management

- Proportion of urban areas with an appropriate solid waste management system (%)
- Proportion of rural areas with an appropriate solid waste management system (%)
- Generation of solid waste in various fractions (%), total and per capita (tons, kg)
- Generation of hazardous waste of various types (%), total (tons)
- Recovery rate of solid waste in various fractions (%)

4.1.4 Indicators for Good Governance and Implementation of SD

Indicators for good governance and implementation of sustainable development reflect measures taken to reduce corruption

and implement SD in the various sectors, on different levels and by key stakeholder groups.

Good Governance for SD

- Adopted Law(s) on Anti-Corruption
- Number of Legal Cases on Corruption
- Adopted Law(s) on Decentralization
- Proportion of Communes with Significant Decentralization

Implementation of SD

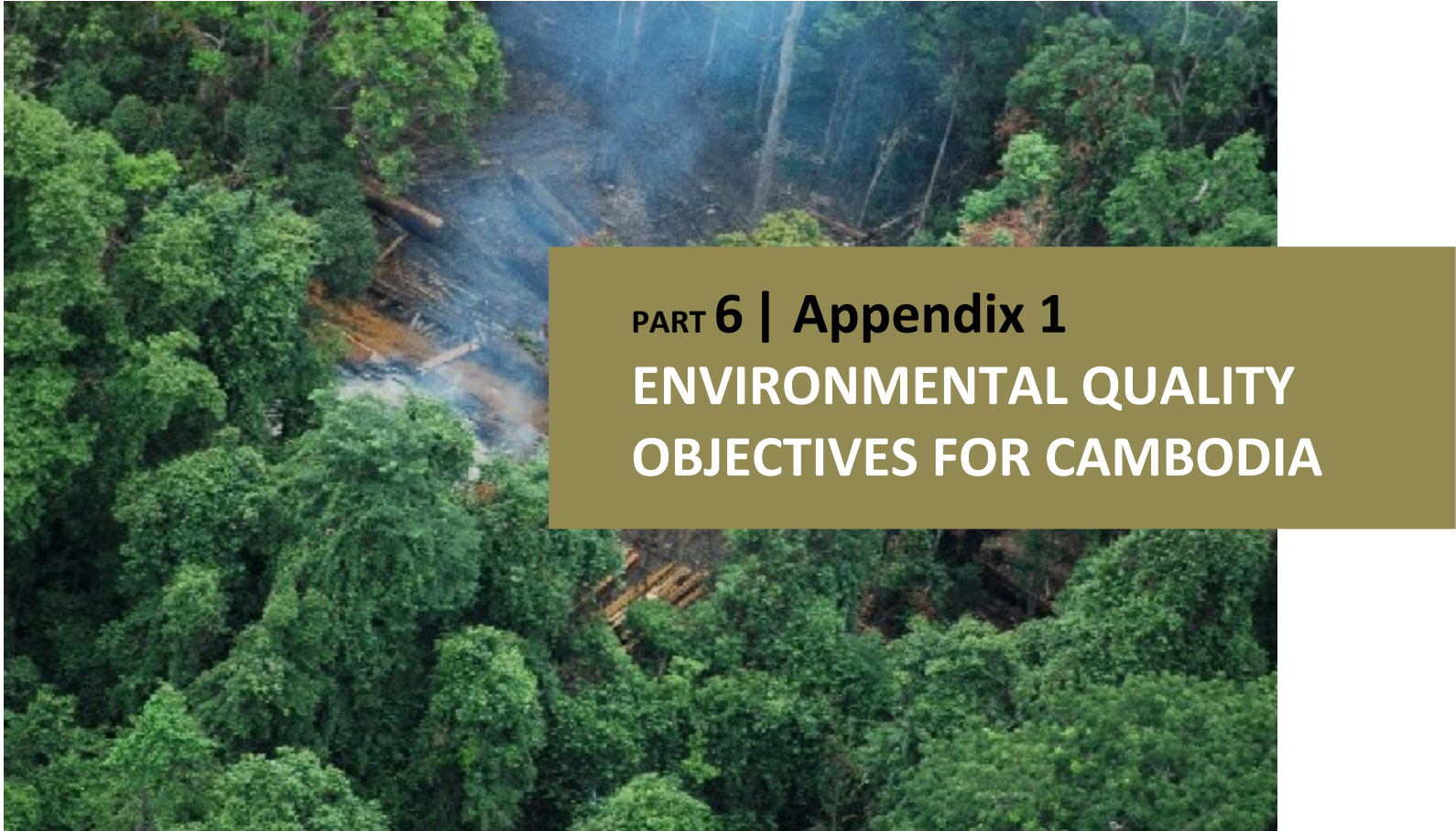
- Proportion of Ministries with Sustainable Sector Policy and Action Plans (%)
- Proportion of Provinces with SD Strategies, Action Plans and Processes (%)
- Proportion of Districts, Communes and Villages doing implementing SD related projects (%)
- Proportion of Major Groups doing SD Implementation
- Number of SD Good Practices in the country



PART 5 | REFERENCES

1. A Poverty Profile of Cambodia, 2004, Royal Government of Cambodia, Ministry of Planning, February 2006.
2. Annual Environmental Report, by Ministry of Environment, 2005-2006.
3. Achieving the Cambodia Millennium Development Goals 2005 Update, Ministry of Planning, September 2005.
4. Cambodia at the Crossroads, Strengthening Accountability to Reduce Poverty, Prepared by the World Bank in Cooperation with the IMF for the Cambodia Consultative Group Meeting, Phnom Penh, December 6-7, 2004.
5. Cambodia Economic Report, Ministry of Economy and Finance and National Bank of Cambodia, Lijiang, Yunnan, China, November 29-30, 2007
6. Cambodia Energy Sector Strategy, Ministry of Industry, Mines and Energy.
7. Cambodia Millennium Development Goals Report, 2003, Ministry of Planning, November 2003.
8. Cambodia National Environment Action Plan 1998-2002, Ministry of Environment, January 1998.
9. Cambodia, May Poverty halve in 2015? Poverty Assessment Document 2006, Prepared by the World Bank for the Consultative Group Meeting, Phnom Penh, in February 2006.
10. Development of Sub-regional Sustainable Development Strategy of Central Asia (SSDS CA), SIC ISDC with Support of UNEP-AP, Bangkok, 7-8 November 2007.
11. Environmental and Social Impact Assessment, Frank Vanclay and Daniel A. Bronstein, 1996.
12. First Expert Workshop through Inter-ministerial Consultations and Meetings Involving Representatives from Various Ministries such as: MoE, MoEF, MoP, MAFF, MLMUPC, MIME, Includes Participation from Non-Governmental Organizations, International Organizations, Academic and Private Sectors, in 7th December 2007.
13. Greater Mekong Sub-region Sustainable Development Strategy, Regional Workshop on National Sustainable Development Strategy, UNEP, Bangkok 7-8 November 2007.
14. http://www.cnv.org.kh/personInfo/biography_of_hun_sen.htm

15. National Adaptation Programme of Action to Climate Change (NAPA), Ministry of Environment, October 2006.
16. National Environmental Action Plan, 1998-2002, Ministry of Environment, January 1998.
17. National Policy on Clean Water Supply and Sanitation; Ministry of Industry, Mines and Energy; 2003.
18. National Strategic Development Plan 2006-2010, For Growth, Employment, Equity and Efficiency to Reach Cambodia Millennium Development Goals, Ministry of Planning.
19. National Strategy for Environmental Protection until 2010 and Vision toward 2020, Ministry of National Resources and Environment, National Political Publisher, 2004, Viet Nam.
20. Private Sector Development Strategy for Cambodia: Investment Climate Assessment: The World Bank: June 2004.
21. Second Expert Workshop through Inter-ministerial Consultations and Meetings Involving Representatives from Various Ministries such as: MoE, MoEF, MAFF, MLMUPC, MIME, Includes Participation from Academic and Private Sectors, in ^{25th} December 2007.
22. Socio-Economic Development Priorities and the Official Development Assistance Needs, prepared by the Consultative Group Meeting for Cambodia, 2002.
23. Strategic Framework for Development Cooperation Management, Ministry of Economic and Finance, January 2006.
24. Sub-regional Sustainable Development Strategy for South Asia (SSDS – SA) – Process and Content at the Regional Workshop on National Sustainable Development Strategies (NSDS) in Asia, Bangkok, 7-8 November 200.
25. Sub-Regional Sustainable Development Strategy, Draft for Multi-stakeholder Review Meeting, October 2007.
26. State of Environment, By Ministry of Environment, 2004.
27. Summary of Proceedings of First Consultation National Workshop on “National Sustainable Development Strategy” Organized by Ministry of Environment in Conjunction with the United Nations Environment Programme - Regional Office for Asia and the Pacific and Asian Development Bank, Sihanoukville, Cambodia, February 26-27, 2007
28. Summary of Proceedings of Inception National Workshop on “National Sustainable Development Strategy”, Organized by Ministry of Environment in Conjunction with the United Nations Environment Programme - Regional Office for Asia and the Pacific and Asian Development Bank, Phnom Penh, Cambodia, September 18-19, 2006,
29. Summary of Proceedings of Second Consultation National Workshop on “National Sustainable Development Strategy” Organized by Ministry of Environment in Conjunction with the United Nations Environment Programme - Regional Office for Asia and the Pacific and Asian Development Bank, Siem Reap province, Cambodia, July 30-31, 2007.
30. Sustainable Energy in Cambodia: Status and Assessment of the Potential for Clean Development Mechanism Projects, by Andrew Williamson with Contributions from Bridget McIntosh, Thanakvaro, Tin Ponlok in Cooperation with the Ministry of Environment, the Cambodian Research Center for Development and Institute for Global Environment Strategies, Japan, Phnom Penh, May 2004.
31. The Rectangular Strategy for Growth, Employment, Equity and Efficiency in Cambodia; July 2004.
32. Waste Management Programme in Cambodia (2002-2006), by Dr. Shrin Sokha, Deputy Director General, Ministry of Environment, 2002.
33. Water Supply Policy; Ministry of Industry, Mines and Energy; 2005.
34. Wetlands Management in Cambodia: Socioeconomic, Ecological, and Policy Prospective, 2004



PART 6 | Appendix 1

ENVIRONMENTAL QUALITY OBJECTIVES FOR CAMBODIA

Environmental Quality Objectives for Cambodia cover the entire spectrum of natural resources and environmental issues. The objectives are to be implemented through all sectors of society, which means that they give direction for environmental sustainability in all sectors.

The environmental quality objectives should be achieved within one generation (meaning by 2030). For each stated objective, short and medium term targets and indicators should be

developed in order to monitor progress towards this “generation-objective”. In some cases, sub-objectives need to be developed in order to cover essential quality aspects of the environment.

Below, an interim set of environmental quality objectives for Cambodia is proposed, including key words for important sub-issues to be further developed:

1. Productive Land Resources

- productive soils with high organic content
- no land deterioration such as due to erosion or loss of nutrients
- no accumulation of pesticides and heavy metals
- a rich biodiversity found within varied biotopes in the landscape
- sustainable agricultural practices

2. Rich Forest Resources

- high forest coverage
- protected forest areas and national parks
- rich biodiversity through varied biotopes
- no poaching of rare and threatened species
- micro-climate services and ground water recharging
- prevention of soil erosion, global warming, and improvement of carbon sinks
- renewable products from the forest such as timber, berries and plants
- sustainable forestry practices
- tourism resource

3. High Quality Ground- and Surface Water Resources

- recharged ground water resources of high quality
- protection of ground water resources from contamination
- sustainable use of ground water for domestic water supply
- lakes and rivers without eutrophication and acidification
- rich biodiversity of species in inland and marine watercourses
- protection of water resources from various pollutions
- sustainable water resources management for water supply, irrigation, fishery, transportation and tourism
- aesthetic landscapes, etc.

4. Rich Fish Resources

- high diversity of fish species
- fish populations with sustainable reproduction
- favorable habitats for spawning and feeding
- good water quality without pollution
- protection of fish species during spawning period
- rules for avoiding over-fishing and destructive fishing practices
- strict enforcement of rules
- sustainable fishing practices
- sustainable aquaculture practice

5. Functional Wetlands

- flood control
- ground water recharge
- rich biodiversity of birds, fish species and plants
- wetlands as filter for absorbing pollutants
- sustainable use of wetland products such as construction material and medicine
- wetlands' benefits(flood plains) for agriculture
- shore line protection by coastal mangroves

6. Sustainable Marine- and Coastal Environment

- high diversity of marine species such as fish
- favorable habitats for reproduction and feeding
- good water quality without pollution
- protected marine areas(corals, mangroves, endangered species)
- strict enforcement of rules
- integrated coastal zone management
- sustainable tourism practices

7. Rich Biodiversity

- high diversity of species
- favorable habitats for reproduction and feeding
- accomplish with requirements in the convention on biodiversity
- rules for long term protection of species & habitats
- special protection programs for endangered species
- strict enforcement of rules by rangers and police
- community based protection of species
- ecotourism and local guides

8. Limited Influence on the Climate

- minimize the influence on the climate
- reduce emissions of CO₂, CH₄ and other greenhouse gases
- keep a high forest coverage for assimilation of CO₂
- use renewable energy sources (for power production & vehicles)
- energy efficiency in all sectors of society
- adaptation strategies for dealing with increased flooding and droughts
- accomplish with requirements in convention on climate change
- introduce economic instruments for mitigating climate change
- apply Clean Development Mechanism (CDM) & Joint Implementation as mitigation instruments

9. Protected Ozone Layer

- minimize the use of substances depleting the ozone layer
- collect waste products (old refrigerators etc) for destruction of CFCs and other ozone layer reactive substances
- make use of products with alternatives to CFCs
- accomplish the requirements contained in the Montreal protocol, etc.

10. Clean Air

- low concentrations of air polluting substances in urban areas (NO_x, NO₂, SO₂, CO, PM, VOCs)
- low emissions of acid rain substances (SO₂, NO_x)
- low emissions of greenhouse gases (as above)
- reduce smoke and dust indoors and outdoors
- prioritize public transportation such as buses (and not cars)
- promote sustainable transportation (walking, bicycles, electric motorbikes, train and cleaner fuels for buses, motorbikes & cars)

11. Non-Toxic Environment

- low concentrations of toxic substances in food, water, human body tissues and the environment especially persistent organic pollutants and heavy metals
- reduce emissions of toxic substances from industries, workshops, trade and transportation
- low use of pesticides in the agriculture sector and commercial fertilizers containing cadmium
- reduce the use of products containing toxic substances
- strict control and treatment of hazardous waste
- restrict the movement of hazardous wastes
- introduce and apply the environmental performance of Pollution Payer Principle
- introduce green growth concept and practice

12. Good Living Environment

- a clean and healthy living environment without pollution
- open spaces, green areas and cultural environments
- better working environment
- better environment landscapes as a basic resource for tourism development

13. Limited Use of Non-Renewable Resources

- economize with scarce natural resources
- limited use of fossil fuels and hazardous metals

14. Efficient Use of Natural Resources and Limited Waste Generation

- energy saving means saved money and environment
- use raw materials efficiently and recycle rest products
- efficient use of materials means less waste generation

15. Limited Impact from Natural Disasters

- protection of mangrove gives protection from storms and tidal waves
- protection of forests reduces soil erosion and flooding

The environmental quality objectives are to be linked to Goal 7 “Ensure Environmental Sustainability” in CMDGs. Sub-objectives, targets and indicators need to be further developed within the framework of the CDMGs.

The indicators for monitoring progress of achievements of the environmental objectives should be based on the **DPSIR** approach, or variations upon that approach, in order to get a well structured assessment and monitoring system. ‘**D**’ equates to **Drivers** behind the pressure on the environment; ‘**P**’ means the **Pressure** on the environment; ‘**S**’ means the **State** of the environment; ‘**I**’ means **Impacts** on the environment; ‘**R**’ means **Response** in order to reduce the pressure or improve the environment.

For instance, a *Driver* for climate change is the use of cars with high consumption of gasoline

(fossil fuel), the *Pressure* is the emission of carbon dioxide CO₂ (greenhouse gas) to the atmosphere, the *State* is the concentration of CO₂ in the atmosphere, the *Impact* is a warmer climate on the planet with many serious consequences, the *Response* is to convert to renewable energy sources without net CO₂ emissions such as with bio-energy, solar energy, wind energy and hydropower energy and to use energy more efficiently as well as reforestation activities resulting in trees that are growing and assimilating CO₂ from the atmosphere.

In order to avoid a dramatic change of the world's climate with severe consequences for people and nations, there is an urgent need to reduce the *Drivers* and *Pressure* on the climate system as well as to make intermediate *Responses* to find long term climate friendly options, sustainable solutions.

