United Nations Development Programme
Country: fyr MACEDONIA

PROJECT DOCUMENT[1]

Project Title: Third National Report to the UNFCCC

UNDAF Outcome(s):

By 2015 central and local level authorities have improved capacities to integrate environment and disaster risk reduction into national and local development frameworks, while communities and CSOs participate more effectively in environmental protection and disaster risk reduction planning, implementation and monitoring

UNDP Strategic Plan Environment and Sustainable Development Primary Outcome:

Mainstreaming environment and energy

UNDP Strategic Plan Secondary Outcome:

Promoting adaptation to climate change

Expected CP Outcome(s):

By 2015, national policies better address climate change adaptation and mitigation needs and demonstration programmes respond to climate change challenges;

Expected CPAP Output (s)

Vulnerability assessments, impact costing, policy options and integrated territorial plans for climate change adaptation developed.

Executing Entity/Implementing Partner: UNDP

Implementing Entity/Responsible Partners: Ministry of Environment and Physical Planning

Brief Description

The main aim of the project is to strengthen the information base, analytical and institutional capacity of the key national institutions to integrate climate change priorities into country development strategies and relevant sector programs by providing financial and technical support to prepare its Third National Communication (TNC) to the United Nations Framework Convention on Climate Change (UNFCCC).

The project will further strengthen the dialogue, information exchange and cooperation among all the relevant stakeholders including governmental, non-governmental, academic, and private sectors. It is expected that this will result in achieving national consensus on the actions and measures that need to be undertaken to address the climate change related issues relevant for the country on a short and long term, This should be followed by firm commitment for allocation of adequate financial means for realization of the agreed actions and measures.

Programme Period:	2010 -2015
Atlas Award ID:	00059946
Project ID:	00075206
PIMS #	PIMS 4469
Start date:	01 November 2011
End Date	31 October 2013
Management Arrangements	NIM (NEX)

Total resources required	490,000$
Total allocated resource	490,000$
• Regular	
• Other:	
○ GEF	480,000$
○ Government	
○ In-kind	10,000$
○ Other	

Agreed by (Government): Ministry of Environment and Physical Planning

Date/Month/Year

Agreed by (Executing Entity/Implementing Partner): United Nations Development Programme

Date/Month/Year

[1] For UNDP supported GEF funded projects as this includes GEF-specific requirements

Table of Contents

Acronyms

BAT	Best Avalable Techniques
BSAP	Biodiversity Strategy and Action Plan
CCA	Common Country Assessment
CoP	Conference of the Parties
CHP	Cogeneration power plant
CP	Country Programme
DALY	Disability Adjusted Life Years
GACMO	GHG costing model
GEF	Global Environmental Facility
GHG	Greenhouse Gases
GIS	Global Information System
CRF	Common Reporting Format
ETC/CDS	European Topic Centre on Catalogue of Data Sources
EU	European Union
FAO	Food and Agriculture Organization
HMS	Hydro Meteorological Service
ICEIM	Research Center for Energy, Informatics and Materials
INC	Initial National Communication
IPCC	Intergovernmental Panel on Climate Change
IPPC	Integrated Pollution Prevention Control
LUCF	Land Use Change and Forestry
MAGICC-SCENGEN	Interactive software for climate change investigations
MANU	Macedonian Academy for Sciences and Arts
MDGs	Millennium Development Goals
MED-HYCOS	System of hydrological data exchange between Mediterranean countries
MIKE SHE	Simulation software model for water resources sector
MoEPP	Ministry of Environment and Physical Planning
NAP	National Action Plan
NCCC	National Climate Change Committee
NCSA	National Capacity Self Assessment
NEX	National Execution
NGO	Non-Governmental Organization
QA/QC	Quality Assurance/Quality Control
SNC	Second National Communication
SRES	Special Report on Emissions Scenarios
SWDS	Solid Waste Disposal Sites
TAR	Third Assessment Report of the IPCC
V&A	Vulnerability assessment and adaptation
UNDP	United Nations Development Program
UNDAF	United Nations Development Assistance Framework
UNFCCC	United Nations Framework Convention on Climate Change
WASP	Optimization model for the energy sector
WHO	World Health Organization

Chemical symbols

CO_2	Carbon Dioxide
N_2O	Nitrous Oxide
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2-eq	Carbon dioxide equivalent
CH_4	Methane
N_2O	Nitrous oxide
NMVOC	Non Methane Volatile Organic Compound
HFCs	Hydrofluorocarbons
PFCs	Perfluorocarbons
SF_6	Sulphur hexafluoride

Situation analysis

FYR Macedonia belongs to the lower middle income range of countries with a per capita income of US $2,980 (2008) and HDI of 0.701 (HDR 2010). With the exception of the first three years after country's independence in 1991, the country has been successful in maintaining a high level of price stability and low budget deficit. However, the process of privatization of the state owned enterprises and transition to a market economy has never translated into robust output growth or jobs creation, thus impacting the social map of the country. Macroeconomic stability was maintained by a prudent monetary policy, which kept the domestic currency at the pegged level against the euro, at the expense of raising interest rates.

Accession to the European Union is at the core of the development goals of the country and the main driving force. The European Union integration agenda generates the necessary momentum for political, economic and social reforms and contributes to building consensus on important policy issues across the sectors. Nonetheless, its implementation remains a challenge, particularly due to the country's low socio-economic standing and capacity constraints.

The EU accession poses great challenges in the processes for approximation of the national legislation to the EU one, and even more in enforcement of the strict standards for environment protection foreseen in the new laws and regulations. While the process of approximation of the national legislation to the EU acquis is in an advanced stage, its implementation remains the key challenge. Beside the limited human capacities on national and local level, the country is also faced with a significant financial gap for implementation of the requirements introduced in the new laws. This is especially valid for investments in waste management, wastewater treatment plants, remediation of industrial hotspots, nature conservation, amongst other issues.

Country's institutional and policy frameworks to deal with climate change related issues have improved noticeably since 2008. Number of national documents that set policies for development of the key sectors were adopted. The Ministry of Economy designed a three tier energy policy: the "Strategy for Energy Development in the Republic of Macedonia for the Period 2008-2020 with a Vision to 2030" (adopted in 2010); Renewable Energy Sources Strategy of Macedonia till 2020 (adopted in 2010); and "National Strategy for Energy Efficiency in the Republic of Macedonia till 2020" (adopted in 2010). Also, a new Law on Energy (Official Gazette of R. Macedonia No. 16/2011) was adopted in February 2011. The Strategy for Energy Development offers a set of ambitious and specific numerical targets for 2020 following the EU climate change policy track, e.g. reducing the energy intensity of the economy by 30% relative to 2006 or increasing the share of renewables (including hydropower and wood heat) to more than 20% of total final energy. But still, half of the country's electricity is projected to come from lignite-burning plants, both in 2020 and in 2030, and the overall total electricity demand is projected to grow by around 52% by 2030.

The Ministry of Environment and Physical Planning developed the National Strategy for Sustainable Development (adopted in 2010), National Environmental Investments Strategy (2009); the National Environmental Approximation Strategy (2008); the Waste Management Strategy (2008); the National Waste Management Plan (2008). The Ministry of Health developed the National Health Strategy for Adaptation in Health Sector (NHSAHS) (2010), while the Ministry of Agriculture, Forestry and Water Economy is currently developing, through financial and technical support of the World Bank, a National Strategy for Climate Change Adaptation in Agriculture.

In October 2011, the World Bank has launched a Green Growth and Climate Change Analytic and Advisory Support Program, with the objective of supporting the country in assessing the economic costs and benefits of a shift to greener growth, taking into account projected climate change, and prioritizing actions identified by the National Strategy for Sustainable Development (NSSD). This umbrella Program focuses on jobs creation, inclusive growth, adaptation to climate change, mitigation of greenhouse gas

(GHG) emissions, and policy reforms and public investments through studies, analyses, technical assistance and training. The Program further aims to facilitate Macedonia's compliance with EU accession requirements.

Most of the relevant ministries have nominated Climate Change Focal Points. The Designated National Authority is performing its role in regards to the Kyoto Protocol and the first CDM project has been registered while several others are in an advanced stage of development. National Platform for Disaster Risk Management was established in 2009 as a response to the obligations set in the Hyogo Framework for Action. Climate Risks are among the key one that are priority for the country, and with UNDP's support relevant institutions have started a process of development of specific methodologies for risk assessment on national and local level.

The country ratified the UN Framework Convention on Climate Change (UNFCCC) in December 1997 and the Kyoto Protocol in July 2004. Responding to the obligations towards the UNFCCC the country prepared and submitted the Initial National Communication on Climate Change in 2003 and the Second National Communication in 2008. As a non-Annex I to the UNFCCC, the country currently has no emissions reduction requirements under these agreements. While this will not necessarily change upon entrance to the EU, it is to expected that the EU will ask the acceding countries to take on full Annex I responsibilities or to at least agree to some additional obligations such as participation in the EU Emission Trading Schemes. The latter arrangement would, in effect, create emissions reductions requirements for non-Annex I countries without changing their UNFCCC classification.

The country associated to the Copenhagen Accord at the end of January 2010 and submitted its reduction targets and a preliminary list of mitigation actions (without quantifying the associated emission reductions) based on the action plan developed as part of the Second National Communication to the UNFCCC. The Cancun agreement formally recognizes the planned actions to reduce or limit greenhouse gas emissions communicated by developing countries since Copenhagen. It also reaffirms that non-annex 1 countries will implement nationally appropriate mitigation actions (NAMAs) in the context of sustainable development. Mitigation actions taken by non-Annex I parties will be subject to their domestic measurement, reporting and verification of the result of which will be reported through their national communications every two years.

Even though the SNC was a key in identifying priorities for interventions, the translation of these assessments into concrete sector policy and measures with a broader impact is still rather low, especially in some sectors. Sectoral climate change policy and measures are yet to be assessed in terms of their economic, environmental and social impacts.

However, it is certain that the country's preparedness to respond to climate change challenges, especially investments in vulnerable sectors such as agriculture, water and forests, as well as in energy efficiency and renewable will be costly and will require long-term commitment and efforts from all segments of the society – policy and decision makers, public administration, private sector, CSOs, academic and research institutions and others.

The TNC would advance the process initiated by the SNC taking advantage of the currently strong global political momentum to advance promptly with the CC agenda. It will represent a key tool for decision makers at all levels contributing to deepening the understanding of the needs for and results of the implementation of mitigation and adaptation policies and measures. It will further demonstrate their potential contribution to the sustainable development of the different economic sectors in Macedonia.

Strategy

One of the three areas of cooperation for the UN in the country stated in the UNDAF 2010-2015 is environment protection. The UN's support in this area responds to the national priority for strengthening national capacities for integrated environmental management and enhancing administrative capacities at central and local level for enforcement and fulfillment of obligations of regional and global conventions. The main result of the UN support is expected to be improved capacities of central and local level authorities to integrate environment and disaster risk reduction into national and local development frameworks, while communities and CSOs participate more effectively in environmental protection and disaster risk reduction planning, implementation and monitoring. This will be achieved through support for development of national policies that better address climate adaptation and mitigation challenges, implementation of demonstration energy efficiency and renewable programmes/projects and public awareness on climate change issues and raised competencies of CSOs to influence national and local level decision making.

The value added by the UNCT lies in its experience in supporting the country to fulfill its commitments towards the global environmental conventions and its ability to consider innovative programmes and projects by adapting global best practices to local conditions combined with the scientific and technical expertise of specialized agencies and their networks in specific environmental areas, building partnerships and mobilizing financial and human resources.

The UNDP 2010-2015 Country Programme promotes a long-term development agenda, in line with the MDGs and the process of EU integration. The Programme focuses on three strategic areas of intervention: a) social inclusion; b) local governance and territorial development and c) environmental protection.

It is further grounded in key national analytical instruments such as the Government's National Development Plan, the European Partnership Strategy and EU Annual Progress reports – the latter being a reference point for annual strategic priorities within the current cycle period.

UNDP has a proven track record and experience in addressing environmental challenges in the country. One of the key pillars in the area of environmental protection is directed towards providing strategic support to decision makers and various stakeholders in raising awareness of the major impacts from climate change and associated risks posed to the economy. In this context, UNDP contributes towards formulating an enabling environment for adaptation strategies and other measures, and implement energy efficient practices, including through the promotion of renewables.

UNDP also supports the country's ability to respond to natural and man-made disasters, as well as to assess and adequately reduce associated risks, including the climate risks, by strengthening the capacity of national management institutions to establish a platform for the coordination of risk assessments and management practices, at central and local levels.

In the past decade UNDP has supported national efforts for addressing and responding to climate change challenges by a variety of programmes for strengthening national capacities to monitor climate variability and assess the vulnerability of different sectors to climate change. UNDP provided primary support in creating a GHG inventory and developing mitigation measures for emission reductions, and assessment of vulnerability sectors to climate change and respective adaptation measures as an integral part of the development of the Initial and the Second National Communication to Climate Change. It also provided

an in-depth assessment of the potential socio-economic risks of climate change to the most vulnerable sectors and proposed systematic measures that mitigate its negative impacts and threats for energy demand, agriculture, water resources, biodiversity, forestry and health. Additionally, a comprehensive policy support for the establishment of a legal and institutional framework for the implementation of the Kyoto Protocol has been also provided including amongst others development of the National Strategy for the implementation of the Clean Development Mechanism (CDM) for the first commitment period, as well as a training programme that better enables the relevant national institutions and potential project proponents to participate and benefit from the global carbon market.

Based on the country's commitment as a non-annex I Party to the UNFCCC, the project will assist the Government in implementing activities needed to enable the country to prepare its Third National Communication, following the guidelines adopted by the CoP. The Third National Communication which is the main output of the project, as well as activities for improvement of the capacities to implement the UNFCCC will directly contribute to the achievement of the UNDAF and CP outcomes.

The activities within the TNC are continuation and upgrade of the work done under the Initial National Communication (2000-2003), the Enabling Activities phase II (2003-2004) and the Second National Communication (2005-2008). During the lifetime of the project, particular attention will be put on capitalizing on the information generated during the stocktaking exercise and utilization of the results of relevant prior or ongoing national or international activities related to the climate change issues and the country’s commitments under the UNFCCC and the EU accession. Special attention will be put on exploring the synergies between the UNFCCC and the relevant EU Directives and possibilities to harmonize the country’s reporting obligations and to increase the capacities to participate in the international negotiations on climate change issues.

The strategy of the project is to engage the best local expertise available in the country, and to hire short-term international consultants to assist in the implementation of activities that require specialized expertise and knowledge that is not available locally.

The project outcomes will be achieved through series of activities, including background analyses, national inventory of GHGs and development of programmes for adaptation and mitigation measures in line with requirements deriving from most recent UNFCCC and EU policy developments. Additional support will be provided through separate training workshops, and encouragement of the information exchange between the national and relevant regional and international expert institutions. In implementing the different activities, the project will follow the internationally adopted guidelines and use the existing methodologies and tools whenever available.

Among the other, the analyses related to the GHG Inventory and the relevant sectoral analyses should help in setting realistic national mitigation targets which will further help the country during the negotiation of the climate change chapter with the EU. The socio-economic analyses of the relevant sectors should help in getting better understanding of the implications that changed legislation and new policies would have especially to the industry and private sector, as well as on the associated costs.

The project will strengthen the dialogue, information exchange and cooperation among all the relevant stakeholders including governmental, non-governmental, academic, and private sectors. It is expected that this will result in achieving national consensus on the actions and measures that need to be undertaken to address the climate change related issues relevant for the country on a short and long term, This should be followed by firm commitment for allocation of adequate financial means for realization of the agreed actions and measures.

Further, it will establish linkages and cooperation with ongoing relevant projects that are addressing the national development priorities, or/and are complementary to the activities implemented as part of the development of the TNC. This is considered as essential not only in order to prevent overlapping and inefficient use of available funds but more important it is aimed at creating synergies and sending consistent messages.

The development of the Third National Communication will be coordinated by the Ministry of Environment and Physical which will ensure the compliance of the results with the relevant national policies, strategies and programmes, and the input from the other relevant ministries and institutions. The project team will work closely with the UNFCCC Focal Point, the National Climate Change Committee and the GEF Operational Focal Point. Special emphasis is put on supporting the development of a sustainable institutional infrastructure and capacities necessary to meet the country's commitments under UNFCCC and EU accession.

The Project will promote integration of climate change concerns into sector policies and programs, including related capacity building, concrete proposals for policy changes, and promotion of cross-sectoral coordination. Active participation by all stakeholders in the formulation of mitigation and adaptation policies and measures will be facilitated to ensure ownership and sustainability.

Project objective, outcomes and outputs/activities

The main objective of the project is to strengthen the information base, analytical and institutional capacity of the key national institutions to integrate climate change priorities into country development strategies and relevant sector programs by providing financial and technical support to prepare its Third National Communication (TNC) to the United Nations Framework Convention on Climate Change (UNFCCC).

The project will further strengthen the dialogue, information exchange and cooperation among all the relevant stakeholders including governmental, non-governmental, academic, and private sectors. It is expected that this will result in achieving national consensus on the actions and measures that need to be undertaken to address the climate change related issues relevant for the country on a short and long term, This should be followed by firm commitment for allocation of adequate financial means for realization of the agreed actions and measures.

Outcome 1: GHG Inventory

The objective of this component is to update the country's GHG emission inventory for the key emitting sector, and to strengthen national capacities for modeling, analyzing and projecting GHG emissions.

Outcome 2: Vulnerability and Adaptation Assessments

The objective of this component is to enhance an enabling framework for the implementation of adaptation measures, including the design and delivery of a set of policies and adaptation measures aimed at integrating climate change into the country's development strategy and sector programs.

Anticipated climate change impacts will be assessed with an aim to identify the most vulnerable sectors and areas in the country. Support will be provided for carrying out of socio-economic and climate- change modeling scenarios, targeted at identifying priority adaptation actions and expected impacts, costs and benefits. Additional studies to further develop priority adaptation actions necessary to strengthen the

country's preparedness to climate- change impacts in areas identified as most vulnerable will be carried out. Necessary priority adaptation actions including technical, economic, environmental, social and financial analysis of the proposed adaptation actions will be designed to strengthen adaptive capacity and climate resilience.

One of the key criteria in determination of the sectors is their importance for the Macedonian economy. Therefore, the focus will be given to agriculture, water resources and forestry. The scope of the assessments in the agriculture sectors will be depending on the scope of the work of the World Bank Programme in order to overlap and duplication. Focus will be given on forestry and its correlation with land degradation. Vulnerability of the tourism, cultural and natural heritage will be a new area, as well as links between the climate change and disaster risk reduction. Energy demand was identified as a new focus area which will require an integrated approach.

Another new approach that will be tested in the TNC will be cross-sectoral analyses, especially between water resources and energy demand, water resources and agriculture, etc.

During the TNC, analyses within each sector will be upgraded and improved, utilizing data, results, findings and recommendations from completed or ongoing relevant studies thus obtaining more accurate assessment on a national level. Particularly vulnerable regions of the country within some of the sectors (for example in water resources) will be subject to more detailed analysis.

Outcome 3: Mitigation Analysis

The objective of this component is to enhance an enabling framework for the implementation of mitigation measures, including the design and delivery of a set of policies and mitigation measures aimed at integrating climate change into the country's development strategy and sector programs. This will be done through development of studies on mitigation potential in the country's main economic and GHG-emitting sectors, with an aim at identifying priority mitigation measures. The studies will analyze the technical and economic aspects related to implementation of the identified mitigation actions in the country.

The key activity in this section would be to revise the baseline scenario from the Second National Communication in accordance with the strategic directions stipulated in the newly adopted sectoral strategies and action plans such as Energy Strategy, Energy Efficiency Strategy and Renewable Energy Sources Strategy. This will be accompanied by analyses and recommendations of an appropriate institutional set up in order to establish and/or maintain proper system for monitoring, reporting and verification. Another important task would be to develop mitigation scenarios and measures in a form of NAMA and to evaluate them from the environmental and socio-economic perspective. For each of them GHG reduction potential and the costs for reduction of 1t CO2eq should be determined, followed by mitigation supportive policies and appropriate institutional set up. Cost estimations of the mitigation scenarios and the economic implications of introduction of limitations on emissions and some economic instruments (CO2 tax or CER income tax for example) would be one of the most important outputs.

Outcome 4: National circumstances; Constraints & gaps, related financial, technical, & capacity needs; Other relevant information

The objective of this component is to strength institutional capacities at the national and municipal levels for integration of climate data into sector programs and strategies through organizing workshops for relevant national and municipal institution; Civil Society Organizations (CSO) and journalists. Project-

related information and materials customized to different interest groups will be developed and disseminated to the public.

Outcome 4: Project Management

The main objective of this component is provision of technical and operational assistance, as necessary, to support adequate Project management and coordination by the PIU and the Project Board, including carrying out Project audits.

A detailed description of the activities under each outcome is included in the Work Plan.

The studies which need to be undertaken will be further defined during the inception phase of the project. The main reason for this is very dynamic environment in the country with many players (state, NGOs, Academia) carrying out activities related to climate change, as well as donor programmes that support these national efforts. The inception phase should result with clear list of project products (studies, assessments) that will not overlap with the outcomes of other similar programmes in the country.

Project Results Framework:

This project will contribute to achieving the following Country Programme Outcome as defined in CPD and UNDAF: By 2015 central and local level authorities have improved capacities to integrate environment and disaster risk reduction into national and local development frameworks, while communities and CSOs participate more effectively in environmental protection and disaster risk reduction planning, implementation and monitoring.					
Country Programme Outcome Indicators: By 2015 national policies better address climate change adaptation and mitigation needs and demonstration programmes respond to climate change challenges.					
Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one): 1. Mainstreaming environment and energy					
Applicable GEF Strategic Objective and Program: Enabling Activities: Climate Change					
	Indicator	**Baseline**	**Targets End of Project**	**Source of verification**	**Risks and Assumptions**
Project Objective[2] Preparation of the Third National Communication (TNC)	Preparation and submission of the TNC	INC and SNC endorsed and submitted to UNFCCC	The TNC to be endorsed and submitted to the UNFCCC.	Database and documentation in the UNFCCC	Assumes strong political support for the preparation of the TNC.
Outcome 1[3] GHG Inventory	• GHG inventory with Tier 2 data for key sources • Establishment of continuous data measurement and analysis system • Complete inventory chapter for the TNC	• Tier 2 data not listed for all key sources in SNC • Data collected on an ad hoc basis when NC is compiled.	• GHG inventory uses Tier 2 data for key source emissions • GHG are measured and reported • Data measurement and analysis is institutionalized • Complete inventory chapter is prepared for the TNC	• Project documentation • Government reports • External expert review (NCSP) • TNC	Assumes that state institutions and enterprises will be willing and able to share data on their emissions with the project team. Assumes political commitment for establishing an institutional set up for preparation, updating, and reporting of the GHG Inventory
Outcome 2 Vulnerability and Adaptation Assessments	• Number of studies available to inform different institutions and sectors about feasible adaptation policies and measures and their	• There are some new vulnerability assessments and adaptation related initiatives that are not reflected in the	• Scenarios are prepared that incorporate current data and modelling techniques • Key components of the V&A section are updated	• Project documentation, including training records • Expert review (NCSP)	Assumes existence of adequate methodologies and models which are applicable in the country context and/or interest from the research community and academia to develop such methodologies and models

[2] *Objective (Atlas output) monitored quarterly ERBM and annually in APR/PIR*

[3] *All outcomes monitored annually in the APR/PIR. It is highly recommended not to have more than 4 outcomes.*

	potential prioritization to facilitate decision making; • Upgraded V&A chapter of the TNC	SNC • Rapid assessment of climate change implication prepared for energy consumption, hydrology, agriculture, forestry and health sectors • Limited capacities for conducting socio-economic analyses by using various methodologies and models • SNC does not reflect recent developments	• Targeted sectors have access to new adaptation-related information • Policies and measures for climate change adaptation are upgraded	• TNC	Assumes availability of input data for modeling
Outcome 3 Mitigation Analysis	• Number of studies available to inform different institutions and sectors about feasible mitigation policies and measures and their potential prioritization to facilitate decision making • Upgraded mitigation chapter in the TNC	• New strategies for development of the energy sector that set priorities which are not reflected in the SNC • There are some new mitigation analyses and concrete interventions implemented that are not reflected in the SNC	• Targeted sectors have access to mitigation-related information (e.g. updated and new GHG emission inventories) as well as access to feasible options, policies and measures for climate change mitigation. • Policies and measures mitigation are upgraded	• Project documentation, including training records • Expert review (NCSP) • TNC	Assumes strong political commitment for investing in mitigation measures and existence of financial and other instruments that will facilitate such investments, especially for the industry and private sector
Outcome 4 National circumstances; Constraints & gaps, related	• ...% of targeted institutions with improved capacity to take proposed mitigation and adaptation policies and measures	• Only limited capacities to develop and implement climate change policies and	• At least satisfactory percentage[4] of the survey responses collected at the TNC events confirms increased understanding	• The survey used in conjunction with each TNC event will include questions	Assumes commitment from the national and local governments to invest in capacity building and increasing human and financial resources for mitigation and adaptation measures

[4] As defined in the detailed M&E plan in the Operational Manual: 0-25% unsatisfactory; 25-50% moderate; 50-75% satisfactory, and 75-100% highly satisfactory.

financial, technical, & capacity needs; Other relevant information	forward • % of targeted stakeholder groups that express increased awareness on climate change concerns	measures exist on national and local level • An in-depth knowledge and awareness on the climate change issues are still insufficient	on climate change. • Improved quality of climate change related articles and TV programmes in the country	on the general awareness level of the respondents prior to their involvement with the TNC • Monitoring and evaluation of relevant strategies/plans and programmes on national and local level that foresee mitigation and adaptation measures	

Total budget and workplan

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 2011 (USD)	Amount Year 2012 (USD)	Amount Year 2013 (USD)	Total (USD)
OUTCOME 1: GHG Inventory	**Party 1**	**62000**	**GEF**	71200	International Consultants		10,000		10,000
				71300	Local Consultants	2,000	31,000	16,000	49,000
				72100	Contractual services		17,000	10,000	27,000
				74200	Audio Visual & Print Prod Costs		3,000	3,000	6,000
				74500	Miscellaneous	1,000	2,000	1,000	4,000
					Total Outcome 1	**3,000**	**63,000**	**30,000**	**96,000**
OUTCOME 2: Vulnerability and Adaptation Assessments	**Party 1**	**62000**	**GEF**	71200	International Consultants		28,000	22,000	50,000
				71300	Local Consultants	3,500	33,500	20,000	57,000
				72100	Contractual services		18,000	5,000	23,000
				71600	Travel	1,000	2,000	1,000	4,000
				74500	Miscellaneous	500	1,000	500	2,000
					Total Outcome 2	**5,000**	**82,500**	**48,500**	**136,000**
OUTCOME 3: Mitigation Analysis	**Party 1**	**62000**	**GEF**	71200	International Consultants		20,000	10,000	30,000
				71300	Local Consultants	5,000	36,000	27,000	68,000
				72100	Contractual services		10,000	10,000	20,000
				71600	Travel		2,000	2,000	4,000
				74500	Miscellaneous		1,000	1,000	2,000
					Total Outcome 3	**5,000**	**69,000**	**50,000**	**124000**
OUTCOME 4: National circ; Conts. & gaps, financial, tech, & capacity needs; Other relevant info	**Party 1**	**62000**	**GEF**	71300	Local Consultants	2,000	11,000	10,000	23,000
				72100	Contractual services		10,000	5,000	15,000
				72200	Equipment	7,000			7,000
				74200	Audio Visual & Print Prod Costs			6,000	6,000
				74500	Miscellaneous		2,000	2,000	4,000
					Total Outcome 4	**9,000**	**23,000**	**23,000**	**55,000**
Project Management, including Monitoring and evaluation	**Party 1**	**62000**	**GEF**	71400	Contractual Services - Individual	9,000	39,000	15,000	63,000
				72500	Offices Supplies	1,500	1,000	500	3,000
				71600	Travel		1,000		1,000
				74500	Miscellaneous Expenses		1,000	1,000	2,000
					Total Management	**10,500**	**42,000**	**16,500**	**69,000**

PROJECT TOTAL				**480,000$**

Summary of Funds: [1]

	Amount Year 1	Amount Year 2	Amount Year 3	Total
GEF	**32,500$**	**279,500$**	**168,000$**	**480,000$**
Donor 2 (other donors)				
Donor 3 (cash and in-kind) e.g. Government	**4000$**	**3000$**	**3000$**	**10,000$**
TOTAL	**36,500$**	**282,500$**	**171,000$**	**490,000$**

[1] *Summary table should include all financing of all kinds: GEF financing, cofinancing, cash, in-kind, etc...*

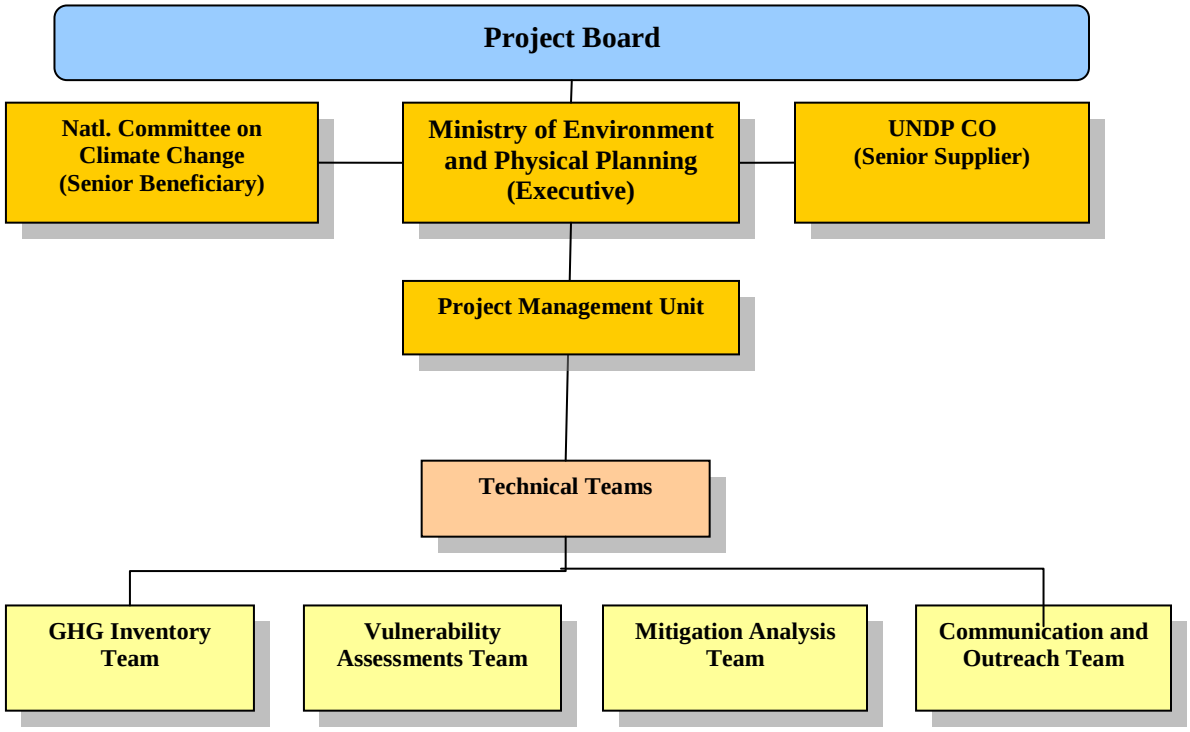
Workplan

	2011	Year 2012				Year 2013				2014
Outputs/Activities	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**
Implementation arrangements and project inception:										
1. Establish project unit and expert teams										
2. Establish project steering committee										
3. Develop capacity development framework										
4. Develop a communication and outreach framework										
5. Organize inception workshop with key stakeholders										
Output 1: GHG Inventory										
1.1: National coordination/ training workshop										
1.2: Revise the input data										
1.3: Gather available data from national sources to fill inventory data gaps										
1.4: Undertake national GHG inventories for the year 2004										
1.5: Recalculate the time series for the period 2000-2003 and for 1990-1999										
1.6: Provide information for emissions for years 2005 to 2009 for the sectors Energy and Industrial processes to the extent possible										
1.7: Develop CO2 emission factors										
1.8: Describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories										
1.9: Support the improvement of the current institutional set up for preparation, updating, and reporting of the GHG Inventory										
1.10: Finalize GHG Inventory										
1.11: Organize workshop for presentation and discussion on the results obtained from the GHG Inventory										
Output 2: Vulnerability and Adaptation Assessments										
2.1: Organize a national training/coordination workshop										
2.2: Establish an inter-ministerial coordination mechanism										
2.3: Review, up-date or if necessary replace the climate scenarios developed by the SNC										
2.4: Analyze the climate changes for the period 1961-2008 for 34 stations										
2.5: Analyze the climate variability by months and years										
2.6: Review the vulnerability assessment of the SNC										
2.7: Undertake vulnerability, costs of climate change damage and adaptation assessments										
2.8: Describe links between climate and socio-economic conditions										
2.9: facilitate actively research partnerships										
2.10. Outline the guiding principles, strategic priorities and actions for adaptation										
2.11. Review the national action plan developed within the SNC and adjust/up-date it										

	2011	Year 2012				Year 2013				2014
Outputs/Activities	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**
2.12. Carry out cost-benefit analysis of proposed adaptation measures										
2.13. Prepare a draft national action plan for adaptation to climate change										
2.14. Organize workshops to discuss the results from V&A										
2.15. Prepare a report on the vulnerability and adaptation assessments, a policy document for decision makers and the national adaptation action plan										
2.16. Disaster risk reduction measures for adaptation on climate change										
2.17. Impact of climate change to cultural and natural heritage										
Output 3: Mitigation Analysis										
3.1: Organize a national training/coordination workshop										
3.2: develop a baseline scenario to mitigate for GHG emissions										
3.3: Revise the measures contained in the SNC and Top-Ups										
3.4: Extend the analysis on the side of energy consumption										
3.6: Develop a series of mitigation scenarios to abate the increase of the GHG emissions										
3.6: Describe links between mitigation, sustainable development and green growth										
3.7: Create synergies with all on-going projects and initiatives that address mitigation										
3.8: Facilitate actively research partnerships										
3.9: Measure, report and verify the reductions of GHG achieved since the SNC										
3.10: Use EU/UNFCCC climate change policy developments as guiding principles for the preparation of the national mitigation action plan										
3.11: Develop an action plan for transposing the EU Climate and Energy Package and revise the measures and policies contained in the SNC accordingly										
3.12: Identify, formulate and prioritize programmes containing measures to mitigate climate change										
3.13: Finalize the GHG Abatement analysis using appropriate software tools										
3.14: Formulate a final national action plan to abate GHG emissions in-line with the UNFCCC requirements										
3.15: Prepare a report on the mitigation assessments, a policy document for decision makers and the national adaptation action plan										
3.16: Workshop to present and discuss the GHG draft national action plan										
Output 4: National circ; Conts. & gaps, financial, tech, & capacity needs; Other relevant info										
4.1: Assess the technology needs for adaptation/mitigation and evaluate enabling environment										
4.2: Report on progress and activities related to technology transfer										
4.3: Provide information on regional, national or local research programmes conducted in the field climate change										
4.4: Provide information on institutional framework for implementation of Article 6 of the Convention										

	2011	Year 2012				Year 2013				2014
Outputs/Activities	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**
4.5: Implement an action-oriented and community based national outreach programme with the aim to engage key stakeholders										
4.6: Establish a clearing house mechanism for climate change related project in the country										
4.7: Provide information on capacity-building activities in accordance with the decision 2/CP.7 focusing on coordination and sustainability of capacity-building process and climate change mainstreaming										
4.8: Improve the applicability of climate change related models and software tools through strengthening translational research										
4.9: Integrate the approaches to climate change and air pollution within the TNC										
4.10: Provide information on financial, technical and capacity needs while undertaking the activities										
4.11: Provide information on financial and technical resources or other in-kind contribution made available by the country for the preparation of the TNC										
4.12: Provide information on financial resources and technical support provided by GEF, Annex II Parties or bilateral and multilateral institutions										
4.13: Create synergies with all on-going projects in the field										
4.14: Provide the list of project proposals for funding										
4.15: Provide the list of adaptation measures/projects focusing on barriers and ways to overcome these barriers										
4.16: Provide information on technology and local know-how development needs										
4.17: Preparation of additional information that the country wants present in its national communication										
4.18: Compile a draft national communication and circulate it for comments										
4.19: Finalization and submission of the TNC										
4.20: Organize a national climate change conference										

Management Arrangements



The project will be implemented under the NIM (NEX) modality with the Ministry of Environment and Physical Planning (MoEPP) as the implementing entity/responsible partner. The Ministry will be responsible for ensuring the government's participation in the project and the timely and verifiable attainment of project objectives. The MoEPP will also facilitate interaction, coordination and input of the relevant ministries, public organizations, research institutions and private organizations.

UNDP Country Office (CO) will be responsible for the procurement and recruitment of the project staff, consultants and consulting companies and representatives of the MoEPP will participate at the evaluation/recruitment panels established by UNDP with a voting right; UNDP will be also responsible for overseeing project budgets and expenditures; project evaluation and reporting; result-based project monitoring; and organizing independent audits to ensure the proper use of UNDP/GEF funds. Procurement, Recruitment, Financial transactions, auditing and reporting will be carried out in compliance UNDP procedures for national execution, based on the Agreement for provision of Support Services signed between UNDP and the Ministry of Environment and Physical Planning.

UNDP Country Office will be responsible for timely submission of progress reports, audit and evaluation reports to the Ministry of Environment and Physical Planning, and to the UNFCCC Focal Point and the GEF Operational Focal Point.

A Project Implementation Unit i.e. the Climate Change Office will be established within the MoEPP and it will consist of a Project Manager and a Project Assistant. The Project Manager (PM) will manage the project on a day-to-day basis and serve as a main coordinator of all technical teams. The PM will be accountable to the executing agency for the planning, management, quality, timeliness and effectiveness of the activities carried out, as well as for the use of funds. The PM will be assisted by a Project Assistant.

He/she will also be involved in circulating discussion papers and draft reports, raising public awareness of project activities and coordinating consultations and workshops.

A Project Board will be established as a main decision making body for the project. The Project Board will consist of representatives of the major stakeholders:

1) **Executive**: Ministry of Environment and Physical Planning**,** representing the project ownership to chair the group;
2) **Senior Supplier**: UNDP representing the interests of the parties, which provide funds and/or technical expertise to the project (designing, developing, facilitating, procuring, implementing); and
3) **Senior Beneficiary**: The Chair of the National Climate Change Committee Senior Beneficiary's primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries.

The Project Board is responsible for making by consensus management decisions for the project when guidance is required by the project manager, including approval of project work plans and revisions. In order to ensure accountability, the Project Board decisions should be made in accordance with standards that shall ensure the project's integrity and transparency.

The Project Board endorses the Annual Work Plans (AWP) presented by the Project Manager, and the Project Board may review and approve quarterly project plans thereafter when required and authorizes any major deviation from the agreed quarterly plans, as well as endorsed the Annual Progress Reports presented by the Project Manager. In addition, it approves any delegation of its Project Assurance responsibilities.

The National Climate Change Committee (NCCC) that was established by the Government will continue to be the overarching political platform, providing a high level support for the development and realization of the climate change activities. It comprises of the key stakeholders from national institutions, academia, private sector and civil society. The NCCC will also provide policy guidance to the project. The Government already initiated a process for reviewing and consequently re-structured the composition of the NCCC in order to improve functionality and adequate representation. The idea is to expand the NCCC by inclusion of the Climate Change Focal points that are appointed in the Ministries that have responsibilities related to climate change issues.

The Climate Change Office will consist of three technical teams. The technical teams will be responsible for carrying out the mitigation and adaptation respectively and for preparation of the GHG inventory.

In the previous national communications the preparation of the GHG inventory was coordinated by the Research Centre for Energy, Informatics, and Materials of the Macedonian Academy of Sciences and Arts (ICEIM-MANU). This arrangement will not be maintained. The Information Center of the Ministry of Environment and Physical Planning will function as leader for the preparation of the GHG inventory. Three junior experts that will form the GHG Inventory Team will be engaged as part of the Information Center to work on the Inventory. They will be supported by experts of the Research Centre for Energy, Informatics, and Materials of the Macedonian Academy of Sciences and Arts (ICEIM-MANU) who will be contracted on retainer basis for the duration of the project. This arrangement will support the establishment of a new institutional arrangement to assure continuous and regular updating of the national GHG inventories and the establishment of an MRV system. The Ministry of Environment and Physical Planning will retain the junior experts after completion of the project. This will create institutional capacity and improve the sustainability of project results.

The mitigation and adaptation teams will be supported by a Chief Technical Advisers contracted on a retainer basis. He /She will provide technical and strategic guidance to the teams and will ensure the soundness and consistency of the products generated by the teams.

In addition, international experts will be contracted on a retainer basis and for the areas/tasks where specific expertise and international experience is requires. The international experts will provide technical and strategic guidance especially for particular aspects of the mitigation and adaptation assessments as well as the development of the national action plans, thus enhancing the capacities of all involved experts and institutions.

The Hydro-Meteorological Service (HMS) of Macedonia within the Ministry of Agriculture, Forestry, Water and Economy was the institution responsible for developing the climate change scenarios up to 2100 and for coordinating the vulnerability assessment and adaptation analysis within the FNC and the SNC. Within the TNC, the HMS will be responsible for reviewing and adjusting the climate change scenarios up to 2100 based on the recommendations of the stocktaking exercise.

An NGO (s) will be contracted to enhance the outreach, action-research and raising awareness agenda for the duration of the project. It will be responsible to implement an action-oriented and community based national outreach programme with the aim to engage key stakeholders (Media, CSOs, Local Governments and Private Sector) and target groups on the national and local level and to raise their awareness on issues pertaining climate change. It will employ social media tools and support the Project Unit to manage the national climate change website. All activities will be closely coordinated with the Public Communication Office of the Ministry of Environment and Physical Planning, and additionally supported by UNDP Communication Officer whenever needed.

Capacity building needs relate to further training of national experts for the analysis envisaged for the thematic areas within TNC. This includes training for usage of simulating software models for vulnerability assessment, and capacity building for application of the specific methodologies for analysis. Targeted capacity building support will be delivered to the members of the inter-ministerial coordination body related to climate risk screening and climate change mainstreaming.

National working groups within each thematic area will be broadened by experts who were already involved in the preparation of related strategic documents. As an inevitable part of the implementing activities, national thematic workshops for presentation of the methodologies and discussion of the results and finding of all thematic areas will be organized. Beside information exchange, the workshops will contribute to enhancing knowledge and interest of all relevant stakeholders.

In order to accord proper acknowledgement to GEF for providing funding, a GEF will appear on all relevant GEF project publications. Any citation on publications regarding projects funded by GEF should also accord proper acknowledgment to GEF. The logo of the Ministry of Environment and Physical Planning and UNDP will also appear at project publications as appropriate.

The equipment, software and other items purchased with the project funds upon finalization of the project will be transferred to the relevant national institutions that are the key project beneficiaries.

Monitoring Framework and Evaluation framework

The project will be monitored through the following M& E activities. The M& E budget is provided in the table below.

Project start:

A Project Inception Workshop will be held within the first 3 months of project start with those with assigned roles in the project organization structure, UNDP Country Office and where appropriate/feasible regional technical policy and programme advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan.

The Inception Workshop should address a number of key issues including:

a) Assist all partners to fully understand and take ownership of the project. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms.
b) Based on the project results framework and the relevant GEF Tracking Tool if appropriate, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
c) Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled.
d) Discuss financial reporting procedures and obligations.
e) Plan and schedule Project Board meetings. Roles and responsibilities of all project organisation structures should be clarified and meetings planned. The first Project Board meeting should be held within the first 12 months following the inception workshop.

An Inception Workshop report is a key reference document and it will be shared with participants to formalize various agreements and plans decided during the meeting.

Bi-annually:

- Questionnaires to indicate progress and identify bottlences as well as technical support needs will be carried out twice a year.
- Progress made shall be monitored in the UNDP Enhanced Results Based Managment Platform.
- Based on the information recorded in Atlas, a Project Progress Reports (PPR) can be generated in the Executive Snapshot.
- Other ATLAS logs can be used to monitor issues, lessons learned etc...

Annually:

- Annual Project Review (APR): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period. The APR/PIR combines both UNDP and GEF reporting requirements.

  The APR includes, but is not limited to, reporting on the following:
  - Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
  - Project outputs delivered per project outcome (annual).
  - Lesson learned/good practice.
  - AWP and other expenditure reports
  - Risk and adaptive management

- ATLAS QPR

Periodic Monitoring:

A detailed schedule of project reviews meetings will be developed by the project management, in consultation with project implementation partners and stakeholder representatives and incorporated in the Project Inception Report. Such a schedule will include: (i) tentative time frames for Project Board Meetings, and (ii) project related Monitoring and Evaluation activities.

Day to day monitoring of implementation progress will be the responsibility of the Project Manager, based on the project's Annual Workplan and its indicators. The Project Team will inform the Ministry of Environment and Physical Planning and UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion.

Periodic monitoring of implementation progress will be undertaken by the UNDP-CO through monthly meetings with the project team, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.

End of Project:

During the last three months, the project team will prepare a brief terminal report. This brief report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

The Project will provide the Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) in accordance with established procedures set out in UNDP's Programming and Finance manuals. Audits are expected to be conducted by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

Learning and knowledge sharing:

Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums. Particular emphasis will be put on exchange and knowledge sharing within the region.

The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects.

Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

Audit clause:
The Audit will be conducted in accordance with UNDP Financial Regulations and Rules and applicable audit policies on UNDP projects.

M& E Workplan and Budget

Type of M&E activity	Responsible Parties	Time frame
Inception Workshop and Report	▪ Project Manager ▪ UNDP CO, UNDP GEF	Within first two months of project start up
Measurement of Means of Verification of project results.	▪ UNDP/Project Manager	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on *output and implementation*	▪ Oversight by Project Manager ▪ Project team	Annually prior to ARR and to the definition of annual work plans
ARR	▪ Project Manager and team ▪ UNDP CO	Annually
Periodic status/ progress reports	▪ Project Manager and team	Bi-annually (second and forth quarter – the latter as part of the annual ARR/PIR)
Project Terminal Report	▪ Project Manager and team ▪ UNDP CO	At least three months before the end of the project
Audit	▪ UNDP CO ▪ Project Manager and team	Yearly

Legal Context

This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together a Project Document as referred to in the SBAA and all CPAP provisions apply to this document.

Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

Appendix A: Summary report of the self-assessment exercise

1. Description of the process and approach adopted for the stocktaking exercise

Stocktaking exercise should be considered as a pre-feasibility study for preparation of the TNC project document. Process aimed at increasing the stakeholders' participation while identifying the priority sectors and activities for the TNC to the UNFCCC. The final output of the current project implementation is the project proposal for the TNC.

The stocktaking exercise was carefully planned in cooperation with the national expert teams, in order to identify the best method for generating information essential for the preparation of the TNC project proposal. It is built on the analysis conducted under the INC, SNC, the Top-ups and utilizing the findings from other related project, in order to avoid duplication of work. Synergies were developed with the UNDP Report "Economics of Climate Change Adaptation". The period of implementing the stocktaking exercise for the TNC concurred with the fact finding mission for the report on economics of climate change adaptation. In this process more then 45 individuals from national and expert institutions were consulted, and several thematic focus groups organised (in the area of Health; Agriculture and Irrigation; Water Resources and Energy; Biodiversity and Forestry; Crisis Management). The findings of the broad stakeholder consultations as well as the preliminary results of the report on vulnerability and adaptation assessments contributed to the preparation of the TNC project proposal.

The main output of this exercise was the identification of gaps and areas where improvement/updating, identification of new areas of work, as well as additional studies are needed. This exercise resulted in a comprehensive list of stakeholders consulted, and produced an extended roster of national experts working in the thematic areas of the NC (more then 120 individuals). It also contributed to identifying list of references, documents, legal regulations, projects and available sources of information relevant to climate change in the country.

In the stocktaking and consultation exercise, two groups of stakeholders: primary - consisting of national expert teams, and secondary, consisting of other relevant stakeholders from governmental, academic, private sector and NGOs were involved.

a) Institutions and individuals involved

Taking into consideration the Stocktaking Guidance, Terms of Reference for a national expert to undertake the stocktaking exercise was prepared. Through this self-assessment the consultant conducted a systematic analysis of work carried out in the previous National Communications and identified and validated priorities for further in-depth studies for the preparation of the Third National Communication. The consultant was supported by an NGO which was responsible for organizing and facilitating consultative meetings and workshops, gathering and processing required data and information, as well as providing technical and strategic input as required. Close cooperation with the international consultant engaged to undertake the UNDP Report "Economics of Climate Change Adaptation" was assured.

The stocktaking exercise capitalized extensively on the sectoral studies developed for the UNDP Report "Economics of Climate Change Adaptation". The preliminary results of the report identified clearly gaps and uncertainties of the vulnerability and adaptation assessments within the previous national communications for specific sectors and recommended new areas of work for the TNC. These recommendations will clearly innovate to the TNC.

Meetings with the national institutions ICEIM-MANU (who prepared the GHG Inventory and GHG Abatement, HMS (responsible for Vulnerability assessment and adaptation) and the experts of each sector were organized. The goal of the meetings was to discuss the methodology used in the thematic areas, the issues that were identified as uncertain and vague, and new areas that were proposed to be included in the analysis of the TNC.

In addition to the above, the legal framework, socio-economic implications of climate change and implications of recent EU/UNFCCC climate change policy developments received special attention within the stocktaking exercise. Based on these assessments, concrete actions were recommended for addressing the legal climate change framework and policy dimension within the TNC.

The stocktaking exercise concluded with a clear roadmap for conceptionally addressing the socio-economic implications within the TNC and identified areas where socio-economic impacts should be taken into consideration, including indirect and combined effects and socio-economic changes, as well as broad implications for the country's development in terms of economic and demographic trends. Innovation within the TNC will be achieved by implementing the economic valuations of climate change damages and costs/benefits of adaptation options.

The national consultant prepared the analyses for the GHG Inventory and GHG Abatement for the appropriate sectors, including determination of methodology, identification of gaps and uncertainties, and recommendations for new studies and areas of work. Recommendations for new areas of work were discussed with all relevant stakeholders on meetings and workshops.

b) Workshops or consultations carried out

- Direct consultations with the most relevant stakeholders were conducted, e.g. Ministry of Environment and Physical Planning (and its respective departments), Ministry of Agriculture, Forestry and Water Economy, State Hydro-Meteorological Service, the Ministry of Economy and ICEIM.

- Focus groups for the areas Adaptation and Mitigation were conducted. Key stakeholders (national and academic institutions, public and private companies and industrial installations) were consulted to reflect on the gaps and uncertainties involved in as well as substantial/analytical developments since the SNC, and proposing new areas of work. Minutes of the sessions were drafted outlining the main conclusions of the focus groups. Minutes were shared with all participants and further comments incorporated.

- One focus group was specifically organized with representatives of the NGO sector. It was attended by the key NGOs working in the field of climate change. By this means, civil society was included into the process of preparing the national communication from the very start. It was an opportunity to facilitate dialogue between the Ministry of Environment and Physical Planning and the NGO sector, to manage expectations and to set the stage for further involving NGOs in this process. Minutes of the sessions were drafted outlining the main conclusions of the focus groups. Minutes were shared with all participants and further comments incorporated.

- The National Climate Change Committee organized a meeting to review and discuss the draft project proposal on the Third National Communication. The discussion was based on the guidelines for

preparation of the TNC, the identified uncertainties within the SNC and the proposed activities for all thematic areas.

- National workshop to present and discuss the findings from the stocktaking exercise was held.

- Consultation with other National Committees

Further consultations were made with the Convention on Biodiversity National Committee, as well as with the Focal Points of the Rio Conventions. The aim of these consultations was providing additional comments on the project proposal, especially in terms of identified capacity building needs and the need of enhancing sustainable use of biodiversity while implementing activities aimed at mitigating and/or adapting to climate change. It was concluded that in the future more attention should be paid on identifying synergies among activities that address climate change and activities to combat desertification and land degradation, and the conservation and sustainable use of biological diversity. A dedicated meeting with the Head of the Sustainable Development Department in the Ministry of Environment and Physical Planning was conducted. It is especially important to align the national sustainable development agenda with the requirements deriving from EU/UNFCCC climate change policies.

2. Main outcomes of the stocktaking, including priorities identified

The gaps and the new areas of work were defined as a result of the review conducted in the following sectors: Energy, Industrial Processes, Waste, Water Resources, Biodiversity, Agriculture, Forestry and Human Health. Within the stocktaking and consultations exercise, the need to focus again at the same most vulnerable sectors, agriculture, forestry, water resources, natural ecosystems and human health, was confirmed. However, since in the meantime for some of these sectors comprehensive assessments have already been done and resulted in respective strategies for adaptation (health, agriculture), the focus of the TNC will be only directed towards filling in the gaps and addressing the deficiencies of the analyses. Vulnerability of the tourism, cultural and natural heritage will be a new area, as well as links between the climate change and disaster risk reduction. Energy demand was identified as a new focus area which will require an integrated approach. These sectors are the main indicators of national vulnerability to climate change.

The recommendations for each sector that were identified during the stocktaking exercise are stipulated below:

GHG Inventory

There is the need to establish a new institutional arrangement to assure continuous and regular updating of the national GHG inventories. The Ministry of Environment and Physical Planning is recommended as coordinating entity for the preparation of the GHG inventory. Capacity building and training will be required for preparing the GHG inventory. Deeper involvement of national institutions obliged for data collection (the State Statistical Office) is of crucial importance in order to make adjustments of the data collection methodology to cover identified GHG-related data.

It is recommended to undertake national GHG inventories for the year 2004, according to the guidelines for the preparation of National Communications (17/CP.8); to calculate emissions for the year 2004 for all sectors (Energy; Industrial Processes; Solvent and Other Product Use, Agriculture, LUCF and Waste); to revise the input data, taken into consideration data gaps and areas needing improvement identified in the stocktaking exercise; to recalculate the time series for the period 2000-2003, and also recalculate time

series for 1990-1999 if it is necessary (if data gaps are detected); and to include information on the following GHGs: CO2, CH4, N2O, HFCs, PFCs, SF6 as well as CO, Nox, SOx and NMVOCs.

Within the SNC, the inventory for the **energy** sector has been prepared for the period 1990-2002, with consideration of the three main GHGs: CO2, CH4, and N2O, as well as the indirect gases CO, NOx, NMVOCs, and SO2. The same approach should be followed within the TNC. The CO2 emissions should be calculated by two methods: a) reference approach (top-down) uses the fuel consumption accounting for the carbon flows into and out of the country; b) sectoral approach (bottom-up) accounts for the fuel consumption by sectors. As the energy sector is a main key source category, the choice of methodology is very important. A higher tier (i.e. Tier 2) method is recommended for this sector. The GHG emissions should be calculated with the IPCC Excel software using the emission factors provided in the IPCC Guidelines.

In the sector of **industrial processes** the key GHG source categories are: mineral industry, with cement production in particular, metallurgy, with production of ferroalloys (ferronickel and ferrosilicon), iron and steel. Direct communication with the specific industry preferably throughout the reporting period is the best possible way of enabling application of Tier 2 to some sub-sectors. It is recommended to develop CO2 emission factors for metal production and cement production and improving the reliability of the relevant activity data.

The **agriculture** is the second largest source of GHG emissions among the sectors considered in the country. The GHG Inventory for agriculture should comprise emissions from the following source categories: (CH4) emissions from enteric fermentation in domestic livestock, manure management and rice production, (N2O) emissions from manure management, direct emissions from agricultural soils, and (CH4 and N2O) indirect emissions from nitrogen used in agriculture, emissions from agricultural residue burning.

The **LUCF** (Land Use Change and Forestry) sectoral inventory of the SNC covers emissions of CO2, CH4, N2O, and CO using the Tier 1 methodology. This approach should be followed within the TNC. The main problems for inventorying are located in the uncertainty of the activity data for the forest area, stock and annual forest growth, changes in land use, as well as loss of biomass due to the commercial logging, illegal logging, wood decay in forest, or the processed industry. The analysis for the TNC should contribute to resolve some of these problems. It is recommended to develop a new forestry inventory that will determine the area, stock, annual growth, species, and other information, needed for higher precision in GHG emissions estimates. it is crucial to establish close working relations with the Public Enterprise Macedonian Forests.

The GHG Inventory for the **waste sector** was not extended with non-direct GHGs (HFCs, PFCs, and SF6, as well as CO, NOx, SOx, and NMVOCs) in the SNC. There are no or relatively low emissions of HFCs, PFCs, and SF6 gases from the waste sector. But especially in recent years, the quantities of HFC gases, which have very high emission factors, are rapidly growing. Activities should be undertaken, as far as possible, to record the quantities of HFC gases (imports and exports), to assess existing quantities, and the quantities of potential emissions into the atmosphere. For further improvement it is recommended to develop a study on quantity of waste disposed, i.e. average annual waste acceptance rate during the active life of disposed waste for the bigger SWDSs.

Programmes containing measures to facilitate adequate adaptation to climate change

The section *programmes containing measures to facilitate adequate adaptation to climate change* of the TNC must address two important issues at the same time. It shall advance the development of a

conceptional framework for valuing climate change damages and costs/benefits of adaptation and serve as a practical tool for actively supporting the climate change mainstreaming process in the country.

All sectors should use the same base case and climate scenarios and the same quantitative data. Data sets for regional climate change have been, or are being gathered from regional climate models for many countries at several institutions (e.g. the Danish Meteorological Institute). It may not be necessary to use a Macedonian regional climate model, if the data already exist for the SRES and other scenarios. In this context, Bergant (2006) should be reviewed, and if necessary, replaced, because it might be better to use transient regional climate model runs, where the climate model outputs change every year over a given simulation period.

It is recommended to use a common conceptual economic framework, based on principles of welfare economics for estimating the economic value of climate change damages and the benefits and costs of adaptation. This also applies to any macro-economic analysis that is done, although it is not clear at this stage that a national model, capable of being driven by sector-level climate impacts, will be developed in time for the TNC.

It is recommended to fill some of the data/model/expertise gaps identified within the Economics of Climate Change Adaptation Report produced by UNDP. This applies to climate modelling and data, impact modelling and data, more than it actually does to economic analysis and data. To place an economic value on impacts requires appropriate impact simulation and the estimation of benefits and costs of adaptation require to simulate how of a given adaptation option avoids (lessens) specific physical impacts. The Third National Communication of Climate Change should be used to close some of these gaps.

It is recommended to develop and apply rational criteria for selecting the improvements so that, in the end, it is possible to defend in writing the sectors, impacts and adaptation options that have been selected for analysis.

It is recommended to establish sectoral working groups that include the following expertise: a) Global and regional climate modelling (as the Macedonian HMI has no capacities for climate modelling - it is important to get downscaled data from another institution like DMI (Danish Meteorological Institute), as it was peer-reviewed; b) Physical impact modelling; c) Systems operation/behavioural modelling for the sector, and d) Economic valuation.

IPCC technical guidelines for assessing climate change impacts and adaptations, Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies, Handbook on Vulnerability and Adaptation Assessments will be the guiding documents in preparation of the analysis. Key guiding documents for the vulnerability and adaptation assessments as well as all mainstreaming efforts should be the Economics of Climate Change Report and the Climate Screening Guidance Manual developed by UNDP for the country.

There is no need for elaborated assessment of the vulnerabilities of the health sector to the climate change as it was already addressed by Ministry of Health in the recently developed National Health Strategy for Adaptation to Climate Change in the Health Sector. This also applies for the Agriculture sector. For both sectors, focus of the TNC should be related to the estimations of the economic value of climate change damages and the benefits and costs of adaptation to the extent possible and depending on available data and applicable models for the country. Vulnerability of the biodiversity should be focused on the protected areas (the reprehensive network of protected areas recently established with support of UNDP, as well as areas important for species and habitats that are nationally, regionally and/or globally important and/or endangered).

New area for the TNC would be the elaboration of the links between the climate change and disaster risk reduction in the country context. There is a proven record of vulnerability of the country to natural disasters, especially to floods and droughts, as well as to wild forest fires in the summer periods, which have serious financial implications due to the damages that occurred every year.

Another new area for carrying out a vulnerability assessment is cultural and natural heritage. The country is exceptionally rich with cultural and historical heritage dating from the prehistory to nowadays. However, most of the archaeological sites, cultural monuments, etc, are not well preserved and thus they could be impacted by the climate change. Closely link to this is tourism sector and its vulnerability to climate change should be assessed due to the increasing importance of the tourism for the overall economy of the country.

Programmes containing measures to mitigate climate change

Based on the results from the GHG Inventory and future development plans, particularly in the energy and industrial sectors, baseline and mitigation scenarios to abate the increase of GHG emissions should be developed. It is recommended to consider a third mitigation scenario for the energy sector for the chapter on electric power. This third mitigation scenario shall reflect more progressively a possible low carbon development pathway of the country.

The main national economic and social development trends should be considered in the analysis, including expected GHG emissions in energy, industrial processes, agriculture, land-use change and forestry and waste management.

It is important to review the policy developments, projects and studies produced since the SNC to expand the knowledge base for the mitigation analysis. To the extent possible, the reductions of GHG achieved through projects implemented since the SNC should be measured, reported and verified through the TNC.

The EU Climate and Energy Package as well as the recent UNFCCC policy developments – especially methodologies of low emission development strategy and national appropriate mitigation actions – should be reflected and incorporated as guidance for the preparation of the programmes containing measures to mitigate climate change in order to increase policy relevance of the results. Opportunities should be spotted to link sectoral mitigation analysis with the development of national appropriate mitigation actions. The overall mitigation analysis should be the basis for the development of a national low emission development strategy. An action plan for transposing the EU Climate and Energy Package should be the framework for the national mitigation action plan.

The mitigation analysis should be expanded on the side of energy consumption, including energy consumption in the industry (for heating, for technological processes), commercial and residential sector employing the simulation software "Stochastic" MARKAL.

The appropriate institutional set up and inter-ministerial coordination mechanism shall be enhanced through the TNC. It is important to strengthen the capacities of designated climate change focal points and to deliver appropriate capacity building services to key institutions.

The mitigation analysis should capitalize on the (project related) research accomplished since the finalization of the SNC, link the results achieved in the area of mitigation to available international research programmes. The project unit shall facilitate actively research partnerships, especially with 7th research framework programme of the EU.

The internationally recommended methodologies should be applied: the IPCC Fourth Assessment Report (AR4), 2007 - Contribution of Working Group III "Mitigation of Climate Change"; Several models are available for simulation and optimization in a GHG mitigation assessment and software tools such as WASP, MARKAL and TIMES, GACMO, ENPEP-BALANCE, LEAP. The UNDP resource guide for preparing the national communications of Non-Annex I Parties, Module 4: Measures to mitigate climate change (2009) shall be used. It is recommended to introduce a specific version of MARKAL for the TNC, "Stochastic MARKAL", which allows to examine consumption and investment strategies for the energy system taking into account the uncertainty regarding the cost or the availability of future technologies or regarding the stringency of future environmental constraint.

Other information considered relevant to the achievement of the objective of the Convention

The TNC should meet its aim to be, besides fulfilling the reporting requirements to the UNFCCC Secretariat, a participatory tool for policy advice and guidance as well as raising awareness and research. It is important to closely link the process and outcomes of the TNC to relevant planning and decision making processes.

It is therefore recommended to i) enhance stakeholder outreach, participation and collaboration; ii) establish inter-ministerial coordination bodies for mitigation/adaptation; iii) strengthen the capacities of national climate change focal points and, more broadly, development planners and managers of relevant national bodies in terms of climate risk screening and mainstreaming; iv) develop the national mitigation and adaptation action plans in line with requirements deriving from the EU accession process and recent international policy developments; iv) and to utilize the TNC to report on GHG emission reductions.

It is recommended to establish a central coordination/surveillance platform and clearing house mechanism for climate change related project in the country and assure that project development is in line with the EU Climate and Energy Package as well as the new international policy requirements and developments.

The applicability of climate change related models and software tools (e.g. MARKAL, Redscreen, Gacmo) through strengthening translational research shall be improved (establishing/strengthening the partnerships of type academia-businesses, academia-policy-making, or even academia-businesses-policy-making) and these models/tools further developed within the preparation of the TNC.

It is important to integrate approaches to climate change and air pollution within the TNC, to strengthen the collaboration between the actors of the national hydro-meteorological observation system (e.g. HMI, MOEPP) and to advocate for the incorporation of the GHG emissions in the reporting scheme of the A and B IPPC installations.

3. Main lessons learned of the self-assessment exercise, including and brief explanation on how its outcomes have provided inputs to the preparation of the project proposal

Main lessons learnt of the stocktaking exercise are:

- The national capacities for preparation of the TNC are moderately advanced compared to the period of preparation of the SNC. While capacities in the area of mitigation analysis have considerable improved, capacities related to adaption assessments have slower progress. Training to address capacity needs on national and local level shall be an inevitable part of the activities within the TNC. In this regard, targeted training should be provided for different stakeholders, such members of the NCCC, experts involved in the preparation of the TNC, business sector and NGOs. Enhancing national capacities through targeted capacity building activities should contribute to conducting more

complex analyses, and at the same time to verifying the results from the analyses and GHG reductions.

- Policy formulation is strongly compartmentalized across the sectors with climate change policy treated often as strictly environmental sector agenda. Therefore, climate change policy is fractioned in isolated efforts that do not create sustainable capacity. Nevertheless, climate change has increasingly taken public policy spaces since the SNC (often initiated through Foreign Donor Assistance). There are a growing number of Ministries appointing Climate Change Focal Points and getting involved in the climate change mitigation and adaptation policy processes within their respective areas. Examples are: the Ministry of Economy, Ministry of Health as well as the Ministry of Agriculture, Forestry and Water Economy.

- It is paramount to reflect the UNFCCC policy developments and to the extent possible the EU Climate and Energy Package– especially methodologies of low emission development strategy and national appropriate mitigation actions – as guiding framework for the preparation of the programmes containing measures to facilitate adequate adaptation to climate change and programmes containing measures to mitigate climate change in order to increase policy relevance of the results.

- The timing of the project is very favorable. The recent UNFCCC and EU climate change policy developments will require further commitments by the country and must be guiding principles for the preparation of the TNC. There is fertile ground to link climate change adaptation and mainstreaming with climate risk screening, risk analysis and assessment in the country based on the recent achievements and institutional commitment by the Crisis Management Center.

- Synergies can be unfolded with several initiatives and project-related research. The MARKAL Model was calibrated for the country in the framework of the USAID project "Regional Energy Security and Market Development (RESMD) Strategic Planning" which will enable further research on energy system development in the country. UNDP is currently implementing the project "Economics of Climate Change Adaptation" with the aim to develop a framework for valuing climate change damages and costs/benefits of adaptation. A set of estimates of the economic value of climate change impacts are being prepared in sectors such as hydrology, agriculture and energy demand, along with corresponding costs and benefits of adaptation options. This will close expertise gaps and advance climate change impact and adaptation research. The World Bank recently launched a Green Growth and Climate Change Analytical Support Programme with the objective to support the government in assessing the costs and benefits of a shift to a greener growth and the adoption of climate change actions as well as preparing key actions from the National Strategy of Sustainable Development for implementation.

- An action-oriented and community based national outreach programme shall be implemented to contribute to the implementation of Article 6 of the UNFCCC with the aim to engage key stakeholders and target groups into the process of preparing the TNC and to raise their awareness on issues pertaining climate change. The involvement of NGOs, Media, Private Sector, Regions and Municipalities shall be assured from the very start, especially in terms of access to information and knowledge sharing, through the employment of social media tools and a revitalized national climate change website.

- It is very useful to maintain and strengthen established links with the countries from the region. It will contribute to enhancing national capacities through experience exchange between the national and relevant regional/international expert institutions, which will upgrade the quality of the analysis.

Institution	Stakeholders interests/responsibilities	Relevance to climate change/reasons for inclusion	Role in the self-assessment process
GOVERNMENTAL INSTITUTIONS			
MINISTRY OF ENVIRONMENT AND PHYSICAL PLANNING (MoEPP)	Responsibilities: - Monitoring of the state of the environment; - Proposing measures and activities to protect waters, soil, air and ozone layer, protection against noise and radiation, protection of biological diversity, geological diversity, national parks and protected areas; - Rehabilitation of polluted parts of environment; - Cooperation with scientific institutions for the purpose of developing standards, norms, rules of procedure to regulate the environment protection; - Development of a system of self-financing from independent sources, types and amounts of environmental compensations and other charges; - Cooperation with civil associations, civil initiatives and other forms of civil activity; - Inspection supervision within its scope of activity; - Carrying out other activities specified in the law	The GEF Focal Points (Operational and Political), along with the UNFCCC Focal Point, UNCBD, UNCCD Focal Point are located in the MOEPP. Responsible for preparation of the National Communications to the UNFCCC and its submission to the Secretariat; Acts as a Designated National Authority for endorsement of the CDM projects as part of the Kyoto Protocol Led the process of formally adhering to the Copenhagen Accord (2010);	Consultations on national priorities, mainstreaming of climate change in national environmental strategies, programmes and other documents, as well as on current and planned projects. Regular consultations with the UNFCCC focal point for discussion of the proposal of the TNC in terms of technical issues and institutional arrangements
MINISTRY OF AGRICULTURE, FORESTRY AND WATER ECONOMY	The Ministry performs activities related to agriculture, forestry and water management, monitoring and research of the conditions of waters, maintain and improvement of the water regime, irrigation and drainage systems, etc. It is responsible for development of Water Master Plan; - Together with Ministry of Defense gives agreement for a programme for protection from the harmful effects of water; - Together with MOEPP establishes operational body for co-ordination of the activities in emergency cases; - Adopts the methodology for information on water level and quantities in the reservoirs; - Together with MOEPP defines normative for maximum allowed values or concentration of dangerous and harmful matters in the waste water that are allowed to be discharged into surface water by legal entities; - Can forbid the use of water for irrigation; - Defines the plan for monitoring, methodology, and parameters for water quality; - Can order release of additional water quantities from the reservoirs in case of increased water pollution; defines the way of monitoring of the reservoirs deposit; - Defines the contents and manner of preparation of water book;	Defines policy and strategies in the agriculture, forestry and water economy that are relevant for the GHG abatement analysis and V&A. Participant in the NCCC. Coordinates the preparation of a National Agriculture Adaptation Strategy. Implements relevant climate change projects	Consultation with regard to the issues related to agriculture, forestry and water economy.

	responsible for forest management, - Agreement for forest cut and afforestation of barelands (for private owners); - Concession for hunting; - Organize afforestation of bareland; monitoring of forest health; - Organize treatment of forest pests and diseases; - Forest police, regulation - Issues water management agreement and water management permission; can limit or forbid inflow of dangerous matters into the water; limit of forbidden inflow of harmful matters or discharged polluted water and outlaw deposition of dangerous and harmful matters on location where water pollution is possible		
MINISTRY OF ECONOMY	The Department for Energy and Mineral Resources within the Ministry is in charge of the following: -Performing activities related to geological investigations and exploitation of mineral resources; -Defining the contents of the geological maps and geological documentation. Energy production: The Ministry is in charge of planning of development of energy supply and demand projections. In the national energy strategy the following topics are considered: energy needs, available energy resources and power plants, needs for energy system expansion, financial matters, as well as measures and activities for the realization of the strategy. Based on the adopted energy sector development strategy the public enterprises are making detailed development programmes. Other competencies of the Department are: - to put into effect the adopted policy in the field of energy through programmes, measures and other activities - to produce laws, ordinances and other regulations in the energy sector and to ensure that they are performed correctly - to initiate, to participate and to carry out the adopted programme for structural reforms in the energy sector for fulfillment of basic targets in this area: competition, regular energy supply and environmental protection and financial and material performance of companies which are involved in production and delivery of energy	Address the energy policy, strategies for energy development that are relevant for the scenarios for the GHG emission and related abatement strategy in the energy sector. Participant in the NCCC.	Consultations and provider of information about the strategy for energy/renewable energy development and energy efficiency strategy. Consultations with the regards to the usage of the MARKAL model.
SECTOR FOR EUROPEAN INTEGRATION	It is the national institution, which organizes, coordinates and synchronizes the process of EU integration. It is organized in 7 units that are in charge of: approximation of the national legislation with that of the EU, translation of the EU legal acts, institution building, support to the Working Committee for European Integration within the Government (WCEI),	To provide information on the related projects, programmes and approximation to the EU legislation	Information provider

	coordination of foreign assistance, realization of the pledged donor assistance deriving from the Framework Agreement, and information and publicity on EU and the process of integration.		
MINISTRY OF TRANSPORT AND COMMUNICATIONS	It is in charge of issuing identification documents; performing inspection over the work of the entities in the communal area, issuing building permits, and preparation of regulation related to isolation	In charge of sustainable transport, preparation of new standards for efficient building, and relayed issues that will be used in the GHG Abatement in the residential and commercial sectors. Participant in the NCCC.	Consultation with regard to the transport sector abatement strategy
MINISTRY OF FOREIGN AFFAIRS	National coordination related to international cooperation	National coordination related to Climate Change	Focal point for the international cooperation
CRISIS MANAGEMENT CENTER	Responsible for ensuring coordination, cooperation and communication of the National Crisis Management System. The Crisis Management System is organized and realized for timely, coordinated and proportional actions in the phases of crisis prevention, early warning and crisis response. The National Platform of Disaster Risk Reduction (according to the Hyogo Framework of Action) was established and a national policy dialogue on disaster risk reduction will take place to further develop a more streamlined approach to DRR on the national level.	National coordination related to Disaster Risk Reduction.	Information provider and consultations with regards to analysis of risks and hazards.
MACEDONIAN ENERGY AGENCY	Responsible for supporting the implementation of the energy policy of the Government, through the preparation of the energy strategies, development plans and programs, with particular emphasis on energy efficiency (EE) and usage of renewable energy sources (RES); Responsible for the preparation of proposals for laws and regulations, Technical regulations and standards in cooperation with the competent ministries, educational institutions, commercial entities, non-governmental organizations and others, that will achieve faster compliance with European Union regulations.	Mandate to lead, give initiatives, coordinate the preparation of studies and projects on energy efficiency and usage of renewable energy sources.	Information provider and consultations with regards to legal framework on EE and res, action plans, projects and research.
ACADEMIC SECTOR			
ICEIM-MANU	The Macedonian Academy of Sciences and Arts (MANU) is the highest scientific and research institution in the country. It deals	The Center was involved in the development of the previous national	Direct consultation and review on the project

	with strategic and fundamental research and planning, advice to governmental institutions. In its work, the Research Centre for Energy, Informatics and Materials (ICEIM) within MANU is focused in following areas: energy, environment, bioinformatics and materials.	communications. MANU developed all relevant strategies for the energy sector The Center was involved in many other national, regional and international projects related to climate change. The president of the NCCC originates from this institution.	proposal on data gaps and new areas for work for the GHG Inventory and GHG abatement
FACULTY OF AGRICULTURE	It is the highest educational academic institution within the University "Sv. Kiril and Metodij which main domain is the education in agriculture at all levels (Graduate, M.Sc., Ph.D. related programmes of study: Field crop production, Vegetable crops and Flower, Fruit and grape Production, Agricultural Machinery, Plant protection, Agricultural economy, Soil and water management protection and utilization (irrigation, drainage, water management, land, soil science) Animal husbandry, Processing of agricultural products, eco-agriculture; scientific and research activities and projects. The Faculty has extensive cooperation with the other similar institutions worldwide, and its experts have participated in many projects and programmes funded by donor community.	Research capacity in the area of their expertise Involvement in the preparation of National Agriculture Adaptation Strategy;	Consultation and identification of new areas for research within TNC
FACULTY OF FORESTRY	The domain of the institution is education in Forest Management, Landscape, and Environment promotion (plant physiology and phytocenology, silviculture, harvesting, plant health and protection, Park designing, soil and water conservation, forest management, environment management), Wood technology (Primary processing, Furniture and Interior design), scientific and research activities and projects identification. The forest management and the environment promotion department is of special interest for the project.	Research capacity in the area of their expertise	Consultation and identification of new areas for research within TNC
FACULTY OF MECHANICAL ENGINEERING	This faculty is the highest educational academic institution in the filed of mechanical engineering, production processes, technology control, quality management in the process of production, industrial engineering and management, heating systems, heating and cooling, thermal engineering, alternative energy sources, environmental protection. etc. It is also the leading institution in the Interdisciplinary studies on environmental protection.	Research capacity in the area of their expertise	Consultation and identification of new areas for research within TNC
PUBLIC AND STATE INSTITUTIONS			
ELECTRICAL POWER COMPANY "JP	The enterprise is the state-owned company, in charge of the	The role of this institution within the	Data provider and

ELEKTROSTOPANSTVO NA RM"	energy production. The main areas of the enterprise are production, transmission and distribution of electricity to all consumers in the country. Production of electricity is mainly based on coal. The biggest production capacity, and the pivot of the whole power system is the Mining power complex Bitola that has three thermal units with an installed 675 MW power. Along with the other mining power complex "Oslomej", supply about 80% of the electricity consumption in Macedonia, and the rest is supplied by TPP "Negotino" and hydro power plants. ESM is also involved in the planning of development of energy supply and demand projections. In the National Energy Strategy the following topics are considered: energy needs, available energy resources and plants, needs for energy system expansion, financial matters, as well as measures and activities for the realization of the strategy.	TNC will be to provide information on its strategies for energy development, potential investments and their relation to the GHG emission, strategies and measures for reduction of GHG emission at the supply side, etc.	information on company's development plans and strategy with regard to energy development
HYDRO METEOROLOGICAL SERVICE	Hydro-Meteorological Service (HMS) is the national organization responsible for atmospheric observations of the climate and other related research and monitoring. Climate-meteorological observations the following parameters: air temperature and humidity, air pressure, wind speed and direction, evaporation, soil temperature on different depth, rain and snow falls, radiation, atmospheric conditions and air quality. Research and analyses consist of control, processing and updating of meteorological and agrometeorological data; urban climate research including interactive relations between polluted atmosphere and climate in cities, etc. Hydrologic observations include: measurements of hydrological parameters; permanent monitoring of surface and groundwater level; monitoring of sediment in rivers and lakes; monitoring of water temperature in rivers and lakes; data control, updating and archiving in hydrological data base; public informing and warning on development and appearance of hazardous hydrological phenomena. The institution is a part of the system of hydrological data exchange between Mediterranean countries (MED-HYCOS).	The HMS was contracted under the FNC and SNC to carry out prognosis of future climate change up to year 2100 at national level. It was the main contractor for conducting the vulnerability assessment and adaptation analyses. Participant in the NCCC.	Data and information provider about climate-meteorological databases and related software;
STATE STATISTICAL OFFICE	The main role of the Office is providing accurate statistical information, data and analysis to the users – the Governmental institutions, private and academic sector, individuals in order to improve the process of business decision making, democratization of the society and scientific research. The main activities of the Office are collection, processing, analysis and dissemination of statistical data related to the economy, demography, and social	The Office was the main data provider for the GHG Inventory. Starting from year 2000, the Office has been archiving and documenting data according to EU procedures. Further data requests will be submitted in the process of preparing the TNC.	Consultations with regard to the status with the activity data availability for the period that will be covered by the GHG Inventory

	life. Beside this, the Office is in charge of establishment and management of databases and statistical registries on national level, setting down statistical methodologies, maintenance collaboration in the domain of the statistics, communication with the beneficiaries, etc.		
HEALTH PROTECTION INSTITUTE	It is the national multidisciplinary scientific and educational institution in the field of preventive medicine. The aim of the Institute is to provide prevention of the population which is exposed on the harmful impacts caused by the polluted air, water, contaminated food, new and not tested products for hygiene, etc. Its department for Hygiene and Environmental Protection is the basic chain of the national policy in the filed of preventive medicine, and its experts are the policy makers in that area, as well as active collaborators in the creation of the policy and decision making in the area protection of living and working environment	Involved in development of the National Health Strategy for Adaptation in Health Sector Participant in the NCCC	Data provider and main stakeholder consulted for the vulnerability assessment in the health sector
PUBLIC ENTERPRISE MACEDONIAN FORESTS	Responsible for development forest units' management plans and manages the state owned forest (90.14%7 of the total area is state owned forest, while their part of the total wood mass is 92.2%).	Implement activities and measures in the forestry sector that have direct implication to climate change	Data provider and main stakeholder consulted for the vulnerability assessment in the forestry sector.
PRIVATE SECTOR			
TEHNOLAB	It is one of the pioneers in the area of environmental protection and promotion. The company deals with laboratory and technical research in the field of working and living environment, monitoring of emission of pollutants and chemical damages in the working and living environment, monitoring of solid and liquid industrial waste, as well as prevention measures, preparation, management and implementation of technical and scientific projects related to environmental protection, transfer of knowledge, know-how, training and consultancy in the field of environment.	Participant in the NCCC	Consultations with regard to the status of development of register of pollutants and polluters in the city of Skopje and on national level as well
TOPLIFIKACIJA"	Share holding company whose basic activity is the production and distribution of heat energy on the territory of city of Skopje. It is a modern system with a high degree of automation of the technological processes and a complete computer monitoring of the heat production. In the past 15 years 50% of the energy delivered to the consumers was measured, and since the year 2000 all of the delivered heat is measured.	Other responsibilities of the company are: Preparation of studies, investment programs and complete technical documentation for thermal energy structures, district heating and the gas distribution network, Construction and installation of district heating and gas distribution appliances, etc	Information about the heat consumption and planned improvements in the combustion process
EVN	EVN A.D., private successor of the former national electricity distribution company ESM AD.		Information about electricity consumption.
NGOs			

Regional Environmental Center for Central and Eastern Europe (REC)	REC country office in Macedonia is a branch office of the REC- non-partisan, non-advocacy, not-for-profit international organization with a mission to assist in solving environmental problems in Central and Eastern Europe (CEE). The center fulfils this mission by promoting cooperation among non-governmental organizations, governments, businesses and other environmental stakeholders, and by supporting the free exchange of information and public participation in environmental decision-making.	REC implements projects especially as part of the REReP in Macedonia, since the country is one of the REReP's beneficiaries, etc, participation of the staff in the projects for harmonization of the national legislative to the EU's, etc. Participant in the NCCC	Consultation with regard to forthcoming climate change related projects
Dvizenje na Ekologistite na Makedonija - DEM (Environmental Movement of Macedonia)	The Ecologists Movement of Macedonia is an umbrella organization, which incorporates 30 environmental member organizations, both regular and support organizations. It is a member of the Friends of the Earth - FoE and the International Union for Conservation of Nature – IUCN. The main principles of the DEM are environmental and nature protection, sustainable development, and increase of public awareness. The DEM aims to coordinate and strengthen the activities of its members, to exchange information and to cooperate with all relevant organizations and institutions in the area of environment and sustainable use of the nature resources. Some of the means for realization of the activities are project activities, initiatives, symposiums, ecological activities and events, and peaceful protests for expression of civil disobedience regarding environmental problems and extremes.	Organizes climate change related public activities, such as the hosting of the European tour Carbon Dinosaur, organized by Friends of the Earth. Participant in NCCC.	Consultation with regard to forthcoming climate change related projects
PROAKTIVA	The environmentally focused non-governmental organization has been active since 2001. The NGO is member of the SEEEN (South Eastern European Environmental NGO Network) presents a first effort to develop a co-ordination of environmental NGOs on a regional level, both by creating a forum that will initiate long-term processes and by organizing and facilitating the implementation of specific tasks placed upon it by its members and broader public in the region. PROAKTIVA focuses its activities in the field of energy efficiency, promotion of renewable energies and sustainable development. It has organized number of campaigns and public awareness activities, workshops, training etc.	Some of the most relevant events are the following: The campaign for energy saving in the commercial and residential sectors through promoting improved insulation in the residential sector, The campaign for promotion of the public transport in the city of Skopje (which was supported by the media and Climate Change Project Office.)	Interest in preparation of project for mitigating climate change.
MACEF	Voluntary scientific organization in the field of energy efficiency. Active within the country and abroad. It is a member of the international network of energy efficiency, RENEUER (Regional Network on Efficient Use of Resources). It is an associate of the Alliance to save energy, to the Association of consulting organizations, offering its professional services. It was included in the creation of the Energy Efficiency strategy of Macedonia. It has organized trainings in the municipalities related to reductions of expenses in the municipalities through energy efficiency activities.	It was included in development of energy strategy programmes and capacity building activities at local level	Consultation with regard to forthcoming climate change related projects

MACEDONIAN GREEN CENTER	MGC mission is to promote concrete democratic tools that will enable citizens to play active role in the democratic and transparent decision making process, and to raise understanding of the environment as truly important political issue in the country.	Implement relevant climate change projects	Consultation with regard to forthcoming climate change related projects
CEPROSARD Center for promotion of sustainable agricultural practices and rural development	NGO which aims to introduce and promote sustainable rural development. Through research and application of best practices we aim for provision of improved living conditions both in rural and urban areas	Implement relevant climate change projects	Consultation with regard to forthcoming climate change related projects
CENTER FOR CLIMATE CHANGE	Environmental NGO working in areas related to climate change (e.g. energy efficiency).	Implement relevant climate change projects	Consultation with regard to forthcoming climate change related projects
CELOR	NGO working in the field of environmental protection.	Implement relevant climate change projects	Consultation with regard to forthcoming climate change related projects
GO GREEN	Go Green is an independent, non-profit and non-governmental organization that focuses on addressing the issues related to climate change, global warming, sustainable development, environmental sustainability and the development of renewable energy sources.	Implement relevant climate change projects	Consultation with regard to forthcoming climate change related projects
NATIONAL COMMITTEES			
National Climate Change Committee	Supervise and co-ordinate the implementation of the climate change issues and projects and initiate related programmes and projects on a national level. It proposes the Government approval on the content of the FNC prior to its submission to the UNFCCC	Final consultation on approval of the project proposal of the TNC.	Consultation and approval of the project proposal
National Biodiversity Committee	Supervise and co-ordinate the implementation of the biodiversity issues and projects and initiate related programmes and projects on a national level	Advisory body with regard to climate change impact on biodiversity and forestry, and the synergy between climate change mitigation and adaptation activities and the conservation and sustainable use of biodiversity	Consultation in the project proposal drafting
PIUs			
PIU for the implementation of the projects for Ozone and Persistent Organic Pollutants (POPs) and the sound management of chemicals (SAICM)	Country Programme for phasing-out the substances that deplete the ozone layer was prepared in 1996. The strategy of the Republic of Macedonia through the Action Plan for phasing-out substances that deplete the ozone layer is included in the Country Programme. The Ozone Unit, established in the 1997 within the Ministry of Environment and Physical Planning, coordinates the provisions of technical and financial assistance to the enterprises, monitors consumption, import and export by individual enterprises in the country, prepares legislative and administrative measures supporting ODS phase-out; conducts a large-scale information	The project will help identifying synergies between UNFCCC and Montreal Protocol and utilization of the results	The data for Consumption of the ozone depleting substances in ODP tones/year (available for the period 1995 to 2003) for some gases, for the ODS will be reviewed and their applicability to the IPCC GHG Inventory will be assessed; SAICM

	programme for public awareness regarding the importance of ozone layer preservation and it is a liaison office for Governmental agencies, involved in ODS phase-out. Macedonia is not a producer, but rather a consumer of (Ozone Depleting Substances) ODS. The total consumption of ODS in 1996 was 560 MT and 75% out of the total consumption is in the sectors of foams and refrigerators.		assessments will be utilized within the preparation of the TNC.
INTERNATIONAL ORGANIZATIONS AND DONORS			
WORLD BANK	The World Bank has over 184 member countries and provides over $24 billion annually for activities ranging from agriculture to trade policy, from health and education to energy and mining. It provides funding for bricks-and-mortar projects, as well to promote economic and policy prescriptions it believes will promote economic growth.	The World Bank recently launched a Green Growth and Climate Change Analytical Support Programme with the objective to support the government in assessing the costs and benefits of a shift to a greener growth and the adoption of climate change actions as well as preparing key actions from the National Strategy of Sustainable Development for implementation. The Bank recently provided 5 million$ loan for participation at the climate risks insurance schemes.	Consultations with an aim of creating synergies and preventing the overlap of activities
EUROPEAN COMMISSION	Among the other, the EC develops relevant polices and directives that are applicable for all EU member countries	IPA is financing projects in the field of energy development and other climate change related areas. The EU Climate and Energy Package was adopted. It is an important reference for the country's development agenda and for the preparation of the TNC.	Consultations
WORLD HEALTH ORGANIZATION	WHO is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends	The National Health Strategy for Adaptation in Health Sector (NHSAHS) has been drafted in 2010 within a WHO initiative and a Climate Change and Health Committee was set up. Key areas for the NHSAHS in adapting to climate change include: adapting the health care infrastructure (hospitals, nursing homes) to be more resilient to the effects of heat, gales and floods; development of local plans for coping with disasters; and increasing awareness of how people can adapt to changes in climate.	Consultations

		Results to be incorporated within the preparation of the TNC.	
SWEDISH INTERNATIONAL DEVELOPMENT AGENCY	SIDA works according to directives of the Swedish Parliament and Government to reduce poverty in the world. The overall goal of Swedish development cooperation is to contribute to making it possible for poor people to improve their living conditions.	Supported the preparation of the National Sustainable Development Strategy and supports projects in the area of renewable energy development. Results to be incorporated within the preparation of the TNC.	Consultations

Appendix B: Technical components of the project proposal

1. Description of components and activities

National circumstances

Information on the national circumstances provided in the SNC will be updated utilizing (project related) research accomplished since the finalization of the SNC. This includes studies carried out for preparation of several national strategies and action plans relevant for the national communication, e.g. National Environmental Investment Strategy (2009), the National Environmental Approximation Strategy (2008), the Waste Management Strategy of the Republic of Macedonia 2008 – 2020 (2008), Public Investment Programme 2008-2010 (2008), the Strategy for Energy Development in the Republic of Macedonia for the Period 2008-2020 with a Vision to 2030 (2010), National Renewable Energy Strategy (2011), the National Energy Efficiency Strategy (2010), the National Sustainable Development Strategy (2010) or the Energy Poverty Action Plan (2010). Special attention will be paid on new information and data related to the sectors vulnerable to climate change (agriculture, forestry, water resources, natural ecosystems, human health) or sectors with biggest GHG emissions (energy, industry, transport and waste).

Particular attention will be paid on the socio-economic parameters and their relation to climate change since this link was not adequately addressed in the SNC. It is crucial to draw the line between climate change, green growth and poverty reduction. Only the sections related to climate and geography will require minor improvements.

This part of the TNC will be updated with information in regards to the new legislation and the decentralization process and their relation to the preparation of the national communications. This is considered of great importance due to the fact that both will create a better enabling environment for establishing a legal and institutional set up for environment management and subsequently more possibilities to address the climate change issues on national and local level. Integration of the UNFCCC requirements in the national legislation will be addressed.

The main source of information will be the State Statistical Office. The Environmental Cadastre and the Register of Pollutants that will be established within the Ministry of Environment and Physical Planning, is expected to be used as an additional source of information and will contribute to obtaining more accurate official data about the particular polluters and polluting substances.

Greenhouse Gas Inventory

The objective of this component is to update the country's GHG emission inventory for the key emitting sector, and to strengthen national capacities for modeling, analyzing and projecting GHG emissions

The main methodological and technical recommendations resulting from the stocktaking exercise which will be applied in the process of preparation of the GHG Inventory to the extent possible and allowed by data availability include:

- Developing country-specific lignite-conversion and CO2-emission factor and CO-emission factor for lignite thermal power plants and lignite mines in the country, as well as CH4-emission factors for the fugitive emissions;
- Categorizing the combustion technologies in the non-energy industries (manufacturing industries and construction – industrial boiler plants and energy systems, district heating plants, etc., transport, commercial institutional and residential, etc.) and determination of category-specific emission factors;
- Incorporating the GHG emissions in the reporting scheme of the A and B IPPC installations;
- Developing CO2 emission factors for metal production and cement production and improving the reliability of the relevant activity data;
- Establishing a farm register and Integrated Administration & Control System (IACS), for reliable agricultural statistics (including the population number of goats, mules, and asses and practical measurements of some of the country's livestock characteristics;
- Developing a new forestry inventory including reliable data on wood decay, forest fires, and illegal logging;
- Collecting data on the quantity and composition of the waste disposed at least at the bigger solid waste disposal sites.

Within the SNC, the inventory for the **energy** sector has been prepared for the period 1990-2002, with consideration of the three main GHGs: CO2, CH4, and N2O, as well as the indirect gases CO, NOx, NMVOCs, and SO2. The same approach will be followed within the TNC. The CO2 emissions will be calculated by two methods: a) reference approach (top-down) uses the fuel consumption accounting for the carbon flows into and out of the country; b) sectoral approach (bottom-up) accounts for the fuel consumption by sectors. As the energy sector is a main key source category, the choice of methodology is very important. A higher tier (i.e. Tier 2) method will be applied to the extent possible.

The GHG emissions will be calculated with the IPCC Excel software using the emission factors provided in the IPCC Guidelines such as the "Emission Factor Database" (EFDB) which contains a library of emission factors from various sources and for various categories of emissions and removals with supporting technical documentation. Taking into consideration the specific type of the Macedonian lignite used in the thermal power plants, a country-specific lignite conversion and CO2-emission factor and CO-emission factor for lignite thermal power plants and lignite mines in the country, as well as CH4-emission factors for the fugitive emissions will be developed and applied for this case. An attempt will be made categorizing the combustion technologies in the various industries with industrial boiler plants and energy systems, district heating plants, transport, commercial, institutional and residential buildings, and determination of category-specific emission factors.

The fugitive emissions from solid fuels (lignite mines) are included in the SNC. However, the fugitive emissions from natural gas and oil systems are not included. They appear primarily at oil and gas facilities as fugitive equipment leaks, process venting and flaring, evaporation losses and equipment failures. Although it is difficult to estimate the quantities of these emissions, some estimating activities will be undertaken as far as possible.

Since 1995 and especially in recent years, the quantities of HFC gases, which have very high emission factors, are rapidly growing. These gases are imported in the country with equipment for refrigeration and air conditioning and in bottles in liquid phase. Therefore an effort will be

made to record the quantities of HFC gases (imports and exports), to assess existing quantities, and the quantities of potential emissions into the atmosphere. The Ministry of Environment and Physical Planning will have a key role in colleting the data in collaboration with other relevant Ministries and institution that are responsible for monitoring and/or data collection.

An attempt will be made to incorporate the GHG emissions in the reporting scheme of the A and B IPPC installations through changes of relevant regulations, and developing CO2 emission factors for metal production and cement production and improving the reliability of the relevant activity data.

The **agriculture** is the second largest source of GHG emissions among the sectors considered in the country. The GHG Inventory for agriculture should comprise emissions from the following source categories: (CH4) emissions from enteric fermentation in domestic livestock, manure management and rice production, (N2O) emissions from manure management, direct emissions from agricultural soils, and (CH4 and N2O) indirect emissions from nitrogen used in agriculture, emissions from agricultural residue burning. However, due to the data unavailability/uncertainty, close collaboration with the Ministry of Agriculture, Forestry and Water Economy will be established in order to analyze the possibility to establish a farm register and Integrated Administration & Control System (IACS) for reliable agricultural statistics, and asses and practical measurements of some of the country's livestock characteristics with an aim to further update the GHG inventory for the agriculture sector.

The **LUCF** (Land Use Change and Forestry) sectoral inventory of the SNC covers emissions of CO2, CH4, N2O, and CO using the Tier 1 methodology, both for the recalculated period within the Initial National Communication, and for the period 1999-2002. The main problems during this inventorying were located in the uncertainty of the activity data for the forest area, stock and annual forest growth, changes in land use, as well as loss of biomass due to the commercial logging, illegal logging, wood decay in forest, or the processed industry. The analysis for the TNC will contribute to resolve some of these problems. In this context, possibilities to develop a new forestry inventory that will determine the area, stock, annual growth, species, and other information, needed for higher precision in GHG emissions estimates will be explored and utilized to the extent possible. This will also include collection of reliable data on wood decay, number of forest fires, areas that are burned, and percentage of burned wood, and to estimate the wood used for heating that is illegally cut and sold.

The **waste** inventory of the SNC consists of the inventory of methane emission from different sub-sectoral sources (solid waste disposal sites, domestic/ commercial organic wastewater and sludge, and industrial wastewater and sludge) and N2O emissions from human sewage for the period of 1999- 2002, as well the corrected data for the inventory for the period of 1990-1998 (Initial National Communication).

A GHG Inventory for the **waste sector** was not extended with non-direct GHGs (HFCs, PFCs, and SF6, as well as CO, NOx, SOx, and NMVOCs). There are no or relatively low emissions of HFCs, PFCs, and SF6 gases from the waste sector. But especially in recent years, the quantities of HFC gases, which have very high emission factors, are rapidly growing. These gases are imported in the country with equipment for refrigeration and air conditioning and in bottles in liquid phase.

CO, NOx, SOx, and NMVOCs could be emitted mainly from the municipal solid waste incineration, but there is little activity in the country. Very small amounts of CO, NOx, and NMVOCs could arise from solid waste disposal sites (SWDSs) and wastewater treatment

plants (approx. 0.3% of the CH4 emission from SWDSs) which is a negligible amount in the total CO2-equivalent emission for the country. Nevertheless, in recent years some studies and projects for solid waste disposal and wastewater treatment plants were undertaken in the country. These projects will be analyzed and used for the purposes of up-grading the sectoral inventory to the extent possible.

The total CO2-eq emissions in the country for time-series will be presented as a data table and in following graphs: trends for GHG totals, sectoral changes in GHG emissions, the GHG shares by gas, the GHG shares by sector and the GHG shares by category.

The quality control and estimation of uncertainties will be done because it is an essential element of a complete emissions inventory. Uncertainty analyses and information are intended to help in improving the accuracy of inventories and to guide decisions on methodological choice. Detailed guidance on how to assess uncertainties which can be found in the IPCC good practice guidance and uncertainty management in national GHG inventories will be used as a reference.

A set of institutional and legislative measures needs to be undertaken in order to further develop the national capacity for archiving and updating the GHG inventory. Deeper involvement of national institutions obliged for data collection (the State Statistical Office) is of crucial importance in order to make adjustments of the data collection methodology, aiming to cover identified GHG-related data.

Therefore, an attempt will be made for adoption of a secondary legislation which will improve the data management process, concerning data supply, processing, systematization, archiving both from the monitoring networks, as well as in accordance with the ratified international agreements. In the same context, linkages between GHG inventory and other pollutants' inventories/cadastre, such as the Air Pollutants and Cadastre of Polluters will be ensured.

Providing incentives and encouraging developing countries to Nationally Appropriate Mitigation Actions (NAMA) supported and enabled by technology, financing and capacity-building, in a MRV (Measurable, Reportable, and Verifiable) manner, as defined by Bali Action Plan, is one of the important elements in designing post-2012 climate regime. The TNC should contribute to the establishment of a monitoring, reporting and verification (MRV) system. According to the Copenhagen Accord and Cancun Agreement, mitigation actions taken by non-Annex I parties will be subject to their domestic measurement, reporting and verification of the result of which will be reported through their national communications every two years. The country will be requested to report its domestic actions in the National Communications and will be able to register the NAMAs requiring international support, and TNC will be utilized to create an enabling environment for this exercise.

In addition, in the light of EU accession, the more sophisticated GHG inventory will contribute towards providing the foundation for establishment of a national registry system, which will be a country requirement. Before starting the designing process, a few amendments to the existing framework, the Law on Environment and to the Law on Energy, are necessary in order to create background for creation of a Law on GHG Allowance Trading and to transpose the Emission Allowance Trading Directive (EATD) into national legislation and for establishment of a Scheme for GHG Emission Allowance Trading. Through the Fast Start Financing Mechanism of the EU, Bulgaria will support the country (with technical assistance of UNDP) to set the stage for transposing and implementing the EU Directives 2003/87/EC and 2009/29/EC. Synergies with the TNC will naturally unfold in this process.

Programmes containing measures to facilitate adequate adaptation to climate change

In the previous NCs long-range impacts of climate change in the country were assessed in the most vulnerable sectors: agriculture, forestry, water resources, biodiversity, and human health. Assessments were made taking into consideration climate change scenarios developed for the sub-regions within the country. Also, there is still a lack of integrated assessment of mitigation and adaptation as well as cross-sector analysis, particularly at national level, which will be addressed within the TNC.

The section *programmes containing measures to facilitate adequate adaptation to climate change* of the TNC will address two important issues at the same time. It will advance the development of a conceptional framework for valuing climate change damages and costs/benefits of adaptation and serve as a practical tool for actively supporting the climate change mainstreaming process in the country.

The first point will build directly on the results of the Economics of Climate Change Adaptation Report produced by UNDP (2011). This report i) provides a conceptual framework for valuing the damages due to climate change, the benefits and costs of avoiding these damages (adaptation); ii) identifies the sectors for which there is a reasonable expectation that rapid estimates of the economic impacts of climate and benefits and/or costs of adaptation in the country can be made with existing resources in the project time-frame (Hydropower, Agriculture and Energy Demand); iii) makes rapid preliminary estimates of the economic value of the impacts of climate change in the selected sectors in the country as well as the corresponding costs and benefits of adaptation options; iv) Recommends options for low cost and no regret measures of adaptation and prioritize adaptation measures based on an economic assessment for the short, medium and long term; v) points out the differences between the valuation of impacts and the benefits and costs of adaptation at the sector level, and the economic impacts of climate change on national income accounts and macro-level indicators of economic activity and development; vi) identifies the data, model and expertise gaps in various sectors that need to be "plugged" in order to undertake a comprehensive study of impacts of climate change at both the sectoral and national (macro-economic) levels; and vii) provides some guidance for what needs to be done to close these gaps in the long-term and what can be done in the short term.

In the TNC the initial work done previously will be upgraded by using common conceptual economic framework, based on principles of welfare economics for estimating the economic value of climate change damages and the benefits and costs of adaptation. This also applies to any macro-economic analysis that is done, although it will depend if a national model, capable of being driven by sector-level climate impacts, will be developed in time for the TNC as part of the "Green Growth and Climate Change Analytical Support Programme" which was launched by World Bank in 2011, with the objective to support the government in assessing the costs and benefits of a shift to a greener growth and the adoption of climate change actions on a macro-economic level.

To the extent possible, the identified data/model/expertise gaps will be filled in. This applies to climate modelling and data, impact modelling and data, more than it actually does to economic analysis and data. To place an economic value on impacts requires appropriate impact simulation and the estimation of benefits and costs of adaptation require to simulate how of a given adaptation option avoids (lessens) specific physical impacts. The Third

National Communication of Climate Change will be used to close some of these gaps through the establishment of sectoral teams that specify these gaps and elaborate plans to bridge them.

Climate: All sectors will use the same base case and climate scenarios and the same quantitative data. Data sets for regional climate change have been, or are being, gathered from regional climate models for many countries at several institutions. It may not be necessary to use a Macedonian regional climate model, if the data already exist for the SRES and other scenarios. In this context, Bergant (2006) will be reviewed, and if necessary, replaced, because it might be better to use transient regional climate model runs, where the climate model outputs change every year over a given simulation period. This will be decided in the project by a team that is tasked with that responsibility.

Examples of issues which is expected to be reviewed/addressed in the targeted sectors:

Agricultural sector:

i. Impacts – include more areas and crops, both irrigated and dry land agriculture will be looked at.
ii. Adaptation – look at expanding irrigation, where will it be economically feasible? If the area is small, what will this do to the country's export/import balance for food? What are the opportunities for organic-agriculture and agroecology (in light of the National Strategy and Action Plan for Organic Agriculture) for improving resilience, productivity and income generation for the rural population?
iii. Link the demand for irrigation water to the supply of irrigation water, focusing on the impacts of climate change on both supply and demand for irrigation water.
iv. Develop estimates of costs to develop irrigation water supplies (reservoirs and ground water) and irrigation systems.

Water resources:

i. Impacts
    1. Supply and demand of Irrigation water
    2. Supply and demand for water to generate electricity
    3. Supply and demand for water used by humans/municipalities for house-hold use.
    4. Possibly water quality, for primary and secondary treatment as runoff decreases.
ii. Adaptation
    1. Additional irrigation water supplies
    2. Additional hydro generation capacity and distribution infrastructure
    3. Water for municipal and human use:
        a. Additional water supplies (additional water storage from new reservoirs and/or from groundwater that is "under-utilized").
        b. Conservation technologies.
iii. Water quality – changing type of treatment (primary, secondary, tertiary) to use less water.
iv. Major need for all areas – to develop and implement the capability to simulate the effects of changes in temperature and precipitation on basin runoff. A model to simulate how "relevant" climate variables change over time can be used in each selected climate scenario. This data are available for the country from one or more GCM-RCM combinations. This data will be fed into a physical model (e.g. a rainfall-runoff model) for some of the basins to generate runoff over time into an existing (or planned) reservoir. This runoff data will be then used by a reservoir operation model to simulate changes in reservoir storage and releases and average annual yield and these outputs can in turn be

used by other models to simulate the effects on energy supply, water supply for irrigation and to value these changes over time and space.

v. The development of this capability will be focused on the locations for which this data is needed to project physical impacts, namely:
    1. Water resources supply and demand
        a. Human/municipal water use (surface and groundwater) - This means that municipal and human use can come from either groundwater or surface water and, by extension, that to simulate the effects of climate change on water use in these sectors, it requires simulation (using a model or appropriate method).
        b. Irrigation water
        c. Hydro-electricity
        d. Industrial cooling.
    2. Water quality - Climate change will affect water quality, primarily by reducing the amount of water that is used for environmental and human purposes – for waste assimilation, aquatic habitat, for water-based recreation and for its amenity value.

vi. Other areas that will be looked at for possible more elaborated analyses would be effects of climate change on ground water supply and effects of climate change on household water demand. During the inception phase of the TNC, the experts will once again assess availability of data and applicable models to simulate the effect of climate change in these area and based on that, a decision will be made whether to proceeds with the analyses or to recommend actions needed to create an enabling environment for carrying out such analyses in the future

Energy:

i. Impacts
    2. Effects of climate change on energy use for heating and cooling:
        a. Estimate own price elasticity of residential and commercial demand for energy.
        b. Estimate effects of changes in cooling and heating degree days on energy use in these sectors.
        c. Integrate this information into Markal-Elastic model (a newer version). The current model in the country is the Markal Standard. The "better" version is Markal Elastic. With the elastic version, it is possible to calculate the effects of climate change on the willingness to pay of household energy users of energy due to climate-induced shifts in the demand function and the resulting decrease/increase in the price of energy depending on whether the net effect of climate change is to increase or reduce the total demand for energy.
    3. Effects of climate change on energy-supply: primarily through hydro-electric generation:
        a. Expand the previous analysis to all existing and proposed hydro plants.

ii. Adaptation:
    1. Changes in investment in infrastructure (electricity generation and distribution) required to adjust to climate change.

Human Health:

i. Impacts – develop and implement models to simulate the effects of climate change on:
    1. Heat and cold mortality:

2. Food-related diseases.
2. Vector-born diseases.
3. All of the above, using multi-year data sets.

Forests: Based on past experience, as well as on the results from climate change scenarios of the SNC, climate change impacts on forestry might be manifested through: a more intensive process of morphological changes to oak and fir; increased number of forest fires and burned area, due to the increased percentage of dead trees; and migration of tree species towards higher altitudes.

The TNC will undertake an assessment of the costs of climate change in the area of forestry. The objective of this study is to determine the vulnerability of the fire-wood sub sector to climate change and to estimate the economic value of the lost timber supply due to reductions in firewood tree growth. This shall furthermore be contrasted with social vulnerabilities and issues of poverty reduction and inter-linked with relevant national strategies and actions plans (Energy Poverty Action Plan, National Renewable Energy Strategy, etc.).

It is also important to assess the adaptation potentials and GHG emission reductions of the "Day of the Tree" initiative. The campaign by the name 'Tree Day-Plant Your Future' was first organized on 12 March 2008, when more than 150,000 Macedonians planted 2 million trees in one day. Six million more were planted in November the same year, and another 12,5 million trees in 2009. Since then in average 5-6 million trees are planted twice a year. The adaptation and mitigation results of this initiative will be estimated through the TNC.

Biodiversity: The overall objective is to assess the potential impacts of climate change on the biodiversity of the country, specifically highlighting critical areas for conservation. This study shall focus on biodiversity from the standpoint of both ecosystems and the species which inhabit them, particularly terrestrial amphibians, birds, and mammals, keeping in mind how climatic factors will potentially threaten or impact these. Ecosystems are represented by the dominant vegetation - or the dominant land cover, if human intervention has occurred - and different altitudes.

Species richness is a fundamental measure of biodiversity, which counts the number of unique individual species in a place, regardless of the density or abundance of each type of animal. High-resolution climatological scenario data will be used as inputs in the analysis, acknowledging that while climate scenario data are not predictions and possess uncertainties, they nonetheless constitute useful tools that allow to better plan strategies for mainstreaming initiatives to facilitate adaptation to climate change in the country.

There is the need to develop a climate change indicator system in the country, based on the different responses of species to climate change. As a first step, the usefulness of several climate change indicators will be tested within the TNC by analyzing the relation between indicators and population trends of target species (restricted to terrestrial ecosystems). The study shall capitalize on the recent work accomplished of the GEF funded Macedonian Protected Areas Project. Within this project, a national biodiversity information system was developed as well as a representative protected areas network. The latter includes the following products: (1) a document entitled "Selection Criteria For Priority Rare and Endemic Species and Internationally Significant Species in Macedonia"; (2) separate GIS layers regarding designated areas (significant ornithological sites, significant plant areas, significant butterfly areas, Ramsar List areas, areas from UNESCO List of World Natural and Cultural Heritage, areas from the national Emerald Network and national protected areas with known

boundaries, whether proclaimed or re-proclaimed or in a process of proclamation or re-proclamation; (3) Map of Virgin Forests Identified in Macedonia; (4) Map of Significant Species Selected for Protection; (5) Distribution Maps of All Selected Species (6) Map of Areas Sensitive to Climate Change and (7) Map of All National Protected Areas and Proposed Areas for Protection. These achievements represent a solid basis for up-grading the biodiversity-related research on climate change adaptation within the TNC.

Cultural and Natural Heritage

Another new area for carrying out a vulnerability assessment is cultural and natural heritage. The country is exceptionally rich with cultural and historical heritage dating from the prehistory to nowadays. However, most of the archaeological sites, cultural monuments, etc, are not well preserved and thus they could be impacted by the climate change. To the extent possible, a rapid assessment of the possible impact of climate change on the country's cultural and natural heritage will be carried out.

Climate Change and Disaster Risk Reduction

New area for the TNC would be the elaboration of the links between the climate change and disaster risk reduction in the country context. There is a proven record of vulnerability of the country to natural disasters, especially to floods and droughts, as well as to wild forest fires in the summer periods, which have serious financial implications due to the damages that occurred every year. The work in this area will be very much based on the results of the recent UNDP project with the Crisis Management Centre, the key national institution which coordinates the activities in regards to disaster risk management. As part of the project, guidelines for development of methodologies for assessment of risks and hazards and assessment of their implications over the lives, health of the citizens and goods of the country and guidelines for preparation of the unified risk and hazard assessment were developed; historical database for events happened during the past 50 years was established; and the preliminary risk profile of the Country was prepare. As part of the TNC more comprehensive disaster and climate risk assessment will be prepared that among the other will include: hazard assessment, climate risk and impact identification, exposure assessment, vulnerability analysis, loss/impact analysis and risk profiling and evaluation.

Tourism

Tourism is now the world's largest single industry with a projected continuing worldwide growth. Therefore is one of the sectors that are priority to the Government. The country has a rich array of natural, historical and cultural tourist assets. It is a place still largely unspoilt with the unique and diverse beauty of its lakes, high mountains, virgin woods, rivers and streams and many cultural monuments and archaeological sites. Tourism can benefit people living in areas where other industries will not go. It can provide the economic base to maintain a rural population and to preserve and enhance the physical and cultural environment, usually at a much lower capital investment per job. Therefore, it is important to understand the vulnerability of this sector to climate change. Within the TNC, specific analyses will be carried out in order to determine the climate change impact to the tourism sector in the country, having into consideration the national strategy for tourism development.

Programmes containing measures to mitigate climate change

There is lack of an overall conceptional and strategic approach towards tackling climate change in an integrated and inter-linked way. Recent international policy developments and requirements must be adequately reflected in the preparation of similar documents within the

Third National Communication, i.e. Low emission development strategies, national appropriate mitigation actions and the EU climate change and energy package. Therefore, to the extent possible, the National Mitigation Action Plan of the TNC will constitutes not just a feasible roadmap for responding to the obligations of the UNFCCC but it will also be a roadmap that will help the country in responding to the respective EU requirements as well.

The Third National Communication on Climate Change will be used to the extent possible to address these requirements in a comprehensive manner. The TNC should consequently serve as a basis for any policy document on Low-emission development and/or NAMAs, connected to the EU accession process. Synergies will also be unfolding with the UNDP BRC regional project "Supporting RBEC countries transition to low-emission development".

Electric Power: The knowledge base for the mitigation analysis has been improved since the SNC through the development of the "Strategy for Energy Development in the Republic of Macedonia for the Period 2008-2020 with a Vision to 2030" (2009); "Renewable Energy Sources Strategy of Macedonia till 2020" (2010); and Energy Efficiency Strategy (2009). Several studies about the energy sector (especially EE and RES) where released and projects have been implemented that will benefit as well as already influence the mitigation analysis. In 2011 the first two CHP plants on natural gas will be put in operation, one is Te-To AD – Skopje with an electricity capacity of 230 MWe, and the second one is Kogel AD - Skopje with a capacity of 30 MWe.

Therefore, a specific version of MARKAL for the TNC will be introduced, "Stochastic MARKAL", that allows to examine consumption and investment strategies for the energy system taking into account the uncertainty regarding the cost or the availability of future technologies or regarding the stringency of future environmental constraint. The RETScreen Clean Energy Project Analysis Software will be used to evaluate the energy production and savings, costs, emission reductions, financial viability and risk for various types of Renewable-energy and Energy-efficient Technologies (RETs). GACMO (GHG costing model) will be used to evaluate the costs and benefits of a wide range of mitigation options, to calculate the GHG emissions reduction, as well as the average mitigation cost expressed in US$ per ton of CO2 equivalent. It is able to combine the options in the form of an emissions reduction cost-curve, displaying the average cost of reducing GHG emissions for a number of different alternatives.

Industrial Energy Transformations and Heating: Fossil fuels contribute with the largest share in the structure of the primary energy consumption for heating purposes in the industrial, residential, commercial and public sectors, agriculture, and other sectors in the country. According to the statistical data for the last few years, in this part of the energy sector, liquid fuels, mostly fuel oil and diesel oil, cover over a half of the primary energy for heat production. In the same period, the contribution of firewood is considerable, making about 20% of the total primary energy needs, used mostly in the households. In the liquid fuel supply, the country is completely dependent on the importation of crude oil. Domestic consumption of fuel oil products in the last few years ranges 700,000-1,000,000 t/year. Regarding the final energy consumption, the distribution between various segments of the sector is relatively even, over the last few years. According to the energy balance for 2005, the final energy consumption in the industry amounts to 33.5%, the consumption in the households makes 29%, the transport sector 20.9%, and agriculture, commercial buildings, the public and administrative sector, and other areas contribute with 16.7% in the final consumption.

In developing of the baseline scenario for energy transformations in the industry sector and for heating within the SNC, forecasts for annual growth rates of the economy activities, industrial production, energy needs and, in this framework, necessities for heat, etc., over the period 2006-2025, are assumed in accordance with relevant studies and publications that cover the mentioned period (annual growth rate of 3.5% during the first decade and of 3% during the second decade of the analyzed period).

Comparison between the GHG emissions of the scenarios considered, presented as CO2-eq, leads to a conclusion that the reduction of emission is relatively small. That is a result, most of all, of limited opportunities for fuels switching and transition towards energy resources with less potential for GHG production: limited capacity of a natural gas pipeline system, small probability for connection to other regional gas pipeline systems, limited potentials of the renewable energy sources, etc. In the TNC the baseline scenario will be reviewed with an aim to check whether the assumptions made in the previous NCs are still valid and/or it has to be updated.

Transport: The analyses accomplished in the framework of the inventory of greenhouse gases within the SNC show that the contribution of the transport sector is 10.6 ÷ 13.4% in the total CO2-eq emission from the energy sector in the period from 1990 until 2002, while in the total GHG emission in Macedonia, presented as CO2-eq emission, its contribution is 6.9 ÷ 9.6%. Regarding the energy consumption, road transport dominates ahead of railway and air transport.

The projections of the trend of consumption of various fuels and consequent GHG emissions coming from the transport sector were based on officially published statistical data from the last fifteen years. While developing the baseline scenario for this sector over the period until 2025, several assumptions were taken into account, which, regarding the fact that the the country still does not have a document for long term strategic planning of its goals and development policies in the transport sector, were mostly a result of expert judgment.

In the mitigation scenario, the main strategic directions that will be followed for reduction of GHG emissions coming from the activities in the transport sector in the TNC are directed towards the following objectives: improvement of the efficiency in the transport sector and energy efficiency of the vehicles, which means, reduction of the specific energy consumption, improvement of the public urban and inter-city transport and bringing the national legislation into accord with European Union regulations.

Waste: Considering that the major part of the emissions comes from the solid waste disposal sites, the mitigation analyses was mainly done for this sub-sector. In order to reduce the GHG emissions from the waste decay, a technology for methane collection and flaring was taken, thus converting the methane content of LFG into CO2. In this sector following scenarios are considered: Baseline scenario which assumes that no changes will be made, and the GHG emissions will increase according to the demographic growth rate; Mitigation scenario which proposes implementation of systems for methane collection and flaring at nine landfills in the country. In the TNC, the baseline scenario will be reviewed and revised in order to reflect the new development in this sector.

Agriculture: The GHG emissions from the agricultural sector account for 8-15% of the total emissions and comprise methane (CH4) and nitrous oxide (N2O), originating from enteric fermentation (CH4 emissions); manure management (CH4 and N2O emissions); rice cultivation (CH4 emissions); agricultural soils (N2O emissions).

The mitigation analysis for the TNC will follow the recommendations of the SNC. The scope of the sectoral mitigation assessments will include an analysis of related legislation, policies and programmes that facilitate the rapid implementation of mitigation technologies and practices, energy demand and supply, transport, forestry, agriculture and waste management, as well as – to the extent possible – the macro-economic impact of the mitigation options (including possibilities for green job creation). The EU approximation process and international requirements deriving from UNFCCC as guiding principles for development will be taken into consideration while doing the analyses within the TNC.

The mitigation assessment will focus on clearly defined objectives and emphasize implementation. The basic steps will depend on the objectives and the scope of the assessment, but is expected to include: collecting data and assembling base year emissions calculations such as national GHG inventory; preparing baseline scenario; screening mitigation options; preparing mitigation scenarios and sensitivity analyses; assessing the social, economic or environmental impacts; developing an overall mitigation strategy and preparing report.

On the base of the inventory, proposed measures and policies, development plans and trends, baseline and mitigation scenario will be performed and a second mitigation scenario. To the extent possible a third mitigation scenario for the energy sector for the chapter on electric power will be developed. This third mitigation scenario should reflect more progressively a possible low carbon development pathway of the country in line with the guidelines developed by IPCC. This third mitigation scenario shall reflect more accurately the more stringent future requirements deriving from EU accession and UNFCCC, assuming accelerated international commitment to implement decentralized renewable energy systems in the near future (incorporating poverty reduction, sustainable development and green jobs indices).

The baseline scenario is a plausible and consistent description of how a system might evolve in the future in the absence of new GHG mitigation measures. It shall consider the possible evolution of macroeconomic and demographic trends, structural shifts in the economy, projections of the main GHG emitting activities and the evolution of technologies and practices.

Mitigation scenarios will reflect a future in which explicit policies and measures are adopted to reduce the sources of GHGs, and will be used to compare and evaluate GHG mitigation policies and measures against the baseline scenario. The emission projections wil be performed and presented for each sector (tables and graphs), and then to give the total GHG emission projections in all scenarios.

The internationally recommended methodologies will be applied: the IPCC Fourth Assessment Report (AR4), 2007 - Contribution of Working Group III "Mitigation of Climate Change"; Several models are available for simulation and optimization in a GHG mitigation assessment and software tools such as WASP, MARKAL and TIMES, GACMO, ENPEP-BALANCE, LEAP. The UNDP resource guide for preparing the national communications of Non-Annex I Parties, Module 4: Measures to mitigate climate change (2009) shall be used. It is recommended to introduce a specific version of MARKAL for the TNC, “Stochastic MARKAL”, which allows to examine consumption and investment strategies for the energy system taking into account the uncertainty regarding the cost or the availability of future technologies or regarding the stringency of future environmental constraint.

Other information considered relevant to the achievement of the objective of the Convention

Integration of climate change into national development priorities

Since the Second National Communication of Climate Change several important national strategies and action plans were adopted which provide strategic guidelines for the development of key sectors. But in general, these development strategies, plans and programmes currently do not sufficiently take into account climate variability.

Policy formulation is strongly compartmentalized across the sectors with climate change policy treated often as strictly environmental sector agenda. Therefore, climate change policy is fractioned in isolated efforts that do not create any sustainable capacity. This high degree of sectoralisation even within one sector precludes coherent cross-sectoral planning that is essential for climate change policy formulation and capturing the opportunities that the synergies between the adaptation and mitigation options could offer. To ensure such cross-sectoral collaboration there is a need to gradually overcome compartmentalisation often driven by common perception that everything related to climate change is an exclusive responsibility of the Ministry of Environment and Physical Planning. Fully transposed national laws and policies are often missing operational hands through the sub-laws and subsidiary legislation to be elaborated by responsible Ministries.

Climate change mitigation has not yet entered into the institutional infrastructure and national policy landscape. Key national documents developed and adopted in the previous three years do not take mitigation into consideration to the extent that is to be expected, and if, just as a separate issue, and not as conceptional and strategic guidelines, e.g. the National Environmental Investments Strategy (2009); the National Environmental Approximation Strategy (2008); the Waste Management Strategy (2008); the National Waste Management Plan (2008); and the National Sustainable Development Strategy (2010). The concept of green growth and green jobs are not enough understood although there is more interest about it. The World Bank recently launched a Green Growth and Climate Change Analytical Support Programme with the objective to support the government in assessing the costs and benefits of a shift to a greener growth and the adoption of climate change actions as well as preparing key actions from the National Strategy of Sustainable Development for implementation.

Nevertheless, climate change is increasingly taking public policy spaces. There are a growing number of Ministries appointing Climate Change Focal Points and getting involved in the climate change mitigation and adaptation policy processes within their respective areas. Examples are: the Ministry of Economy, Ministry of Health as well as the Ministry of Agriculture, Forestry and Water Economy.

The Ministry of Economy designed a three tier energy policy: the Strategy for Energy Development in the Republic of Macedonia for the Period 2008-2020 with a Vision to 2030 (2010); Renewable Energy Sources Strategy of Macedonia till 2020 (2010); and Energy Efficiency Strategy (2010). The Strategy for Energy Development offers a set of ambitious and specific numerical targets for 2020 following the EU climate change policy track, e.g. reducing the energy intensity of the economy by 30% relative to 2006 or increasing the share of renewables (including hydropower and wood heat) to more than 20% of total final energy.

The devastating heatwave across Balkan in 2007 led to the Ministry of Health first launching its National Heat wave Plan in 2010, in which a 'Heat-Health Watch' system operates in the

country during the summer months, with advice from the Institute for Public Health and the Ministry of Health, with four levels of response and appropriate advice. Also the National Health Strategy for Adaptation in Health Sector (NHSAHS) has been drafted in 2010 within a WHO initiative and a Climate Change and Health Committee was set up. Key areas for the NHSAHS in adapting to climate change include: adapting the health care infrastructure (hospitals, nursing homes) to be more resilient to the effects of heat, gales and floods; development of local plans for coping with disasters; and increasing awareness of how people can adapt to changes in climate.

The Ministry of Agriculture, Forestry and Water Economy designated a Focal Point for Climate Change and Agriculture, and is currently developing, through financial and technical support of the World Bank, a National Strategy for Climate Change Adaptation in Agriculture.

The National Sustainable Development Strategy was adopted in 2010, produced under the Ministry of Environment and Physical Planning, supported by the Swedish Development Cooperation. It considers climate change mitigation in terms of clean energy production as key priority, but fails to take into consideration future impacts of climate change. A Trust Fund has been recently established with the support of Swedish SIDA and Norway, managed by the World Bank, in order to review the Strategy and develop an Action Plan for its implementation in the next two years. This opens an opportunity to link this exercise with the TNC in order to ensure that mitigation/adaptation measures that will be identified as part of the TNC to be considered as well in the Action Plan for the NSSD, and funds for their implementation to be allocated.

Water management is highly important area for climate change policy. However, it is still being formed. There are two basic strategic documents governing the water sector in the country, the Water Strategy and the Water Master Plan. The Water Strategy (still only in draft) is a political document setting the general water management objectives and principles. The Water Master Plan offers operational guidance containing even engineering details. Currently there is an old and out-dated Water Master Plan. The new one should be prepared in accordance to the new Water Law. Beside these two documents, the state needs to prepare the three River Basin Management Plans for the three River Basin Districts defined in the Law. The preparation/revision of these documents opens an opportunity to incorporate the key finding and recommendations of the TNC related to the water sector. The responsibilities for water management will soon be transferred to the Ministry of Environment and Physical Planning so the mainstreaming of climate change should be easier to do.

The "Strategy for Sustainable Development of Forestry in the Republic of Macedonia", published in 2006, establishes a plan to develop the forestry sector in Macedonia in a sustainable and integrated manner through 2026. This document also discusses the importance of Macedonia aligning its forest policies with those of the EU to facilitate its accession. But the strategy is currently overlooking climate change related impacts on forests, only with a vague mention of mitigation function of forests.

As forest management is largely executed through the Public Enterprise "Macedonian forest", there is an apparent tension between its dual functions of forest protection / sustainable management, on the one hand, and a financial self-sustainability granted by the cutting of wood, on the other. The Public Enterprise "Macedonian forest" has 30 branch offices and 190 forest management units. The Branch offices of the forest enterprise develop annual forest fire protection plans. These plans only consider historical trends of climatic parameters, including the hazard occurrences, such as fires. There are limited resources, staff capacity or equipment

available for forest fire management. Local municipalities are also charged with responsibility for forest fire protection.
Recent developments in the area of disaster risk reduction reveal political awareness of the need to have a well-functioning crisis management system in the country. Recent accomplishments demonstrate an increased preparedness for man-made and natural disasters on local and central level.

National Platform for Disaster Risk Reduction was adopted establishing a formal arrangement to respond to the country's obligations to the Hyogo Framework for Action 2005 - 2015. The platform engages all relevant ministries, institutions, local governments, academia, CSOs, private sector and thus ensuring commitment towards the sustainable risk reduction in the country.

The two leading national bodies within the Crisis Management System are the Crisis Management Center and the Directorate for Protection and Rescue. The Crisis Management Center is an independent governmental body with responsibilities to ensure coordination, cooperation and communication of the National Crisis Management System. The Directorate for Protection and Rescue represents the operational arm of the Government, responsible for the effective implementation of on-the-ground activities.

The Crisis Management Center recently developed guidelines for Preparation of the National Crisis Management Plan; Guidelines for development of methodologies for assessment of risks and hazards and assessment of their implications over the lives, health of the citizens and goods of the country; Guidelines for Preparation of the Unified Risk and Hazard Assessment; historical database for events happened during the past 50 years; Guidelines for Preparation of the Unified Risk and Hazard Assessment; and the Preliminary Risk Profile of the Country.

Based on these documents, the Crisis Management Center aims to prepare currently a comprehensive Disaster and Climate Risk Assessment that will among the other include: Hazard assessment, climate risk and impact identification, exposure assessment, vulnerability analysis, loss/impact analysis and risk profiling and evaluation.

Managing climate-related risks is a key enabler of development. Identifying and reducing risks associated with climate-related hazards will help to protect people, livelihoods and assets, thereby promoting the achievement of development goals. There is fertile ground to link climate change adaptation and mainstreaming with climate risk screening, risk analysis and assessment in the country based on the recent achievements and institutional commitment by the Crisis Management Center.

Activities relating to technology transfer

The present status of technologies used in the energy and industry sectors is far from being satisfactory. The prolonged transitional period has caused delay in accepting contemporary and environmentally favorable technologies. The situation is even worse since the harmful effects of the outdated technologies, as well as of the poor, inadequate, or even neglected maintenance of the equipment, have not reached their real size due to the substantial reduction in the industrial and similar activities during the transitional period.

Practical aspects of the technology transfer process were proven through direct use of the GHG software model GACMO that was adjusted to the national conditions. This model contributed to cost-benefit analysis of a wide range of mitigation options within the

technology needs assessment under the top-up and is very useful tool for decision making processes on the GHG abatement alternatives.

Other software tools and models were developed and employed by the Macedonian Academy of Science and Arts which will support the determination of appropriate technology needs in the future. The RETScreen Clean Energy Project Analysis Software is a decision support tool which can be used to evaluate the energy production and savings, costs, emission reductions, financial viability and risk for various types of Renewable-energy and Energy-efficient Technologies. The MARKAL Model for the country was developed in the framework of the USAID project "Regional Energy Security and Market Development (RESMD) Strategic Planning". The MARKAL model can be used to identify least-cost energy systems and cost-effective responses to restrictions on emissions, to perform prospective analysis of long-term energy balances under different scenarios, to evaluate new technologies and priorities for R&D, to evaluate the effects of regulations, taxes, and subsidies, to project inventories of greenhouse gas emissions and to estimate the value of regional cooperation.

The cost-benefit analysis of mitigation options has not been introduced sufficiently into national development planning. Further institutional awareness, capacities and commitment is needed to benefit of these instruments. For example, the investment priorities presented in the Energy Strategy describe a plan for Macedonia's energy system that is projected to meet the country's needs through 2030. While the plan has strengths and describes many needed expenditures, it also contains features that are needlessly costly, and will be vulnerable to the impacts of climate change. Modifications to the plan could reduce its costs and make it more "climate-proof" for the decades to come.

To analyze the full potential of efficiency investments, a study will be conducted of energy efficiency options and costs for the country. Efficiency measures will be ranked in order of cost per saved kWh, or other unit of energy. These efficiency costs should be fully incorporated into energy system planning: If energy can be saved at a lower cost per kWh than the cost of a new power plant, then it is preferable to invest in efficiency and energy savings, rather than in power plant construction.

The Energy Strategy calls for investment of €458 million in non-hydro renewables (Option 1): geothermal energy, windmills, solar water heating, and photovoltaics. Relatively little is said about the justification for these investments; the balance among them calls for further analysis. In general, these alternative energy sources should be ranked by a common metric, such as cost per kWh, or cost per unit of avoided GHG emissions. Those rankings should guide the pattern of investment –with the added benefit of potential CDM or EU ETS credits lowering their cost. Solar water heating could be evaluated in terms of the avoided cost of electric water heating; that is, its cost could be expressed as a cost per avoided kWh. Such an analysis would determine the relative importance of solar water heating, versus other technologies.

Climate change research and systematic observation

Monitoring and research activities of climate-meteorological and hydrological parameters in Macedonia are performed by the Hydro Meteorological Service (HMS) within the Ministry of Agriculture, Forestry and Water Economy. The meteorological observing system in the country consists of 14 main meteorological stations, 19 regular climatological stations, 26 phenological stations, one aerological station, 6 hailsuppression centres and about 200 precipitation stations. There are also two automatic stations installed in Gostivar and Skopje-Zajcev Rid. In accordance with international standardized procedures and recommendations,

measurements are performed for: air temperature and humidity, air pressure, wind speed and direction, evaporation, insulation, soil temperature, precipitation, atmospheric conditions and air quality.

The Hydro-meteorological Service uses the "Clidata" database for input and management of the national climate parameters. CLIDATA is a climate database application of a Czech origin developed by Ataco Ltd. in cooperation with Czech Hydrometeorological Institute.

HMS is the only national institution that collects, monitors and manages climate-meteorological and hydrological parameters in the country. The Institute had acquired Clicom-clidata – climate data management software produced by Czech Republic and recommended by the WMO. The software is not fully used at the Institute due to limited IT specialists who can actually work with this software. As a result, currently few available data sets are currently digitized. Some important adaptation or mitigation related data are monitored and captured (e.g. soil temperature, moisture, wind speed and direction, etc). However, they are recorded manually, on paper and stored at the department. This does not allow for any user-friendly availability of data for experts or decision-makers. Instrumentation for observation is also very poor. There is collision between laws how to define the hydromet data that adds additional barrier to the access. Moreover, relevant and readily available databases and GIS layers (climate, soil, vegetation, hydrology, geology, ground waters, and aquifers, land use, etc.) in appropriate scale do not exist and become constraints to more advanced and detailed research, analyses, and robust decision making.

Clidata database is the most complex and comprehensive database in HMS, containing all relevant meteorological data since the foundation of the HMS. Currently, Clidata version W.200 with Service packs 2,3,4 is used and version 8.1.7 of Oracle database. Server works on 24/7/365 regime. Data from HMS were used for preparation of the vulnerability assessments within First and Second National Communication on climate change (2003 and 2008), as well as for the development of climate scenarios up to 2100.

As identified in the Initial National communication on climate change, the existing network of meteorological stations does not satisfy the modern necessity and also the series of data are very often inhomogeneous, with gaps due to problems with measuring equipment, data processing, etc. Thus, in 2003, within the UNDP implemented project "Evaluation of Technology Needs for GHG Abatement in the Energy Sector" several activities were initiated to contribute to maintaining and enhancing the established national capacities for the preparation of future National Communications. Capacities for participation in systematic observation networks were to certain extent improved under the Top-up activities (Phase II). Climatological database CLIDATA at the national institution Hydro Meteorological Service (HMS) was upgraded in order to meet the requirements for data use and exchange. The most comprehensive active database in the HMS became operational and inconsistencies in the databases were reduced. The Global Information System (GIS) layers – relief and natural resources that were installed in the HMS for the first time, enabled graphical illustration of hydro meteorological parameters, GIS quality control and spatial analysis. This will further contributed to the preparation of documents/reports on a higher technical level than earlier, especially subsequent analysis related to the Second National Communication.

Recommendations for further actions emphasized the need to upgrade the hardware on the computer of the Hydro-Meteorological Service where the database is installed and to provide additional service packs for the Clidata database (approx. every second year). To date upgrades of the Clidata database of HMS have not been realized.

Comprehensive assessment of the capacities of the Hydro-Meteorological Service especially in regards to climate change was done as part of the regional project on Disaster Risk Reduction that is implemented together by UNDP and the UN World Meteorological Stations. It identified a number of deficiencies and therefore further support for upgrading the capacities of the HydroMat is expected in a short and medium term.

The country is a part of the system of hydrological data exchange between Mediterranean countries (MED-HYCOS). On national level three automatic meteorological stations operate for special purposes and two automatic stations according to MED-HYCOS. The air quality monitoring has been performed by the Ministry of Environment and Physical Planning, the HMS, the Pubilc Health Institute, and its regional organizations, as well as by the bigger industrial capacities. The National Automatic Monitoring System performing air quality and meteorological measurements under the responsibility of the MOEPP consists of 13 fixed monitoring stations, one mobile station, and one fixed station for urban traffic air pollution monitoring. Under the activities of the Twining project ”Strengthening the central and local level capacities for environmental management in the area of air quality” an environmental information system will be developed and implemented. A web portal for air quality is in process of development. The public will gain access to near real-time data derived from the national environmental information system. This is of importance as the country’s approaches to climate change and air pollution should be better integrated, to lower costs and more effectively advance both agendas. Efficient air pollution control can decrease the costs of climate change mitigation, and vice-versa. Climate change is closely connected to ambient air pollution, because both often involve the same sources (vehicles, factories and power plants burning fossil fuels). While emissions reduction is, first and foremost, a mitigation strategy, improved air quality will reduce stresses on human health, flora and fauna, partially offsetting the impact of a harsher climate.

The Second Environmental Action Plan identifies energy production and transformation, fuels combustion, and heat production for residential, industrial and commercial buildings as the biggest sources of air pollution in the country. But the strategy lacks specifics regarding implementation. A detailed climate change and environmental impact assessment is recommended on the specific implementation plans for these measures.

Information on research programmes

The SNC concluded that under Macedonian conditions the Research and Development (R&D) becomes a decisive factor in all the efforts to limit climate change and its costs and negative effects to society and the environment. Moreover, the climate-change-related R&D is being built upon the following two elements: translational research (establishing/strengthening the partnerships of type academia-businesses, academia-policy-making, or even academia-businesses-policy-making) and international cooperation (in particular, participation in EU Framework Programme 7, where climate change is among the top priorities for cooperation).

Developments since the finalization of the SNC: The MARKAL Model was calibrated for the country in the framework of the USAID project “Regional Energy Security and Market Development (RESMD) Strategic Planning” which will enable further research on energy system development in the country. UNDP is currently implementing the project “Economics of Climate Change Adaptation” with the aim to develop a framework for valuing climate change damages and costs/benefits of adaptation. A set of estimates of the economic value of climate change impacts are being prepared in sectors such as hydrology, agriculture, energy

demand and forestry, along with corresponding costs and benefits of adaptation options. This will close expertise gaps and advance climate change impact and adaptation research. The World Bank recently launched a Green Growth and Climate Change Analytical Support Programme with the objective to support the government in assessing the costs and benefits of a shift to a greener growth and the adoption of climate change actions as well as preparing key actions from the National Strategy of Sustainable Development for implementation (duration 2 years).

Several other projects implemented since the finalization of the Second National Communication or currently under implementation support the research agenda related to programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change. The project promotion of sustainable agricultural practices, energy efficiency and usage of renewable energies in rural areas – Agroenergy (funded by SIDA) aims to adapt technologies for utilization of Renewable Energy Sources (RES) and Energy Efficiency (EE) to the needs of individual farmers, rural communities and municipalities and test these technologies for technical, economic, operational and environmental feasibility in selected rural pilot locations. Through IPA, maps and feasibility studies on biomass, geothermal, hydropower and were produced. Italy supported the establishment of the Centre for implementation of low-cost technologies for solar cells in Macedonia at the Ss Cyril and Methodius University - Faculty of Electrical Engineering and Information Technologies (UNIM-FEIT). Italy also supports the establishment of a wind database for the country which will provide an institutional set-up for sustainable process of wind data measurement and collection, and organization of appropriate database that can later be used for energy generation.

There are several projects in the area of energy efficiency that aim to support the country to transpose and implement the EU Energy Performance in Buildings Directive (EBPD). A project implemented by UNDP establishes a national database of climate parameters per regions required for the calculation of energy performance of buildings and an inventory of over 600 public buildings in the country. A software was developed that will allow national institutions to create energy consumption statistics for public buildings on a rolling basis. This statistics represent the foundation for the development of any future national, regional and local energy efficiency programme of public buildings.

Within a GEF funded project, a national biodiversity information system was developed as well as a representative protected areas network. The latter includes the following products: (1) a document entitled “Selection Criteria For Priority Rare and Endemic Species and Internationally Significant Species in Macedonia”; (2) separate GIS layers regarding designated areas (significant ornithological sites, significant plant areas, significant butterfly areas, Ramsar List areas, areas from UNESCO List of World Natural and Cultural Heritage, areas from the national Emerald Network and national protected areas with known boundaries, whether proclaimed or re-proclaimed or in a process of proclamation or re-proclamation; (3) Map of Virgin Forests Identified in Macedonia; (4) Map of Significant Species Selected for Protection; (5) Distribution Maps of All Selected Species (6) Map of Areas Sensitive to Climate Change and (7) Map of All National Protected Areas and Proposed Areas for Protection. This represents a solid basis for up-grading the biodiversity-related research on climate change adaptation and mitigation within the TNC.

The Italian Ministry of Environment, and its corresponding office of the Western Balkan Environmental Task Force in Skopje, prepared the report “Biomass Availability in the

Territory of Republic of Macedonia – enabling activities for climate change mitigation through biomass utilization under CDM projects" (2010).

The TNC must capitalize on the (project related) research accomplished since the finalization of the SNC. It is important to leverage the research results achievable within the TNC, to connect the TNC with available research programmes and to facilitate (research) partnerships, especially with 7th research framework programme of the EU, the regional UNDP project "Supporting RBEC countries transition to low-emission development", the UNDP-EC climate change program on establishment of MRV systems or the National Communication Support Programme (GEF).

Networking, stakeholder engagement and awareness raising activities

Activities related to public awareness have been implemented by various interest groups applying different means: MOEPP, NGOs, as well international organizations and bilateral donors. Because recent international events related to climate change (COP 15, COP 16), media is more frequently reporting on the topic and several publications were released addressing a variety of climate change related topics.

But the general awareness of the population is still considered as not sufficient to contribute to a process of behavior change. A handful of NGOs are solely dedicated to climate change, focusing mainly on activities related to public awareness raising. Other environmental NGOs have incorporated climate change conceptionally into their programming. The informal network of CSOs "Together for Climate" was established and a letter was sent to the Macedonian delegation to the COP 15 containing opinions, recommendations and solutions prepared by the network. There is a wealth of leaflets, calendars and brochures developed for the general public and specific target groups (e.g. schools) on climate change related issues but for achieving transformational change, enhanced engagement and outreach activities must be performed, especially in the rural areas incorporating lower levels of state governance (i.e. Municipalities and Regional Councils).

The conclusions of the SNC and the consultation process for the TNC will be followed. The development of a national survey to assess needs and requirements for implementation of Article 6 of the UNFCCC and the implementation of a national outreach programme to engage key stakeholders will be addressed within the TNC. It will assist the country to raise public awareness on climate change, to involve local stakeholders in a dialogue on a perspective national climate strategy as well as to approach various target groups on climate change issues, and to disseminate up-to-date materials on climate change produced in the process of preparing the TNC. The appropriate employment of social media should be guaranteed in this process and the national climate change website www.unfccc.org.mk revitalized and re-structured.

The survey will follow the action-research methodology and approach, e.g. developed and employed by the CIVICUS Civil Society Index (CSI) project (the project is implemented in the country by the NGO Macedonian Center for International Development). The CSI is a self-assessment and evidence-based advocacy tool for civil society organizations. Adjusted to the needs of a survey on climate change, it will serve as tool for stakeholder engagement, partnership building, strategy development, public policy formulation and to conduct further community-based and action-oriented assessments on relevant issues pertaining climate change. In particular it is critical to include the private sector in this process and to use the CSR infrastructure already in place in the country for this purpose (the National CSR Body,

UN Global Compact, NGOs specialized in CSR, etc.). A detailed analysis was produced in 2010 on the current state of access to environmental information as well as the rights of public participation and access to justice in the context of the Aarhus Convention which can be further utilized in this process (the analysis was produced within the UNDP "Hotspots" Project).

Capacity Building

Capacity constrains and gaps are identified at systemic, institutional and individual levels. Main constraints at systemic level are related to insufficient regulations and different priorities of the stakeholders i.e. the Ministries that have responsibilities related to the climate change. The legal framework in relation to climate change is inadequate and is characterized with overlaps, gaps and inconstancies. In addition, implementation of the strategic documents in practice is very low. Low level of coordination between different Ministries at national and local level is leading to inefficient problem solution strategies.

The existing institutional structure in the country should be reorganized and improvements in institutional activities, such as planning, management, data monitoring and processing and evaluation, have to be achieved. Financial resources should be available to provide effective institutional operation related to the identified priority issues. In most cases the institutional infrastructure need to be reorganized. Inter-institutional cooperation is insufficient. The authorized institutions are not publishing and updating the collected data/parameters on climate, climate change impact, water resources, air quality, water quality, etc.

Individual capacities are estimated to be sufficient in order to improve the quality of the TNC. The exploitation of individual experience of the experts by the institutions involved in climate change is not sufficient. In terms of capacity needs, there is lack of practical experience among experts dealing with socio-economic aspects related to climate change.

In general, the recommendations of the SNC will be to the extent possible addressed within the preparation of the TNC, i.e. Improvement of the current institutional set up for preparation, updating, and reporting of the GHG Inventory and National Communication according to the newly proposed Law on Environment; Strict definition of the responsibilities of each governmental institution in the process of preparation, updating and reporting according to the Law on Environment; Strengthening the human capacities related to some relevant climate change issues (for example, "climate potential of the pollution" connected with abatement measures); Strengthening the national hydro-meteorological observation system especially the meteorological and hydrological systematic monitoring networks; Preparation of the secondary legislation for submission of the data from different sectors needed for preparation of the GHG inventory in order to reduce the uncertainties.

In general, the available financial support (particularly the national one) of climate change activities in the country is scarce and limited, so there is an urgent need for fundraising, involvement of private sector, and awareness raising of policy-makers. Active use of EU Research Programmes (FP Programmes) is also recommended, as well as providing budgets in relevant national institutions.

An action-oriented approach towards the key points of the chapter *other information considered relevant to the achievement of the objective of the Convention* will be employed in order to transcend the mere assessment of data/information with the aim to contribute to and guide the implementation of recommendations leading to increased engagement, participation,

institutional change and the advancement of the climate change agenda in the country. By this means, the TNC should meet its aim to be, besides fulfilling the reporting requirements to the UNFCCC Secretariat, a participatory tool for policy advice and guidance as well as raising awareness.

Constraints and gaps, and related financial, technical and capacity needs

GHG Inventory: There is the need to establish a new institutional arrangement to assure continuous and regular updating of the national GHG inventories. The Ministry of Environment and Physical Planning shall act as coordinating entity for the preparation of the GHG inventory. Capacity building and training will be required for preparing the GHG inventory. Deeper involvement of national institutions obliged for data collection (the State Statistical Office) is of crucial importance in order to make adjustments of the data collection methodology to cover identified GHG-related data. Adoption of a secondary legislation would improve the data management process, concerning data supply, processing, systematization, archiving both from the monitoring networks, as well as in accordance with the ratified international agreements. It is essential to design and pilot a mechanism for regular data submission. Synergies should be build with the European Emission Trading Scheme project supported by Bulgaria's Fast Start Financing Assistance and to utilize the GHG inventory for addressing requirements of EU and UNFCCC (MRV, NAMAs, etc.). It is important to cultivate partnerships with key stakeholders, such as Public Enterprise Macedonian Forests, Crisis Management Center, MOAFWE and the Industry, as part of an enhanced stakeholder engagement approach.

Tier 2 for the sectors energy, industrial processes and waste (and for other sectors if possible) should be applied as well as CO2 emission factors for several areas developed. Specific measures (e.g. the development of a new forestry inventory) will be implemented to decrease the uncertainty of the activity data for the forest area, stock and annual forest growth, changes in land use, loss of biomass due to the commercial and illegal logging, forest fires and wood decay. The establishment of a farm register and Integrated Administration & Control System (IACS) for reliable agricultural statistics would be beneficial and therefore further explored within the TNC. The incorporation of GHG emissions in the reporting scheme of the A and B IPPC industrial plants will be actively supported to improve the reliability of the relevant activity data in Industrial processes.

Programmes containing measures to facilitate adequate adaptation to climate change: Several major constraints and gaps were identified during preparation of the thematic studies on the vulnerability assessment. The most persisting one is a problem of data availability, consistency, and transparency. Existing monitoring in climate and ground water conducted by the Hydro-Meteorological Service in the country is facing permanent problems in operation, slow modernization of equipment, reducing of monitoring network, etc. Therefore, improvement of the hydrological monitoring stations (for surface and especially for ground water) including stations for monitoring the water quality, improvement of the data processing, implementation of the predictive models in real time and modernization of the equipment (in the field, in laboratory, software, and hardware) are of the highest importance in the near future. Soil monitoring does not exist, as well as groundwater monitoring. Basic maps and databases are very old and/or hardly available (soil map, vegetation map, land-use map, etc.).

There is a need for increasing technical capacities for monitoring and updating of basic data sets. Modern tools for vulnerability assessment are needed almost in all vulnerable sectors

(hardware, software, and training of personnel). Training of experts in modern technologies for adaptation is also requested, to overcome the gap in personal capacities. Determination of the climate system components should be modernized by establishment of a new revised (modern) climate observing system which would be established over the whole territory of the country, that is, in all climatic areas, as well as by all climate parameters.

The vulnerability and adaptation assessments within the SNC lacked substance and confusion in terms of measuring and valuing climate change impacts as well as analyzing the costs and benefits of adaptation. There was no overall conceptual framework to explain what was being "valued" in the individual sector studies within the SNC. The sector-level economic analysis varied from sector to sector, and there was no clarity in terms and concepts, and the coverage of impacts to be valued varied widely from sector to sector without any explanation**.** Vulnerability assessments did not go into depth and adaptation assessments were largely based on expert judgement and remained in general terms.

The implementation of the Interesectoral Adaptation Action Plan produced within the Second National Communication on Climate Change was fragmented and there is insufficient communication and coordination between the individual projects. That is due to insufficient political awareness, support, ownership and enforcement of the Action Plan and appropriate coordination structure within the relevant Ministries. The Action Plan also revealed lack of approach, principles and methodology of process-oriented climate screening, the application at specific levels (focusing on the sectoral level), and specific recommendations for successfully mainstreaming climate change into national development planning processes within the country context. The application of a climate lens at the sectoral level was not employed yet in the country.

In some cases modern technology was supplied through individual projects, but the operational cost is high and the sustainability cannot be provided. For example, the country was part of the system of hydrological data exchange between Mediterranean countries (MED-HYCOS), but the automated measuring stations are non-operational. A similar case has occurred with use of modern software (such as hydrology software MIKE SHE). Although software is available and training was provided, initial databases (such as the cross-sections, slope of the riverbed, roughness coefficients, and other parameters at several points along the watercourse for accurate modeling of the runoff and for discharge routing) are still missing, thus limiting the software's ability to be used efficiently. Therefore, the available software tools in the process of preparing the TNC (such as the hydrology software MIKE SHE) will be used and ownership will be transferred to appropriate institutions after completion of the TNC in order to secure the sustainability of applications.

Programmes containing measures to mitigate climate change: Climate change mitigation has not yet entered into the institutional infrastructure and national policy landscape. Mitigation is far from being mainstreamed and the recent international policy developments are barely reflected due to lack of understanding and knowledge on the subject. Key national documents developed and adopted in the previous three years do not take mitigation into consideration, and if, just as a separate issue, and not as conceptional and strategic guidelines

The National Action Plan for Climate Change Mitigation was developed without having a clear roadmap and operational structure for implementation. The implementation is fragmented and there is a lack of communication and coordination between the individual projects. That is due to the lack of political awareness, support, ownership and enforcement of the Action Plan and appropriate coordination structure within the relevant Ministries. The

mitigation analysis within the SNC was constrained by the lack of sectoral development plans, relevant data (historical and present), as well as other relevant national studies. The knowledge base for the mitigation analysis has been improved since the SNC through the preparation of new national strategies, studies and implemented projects.

The scope of the sectoral mitigation assessments should include an analysis of related legislation, policies and programmes that facilitate the rapid implementation of mitigation technologies and practices, energy demand and supply, transport, forestry, agriculture and waste management, as well as – to the extent possible – the macro-economic impact of the mitigation options (including possibilities for green job creation). It is important to take into consideration the EU approximation process and international requirements deriving from UNFCCC as guiding principles for development.

The TNC will be used as reporting tool for GHG reductions achieved by mitigation actions as well as the TNC for addressing EU and International policy requirements. There is insufficient overall conceptional and strategic approach towards tackling climate change in an integrated and inter-linked way. Recent international policy developments and requirements will be adequately reflected in the preparation of similar documents within the Third National Communication. The TNC will consequently serve as a basis for any policy document on Low-emission development and/or NAMAs, connected to the EU accession process.

Since the Second National Communication of Climate Change several important national strategies and action plans were adopted which provide strategic guidelines for the development of key sectors. But in general, these development strategies, plans and programmes currently fail to take into account climate variability, let alone climate change.

Policy formulation is strongly compartmentalized across the sectors with climate change policy treated often as strictly environmental sector agenda. Therefore, climate change policy is fractioned in isolated efforts that do not create any sustainable capacity. This high degree of sectoralisation even within one sector precludes coherent cross-sectoral planning that is essential for climate change policy formulation and capturing the opportunities that the synergies between the adaptation and mitigation options could offer. To ensure such cross-sectoral collaboration there is a need to gradually overcome compartmentalisation often driven by common perception that everything related to climate change is an exclusive responsibility of the Ministry of Environment and Physical Planning. Fully transposed national laws and policies are often missing operational hands through the sub-laws and subsidiary legislation to be elaborated by responsible Ministries.

The Energy Department at the Ministry of Economy and the Energy Agency, the two main responsible institutions for developing and implementing policies and projects in the field of renewable energy, remain understaffed and resources to implement national policies are inadequate. Inefficient and incomplete administrative procedures preclude more robust development of renewable energy potential. Moreover, certain inadequate subsidies distort some nascent renewable energy markets (e.g. solar thermal for domestic use) and discourage potential consumers from paying the producers. There are currently no capacities and awareness about climate change related issues in these institutions and a lack of political interest to address them.

Integration of climate change into national development priorities: Synergies between climate risks and adaptation and mainstreaming were not addressed in the previous national communications. Nevertheless, managing climate-related risks is a key enabler of

development. Identifying and reducing risks associated with climate-related hazards will help to protect people, livelihoods and assets, thereby promoting the achievement of development goals. There is fertile ground to link climate change adaptation and mainstreaming with climate risk screening, risk analysis and assessment in the country based on the recent achievements and institutional commitment by the Crisis Management Center.

The present status of technologies used in the energy and industry sectors is far from being satisfactory. The prolonged transitional period has caused delay in accepting contemporary and environmentally favorable technologies. The situation is even worse since the harmful effects of the outdated technologies, as well as of the poor, inadequate, or even neglected maintenance of the equipment, have not reached their real size due to the substantial reduction in the industrial and similar activities during the transitional period.

The country's approaches to climate change and air pollution should be better integrated, to lower costs and more effectively advance both agendas. Efficient air pollution control can decrease the costs of climate change mitigation, and vice-versa. Climate change is closely connected to ambient air pollution, because both often involve the same sources (vehicles, factories and power plants burning fossil fuels). While emissions reduction is, first and foremost, a mitigation strategy, improved air quality will reduce stresses on human health, flora and fauna, partially offsetting the impact of a harsher climate.

The TNC will capitalize on the (project related) research accomplished since the finalization of the SNC. The research results achievable within the TNC will be leveraged and will facilitate (research) partnerships, especially with 7th research framework programme of the EU.

There is a wealth of leaflets, calendars and brochures developed for the general public and specific target groups (e.g. schools) on climate change related issues but for achieving transformational change, enhanced engagement and outreach activities must be performed, especially in the rural areas incorporating lower levels of state governance (i.e. Municipalities and Regional Councils). The development of a national survey to assess needs and requirements for implementation of Article 6 of the UNFCCC and the implementation of a national outreach programme to engage key stakeholders will be addressed within the TNC is needed. It will assist the country to raise public awareness on climate change, to involve local stakeholders in a dialogue on a perspective national climate strategy as well as to approach various target groups on climate change issues, and to disseminate up-to-date materials on climate change produced in the process of preparing the TNC.

Capacity constrains and gaps are identified at systemic, institutional and individual levels. Main constraints at systemic level are related to insufficient regulations and different priorities of the stakeholders i.e. the Ministries that have responsibilities related to the climate change. The legal framework in relation to climate change is inadequate and is characterized with overlaps, gaps and inconstancies. In addition, implementation of the strategic documents in practice is very low. Low level of coordination between different Ministries at national and local level is leading to inefficient problem solution strategies.

Individual capacities are estimated to be sufficient in order to improve the quality of the TNC. International expertise for the mitigation and adaptation analysis to assure substantial and conceptional improvements of the assessments will be used whenever deemed to be necessary.

In general, the available financial support (particularly the national one) of climate change activities in the country is scarce and limited, so there is an urgent need for fundraising, involvement of private sector, and awareness raising of policy-makers. Active use of EU Research Programmes (FP Programmes) is also recommended, as well as providing budgets in relevant national institutions.

2. Strategy to link process and outcomes of the TNC to relevant planning and decision making processes

The TNC shall meet its aim to be, besides fulfilling the reporting requirements to the UNFCCC Secretariat, a participatory tool for policy advice and guidance as well as raising awareness and research. It is important to closely link the process and outcomes of the TNC to relevant planning and decision making processes.

Therefore TNV will be used to i) enhance stakeholder outreach, participation and collaboration; ii) establish inter-ministerial coordination bodies for mitigation/adaptation; iii) strengthen the capacities of national climate change focal points and, more broadly, development planners and managers of relevant national bodies in terms of climate risk screening and mainstreaming; iv) develop the national mitigation and adaptation action plans in line with requirements deriving from the EU accession process and recent international policy developments;

The country also orients itself toward the EU position on climate change and, being a non-Annex I Parties to the UNFCCC, is more inclined to come forward with NAMAs. The country will have to transpose the key EU climate change legislation in the process of moving closer to EU accession. The country will need to develop an adequate cross-sectorial action plan for the transposition of the key EU climate change legislation, which will further determine its low-emission development pathway and the determination of NAMAs.

The Third National Communication on Climate Change will be used to address these requirements in a comprehensive manner. The TNC will consequently serve as a basis for any policy document on Low-emission development and/or NAMAs, connected to the EU accession process. For increasing policy relevance and political commitment, it is recommended to develop an action plan for transposing the EU Climate and Energy Package and to align the national mitigation and action plan to it.

Detailed Workplan

Outputs/activities	Year 2011			Year 2012				Year 2013				
	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	
1. National circumstances												
1.1 Development priorities, objectives and national circumstances												
1.2 Describe the national and regional development objectives, priorities, circumstances and programmes												
1.3 Upgrade the information on the features of national geography, climate, natural resources and socio-economic conditions												
1.4 Development of a capacity development framework												
1.5 Development of an outreach and communication framework												
1.6 Compilation of information from existing sources												
2. Greenhouse gas inventory												
2.1. National coordination/ training workshop												
2.2. Revise the input data, taken into consideration data gaps and areas needing improvement identified in the stocktaking exercise												
2.3. Gather available data from national sources to fill inventory data gaps, Identify and develop methods for overcoming inventory data gaps if there is no available data												
2.4. Undertake national GHG inventories for the year 2004, according to the guidelines for the preparation of National Communications (17/CP.8)												
2.5. Recalculate the time series												

Outputs/activities	Year 2011			Year 2012				Year 2013				
	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	
for the period 2000-2003, and if necessary, for 1990-1999												
2.6. Provide information for the emissions for years 2005 to 2009 for the sectors Energy and Industrial processes to the extent possible												
2.7. Develop CO2 emission factors for metal production, cement production, lignite thermal power plants and lignite mines, as well as CH4-emission factors for the fugitive emissions and improve the reliability of the relevant activity data;												
2.8. Describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, and efforts to make this a continuous process, including information on the role of the institutions involved												
2.9. Support the improvement of the current institutional set up for preparation, updating, and reporting of the GHG Inventory; suggest responsibilities of each governmental institution in the process of preparation, update and report; provide input to the preparation of the secondary legislation for submission of the data from different sectors needed for preparation of the GHG inventory and MRV system.												
2.10. Organize workshop for presentation and discussion on the results obtained from the GHG Inventory												
2.11. Final GHG Inventory												
3. Programmes containing measures to facilitate adequate adaptation to												

Outputs/activities	Year 2011			Year 2012				Year 2013				
	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	
climate change												
3.1. Organize a national training/coordination workshop												
3.2. Establish an inter-ministerial coordination mechanism, strengthen the capacities of designated climate change focal points and deliver appropriate support services to undertake climate risk screening and mainstreaming												
3.3. Review, up-date or if necessary replace the climate scenarios developed by Bergant (2006) (who applied the interactive software MAGICC-SCENGEN)												
3.4. Analyze the climate changes for the period 1961-2008 for 34 stations of the following parameters: temperature, precipitation, wind, cloudiness and sunshine duration												
3.5. Analyze the climate variability by months and years												
3.6. Review the vulnerability assessment on the following sectors: agriculture, forests, water resources, natural ecosystems and public health.												
3.7. Undertake vulnerability, costs of climate change damage and adaptation assessments (and integrate the concept of climate risks and hazards) as per the stocktaking exercise												
3.8. Describe links between climate, and socio-economic baseline conditions of the country in the most vulnerable sectors												
3.9. Link the results achieved in the area of V&A												

Outputs/activities	Year 2011			Year 2012				Year 2013				
	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	
assessments to available international research programmes and facilitate actively research partnerships, especially with the 7th research framework programme of the EU												
Draft adaptation strategy												
3.10. Outline the guiding principles, strategic priorities and actions for adaptation in the country context (in line with the EU/UNFCCC climate change adaptation policies)												
3.11. Review the national action plan developed within the SNC and adjust/up-date it in-line with the results of the vulnerability and adaptation assessments and the latest EU/International climate change adaptation policy developments												
3.12. Carry out cost-benefit analysis of proposed adaptation measures												
3.13. Prepare a draft national action plan for adaptation to climate change based on international best practices												
3.14. Organize workshops to discuss the results from V&A												
3.15.Prepare a comprehensive and transparent report on the vulnerability and adaptation assessments, a concise policy document for decision makers as well as the national adaptation action plan.												
4. Programmes containing measures to mitigate climate change												
4.1. Organize a national training/coordination workshop												
4.2. Establish an inter-ministerial coordination mechanism, strengthen the												

Outputs/activities	Year 2011			Year 2012				Year 2013				
	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	
capacities of designated climate change focal points and deliver appropriate capacity building services to key institutions.												
4.3. Based on the results from the GHG Inventory, develop a baseline scenario to mitigate for GHG emissions												
4.4. Revise the measures contained in the SNC and Top-Ups according to the latest economic development												
4.5. Extend the analysis on the side of energy consumption, including energy consumption in the industry, commercial and residential sector												
4.6. Develop a series of mitigation scenarios to abate the increase of the GHG emissions												
4.7. Describe links between mitigation, sustainable development and green growth												
4.8. Create synergies with all on-going projects and initiatives that address climate change mitigation and green growth (WB, UNDP BRC, GEF, etc.).												
4.9. Link the results achieved in the area of mitigation assessments to available international research programmes and facilitate actively research partnerships, especially with the 7th research framework programme of the EU												
Draft national action plan to abate the increase in GHGs												
4.10. To the extent possible, measure, report and verify the reductions of GHG achieved through projects implemented since the SNC and report the results through the TNC.												

Outputs/activities	Year 2011			Year 2012				Year 2013				
	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	
4.11. Reference to recent EU/UNFCCC climate change policy developments, especially low emission development strategy and national appropriate mitigation actions, as guiding principles for the preparation of the national mitigation action plan												
4.12. Develop an action plan for transposing the EU Climate and Energy Package and revise the measures and policies contained in the SNC accordingly												
4.13. Identify, formulate and prioritize programmes containing measures to mitigate climate change within the framework of sustainable development												
4.14. Finalize the GHG Abatement analysis using appropriate software tools and background information (including cost-benefit analysis of the different measures)												
4.15. Formulate a final national action plan to abate GHG emissions in-line with the EU and UNFCCC requirements so that it can serve as basis for the development of a national low carbon development strategy and the preparation of (sub) sectoral national appropriate mitigation actions.												
4.16.Prepare a comprehensive and transparent report on the mitigation assessments, a concise policy document for decision makers as well as the national mitigation action plan.												

Outputs/activities	Year 2011			Year 2012				Year 2013				
	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	
4.17. Workshop to present and discuss the GHG draft national action plan												
5. Other information considered relevant to achievement of the objective of the Convention												
5.1. Assess the technology needs for adaptation/mitigation and evaluate enabling environment;												
5.2. Report on progress and activities related to technology transfer and propose specific interventions for introduction of new technologies												
5.3. Provide information on regional, national or local research programmes conducted in the fields of GHG inventory (AD, EF), vulnerability & adaptation, mitigation.												
5.4. Provide information on institutional framework for implementation of Article 6 of the Convention, implemented and planned activities;												
5.5. Implement an action-oriented and community based national outreach programme with the aim to engage key stakeholders (Media, CSOs, LSG and Private Sector) and target groups on the local level into the process of preparing the TNC and to raise their awareness on issues pertaining climate change.												
5.6. Establish a clearing house mechanism for climate change related project in the country and assure that project development is in line with the EU/UNFCCC climate policies and requirements..												
5.7. Provide information on capacity-building activities in												

Outputs/activities	Year 2011			Year 2012				Year 2013				
	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	
accordance with the decision 2/CP.7 focusing on coordination and sustainability of capacity-building process and integration of climate change adaptation programmes into medium and long-term planning.												
5.8. Improve the applicability of climate change related models and software tools (e.g. MARKAL, Redscreen, Gacmo, Mosaik) through strengthening translational research (establishing/strengthening the partnerships of type academia-businesses, academia-policy-making, or even academia-businesses-policy-making) and further develop these models/tools within the preparation of the TNC.												
5.9. Integrate the approaches to climate change and air pollution within the TNC, strengthen the collaboration between the actors of the national hydro-meteorological observation system (e.g. HMI, MOEPP)												
6. Constraints and gaps and related financial, technical and capacity needs												
6.1. Provide information on financial, technical and capacity needs while undertaking the activities, measures and programmes to implement the Convention and improve the national communication on the continuous basis												
6.2. Provide information on financial and technical resources or other in-kind contribution made available by the country for the preparation												

Outputs/activities	Year 2011			Year 2012				Year 2013				
	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	Qr1	Qr2	Qr3	Qr4	
of the TNC												
6.3. Provide information on financial resources and technical support provided by GEF, Annex II Parties or bilateral and multilateral institutions, for activities related to climate change;												
6.4. Create synergies with all on-going projects in the field of mitigation/adaptation and climate/green growth policy development.												
6.5. Provide the list of project proposals for funding specifying the technologies to be used and equipment required (especially for NAMAs)												
6.6. Provide the list of adaptation measures/projects focusing on barriers and ways to overcome these barriers												
6.7. Provide information on technology and local know-how development needs												
7. Preparation and submission of the NC												
7.1. Prepare additional information that the country wants present in its national communication												
7.2. Compile a draft national communication and circulate it for comments												
7.3. Finalization and submission of the TNC												
7.4. Organize a national climate change conference												

Appendix C: Terms of Reference

Draft Terms of References
Project Manager (Full-time)

Project Title & Number:	Third National Report to the UNFCCC
Post Title:	Project Manager
Duty Station:	Skopje
Duration of initial contract:	12 months
Duration of project:	2 years
Type of contract:	Service Contract
Contract Level:	SC 9

BACKGROUND/ORGANIZATION CONTEXT:

The main aim of the project is to strengthen the information base, analytical and institutional capacity of the key national institutions to integrate climate change priorities into country development strategies and relevant sector programs by providing financial and technical support to prepare its Third National Communication (TNC) to the United Nations Framework Convention on Climate Change (UNFCCC).
The project will further strengthen the dialogue, information exchange and cooperation among all the relevant stakeholders including governmental, non-governmental, academic, and private sectors. It is expected that this will result in achieving national consensus on the actions and measures that need to be undertaken to address the climate change related issues relevant for the country on a short and long term, This should be followed by firm commitment for allocation of adequate financial means for realization of the agreed actions and measures.

The Project Manager will be based in a Project office within the Ministry of Environment and Physical Planning. Under the direct supervision of UNDP Programme Officer, Head of energy and Environment Unit, and the overall guidance of the Project Board, the Project Manager is responsible for the administrative, financial and the overall project management and implementation ensuring that the project is efficiently managed to fulfil its mission and objectives as set out in the relevant project documents, and in accordance with the UNDP standards and best practices. The Project Manager works in close collaboration with the UNFCCC Focal Point, National Climate Change Committee, UNDP programme and operations team, technical advisors and experts, multi-lateral and bi-lateral donors and civil society ensuring successful project implementation.

DUTIES AND RESPONSIBILITIES:

Summary of Key Functions:

1. Ensures the Implementation of the Project Goals & delivery of different aspects of the same;
2. Day-to-day implementation and management of the project by maintaining the delivery of appropriate technical, operational, financial and administrative outputs and tracking the progress of the project by monitoring and reporting
3. Ensure Provision of policy advice services to the Government and relevant ministries, local authorities and other stakeholders, and facilitation of knowledge building;
4. Ensure creation of strategic partnership and support implementation of the resource mobilization strategy
5. Ensure Gender mainstreaming within the project

Specific tasks and responsibilities:

1. Ensures the **implementation of the Project Goals & delivery** of different aspects of the same, focusing on achieving the following results:

Coordinate, systemize, codify and integrate successful approaches, methodologies and tools developed in the relevant area, into a cohesive UNDP framework for supporting governments efforts in different aspects of climate change;

2. **Day-to-day implementation and management of the project** by maintaining the delivery of appropriate technical, operational, financial and administrative outputs and tracking the progress of the project by monitoring and reporting

- Managing and coordinating the activities of project implementation based on relevant Project Document and related proposals, including the supervision and guidance of the Project Staff, short, medium and long-term consultants, with a view to achieving project results;
- Responsible for the development of comprehensive/detailed Project work-plan including structured dynamics of all Project activities, role and responsibilities of the stakeholders and milestones;
- Monitor progress and implementation of comprehensive/detailed project work plans and key event schedules comprising planned activities, responsibilities and deadlines relating to all active participants in the project;
- Mobilize goods and services to initiative activities, including drafting TORs and work specification;
- Monitor financial resources and accounting to ensure accuracy and reliability of financial reports;
- Manage and monitor the project risks initially identified, submit new risks to the Project Board for consideration and decision on possible action if required; update the status of these risks by maintaining the Project Risk Log;
- Ensures the existence of successful quality assurance for the project's financial, procurement and administrative processes in order to make sure that they are conducted in line with prevailing UNDP rules and regulations as well as in line with the project timelines;
- Prepare the Progress Report (progress against planned activities, update on Risks issues, expenditures) and submit the report to the Project Board and Project Assurance;
- Prepare the Annual review Report, and submit the report to the Project Board and the Outcome Board;
- Perform tasks in ATLAS in line with given function;

3. Ensure **provision of policy advice services** to the Government and relevant ministries, local authorities and other stakeholders, and facilitation of knowledge building focusing on achievement of the following results:

- Identification of sources of information related to policy-driven issues. Identification and synthesis of best practices and lessons learnt into project goals;
- Support to development of policies that will address the country problems and needs in collaboration with the Government and other strategic partners.
- Share relevant and substantive and operational experiences with other colleagues and counterparts; (Develop knowledge products to be shared with the Project partners).

4. Ensure **creation of strategic partnership and support implementation of the resource mobilization strategy** focusing on achievement of the following results:

- Develops strong relationships with the implementing partners;
- Establishing effective linkages with other UNDP projects and with other initiatives in the sector with a view to developing substantive partnerships and generating synergies.
- Analysis and research of information on donors, preparation of substantive briefs on possible areas of cooperation, identification of opportunities for initiation of new projects, recommend approaches to donors in terms of resource mobilization.

5. Ensure **Gender mainstreaming within the project** focusing on achievement of the following results:

- Ensures gender is effectively mainstreamed throughout the project activities, work plans, budgets, reports, researches, analyses and, where specifically relevant, analyzed in detail;
- Ensure gender equality is mainstreamed throughout team, consultant and staff management activities;
- Ensures knowledge on gender equality is incorporated in Project Knowledge management activities and products.

PERFORMANCE INDICATORS FOR EVALUATION OF RESULTS:

- Project activities executed in line with UNDP corporate principles (RBM, Prince2);
- Project team(s) effectively and efficiently guided and backstopped;
- New partnership with relevant national and international institutions (incl. UN agencies, EU, bilateral donors and international organizations) promoted;
- Enabling legal and policy environment improved;
- Institutional and individual capacity to raise management cost-effectiveness in relevant institutions strengthened;
- Delivered funds in accordance to the planned Annual Work Plan (in 90 %).
- Timely and qualitative reporting in line with the Programme needs and Country Office/National partners requirements.

COMPETENCIES

Corporate Competencies:

- Integrity : Demonstrates commitment to UNDP's mission, vision and values.
- Respect of diversity : Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability; Treats all people fairly without favoritism

Core Competencies:

- *Client Orientation:* Focuses on impact and result for the client and responds positively to feedback
- *Team Work:* Participates in teams effectively and shows conflict resolution skills
- *Relationship Building:* Builds strong relationships with clients and external actors
- *Stress Management:* Remains calm, in control and good humored even under pressure
- Demonstrates openness to change and ability to manage complexities

Functional Competencies

- Development and Operational Effectiveness: Ability to participate in strategic planning, results-based management, monitoring and reporting; Ability to contribute in formulation, implementation, monitoring and evaluation of development programmes;
- Judgment/Decision Making: identifies key issues in a complex situation and proposes course of action for overcoming of the issues.

Technical Competencies

- Experience in implementing/managing environment and/or climate change related projects
- Experience in Managing Project work plans and budgets

Education:

University Degree in Environmental Sciences, Mechanical and/or Electrical Engineering, or other relevant field. Master degree is an asset.

Professional experience:

- At least 3 years (1 year for candidates with Master Degree) of relevant professional project management experience preferably on similar projects;
- Previous experience in implementing climate change related projects would be an asset;
- Evident experience in liaising and co-operating with all personnel including government officials, scientific institutions, NGOs and private sector;
- Evident experience in performing training needs assessments, evaluations, knowledge management.
- Previous experience in the UN system and cooperation with civil society sector is a strong asset.
- Excellent computer literacy (MS Office; Windows XP, Internet); excellent communications, report writing and analytical skills.

Language Requirements

Language proficiency in both written and oral English and Macedonian is required. Knowledge of Albanian language and/or languages of other communities shall be considered an asset.

Draft Terms of References
Project Assistant (Full-time)

Project Title & Number:	Third National Report to the UNFCCC
Post Title:	Project Assistant
Duty Station:	Skopje
Duration of initial contract:	12 months
Duration of project:	2 years
Type of contract:	Service Contract
Contract Level:	SC 6

BACKGROUND/ORGANIZATION CONTEXT:

The main aim of the project is to strengthen the information base, analytical and institutional capacity of the key national institutions to integrate climate change priorities into country development strategies and relevant sector programs by providing financial and technical support to prepare its Third National Communication (TNC) to the United Nations Framework Convention on Climate Change (UNFCCC).
The project will further strengthen the dialogue, information exchange and cooperation among all the relevant stakeholders including governmental, non-governmental, academic, and private sectors. It is expected that this will result in achieving national consensus on the actions and measures that need to be undertaken to address the climate change related issues relevant for the country on a short and long term, This should be followed by firm commitment for allocation of adequate financial means for realization of the agreed actions and measures.

The Project Assistant will be based in a Project office within the Ministry of Environment and Physical Planning. Under the direct supervision of the Project Manager and the overall guidance of the Project Board, the Project Assistant will support effective delivery of the activities within the project by administering and executing processes and transactions and supporting day-to-day project implementation consistent with UNDP rules and regulations. The incumbent will work in close cooperation with the Ministry of Environment and Physical Planning, UNFCCC Focal Point, National Climate Change Committee, UNDP programme and operations team, technical advisors and experts, multi-lateral and bi-lateral donors and civil society ensuring successful project implementation as deemed necessary.

DUTIES AND RESPONSIBILITIES:

Summary of Key Functions:

1. Perform financial duties related to implementation of the project activities;
2. Assist with organizing operational and administrative processes for project needs and provides support to office maintenance;
3. Support implementation of project strategies focusing on achieving the project results;
4. Manage the project documentation in an appropriate and satisfactory manner;
5. Support knowledge building and knowledge sharing across Unit's projects, particularly in finance and administrative/ATLAS matters.

Specific tasks and responsibilities:

1. **Function/ Expected Result:** *Perform financial duties related to implementation of the project activities*

- Prepare Requests for Direct Payment (RDP), upon conducting proper control of the supporting documentation and ensuring that the supporting documentation meets the requirements and standards of UNDP rules and procedures;
- Assist in preparation of budget plans, budget revisions, financial reports, payments and status of funds and expenditures;
- Assist in analysis of financial information, availability of funds, readjustment of funds, monitoring of delivery of funds;
- Prepare the necessary documentation for timely VAT reimbursement, if relevant;
- Backstop the Project Coordinator and other project staff (if applicable) in performing tasks in ATLAS in conjunction with the functions/roles given (creating requisitions, preparation of budget plans, budget status of funds, drafting budget revisions, uploading project - related documents particularly with reference to RMG requirements, generate various reports, etc.).

2. **Expected Result:** *Assist with organizing operational and administrative processes for the needs of the projects and provides support to office maintenance*

- Assist in the human resources administrative processes, including recruitment of short-term consultants and temporary assignments, evaluation processes, minutes-taking;
- Create a roster of potential consultants/consultancy companies that work on issues relevant to the projects;
- Assist with procurement of goods and services;
- Initiate procurement cycle in ATLAS and assist the preparation of receiving reports for the procurement of equipment, other goods and services;
- Maintain records on assets management and prepare asset reports;
- Responsible for overall management of project premises and assets;
- Make travel and logistics arrangements, as needed;
- Initiate routine correspondence relating to the implementation of project and drafting of official documents;
- Organize meetings, workshops and conferences;
- Draft meeting minutes, translate and interpret from local language/s into English and vice-versa.
- Serves as a focal point for the audit exercises of the projects and provides the relevant documentation and actions to respond to auditors' questions/requests.
- Proposes solutions to any administrative issues, whenever relevant and possible.

3. **Function/Expected Result:** *Support implementation of project strategies focusing on achieving the project results*

- Assist in preparation of project work-plans through providing support in data collection, systematization and analysis of information, inter-action with institutions in data collection;
- Preparation of relevant background materials for use in discussions, correspondence and briefing sessions;
- Contribute to the preparation and implementation of variety of progress reports, by providing information, preparation and analysis of financial data, etc.

4. **Function/ Expected Result:** *Manage the project documentation in an appropriate and satisfactory manner*

- Maintain files and ensure proper records of projects working files and permanent retention files in line with corporate requirements (project audit, evaluation and operational and financial closure);
- Perform tasks in ATLAS in conjunction with the functions/roles given (uploading project - related documents particularly with reference to RMG requirements, generating various reports etc.);
- Compile, copy and distribute project products.

5. **Expected Result:** *Support knowledge building and knowledge sharing across Unit's projects, particularly in finance and administrative/ATLAS matters.*

- Participate in the training for the operations/project staff on administration;
- Advise counterparts and consultants on applicable administrative procedures and ensure their proper implementation;

- Provide recommendations on ways to improve project implementation systems.

6. **Other expected Results**: S/he will perform any other duties related to the project as required

PERFORMANCE INDICATORS FOR EVALUATION OF RESULTS:

- Effective and timely fulfilment of all financial steps by ensuring due diligence and respecting the UNDP rules and regulations;
- Effective fulfilment of administrative, logistical and organizational requirements for the projects;
- Establishment of effective document management system for the projects;
- Timely management of ATLAS requirements in terms of asset and document management systems;
- High quality maintenance of files and records and efficient response to queries.

COMPETENCIES

Corporate Competencies:

- Integrity: Demonstrates commitment to UNDP's mission, vision and values.
- Respect of diversity: Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability.

Core Competencies:

- *Client Orientation:* Focuses on impact and results for the client and responds positively to feedback
- *Team Work:* Participates in teams effectively and shows conflict resolution skills
- *Relationship Building:* Builds strong relationships with clients and external actors
- *Stress Management:* Remains calm, in control and good humoured even under pressure
- Demonstrates openness to change and ability to manage complexities
- Consistently approaches work with high energy and positive and constructive attitude.

Functional Competencies:

- Development and Operational Effectiveness: Ability to perform a variety of specialized tasks related to Results Management, including support to planning and implementation of the project, managing data, and clear and accurate reporting. Ability to provide input to business processes re-engineering, implementation of new systems, including new IT based systems

RECRUITMENT REQUIREMENTS

Education: Secondary Education. University degree in finance, economy, business administration, public administration shall be considered a strong asset.

Professional experience:

- At least 6 years (4 years for candidates with University Degree) of professional experience in project administration, logistical and financial operations.
- Previous experience in similar development projects shall be considered an asset.
- Previous experience in the UN system is an asset.
- Excellent computer literacy (MS Office; Windows XP, Internet); excellent communications, report writing and analytical skills.
- Experience in general project administration and financial operations;

- Experience and skills in logistical and organizational matters;

Language requirements:

Language proficiency is required in both written and oral English and Macedonian.
Knowledge of Albanian language and/or languages of other communities shall be considered an asset.

Appendix D: Endorsement letters

- GEF Operational Focal Point
- UNFCCC Focal Point

SIGNATURE PAGE

Country: fyr Macedonia

UNDAF Outcome (s)/Indicator (s): By 2015 central and local level authorities have improved capacities to integrate environment and disaster risk reduction into national and local development frameworks, while communities and CSOs participate more effectively in environmental protection and disaster risk reduction planning, implementation and monitoring

CPAP Outcome (s)/Indicator (s): By 2015, national policies better address climate change adaptation and mitigation needs and demonstration programmes respond to climate change challenges

CPAP Output (s)/Indicator (s): Vulnerability assessments, impact costing, policy options and integrated territorial plans for climate change adaptation developed.

Executing Entity/Implementing Partner: INDP
Implementing entity/Responsible Partner: Ministry of Environment and Physical Planning

Programme Period:	2010 -2015
Atlas Award ID:	00059946
Project ID:	00075206
PIMS #	PIMS 4469
Start date:	01 November 2011
End Date	31 October 2013
Management Arrangements	NIM (NEX)

Total resources required 490,000$
Total allocated resource 490,000$

- Regular
  _____
- Other:
  - GEF 480,000$
  - Government
  - In-kind 10,000$
  - Other

Agreed by (Executing Entity/Implementing Partner): Ministry of Environment and Physical Planning

Abdilaqim Ademi, Minister

NAME SIGNATURE
Date/Month/Year

Agreed by (UNDP):

Deirdre Boyd, Resident Representative

NAME SIGNATURE
Date/Month/Year