Ministry of Natural Resources and Environmental Protection of Belarus

UNDP/GEF Project

National Self-Assessment for Global Environmental Management in Belarus

R E P O R T

Assessment of Capacity Existing in Belarus to Meet the Commitments of the UN Framework Convention on Climate Change

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1. Introduction

Meeting the commitments made by Belarus under the UN Framework Convention on Climate Change, UN Convention on Biodiversity, and UN Convention to combat desertification/land degradation should be considered an important opportunity to make sure that the government does its best in managing natural resources and protecting the environment, assisting stakeholders in making their interactions and coordination more efficient, promoting research and scientific studies in the areas of expertise that pertain to the conventions.

However, it will be possible to take this opportunity, provided the whole range of issues the conventions try to address have been quite understood and an action plan has been developed and adopted, which would:

- be based on the existing capacity in the country;
- be aimed at addressing key (root) problems;
- create conditions for meeting respective convention commitments in a systemic manner.

A review of the situation with implementing the UNFCCC and Kyoto Protocol at the system, institutional and individual levels was done in the first place within this NCSA project (Stage 1). The conclusions arrived at during Stage 1 have been used as a basis for a thorough analysis, the results of which are presented here (Stage 2). In their turn, the conclusions and recommendations contained herein may serve a nice basis for taking practical steps to build the country's capacity in implementing UNFCCC as well as the other two UN conventions. These conclusions and recommendations may also provide a starting point for an in-depth review and analysis of cross-cutting issues of the three conventions, so as to create conditions and set up required mechanisms for setting any existing synergies between the conventions to work, within a single national action plan or three interlinked ones (Stage 3).

The key objective of Stage 2 is to identify relevant problems, pinpoint constraints and factors that hamper building the capacity in the country to implement UNFCCC at the system, institutional and individual level. This report and the conclusions contained herein are addressed in the first place to the specially designated government body responsible for environmental protection - the Ministry of Natural Resources and Environmental Protection of Belarus – and, secondly, to any authorities, institutions and individuals that might be concerned, including non-governmental organizations.

To form a judgment on the existing capacity, each relevant area of action pertaining to specific UNFCCC commitments Belarus has made was duly reviewed, and compared to what is required. Key constraints (causes) were identified and specific action suggested to enhance the capacity so as to further facilitate meeting the UNFCCC commitments. Analysis in each area of expertise was carried out by a single expert or a group of experts, as appropriate. Reports produced by the individual experts or groups of experts assigned a common task were used to prepare this aggregate Stage 2 report.

Chapter 2 of this report outlines the methodology which has been used. In Chapter 3 the results of an analysis of legal framework are presented along with law enforcement practices as pertains the thematic area of UNFCCC. Chapter 4 offers an analysis of national policies, programmes and plans of all levels, cooperation and coordination between relevant authorities and other stakeholders. A detailed assessment of the existing practices and capacity in inventorying GHG emissions and sinks is the main focus of Chapter 5.

The results of an analysis of existing capacity as concerns public education, professional training, and awareness raising in climate change are given in Chapter 6. Capacity to meet Belarus' commitments in terms of information provision and research is discussed in Chapter 7. The report is concluded by a chapter on synergies between the three conventions and cross-cutting issues they share (Chapter 8).

Monitoring the climate is one of the key areas of action within UNFCCC, however, the issues of improving the National Environmental Monitoring System (NEMS) are left outside the scope of discussion in the report, since they were reviewed in great detail in 2003 when developing 'The concept for optimizing the National Environmental Monitoring System', and there is reference to the fact in Chapter 10.

Chapter 10 contains a short description of draft documents developed within the project lifetime. The full texts of the documents are given in Annexes 1 through 4.

Each of the said chapters (3 through 10) are concluded with a set of practical recommendations on enhancing capacity, which are then overviewed in Chapter 8. The recommendations include measures on improving legal framework in the areas of UNFCCC which includes development of new and amendment of existing legal acts in order to fill up the gaps in the legislation of Belarus, one of key ones being the lack of the legal term 'climate' as well as lack of legal provisions aimed at controlling impacts on the climate.

The recommendations reflect issues related to the need to improve the planning and project development system in the country so that to take due account of

impacts on the climate, include measures to enhance cooperation and coordination between stakeholders in their common effort to implement UNFCCC, measures to improve the national GHG emissions and sinks inventory system; as well as there are recommendations on improving public education, professional training and awareness raising as concerns climate change.

In conclusion (in Chapter 9) the recommendations made in the whole report are further systematized and assigned relative priority as well as likely funding sources are indicated which is expected to help while developing action plans, programmes etc.

The recommendations cover key subject areas as concerns UNFCCC implementation, and following them will assist in solving the tasks and achieving the objectives set by UNFCCC.

2. Methodology used for assessment of existing capacity to meet the commitments of Belarus under the UN Framework Convention on Climate Change

The work to carry out the self-assessment of the existing capacity was done in strict adherence with a workplan approved by the Ministry of Environment, which is the government body primarily responsible for implementing UNFCCC in Belarus.

To take, to the fullest extent possible, into account different opinions and positions on issues related to UNFCCC and its implementation, stakeholders have been actively involved both at the stage of establishing working groups and that of reviewing achieved results upon specific phases of work (through workshops, mini-seminars, peer review of interim reports, etc.). In pinpointing stakeholders such things were taken into account as: having interests in the area at issue, being competent, participation in similar work in the past, any existing cooperation and coordination mechanisms shared by stakeholders.

Capacity assessment was carried out article by article of UNFCCC. Existing capacity was reviewed in the light of each article to identify constraints for meeting commitments, to make proposals so as to enhance the capacity at the individual, institutional and system level.

Collecting and reviewing information was done by individual experts and groups of experts by means of document reviews, interviews, field missions (eg Luninets district), mini-seminars.

Specific work objectives in each area were set out in a terms of reference approved with Minpriroda according to agreed procedure.

SWOT analysis was used to identify strengths and weaknesses in selected areas of implementing the Convention.

To identify high priority issues in each area of UNFCCC, a priority-setting matrix was used. Criteria to evaluate priority were the scale of a problem, level of its topicality and possibility of addressing it adequately.

To pinpoint constraints for building capacity needed to meet commitments under UNFCCC and identify possible solutions an analysis of root causes was carried out. For this the problem tree method was used. Stages included: identification of a problem, evaluation of its relative significance, and identification of its possible sources. In carrying out such analysis primary focus was placed on the cross-cutting problems among the three conventions, not special cases.

A methodology similar to the ones described above was used in conducting cross-cutting problem analysis.

3. Analysis of legal framework, enforcement practices and proposals on improving it with the thematic area of the UNFCCC

The chapter includes an analysis of legislation existing in Belarus as far as UNFCCC is concerned and is concluded with proposals to improve it.

Legal framework and procedures to enforce it are largely the factors that determine the efficiency of existing capacity both at system, institutional and individual levels, as well as are called to create conditions for as-full-as-possible involvement of all stakeholders in implementing UNFCCC.

Belarus signed the UNFCCC on 11 June 1992 and became a full party to the Convention on 9 August 2000[1]. All aspects of Belarus' acceding to Kyoto Protocol are at present discussed and reviewed in the most active manner. Current forecasts show that GHG emissions in Belarus will remain below the 1990 level till 2020. It is further estimated that the growth of GHG emissions will be slower than that of GDP. Bearing in mind that meeting UNFCCC commitments and the requirements of the Kyoto Protocol lie in the mainstream of achieving objectives of social and economic development and addressing priority problems (such as reducing energy consumption within GDP, improving the mechanism for controlling use of natural resources and environmental protection) there is great likelihood that Belarus eventually accedes to the Kyoto Protocol.

For this reason while making an assessment of legal framework we placed focus on issues pertaining to both UNFCCC and the KP.

The provisions of UNFCCC and the KP in the main do not contradict the Constitution and legislation of Belarus as a whole. Some acts in Belarus legislation contain provisions which have direct links with UNFCCC provisions. The key documents that regulate issues pertaining to climate change are as follows:

- Law 'On Environmental Protection', 26 November 1992, # 1982-XII (the Gazette of the Supreme Soviet of the Republic of Belarus, 1993, # 1, art. 1) and Law's edition of 17 July 2002, # 126-3 (National Register of Legal Acts of Belarus, 2002, # 85):
- Article 56. Liabilities of legal persons and entrepreneurs in carrying out economic and other activities linked with GHG emissions into the atmosphere;
- Article 57. Controlling impacts on the climate.

1 In accordance with 10 April 2000 Presidential Decree # 177.

- Law of Belarus 'On Protection of Ambient Air', 15 April 1997, # 29-3 (Gazette of National Assembly of Belarus, # 14, art. 260):
- Article 43. Regulating impacts on the weather and climate.
- Law of Belarus 'On Hydrometeorology', 10 May 1999 (National Register of Legal Acts of Belarus, 1999, # 37):
- Article 16. The competence of the national body for hydrometeorology (climate cadastre).

The country has a well developed legislation pertaining to the energy saving sector, which is considered to be the one where key solutions for mitigating climate change lie.

A review of law enforcement practices in the thematic area of UNFCCC shows that the main points of application are the protection of ambient air and energy saving (as far as the energy efficiency of processes and alternative power sources are concerned). There is strict government control over the use and protection of ambient air as well as the ozone layer, in Belarus. Industries found guilty of violating air protection legislation may be punished by limiting or suspending their operations, until the violations have been discontinued and damage has been undone or compensated for. Taking legal action against violators of air legislation is practiced widely enough. Records of ambient air date are kept on file, in the form of the air cadastre. The state data base on the ambient air quality and negative impacts on it is run within the National Environmental Monitoring System. Limits of allowable polluting emissions are set, as well as tariffs at which to pay for an amount of polluting emissions or for other negative impact on ambient air. There are also rates applied to industries that emit pollutants in excess of set standards. There are provisions to provide legal and natural persons with tax, loan and other benefits for introducing recycling, and energy- and resource-saving technology. These measures, as a whole, allow for impartial assessment and control of the quality of ambient air, and for tracking down, to some extent, man-caused impacts on the climate.

A whole line of legal documents set out measures to increase energy effectiveness and use alternative sources of energy on a wider scale, which, in the final analysis, is directly linked to reducing GHG emissions. The documents include: the law 'On energy saving', the National Programme on Energy Saving and Use of Renewable Sources of Energy for 2001 to 2005, directives of the Council of Ministers regarding additional measures to save and efficiently use fuels and energy, to stimulate the growth of small and mid-size alternative energy producers. However, legislation has an insufficient focus on incentives to bring energy losses to a minimum, make industries use alternative sources of power.

The existing legislation allows in general taking action to meet most of the commitments under UNFCCC. However, there are a number of constraints that are mainly due to deficiencies of the legal framework, which are as follows:

- no fundamental strategic document to take forward institutional and legal aspects of UNFCCC implementation has been developed;
- there is no legal term 'climate' within Belarus legislation;
- legislation of Belarus does not consider the climate and climatic system as objects liable to human impacts and therefore in need of protection;
- legislation of Belarus has no provisions to control impacts on the climate;
- there is no proper concordance between procedure for monitoring and that for exercising state control over how industries perform environmentally, and that for certification of industries for the purpose of bringing down their GHG emissions;
- while evaluating projects for environmental consistency as part of project approval procedure or conducting environmental impact assessment, impact on the climate is generally left unaccounted for;
- provisions of legal documents pertaining to climate change are largely of generic nature and need to be amended by adding concrete measures, to be formulated based on specific Belarus' commitments under UNFCCC.

Pursuant to the 10 April 2000 Presidential Decree # 177, the Ministry of Natural Resources and Environmental Protection of Belarus is appointed as primarily responsible for UNFCCC implementation in the country , including with regard to developing new and amending existing legislation in the thematic area of UNFCCC.

If Belarus has acceded to the Kyoto Protocol, it will be necessary to designate a body responsible for bringing it into effect. Bearing in mind that the Kyoto Protocol is a protocol within the said Convention serving to take some specific practical action to attain its objectives, it would apparently be expedient to authorize the Ministry of Natural Resources and Environmental Protection to be the body responsible for the Kyoto Protocol as well. Another issue to address to this end is setting up an intergovernmental commission on UNFCCC and Kyoto Protocol at the level of the Council of Ministers.

To ensure efficient implementation of Kyoto commitments (in case it has been acceded by Belarus) it is needed to develop as a matter of priority some legal tools which would provide for:

- timely development and making available to the Conference of the Parties of national inventories of anthropogenic emissions by sources and removals

by sinks of all GHGs not controlled by the Montreal Protocol (Art. 4.1 (a), UNFCCC);

- development of a legal framework for a national system for the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol;
- development of legal instruments to make it possible for Belarus to trade emission allowances with other Parties of the Kyoto Protocol;
- identification of national stakeholders, their rights and responsibilities in trading GHG emission allowances.

It is clear from the analysis that for Belarus to meet its commitments under UNFCCC and removing constraints that hamper capacity building at the system level, it is needed to take certain measures to improve the existing legal framework as well as enforcement practices.

It goes without saying that any law amendment efforts and action in planning UNFCCC implementation in Belarus will depend on what future State Climate Programme (or Strategy) will provide for. The latter is meant to be a strategic document to guide institutional and legal developments in country to assist UNFCCC implementation as well as the other two conventions, and to be in accord with the National Sustainable Development Strategy.

A list of key legal instruments which are needed to be developed or amended in the course of UNFCCC and KP implementation in Belarus, is as follows:

- National Climate Programme (Strategy) of Belarus, key provisions of which are to be reflected in the National Sustainable Development Strategy.
- Law of Belarus 'On Climate' ('On Controlling Impact on the Climate') which should at last give climate definition as a legal term; address issues related to anthropogenic impacts on the climate and climatic system; and regulate such issues as monitoring, state control of and limit-setting with regard to GHG emissions.
- Following Belarus' accession to the Kyoto Protocol of UNFCCC there will come a need to make amendments into the Law of Belarus 'ON environmental Protection'. In particular, Article 10 will need additional clauses regarding a **national GHG inventory** and setting GHG emission allowances for industries in Belarus.
- Law of Belarus 'On State Environmental Expertise' must include provisions pertaining to estimations of anthropogenic impacts on climate while evaluating projects from an environmental point of view.

- Legal acts pertaining to the accession to and implementation of the Kyoto Protocol of UNFCCC.
- Legal instruments that are called to provide industries with incentives so that to encourage them to save energy and develop the alternative energy market.
- Nation-wide programme or action plan on reducing GHG emissions in the country (to be approved by the Council of Ministers).
- Legal instruments that regulate trading in GHG emission allowances:
- Law of Belarus (Directive of the Council of Ministers) 'On trading in tradable GHG emission allowances';
- Instruction on registers of tradable GHG emissions (to be approved by the Council of Ministers).
- Legal instruments that establish procedure for developing annual inventories of emissions by sources and removals by stocks of GHGs, such as Instruction on annual inventories of emissions by sources and removals by stocks of greenhouse gases (to be approved by the Council of Ministers), etc.

Apart from the aforementioned, there is a need to develop a series of bylaws and instructions at the level of institutions in the thematic area of UNFCCC and Kyoto Protocol.

Since capacity building in meeting commitments related to UNFCCC and KP is closely linked with amendments into the existing legal framework, what these amendments should be like in greater detail and in what specific areas of UNFCCC and KP implementation will be discussed in later sections of this report

4. National policies, national, regional and sectoral programmes and action plans in the area of reducing emissions of GHGs, and cooperation and coordination between government and other stakeholders

This Chapter deals with an analysis of the existing practices in planning economic development, of the efficiency of measures taken to limit emissions of GHGs, an analysis of the contribution of various stakeholders to meeting UNFCCC commitments. Planning is a key activity from the point of view of the Convention, therefore the recommendations in this chapter cover most of the areas that pertain to UNFCCC.

4.1. Estimating impact of various economic sectors on the environment in terms of their anthropogenic GHG emissions and estimating the quality of GHG sinks

The main commitment Belarus has made by joining UNFCCC is a reduction of anthropogenic emissions it produces or will produce. It is well known that GHG emissions are estimated in terms of both gross volumes and a total warming effect (TWE) of GHG emissions in CO_2 equivalent. Various economic sectors produce emissions that have direct warming effect (different 'modules' – in IPCC terminology), such as: energy production, industries, agriculture, land uses, forest management, municipal waste management. It is carbon dioxide emissions that contribute the most to global warming, and they totaled 72888.15 Gg in 2000, or 58% of the basis year 1990, or 91% of the level of 1995, the year when GDP was the lowest as were GHG emissions.

Table 1

CO_2 Emissions and Sinks, Gg

Item	1990	1995	1999	2000
Emission	126148.44	79699.08	76838.05	72888.15
Sink (removal)	-36397.4	-36501.84	-39545.39	-39565.02
Total:	89751.04	43297.24	37292.66	33323.13

CO2 emissions accounted for about 83% of the total warming effect (Table 1) in 2000. The amounts of removed CO_2 did not change as significantly as those of emitted CO_2 from one reporting year to another for the period 1990 to 2000. In 2000, sinks totaled 39565.02 Gg, or 108.7% to both 1990 and 1995.

By far the largest CO_2 emissions come from the energy sector: 51026.74 Gg or 70%, whereas land use changes and forest management practices account for the largest stock for CO_2 – 39565 Gg or 100%.

Methane emissions totaled 12839,19 Gg in CO_2 equivalent or 24,27% of TWE in 2000. In terms of distribution by sector, energy production accounted for 20%, agriculture – 34.6% and wastes – 21%.

In comparison with 1990 and 1995 the most significant changes were in the energy and agriculture sectors. N_2O emissions were 6748,8 Gg in CO_2 equivalent in 2000, or 12,75% of the TWE. On the whole, the TWE in 2000 totaled 52911.13 Gg. In the same year, sinks compensated for 54.3% of CO_2 emissions, and for 35% of TWE. In 1990 sinks compensated for 10% of TWE, and in 1995 – for 27.1%. Some reduction in GHG emissions that occurred during the period in question is mainly due to a decrease in GHG emissions from energy production.

Transport is the key emitter of CO within the Energy sector. In 2000 CO emissions went down to 765.5 thousand tons, thus accounting for 40% of the year 1990 or 54% of the year 1995. The reduction in CO emissions resulted from a decline in the transport industry. A similar trend is reported for non-methane hydrocarbons.

In the period 1990-2000 there was reported a reduction in NO_x emissions coming largely from burning fuel. SO_2 emissions fall mainly within the Energy module and decreased by 55% from 1990 to 1995, and by 2000 by 74% compared to 1990, totaling 213.15 thousand tons. This outcome is a result of a reduced fuel consumption, a drop in black oil consumption and a rise in using natural gas as fuel.

Projections of GHG emissions as well as an assessment of efficiency of measures to bring them down, made by the developers of the First National Communication, show that the growth rate of GHG emissions is likely to be less that that of GDP.

According to the forecast TWE will grow by 2020. The optimistic scenario suggests that by the year 2020 TWE will amount to 76512.72 Gg which is nearly 1.5 times higher that the total TWE in 2000 and 36.5% lower than the 1990 level. However, it is estimated that the growth of warming effect emissions will by far less that the growth rate of GDP. The increase in emissions will be largely due to the energy sector.

The contribution of industries and the waste management sector will be relatively small – 2.37% and 2.97%, respectively, agriculture – 19.96%. The land use changes and forest management sector will account for the removal of about 24.17% of greenhouse gases discharged into the atmosphere.

CO_2 emission will remain the key greenhouse-effect emissions, estimated to be at 81981.1 Gg in 2020. The likely growth of CO_2 emissions will be about 30% to the level of 2000, while compared against the 1990 levels they will decrease by 25%.

Table 2

Emission and removal of CO_2, Gg (forecast)

	2000	2005	2010	2015	2020
Emission	72888.15	85125.7	89254.9	92445.7	94169.1
Removal (sink)	-39565.02	-37984.0	-39218.2	-39192.4	-37626.16
Total	33323.13	47141.7	50036.7	53253.3	56533.5

According to forecast projections (Table 2) CO_2 emissions in 2020 will account for more than 71% of the total TWE. It is projected that sinks in 2020 will decrease by 5% compared to the 2000 levels, while they are projected to increase by 3% against 1990.

Among the sectors of economy in 2020, CO_2 emissions will be mainly produced by the energy sector: 71821 Gg or 78% against 2000, while CO_2 removal will be largely provided by the land use changes and forest management sector: 37626 Gg or 100%.

Methane emissions in 2020, by optimistic scenario, will be 13235 Gg in CO_2 equivalent, or about 17.3% of TWE. The major contribution of methane (over 53%) will be due to emissions in agriculture. Energy will contribute about 28%, while waste management – about 15%. Against 2000, energy sector's contribution to methane emissions will rise by 40%, while decrease by 15% against 1990. As the projections have it, N_2O emissions will total 8922 Gg in CO_2 equivalent in 2020, or 11% of TWE.

The projected growth of GHG emissions in the energy sector is mainly due to growing GDP and fuel consumption. However, GHG emissions will remain well below the 1990 levels. The projected TWE in 2020 against 1990 and 2000 is estimated at 63.5 and 146% respectively. The growth against 2000 will be due to a considerable rise in GDP. Growing emissions are projected for all sectors of economy against the year 2000, while sinks belonging to the land use changes and forest management sector are projected to remain virtually the same as in 2000.

However, it is worth making a point that the accuracy of emission projections will be greatly affected if the government decides to change the current preferences in energy sources in favor of black oil, peat, and brown coal. Meeting the projected levels will require measures to reduce energy intensity of GDP and/or increase sinks.

In accordance with National Sustainable Development Strategy of Belarus GDP by 2010 will exceed the 1990 one by 20-30% which will require taking special measures to reduce GHG emissions, increase the amounts of CO_2 absorbed by

forests and bogs, as well as taking action to adapt the economy to changed climate.

It follows from the thematic assessment results that key commitments of the country under UNFCCC are met as concerns bringing down greenhouse gas emissions. Projections for the nearest future (until 2020), as data presented show, are rather optimistic in regard to the Kyoto Protocol. If Belarus joined the Protocol and its flexibility mechanisms were brought into effect, the country could draw economic benefits from participating in the treaty.

In order to assist development of national, regional and sectoral programmes and action plans regarding reduced GHG emissions, it is needed to produce more detailed projections of changes in TWE for various scenarios fuel consumption may follow both nation-wide and by sector.

4.2. Assessing capacity of the existing economic planning system in the context of climate change

4.2.1. Background information on the existing economic planning system

The quality of meeting UNFCCC commitments is will depend on the quality of planning and implementing relevant strategies, programmes, plans and projects. One of the key commitments Belarus has made is to develop, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by source and removals by sink of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change (art. 4.1(b), UNFCCC).

To his or that degree planning is connected with UNFCCC obligations as follows:

- Promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs (4.1.d);
- Cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for water resources and agriculture (4.1.e);
- Take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change (4.1.f).

The system of economic projections and project development existing in Belarus includes project documents or projections of macro-, meso and microterritorial level. To have a chapter on environmental protection is mandatory for project documents and projections of virtually any type. Below, the existing practices of planning at macroterritorial kevel (nation- or sector-wide) are discussed in more detail, while in paragraph 4.3 some consideration is given to mesoterritorial level planning.

There are concepts, programmes and projects in energy production, transport, industries, agriculture, forest and waste management, that cover developmental issues in relevant sectors (see Table 3).

Some of these documents have already been implemented, some are under way. The crucial sectors, in terms of both the magnitude of GHG emission

produced thereof, or the number and efficiency of GHG sinks, are also covered by relevant programmes and action plans.

Table 3

- National Sustainable Development Strategy of Belarus, 1997
- Industrial Complex Development Concept and Programme for 1998-2015
- Integrated projections of Research and Development in Belarus for 2001-2020
- National Energy Conservation Programme for 2001-2005
- National Environmental Action Plan for 2001-2005
- Energy Policy of Belarus for 2001-2005 and until 2015
- Ministry of Industry of Belarus' Sectoral Environmental Programme for 2002-2005
- Ecology Programme for 2003-2005, Ministry of Transport of Belarus
- Ministry of Transport of Belarus' Social and Economic Development Concepts till 2015
- Strategic Forest Management Development Plan of Belarus
- Transport Policy Concept of Belarus (draft), 2003
- Council of Ministers' Directive 'On additional measures to use fuels and energy resources in economical and efficient ways'
- BELENERGO Concern's Sectoral Environmental Programme for 2003-2005
- Sectoral Environmental Programme for BELNEFTEKHIM Concern's Organizations for 2002-2005
- State Research and Development Programme 'Nature Uses and Environmental Protection' (1997-2000).
- State Research and Development Programme "Environmental Safety" (2001-2005)

The concept of the National Sustainable Development Strategy of Belarus until 2020 and the Industrial Complex Development Concept and Programme for 1998-2015 both envisage a serious reform in various industries. Strengthening environmental policies in relevant industries is addressed currently not only by territorial environmental action programmes, like NEAP for 2001-2005, but by sectoral ones as well. Such sectoral EAPs are at present development for 2002-2005 (Ministry of Industry of Belarus' Sectoral Environmental Programme for 2002-

2005; Sectoral Environmental Programme for BELNEFTEKHIM Concern's Organizations for 2002-2005, etc.).

NEAP specifies that the international conventions and protocols thereto, signed by Belarus, are paid special attention (UN Convention on Biodiversity, UNFRAmework Convention on Climate Change, UN Convention to combat desertification/land degradation, etc.). Moreover, NEAP contains some measures to mitigate climate change and reduce GHG emissions. For instance, it sets out such a priority measure as improving techniques to evaluate emissions and measuring the levels of contaminants in the atmosphere, including greenhouse gases. Directly or not, virtually all urgent environmental action therein is aimed at reducing impact on climate, GHG emissions, protecting sinks, and climate adaptation measures.

It should be noted that NEAP must be tightly interlinked with the National Sustainable Development Strategy and other sectoral and territorial plans and programmes, although in practice much remains to be desired. Ideally, together with NEAP the said programmes and plans should be part of a system of integrated and entwined technical, organizational and other relevant measures aimed at mitigating anthropogenic impact on climate and having economic sectors adapted to changing climate.

To make sure the programmes and plans are properly interlinked, it is required ensure adequate coordination between stakeholders in planning their action to implement the three conventions. This could be a responsibility of a Three Conventions Coordination and Analysis Centre, which should be granted relevant legal powers to develop programmes and plans and ensure their enforcement.

There is considerable work to conserve sinks being done in Belarus. A policy of sustainable forest management is being currently implemented, a number of land rehabilitation projects are in progress. The effort taken to conserve GHG sinks is generally in line with the objectives of the conventions on biodiversity and to combat desertification/land degradation. According to the Strategic Forest Management Development Plan of Belarus, it is planned to switch all forest units under the Forest Management Committee of Belarus to permanent forest management and to introduce a global forest management information system. This is expected to reduce uncertainty in estimating removals and emissions of GHG.However, it is in the plans to increase logging up to 18 million m^3 which is going to reduce GHG removals considerably.

A number of management and technical measures have been proposed, which are expected to help bring down carbon dioxide emissions from drained wetlands.

1. It is suggested that Government should grant local authorities powers to decide themselves on how to use abandoned peat lands.
2. Carry out measures to rehabilitate degraded wetlands by restoring them and with them their peat generation capacity.
3. Bring the practices by which crops are grown on drained peat lands in line with guidelines on the use of drained soils and recommendations based on scientific evidence.
4. Switch to environmentally friendly and cost-effective approaches in using degraded peat soils.
5. Enforce safety rules against peat fires.

The National Municipal Waste Management Programme until 2007, develop by the Ministry of Housing and Municipal Services sets out a system approach in municipal waste management, from step-by-step introduction of separated waste collection to industrial waste processing and recycling. This will allow reducing methane emissions and more exact estimating its volumes at waste management facilities.

There has been good progress in planning in the area of energy conservation, which is considered as one of the key factors in climate change. Energy Policy of Belarus for 2001-2005 and until 2015 has a separate Environmental Component of Energy Policy.

The National Energy Conservation Programme till 2005 sets out key policies and priorities in energy conservation.

In development of the provisions of the Energy Policy of Belarus for 2001-2005 and the National Energy Conservation Programme, a number of sectoral programmes have been developed (e.g, Energy Conservation Programme of the Ministry of Housing and Municipal Services of Belarus for 2003-2005, the BELENERGO's Sectoral Environmental Action Programme for 2003-2005, etc.) and 27/12/02 Council of Ministers' Decision #1820 'On additional measures to use fuels and energy resources in economical and efficient ways'. The listed programmes contain a set of measures aimed at reducing the energy consumption of GDP by, *inter alia*, increasing the share of less expensive fuels, as well as by using locally available fuels and production waste as fuel, and using alternative and renewable sources of energy. Energy policy has been worked out in detail, including its investment and tariff-setting components.

Selected environmental issues, including reduced greenhouse gas emissions, have been reflected in some transport sector development documents, namely the Transport System Development Concept of Belarus, the State Transport Development Programme of Belarus, the Ministry of Transport's Social and Economic Development Concept till 2015, the Transport Environmental

Programme of Belarus for 2002-2005. The purpose of the latter programme is an integrated approach to addressing issues pertaining to improving environmental performance in the transport sector.

Notwithstanding the fact that the programmes and plans at issue do not consider impacts on the climate as a fundamental or priority factor, they, however, do deal with environmental issues, including ways to reduce emissions and enhancing sinks, and set out practical measures and project proposals to achieve an effect to this end. However, none of the documents considered above contains measures for adjustment to changing climate. The fact of the matter is that such measures can be developed drawing on climate change projections. At the present time such projections are being prepared (Institute for Environmental Studies and Ecology under National Academy of Sciences of Belarus) and will then be used to develop climate adaptation measures for climate-dependent sectors in the first place (forest management, agriculture, water management), as well as for geographic areas of concern.

An executive summary on likely impacts of changing climate on economic sectors (mainly climate-dependent ones) in Belarus (see Annex 1) has been prepared by the project team which may be of use to any person at relevant ministries and institutions of Belarus involved with sectoral (regional) action plans as far as climate adaptation measures for economic sectors and geographic areas are concerned.

4.2.2. Economic Planning Capacity Assessment in the context of climate change

First of all, it must be noted that for last 20 years the system of economic planning and programming in the country has not operated at its full capacity. Mesoterritorial-level planning has been largely neglected, notwithstanding its being the most useful type of planning in terms of facilitating implementation of the three Conventions, including as far as the development of adaptation strategies (measures) is concerned . This is primarily district development planning schemes and projects that have been lacking. District planning is a type of integrated planning focused on a synthesis of various aspects of economic development in a region. The absence of the meso-level in planning create certain obstacles in fulfilling some UNFCCC requirements, achieving consensus and close coordination of efforts that various stakeholders make to implement the three conventions, makes it difficult to develop and take joint measures to adjust to climate change, develop and elaborate integrated plans for water resources and agriculture (art. 4.1(e), UNFCCC), raise public awareness, etc.

The fact that meso-level planning is both an important and efficient tool is supported by evidence collected during a pilot study in Luninets District of

Belarus. The purpose of this study has been to demonstrate the advantages of spatial planning that allows taking focused action on implementing the three conventions consistent with existing needs in the District, as well as creating a conducive environment for sustainable development. A wide circle of stakeholders have been involved in the discussion and development of measures to improve the ways natural resources are used in the region. A few public education issues have been resolved. At present a plan to optimize land uses in the region is well into being completed. The outcomes of the pilot study are expected to help spatial planning practices in the country.

Key constraints that hold back stakeholder involvement, including that of the general public, in developing adaptation measures, and joint measures to implement the three conventions, include:

- lack of a common approach to the development and approval of programmes and plans of various levels, including those designed specifically to address environmental issues;
- absence of an impact assessment stage in programme and project development, including proper environmental impact assessment;
- no clearly formulated EIA requirements, which hinders proper environmental assessment of projects and measures;
- there is lack of consistency between some of provisions in sectoral programmes with those in the National Sustainable Development Strategy of 1997;
- when programmes or plans of any level are being developed, no consideration, as a rule, is given to different options or scenarios of development;
- system analysis, modeling etc. are virtually not used when developing programmes or plans, which leaves out some possible scenarios. For instance, a system analysis of the geosystem might allow coming closer to identifying correlation between changes in land uses and changes in meso-climate, in other words, to calculating anthropogenic impact on the meso-climate;
- insufficient capacity at institutional and individual levels, this being a hindrance for more wide use of system analysis in the area of expertise in question, of modeling of geo- and socio-ecologo-economic systems.

Improving the planning system, including for the purposes of UNFCCC, will allow addressing many issues of the implementation of the three conventions, closer stakeholder interaction and making more balanced decisions.

To take forward planning system to assist the implementation of UNFCCC and the other two conventions it is needed to:

- develop and adopt sectoral programmes on reducing GHG emissions and adaptation to climate change;
- develop a set of guidelines on how to develop, elaborate and approve national, sectoral and regional strategies, programmes and plans (involving stakeholders), and on what the environmental chapter therein should contain bearing in mind commitments under the global conventions;
- develop a guideline on environmental impact assessment for development plans and programmes, plans and measures on adjusting to climate change, on procedure for submitting project documents for EIA;
- develop a set of measures aimed at doing more spatial planning at district level (including the development of Local Agendas 21), to ensure closer interaction in implementing the three conventions between various players (using Luninets District as a study area);
- develop a programme of measures to promote research and find practical application of mathematical modeling in geo- and socio-ecologo-economic system studies;
- develop a methodology for working out measures to adapt economic sectors to climate change, and to increase the sustainability of agriculture and forest management.

4.3. Interaction between Stakeholders

Interaction between authorities and other stakeholders (including NGOs) is a key pre-requirement for a mechanism to implement UNFCCC in the country to work. Involvement of key players in limiting and reducing GHG emissions in all sectors of economy, rational use and protection of GHG sinks and reservoirs, adaptation to climate change, will allow taking more balanced decisions and better control of their implementation. Stakeholder involvement is about inviting stakeholders to participate in planning, decision-making, practical implementation of measures and control to ensure implementation. Stakeholder involvement can be either voluntary or mandatory, however the target is to ensure their involvement to the fullest degree possible. Key activities on UNFCCC implementation, which require tight involvement and interaction between stakeholders, include as follows:

- develop and implement sectoral and regional programmes to reduce GHG emissions;

- develop and implement programmes on adaptation of economic sectors to climate change, and rendering agriculture and forest management sustainable.

An analysis of information on what is done in the country to ensure involvement of stakeholders in environmental activities of various kinds, shows that at present there is ongoing work to develop and approbate relevant mechanisms at the national and regional level, while at the same time the estimated level of existing coordination between various stakeholders provides evidence that interaction, as of now, is inefficient and there is lack in determination to find and build synergies amongst the conventions. To this end, efforts taken to implement Belarus' commitments under UNFCCC and the other environmental conventions can well lead the way to taking to new heights interaction between stakeholders.

Three key categories of stakeholders have been identified based on available data, as follows: first, second and third level stakeholders. Of course, the grouping is to a large extent arbitrary, as, for instance, local (oblast and district level) executive and administrative bodies can be ascribed to both the first and second categories, while NGOs – to all the three.

The first-level stakeholders include those (institutions, organizations, local executive and administrative bodies, groups of persons, etc.) which are directly involved in UNFCCC implementation, chiefly in the planning field (see Table 4). This is the field where stakeholders' interests are liable to clash. Regardless of whether the stakeholders belong in institutional, social or commercial domains, it is exactly at this level that there is a felt need for sharing responsibilities and powers among stakeholders, proper coordination, and creating conducive conditions for interaction. The quality or programmes being developed much depends on how well developers are qualified, and how well they are aware of issues related to climate change.

Stakeholders of this category include specially authorized government bodies that are responsible for assessing whether programmes, plans and project comply with existing environmental legislation, including international conventions. For them to work effectively there is a need to develop a procedure and criteria for making such an assessment. While developing the procedure, a detailed description would be required as to how stakeholders are supposed to interact to reconcile their interests and inform each other of their planned action. Such an assessment in some features is close to strategic environmental assessment. Therefore enhancing capacity in this area would be directly linked with the development of strategic environmental assessment in the country. Setting up an environmental assessment centre and having plans and programmes and projects assessed in terms of energy conservation,

protection of sinks, etc. would be a significant contribution into implementation of not only UNFCCC but the two other global environmental conventions.

Table 4

- Ministry for Natural Resources and Environmental Protection of Belarus and institutions and organizations directly answerable to it, e.g. Belarus Research Centre ECOLOGY.
- Ministry of Architecture and Construction of Belarus.
- Ministry of Agriculture and Foods of Belarus
- Ministry of Health of Belarus
- Committee for Energy Conservation under the Council of Ministers of Belarus
- Ministry of Energy of Belarus
- Committee for Aviation under the Council of Ministers of Belarus.
- Committee for Land Resources, Surveys and Cartography under the Council of Ministers of Belarus
- Ministry of Forestry of Belarus
- Belneftekhim Concern
- Belavtodor Department (motor roads)
- Institute of Forest, of the National Academy of Sciences of Belarus
- Institute of Experimental Botany, of the National Academy of Sciences of Belarus
- Institute for Nature Use and Environment Studies, of the National Academy of Sciences of Belarus
- Information Centre for Land Cadastre Data and Land Monitoring
- Ministry of Statistics and Analysis of Belarus
- Ministry of Housing and Municipal Services of Belarus
- Local (Region and District level) executive and administrative bodies

The first-level stakeholders are involved in meeting such commitments as to develop and make available to the Conference of the Parties national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and this may well facilitate meeting other UNFCCC commitments, including that about setting up

a national system for calculating anthropogenic emissions by sources and removals by sinks of all greenhouse gases. The issues of the development of a national inventory of GHGs are discussed in detail in Part 5.

An analysis of the existing practices in stakeholder coordination has shown that the key constraints for it are:

- lack of informed focus on UNFCCC implementation issues; lack of experts on climate change and, as a result, low motivation to take action aimed at meeting commitments under UNFCCC;
- lack of a smooth mechanism to ensure interaction and coordination between stakeholders involved in the development and approval of programmes and plans and their practical implementation.

The key areas for improving capacity of stakeholders at this level are:

- amendment of regulatory documents so that they should contain procedures for developing and approving programmes and plans as long as stakeholders' participation in environmental decision-making (including on climate change, adaptation measures etc.) is concerned, which would facilitate improvements in stakeholder interaction;
- improvement of the education system (including post-graduate school) in its environmental section as far as issues of climate changes are concerned, so that it hopefully increase the level of awareness in decision-makers, help build a foundation for training national experts on climate change and related issues.

The **second-level** stakeholders include mainly institutions, organizations and economic entities who do not generally partake in programming and planning, but whose decisions taken independently within their competence may affect the efforts taken to meet Belarus' commitments under UNFCCC. These stakeholders may take part in the planning process at the stage of discussing draft programme documents, etc. However, the analysis shows that *the level of awareness concerning greenhouse gases and their emissions in the context of UNFCCC remains very low among economic entities concerned.* In consequence of this the level of motivation in these 'stakeholders' is clearly not sufficient to drive forward UNFCCC implementation.

It is a well-known fact that one of the most cost-efficient ways to reduce emissions of GHGs is fuel conservation technology or use of alternative sources of energy. To fund such projects industries or institutions may take low-interest loans from the State's innovation funds, which are ample enough. However, experience of recent time has shown that *real investments into energy-efficient projects are below government's expectations*. In total, since the beginning of

the 2nd National Energy Conservation Programme around 320 million dollars have been invested in energy-conservation projects, while the expected total of investments was US$ 435 million. In fact, Belarus Energy Innovation Fund can invest up to US$5 to 7 million in low interest loans annually, whereas actual use of this fund is only about US$ 1 million annually.

Key constraints for reducing fuel consumption or switching to alternative sources of energy are:

- lack of specialists who can identify and develop good business-plans;
- the loaning system in the country requires improvements;
- lack of economic incentives for civil servants and managers of industries to go for energy conservation technology, as well as, to an extent, the mechanism to use energy conservation funds at industries themselves being in need for improvements.

Main ways to increase motivation in stakeholders of this level to partake in meeting UNFCCC commitments are as follows:

- increase the level of awareness about issues related to climate change, including practical ways to reduce the consumption of fossil fuels;
- set up an economic mechanism to motivate industries to move in this direction.

Environmental management system certification of industries that are major emitters of greenhouse gases may play a prominent role in addressing issues of controlling and limiting emissions. As concerns sinks and reservoirs, a similarly important role might be played by environmental certification of territories and by forest certification. This will allow to increase motivation to reduce emissions and protect sinks on a permanent basis. To achieve this objective it is needed to develop methodologies to determine environmental parameters that take into account emissions, as well as EIA methodologies for their use in forest and environmental certification.

Taking into account human impacts on the climate through emissions of GHGs while setting up and operating environmental management systems in industries will not only allow addressing specific practical problems, but set conditions conducive to raising awareness in a wide range of specialists on issues of climate change caused by anthropogenic factors.

It is thought to be important to develop and implement pilot and demonstration projects on using alternative sources of power in various sectors of economy which will not only allow resolving some technical issues, but also train staff and encourage industries to move in this direction. The work on developing such

projects must be preceded by an assessment of the existing potential to use alternative sources of energy, such as biomass, biogas, etc., in Belarus.

In case Belarus participates in trading emission credits or joint implementation it is needed to take a whole range of measures to motivate stakeholders of the first and second levels (industries) to this end. Key measures to be taken are:

- develop legal documents that set out procedure to trade emission credits inside the country (see paragraph 8, Part 3), draw up a list of entities to be involved;
- develop procedure to issue emission permits to entities involved in the trading of credits inside the country;
- develop standards of allowable levels of emissions of greenhouse gases for companies that produce such emissions;
- draw up and approve a list of heat and power production companies that are liable to priority environmental certification, develop methodologies for determining environmental aspects that take account of emissions of greenhouse gases, and EIA methodologies for their use in environmental and forest certification;
- develop legal documents that regulate the involvement of national organizations in international joint implementation projects, including a mechanism to distribute saved emissions credits among the partners in such projects;
- prepare a portfolio of viable joint implementation project proposals;
- develop legal documents that allow for the use of new type contracts between investors and beneficiaries in joint implementation projects as well as set out rules for banks, loaning organizations and energy supply companies in joint implementation projects.

Third-level stakeholders include those who are generally not involved in taking specific measures planned by Government, but who are indeed concerned with progress in implementing UNFCCC. These include various non-governmental organizations, public unions, charity funds, and donor organizations who are conscious of related environmental problems, etc.

For last decade the non-governmental organization sector has strengthened and grown up. An increased number and a broader range of areas of endeavor speak for themselves. At the end of 2003 there were 65 operational environmental NGOs in the country. Environmental NGOs in Belarus generally receive no subsidies from the State and therefore are liable to apply for support to partner international funds and organizations.

Seventeen environmental NGOs are members of the Public Steering Environmental Council attached to Minpriroda, and thereby take part in discussing environmentally important decisions, including ones pertaining to UNFCCC.

An analysis of NGOs' involvement in UNFCCC implementation shows that some of them have had experience of UNFCCC-related projects. These include, in the first place, projects on energy conservation in the municipal sector, use of bio-fuels, alternative sources of energy (wind power projects, etc.). A considerably larger group of NGOs have experience of actions indirectly linked with UNFCCC (Biodiversity conservation, land protection, etc.).

Non-governmental organizations seem to be less active in the area of UNFCCC implementation than in that of the other two conventions (with the exception of energy conservation). Achieving, through NGO involvement, practical specific results in preventing dangerous anthropogenic interference with the climate system looks problematic as such interference, especially at meso- and micro-level, largely stems from changes in the natural environment caused by adverse human impacts. The area in which NGO could be instrumental is indeed public awareness in the area of climate change. To achieve maximum efficiency raising awareness on climate change issues should go hand in hand with PR campaigns on the other two conventions.

Constraints that hold back active involvement of NGOs in UNFCCC implementation, and serve as a barrier for using their large potential for addressing specific issues are as follows:

- lack of support (including by material resources) for NGOs in general and those involved in UNFCCC implementation in particular;
- rights and responsibilities of the members of the Public Steering Environmental Council are unclear or blurred, which does not help make it real decision-making, programming and project preparation, etc.;
- there are numerous problems and obstacles for raising grants (both from internal and external grant-givers) to fund environmental projects.

To render NGO involvement in UNFCCC implementation more active it is needed:

- for the Ministry of Environment of Belarus and its local divisions (committees and inspectorates) – to conduct, on a regular basis, tenders for NGO-run projects in the area of UNFCCC;
- to give credit to NGOs with a record of successful involvement in UNFCCC implementation by some kind of reward;

- to develop a regulation on public steering environmental councils attached to the Ministry of Environment, regional and Minsk City committees for environment, whereby clearly defining its status and its members' rights and responsibilities.

5. Analysis of practices, assessment of existing potential to make inventories of emissions by sources and removals by sinks of greenhouse gases, and to develop and publish national communications

One of the key commitments under UNFCCC is to develop, implement, publish and make available to the CoP national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol (art. 4.1(a), UNFCCC).

Meeting this commitment sets conditions conducive to taking efficient effort to meet other commitments under the Convention. According to article 5 of the Kyoto protocol each Party shall have in place, not later than one year prior to the start of the first commitment period (2008-2012), i.e. before 31.12.2006, a national system for the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol. Article 6 of KP states that any Party included in Annex I shall not acquire any emission reduction units if it is not in compliance with its obligations under Articles 5 and 7. That means that before coming round to issues of trading emission credits it is needed to make all the arrangements for putting in place a national system for the estimation of anthropogenic emissions by sources and removals by sinks of greenhouse gases.

An analysis of obligations Belarus has taken on under the UNFCCC (and those it would have taken on under the Kyoto Protocol) provides evidence that much of what is needed to meet these is linked with required improvements into the existing system of information exchange between stakeholders, ensuring appropriate and timely provision of reliable information to a specially authorized body (national centre) responsible for UNFCC implementation. The development of the national system of inventories of anthropogenic emissions and removals of GHGs, registers of emissions and removals, as well as preparation of national communications, all serve to improve information management in the country in the context of UNFCCC.

Capacity assessment shows that the national system of inventories of emissions and removals is still under development. The fact that the First National Communication have been prepared successfully is evidence that there is a good foundation for building such a system.

Of things the country has got to this end, there are a few organizations involved in climate change issues, there is in place a national system to control and set limits on emissions, there is a governmental agency for the protection of ambient air and the ozone layer, and the National Environmental Monitoring

System (NEMS) has ambient air monitoring. There are specialists who have experience of involvement in UNFCCC implementation, and the main portion of information required for estimating anthropogenic emissions by sources and removals by sinks of greenhouse gases is available. However, *the existing system to control and set limits on anthropogenic emissions is lacking a properly developed methodology to estimate and take account of emissions from non-point (diffuse) sources whose contribution into total emission is high.*

The functions of NEMS information-and-analysis centres and those of the national system for the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol being built differ considerably. The latter is directly involved in making inventories within a 'top-to-down' arrangement. *There is a need to make NEMS work more consistent with information management objectives of UNFCCC and Kyoto Protocol.*

The problems of the existing 'system' include *the absence of national emission rates, resulted in having to use the IPCC rates, while calculating totals of emissions, or some aggregated rates from elsewhere, which need verification.* On the other hand, there are nationally developed rates for removal of greenhouse gases by wetland ecosystems, which are missing in the IPCC guidelines altogether.

At the present time *there has to be completed work on updating data bases which will become the basis for a national greenhouse gas emission register, and there has to be worked out a final list of such data bases. There is lacking a systematized list of nationally recognized methodologies to conduct inventories.*

A large portion of data is collected by single requests to various organizations. No data is available to calculate uncertainty, including that of official statistics. Official statistics lack some data which is needed to prepare inventories. This primarily concerns data on fuel consumption by various categories of users. This complicates matters with meeting the requirements for accuracy and transparency in inventory-making for emissions and removals of GHGs. Meeting such requirements is needed for Belarus to qualify to participate in the Kyoto Protocol mechanisms (trading emission credits, joint implementation, etc.).

Switching from preparing national communications using occasional grant funds and using data collected by single requests, to a system with a distinct functional and data collection structure will allow preparing and making available to the public information in a way when transparency and minimum uncertainty are guaranteed.

Assessment of the way the First National Communication was prepared shows that there is *a problem of lack of staff for carrying out work to estimate emissions and removals of GHGs, at both national and sector levels.*

Summarizing the above information it can be noted there are some constraints that may seriously hinder action to meet obligations under UNFCCC in the near future, as concerns the development of inventories of emissions and removals of GHGs:

- there does not exist (or has no legal status) a national inventory system for emissions by sources and removals by sinks of GHGs, no institution is formally responsible for operating one; no procedure in place for developing and updating a GHG cadastre;
- neither the existing statistics service (as long as some vital data is missing), nor NEMS information resources, nor the current procedure for providing relevant environmental information to stakeholders adequately cover needs arising from UNFCCC commitments;
- for a range of processes which produce greenhouse gas emissions in various sectors of economy, there is lack of reliable data thus preventing adequate estimation of emissions and removals as well as there are no national emission coefficients;
- there is no comprehensive information and good methodology to estimate uncertainty in national inventories of greenhouse gases by sector.

To develop, and make sure proper functioning of, a national system for the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol it is needed to:

- develop a concept, work programme and structure for a national system for the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases (NSGHG);
- assign the institution BelNIC ECOLOGY the status of NSGHG Information & Analysis Centre;
- develop an instruction (regulation) on providing information by governmental bodies, industries, local structures under Ministry of Environment, agencies of the National Environmental Monitoring System (NEMS) for the purposes of making inventories of emissions and removals of all greenhouse gases not controlled by the Montreal Protocol;
- develop an instruction (regulation) on national registers of emissions and removals of GHGs;

- identify information gaps arising from commitments under UNFCCC, to be addressed by NEMS. Develop methodologies for determining indices of the status of sinks and reservoirs to be done within NEMS;
- develop proposals on adjusting the existing fuel consumption statistics reporting format, so as to collect data on the consumption of all fuels by year – balances at the beginning and end of the year, quantities imported and exported, as well as data by sub-sector and type of fuel;
- incorporate items on GHG emissions into the statistic form 2-OS (Air);
- train experts in GHG inventories by sector;
- take forward international cooperation on expertise in national systems for the estimation of emissions by sources and removals by sinks of GHGs, calculating uncertainties, training experts in national inventories, etc.;
- make an inventory and develop a register of all available methodologies for the estimation of specific emission rates for greenhouse gases and identify a list of methodologies that need to be developed;;
- conduct research on calculating national emission coefficients for various processes and production cycles, and non-point (diffuse) sources of emissions of greenhouse gases;
- take measures to incorporate the national coefficients of CO2 absorption by wetland ecosystems in the IPCC Guidelines.

An analysis of the abovementioned areas, taking fully into account the scale of the problems and their urgency, shows that a large part of measures required to this end, consists in developing additional legal documents and doing research aimed at the development of missing indices, coefficients and methodologies. Specific areas of research that need to be explored to help meet commitments under UNFCCC will be discussed in subsequent chapters.

6. Assessment of capacity in the area of education, training and awareness raising related to climate change. Analysis of the National Programme on Action to Improve Environmental Education

Pursuant to Article 6 of UNFCCC, the Parties, including Belarus, should "promote and facilitate" the development and implementation of educational and public awareness programmes on climate change and its effects; public access to information on climate change and its effects; public participation in addressing climate change and its effects and developing adequate responses; and training of scientific, technical and managerial personnel.

Environmental education, training and retraining of personnel and public environmental awareness are available in the country. There is ongoing cooperation between the government and environmental NGOs. It is evidence that there is capacity in the country to meet the above commitments under UNFCCC. The key documents that set out guidelines for environmental education in the country are the Concept of Environmental Education and the National Programme of Action to Improve Environmental Education, approved by the 21 April 1999 Decision of the Ministry of Education # 12/362 and that of the Ministry for Natural Resources and Environmental Protection # 31 of 19 March 1999.

In accordance with the NCSA project's terms of reference the team made an assessment of progress in implementing the National Programme of Action to Improve Environmental Education.

For a number of reasons the process of elaborating and final approval of the Programme was lengthy. Since its approval by the Ministry of Education and Ministry of Environment it has not yet been endorsed by the Council of Ministers. It should be noted that some key provisions of the programme, related in particular to the acquirement of practical skills and knowledge in environmental protection, have not been used in developing the higher education standards, work on which has been largely completed in the period 2000 to 2001. The developers of the High School Development Concept for the 21st century did not seem to use them either. The latter mentions the Programme only when referring to international cooperation.

A plan of measures to implement the National Programme of Action to Improve Environmental Education contains 45 items.

The measures the deadlines for which are specified as 'permanently' or 'every year' are generally in place. Measures with periods of implementations include '2003-2004', '2003-2005', starting from 2004', etc. are mostly due.

On the whole we can affirm that plan of measures to implement the National Programme of Action to Improve Environmental Education is making progress. Some items could be excluded as being off the agenda. Items for which deadlines have not been met could be revised to adjust their respective deadlines.

In accordance with the Programme, a special Coordinating Council should exercise control over implementation, and is to be composed of representatives of the Ministry of Education, Ministry of Environment, research institutions answerable to the said ministries and involved with environmental education issues, and educational institutions of all levels. However, till now no coordinating council has been established, which hinders coordinated work to achieve the objectives throughout the education system. In 1998 Belarus saw a few research-methodological councils be established, such as: 'Environmental Protection' (under the aegis of the Methodological Union of High Schools in Nature Use and Forest Management) and 'Ecology' (under the Methodological Union of High Schools in Natural Sciences). The mentioned councils could well serve as a foundation for setting up a coordinating council in the field of environmental education and awareness.

Since the Programme was developed, information technology has spread its presence into many an area of endeavor, including education. Therefore it is expedient that the Programme should include measures which are based on the newest IT developments applicable in environmental education (web-conferences, online lessons, distance learning, etc.).

In view of ongoing reform in the national education system (a two-stage high education system is being put in place, etc.) there is a need to make timely adjustments into the existing Programme or develop a new one.

Lessons drawn since the start of the Programme, there is lack of attention to the following:

- raising awareness in the general public;
- mass media's participation in raising awareness as concerns the environment and sustainable development in the country;
- training journalists to cover the thematic areas of the three conventions;
- NGO involvement in raising environmental awareness in the general public;
- training specialists in environmental subjects;
- training top qualification personnel to be involved in meeting commitments under the three global conventions.

The listed deficiencies should be taken account of when developing the latest version of the Programme. Recommendations on strengthening capacity in the mentioned areas and a more detailed discussion of the problems are given below.

There is some training available in the country for people who seek to be involved in environmental protection in their professional life. Relevant subjects include 'Heat supply, ventilation and air protection', 'Water supply, water disposal, rational use of natural resources', 'Ecology', 'Radioecology', 'Environmental protection and rational use of natural resources', 'Radiobiology and radiation medicine' and some other subjects in curricula for students of agriculture and forest management.

In training students in the said subjects some environmental issues, including human impacts on the climate, are covered. Students of agriculture and forest management study processes related to both anthropogenic emissions and removals of greenhouse gases.

A training course 'Energy-efficient technology and energy management' has been open for students since 1998. Energy efficiency departments have been created at Belarus National Technology University and Belarus State Technical University. In view of the fact that the energy sector is the single largest emitter of greenhouse gases, the said discipline can be considered a fundamental one in training specialists in greenhouse gas inventory-making and setting limits on GHG emissions. Obviously, learning practical ways to control emissions and enhance sinks should be the primary goal of such studies.

Personal initiative remains the key driver in organizing training in environmental disciplines. A downside is that interests of the State are not always taken full account of. Bearing in mind specific demand for specialists in certain (sometimes narrow enough), it is recommended to:

- identify subject-matter areas and types of training of specialists in UNFCCC implementation, chiefly through post-graduate courses, apprenticeships, etc.;
- address problems related to training of top-qualification personnel to tackle issues of meeting commitments under UNFCCC.

It is required that both governmental and non-governmental organizations, as well as mass media should work on a system basis to raise public awareness of climate change and its effects. The population in Belarus has some access to environmental information and that on measures taken to address environmental problems. People learn about the environment from newspapers, magazines, radio and TV. Programmes on radio and TV specifically covering environmental stuff are relatively few.

There are monthly environmental columns in such newspapers as 'Narodnaya Gazeta', 'Byelorusskaya Niva', 'Kultura', 'Vecherni Minsk', 'Minski Kurier' and in many local papers. The 'Zvezda' newspaper has regularly published articles on environmental issues for many years. However, coverage on the whole is insufficient. The quality of the publications does not seem to meet contemporary standards, too. The problem seems to be not lack of environmental information as much as an ability to put across the message in a digestible form.

Amongst radio programmes the 'Ecological Monitoring' is notable, with a 60 minute running time, and from time to time presenting information related to UNFCCC.

None of the four national TV channels (ONT, LAD, BT and STV) has a single programme specifically dedicated to environmental problems. Material featuring local biodiversity, climate change or land degradation issues is broadcast very little. The same applies to the Russian channels broadcast in Belarus (ORT, RTR, NTV).

TV-viewers learn about UNFCCC issues mainly through pieces on energy conservation, transition to local fuels (bio-fuel, peat), etc. The Russian channels occasionally broadcast reports on UNFCCC and Kyoto Protocol as Russia makes moves toward acceding to the latter. Climate change (and the greenhouse effect) is discussed on TV far more frequently in summer, especially when the weather is hot, as well as when reporting on extreme climatic events (drought, gale, etc.).

A series of short TV videos (over 25 in number, 5 minutes long each), paid for by the Ministry of Environment and dedicated to natural heritage in Belarus and broadcast on all the Belarus channels, are thought to contribute nicely to public environmental awareness. However, it is not uncommon, that following a feature on the exceptional role wetlands play for the environment, a viewer is offered a piece about Government's recent plans to considerably increase the use of peat in the country.

The problems in raising public awareness on UNFCCC-related issues have been so far linked, first of all, with lack of reliable information on climate change, including that in the country itself. In view of the recent publication of the First National Communication activity on raising environmental awareness is expected to make better progress. A website on climate change and UNFCCC developed within the NCSA project is also liable to facilitate awareness raising. It is advisable to make more use of specific problems of the country arising from climate change, and make everybody aware how he or she can contribute to resolving them. This is expected to help increase motivation in the population to take practical steps to protect the environment.

Another thing is that people of the press are themselves do not seem to enjoy a high level of awareness in the area of UNFCCC. To cover, in a professional way, issues related to biodiversity, climate change and land degradation it is important that journalists working in papers, on radio and TV go in for environmental training. Currently available information resources, including the global web, training seminars, booklets, posters, authors' competitions, etc. all could be used for this purpose.

Non-governmental organizations can perform a significant role in raising public environmental awareness, although they currently seem to be less active in the thematic area of UNFCCC than that of the other two conventions. It is important that the public be informed about all the three conventions to an equal degree, as well as about cross-cutting issues.

To increase the capacity of mass media in raising awareness it can be recommended that:

- a contest be held for the best series of articles, the best TV- or radio programme (with a prize to be won) on an environmental topic, including that related to UNFCCC;
- training (retraining) be organized for media people working on environmental themes, with involvement of leading researchers and NGO specialists;
- an environmentally focused magazine be established, targeting a broad audience and recruiting leading authors to write for it.

The improvement of the system for education, specialist training and awareness raising on climate change is tightly linked with a new programme of action to improve education, specialist training and awareness raising, currently under development, which is supposed to be drawing on the previous similar programmes and take into account contemporary requirements in this field. Following advice presented in this chapter will allow improvements into the Programme and make it more focused on meeting commitments under the three global conventions.

7. Assessment of practices and capacity in the area of research and information management for meeting commitments under UNFCCC

This chapter is closely linked with the previous ones as meeting most of the recommendations thereof should be preceded by research. This chapter gives an overview of research potential and key areas of research and development related to UNFCCC.

7.1. Potential in research and information management

Research and information management are instrumental in successful meeting UNFCCC commitments. There are some ongoing climate change-related research projects in the country within its overall R&D programme. Human impacts on the environment, including that on the climate, are a topic of a number of research assignments and projects, either implemented or currently under implementation within the state R&D programme 'Nature Uses and Environmental Protection' (1997-2000), 'Environmental Safety' (2001-2005), as well as some programmes financed from the Academy of Sciences of Belarus' Fundamental Studies Fund (see Table 5).

Table 5

- Estimate the effects of climate change on economic life and vice versa. Responsible R&D body: IPIPRE NAS Belarus.
- Estimate the environmental sustainability of forests in Minsk and its surrounding areas in relation to economic activities and climate changes, and develop recommendations on increasing it. Responsible R&D body: Institute of Experimental Botany NAS Belarus
- Conduct an analysis of the formation of volatile organic compounds (VOCs) in Belarus and develop research evidence-based ecologo-economic recommendations on reducing emissions of these. Responsible R&D body: BelNIC ECOLOGY.

It should be noted that there is lack of a systemic approach, interlinks between and focus on the set of tasks ensuing from commitments under UNFCCC.

Analysis shows that the existing R&D programmes lack projects on making climate projections, based on mathematical models, which could be a basis for conducting a systemic analysis, and developing a system to assist decision-makers in taking strategic decisions. Developing regional models allows adjusting (correcting) regional statistics, increasing the role of monitoring information, and laying a foundation for strategic planning and programming based on the analysis and comparison of various development scenarios. A

review of relevant publications conducted within the NCSA exercise suggests that the existing capacity to develop models of socio-ecologo-economic and geo-systems needs to be strengthened considerably.

As follows from the conclusions presented in chapters 4 to 6, to successfully meet commitments under UNFCCC it is needed to do research and development projects aimed at:

- making sure proper functioning of the national system for the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol (development of national coefficients for greenhouse gas emissions, methodologies for estimating emissions from non-point sources, a system of national indices for estimating and making projections of the state of sinks and reservoirs, etc.);
- the development of admissible levels of emissions of greenhouse gases for various industries and processes;
- the development of sectoral and regional programmes on reducing emissions of greenhouse gases;
- the development of a national programme for training of staff and environmental (sustainable development) awareness raising for 2005 to 2010;
- the development of an economic mechanism for trading in GHG emission credits inside the country;
- the development of an EIA methodology to fill specific needs of forest and environmental certification;
- the development of a methodology for elaborating adaptation measures, and the development of programmes of adaptation measures in economic sectors, or action programmes to increase ecological and economic sustainability in agriculture and forest management;
- the development of models of geo- and socio-ecologo-economic systems and their use for developing measures to adapt to climate change at the level of regions.

A number of areas to conduct research and development projects in have been discussed in the previous chapters and will be summarized in the Conclusions chapter.

Selected areas of research and development are of interest in an international cooperation context. These primarily include:

- the development of a legal framework for trading in GHG emission credits;
- the development and implementation of pilot and demonstration projects on the use of alternative sources of energy;

- the establishment of an EIA centre which would be responsible for EIA of projects, action plans, programmes on energy conservation and protection of sinks and reservoirs.

7.2. Indices of the state of sinks of greenhouse gases

To estimate removals of greenhouse gases it is needed to have information on the state of sinks. Belarus is remarkable for having such important sinks as wetlands. The NCSA team of experts has made a review of many years' worth of research on subject related to the biogenic carbon cycle in plants (forests, meadows, wetlands and agrocenoses) and lakes. The following list of indices of the state of sinks of greenhouse gases is proposed: the forested area; typological structure of forest vegetation and its spatial distribution; the area of arable land and pastures taken out of agricultural use; levels of soil liming; intensity of forest uses; how many drainage systems have been decommissioned (compared to the previous year); the area of fully degraded peaty soils; the levels of carbon and nitrogen in different groups and types of peat; the area of abandoned peat lands and those currently being developed; the area of bogs of certain type of peat deposit; methane emissions from natural wetlands.

8. Root causes. Cross-cutting assessment of capacity needs.

8.1. Root causes

Assessment, using a problem tree method, of existing capacity, including constraints and causes for which capacity building does not proceed as planned, shows that there are a few root causes which are not linked with lack of funding. Having these causes removed would have a practical effect and would let increase efficiency in more than one areas of UNFCCC implementation at the same time. Such root causes include:

- lack of legal instruments and methodological mechanism for a national system of the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol to function properly;
- lack of legal framework for the development and approval of national, sectoral and regional strategies, programmes, plans as long as environmental protection, adaptation measures are concerned in view of the commitments under the three global conventions;
- low level of coordination between stakeholders in taking practical measures to implement UNFCCC, identifying priority areas of research at national and sectoral levels;
- some inconsistencies within the system of education and awareness raising as concerns thematic areas of UNFCCC and the other two conventions;
- lack of a financial mechanism to encourage efforts to reduce anthropogenic emissions of greenhouse gases.

8.2. Cross-cutting assessment of capacity in the context of the three global Conventions

Assessment of performance in meeting some of the key commitments under UNFCCC provides evidence that to increase its efficiency at the system, institutional and individual levels there is a need to ensure tight cooperation across the three Conventions' thematic areas.

The 'critical' areas for building cross-cutting capacity for the three conventions, as follows from the assessment done so far, are:

- monitoring and protecting sinks of greenhouse gases, making sure that data on land uses, forest management and wetlands are accurate and reliable;
- creating an uniform information data base for the purposes of implementing all the three UN Conventions;

- spatial planning; the development of adaptation measures; the development of procedures and methodologies for involving stakeholders in EIA of programmes and plans;
- building the capacity in the area of system analysis of geo- and socio-ecologo-economic systems in order to be able to develop measures for optimizing land uses, protecting sinks of greenhouse gases, protecting biodiversity at the regional level;
- making improvements into the system for education, awareness raising and training personnel, including staff of the highest qualification level, primarily in disciplines related to the problem areas of the three Conventions; ensure proper information management and methodology support in the thematic areas of the three Conventions;
- establishing a Three Conventions Information & Analysis Centre which would, *inter alia*, ensure coordination of research of all levels done by various institutions, as long as the needs to meet commitments under the three Conventions are concerned;
- protecting and monitoring the state of greenhouse gas sinks (forest and wetland ecosystems), rehabilitation of wetland ecosystems; re-swamping of abandoned peat excavation sites and drained peat lands of little economic value;
- establishing the correlation between land use changes and those in the meso-climate; determining how large the human contribution is to meso-climate changes;
- optimizing land uses at regional and local levels in terms of looking for the most efficient ways to use lands.

Some issues, especially in the cross-cutting context of the three Conventions, require further thorough exploration in order to identify root causes, develop a detailed programme of action, with estimates of required resources, including financial, to carry out key measures. For instance, as concerns legal framework, it is required to take more stringent measures in exercising control over the implementation of the three conventions, apply an integrated approach in using and protecting lands, forest management, and bringing about changes in land use, taking full account of local sustainable development needs and those of protecting greenhouse gas sinks.

Taking action in cross-cutting areas pertaining to the three Conventions requires resource mobilization and their optimal use in taking relevant measures; better informing decision-makers; strengthening the role of NGOs and the general public in attaining objectives of the three UN Conventions.

It is also needed to work out the question of raising funds, including with the help of international community. All the issues raised in this chapter will be thoroughly reviewed and properly addressed at the next stage of NCSA, which is cross-cutting assessment.

While doing the cross-cutting assessment it is planned that the areas presented as an outline in this chapter will be filled with specific issues and solutions. Joint action will hopefully lead to establishing the Three Conventions Centre mentioned above. Once created, this centre would be a significant contribution to the existing capacity, to improved coordination and better progress in the implementation of the three global Conventions in Belarus.

9. Conclusions and recommendations

Assessment of the capacity existing in Belarus to implement the UN Framework Convention on Climate Change provides evidence that building the capacity requires doing a number of interlinked tasks which embrace more or less all areas of environmental action. Aggregating the recommendations made by the NCSA team to strengthen legal framework, improve the planning system in the area of anthropogenic emissions and removals of greenhouse gases, rendering interactions between stakeholders more active, improve the national system of inventories of emissions and removals, education and awareness raising etc., has resulted in a list of measures (see Table 3), which, when taken together, will certainly assist to meet commitments Belarus has taken on under the UNFCCC, and will generally contribute to improving the use of natural resources and environmental protection in the country.

Table 3

The measures to ensure meeting the commitments of Belarus under the UN Framework Convention on Climate Change

Measure	Responsible Agency	Type	Priority	Comments
1. Draft Law of Belarus 'On Climate' ('On regulating impact on climate')	Ministry of Environment		II	
2. Draft Council of Ministers' Decision 'On implementing the Kyoto Protocol to the UN Framework Convention on Climate Change in Belarus'	Ministry of Environment		_	Following accession to the Protocol
3. Amendments into Laws of Belarus 'On Environmental Protection' and 'On State Environmental Expertise'	Ministry of Environment		_	Following accession to the Protocol
4. Develop and pass through relevant authorities National Climate Programme (Strategy) of Belarus	Ministry of Environment	State R&D Programme	I	Could be included (attached to) in National Sustainable Development Strategy
5. Establish Three Global Conventions Centre	Ministry of Environment	Decision by Ministry of Environment BY	I	Apart from coordination of effort on the three conventions, the centre could be responsible for EIA of projects, plans and programmes in energy conservation and protection of GHG sinks

Measure	Responsible Agency	Type	Priority	Comments
6. Develop a major planning document (programme, action plan) on reducing emissions of GHGs	Ministry of Environment, Ministry of Economy, Ministry of Energy	State R&D Programme	II	Can be included in or attached to NEAP
7. Draft Law of Belarus (Council за Ministers' Decision) 'On trading in emission credits'	Ministry of Environment, Ministry of Economy	Budgetary Environ-mental Fund	_	Following accession to the Kyoto Protocol
8. Develop a set of legal documents to govern: - registration of tradeable GHG credits; - participation of national organizations in international JI projects; - distribution, through a special mechanism, of saved emission units between participants of JI projects.	Ministry of Environment, Ministry of Economy		–	Following accession to KP. Document should list the entities who will participate in the process
9. Develop Instruction on issuing emission permits to entities participating in in-country emission credit trade	Ministry of Environment	Budgetary Environ-mental Fund	_	Following accession to the Kyoto Protocol
10. Develop standards of admissible emissions of GHGs for various industries and processes	Ministry of Environment	State R&D Programme	II	

Measure	Responsible Agency	Type	Priority	Comments
11. Coordinate and approve a list of heat-and-power companies to get environmental certificate as a matter of priority	Ministry of Energy, Environmental Certification Agency under the Ministry of Environment		I	
12. Develop documents governing the use of new-type contracts between investor and beneficiary in JI projects, as well as the rules whereby banks and loan institutions and power services companies can participate in JI projects	Ministry of Economy, Ministry of Energy	Sectoral plans	I	
13. Develop documents to govern the participation of national organizations in international JI projects, including a mechanism for the distribution of saved emission units between the participants of such projects	Ministry of Economy, Ministry of Environment, Ministry of Energy	State R&D Programme	II	
14. Develop and implement pilot and demonstration projects on the use of alternative sources of power	Ministry of Environment, Ministry of Forestry, Inistry of Housing and Municipal Services, Ministry of Agriculture and Foods, Ministry of Energy	State R&D Programme, Sectoral programmes	III	

Measure	Responsible Agency	Type	Priority	Comments
15. Estimate the power potential of biogas in Belarus, develop a biogas power production programme	Ministry of Environment, Ministry of Agriculture and Foods, Ministry of Housing and Municipal Services	State R&D Programme	I	
16. Prepare (by sector) a portfolio of JI project proposals	Ministry of Energy, Ministry of Forestry, Ministry of Agriculture and Foods	Sectoral plans	II	
17. Develop a guideline document 'Development, coordination and approval of national, sectoral and regional strategies, programmes and plans'	Ministry of Environment, Ministry of Economy	State R&D Programme	I	It must set out requirements as to what Environmental Protection (Environmental Impact) section should cover in strategies, programmes, plans, bearing in mind commitments under the global conventions.
18. Develop an instruction on the estimation of effects (environmental effects assessment) of plans, development programmes and measures to respond to climate change	Ministry of Environment	State R&D Programme	I	Procedure for stakeholder participation must be put in place

Measure	Responsible Agency	Type	Priority	Comments
19. Draft Council of Ministers' Decision 'On measures to develop spatial planning'	Ministry of Architecture and Construction, Ministry of Economy, Ministry of Environment		II	Should contain a set of measures aimed at developing spatial planning at district level (including for the purpose of developing local agendas 21) to ensure proper interaction in implementing the three conventions
20. Develop a programme aimed at the development of mathematic models of geo- and socio-ecologo-economic systems and their practical application	NAS Belarus, Ministry of Environment	State R&D Programme, sectoral programmes	II	
21. Provide science-based methodological support for developing mathematic models of geo- and socio-ecologo-economic systems which would allow making projections, and drawing comparison between development scenarios while developing strategies, programmes and plans	Ministry of Economy, Ministry of Environment	State R&D Programme	III	It will provide basis for developing measures to adapt to climate change at the level of regions
22. Develop methodology and instruments for developing adaptation measures for climate-dependent sectors	Ministry of Environment, Ministry of Agriculture, Ministry of Forestry	State R&D Programme	II	These will be used in developing measures to increase sustainability in agriculture and forest management

Measure	Responsible Agency	Type	Priority	Comments
23. Make projections of anthropogenic emissions and removals of greenhouse gases for various fuel-consumption scenarios both nation-wide and by sector	Ministry of Environment, IPIPRE NAS Belarus	State R&D Programme	II	
24. Develop sectoral and regional programmes on reducing emissions of GHGs and adaptation to climate change	Relevant ministries, institutions	Sectoral programmes and plans	I	
25. Develop methodologies for environmental assessment of geographic areas, being important sinks (sources) of GHGs, for the purpose of forest and environmental certification of regions	Central bodies on environmental and forest certification, Ministry of Environment, Ministry of Forestry, Ministry of Agriculture	State R&D Programme	II	
26. Draft Council of Ministers' Decision 'On the creation of the national system for the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol'	Ministry of Environment		I	
27. Develop a concept, programme and action plan for the development of the national system for the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol (NSEERGG)	Ministry of Environment	State R&D Programme	I	

Measure	Responsible Agency	Type	Priority	Comments
28. Develop a regulation on NSEERGG Centre. Designate BelNIC ECOLOGY as the institution to host the NSEERGG Centre	Ministry of Environment	Decision by Ministry of Environment	I	
29. Develop an Instruction on data collection for the purposes of inventorying emissions and removals of GHGs	Ministry of Environment		I	Draft Instruction has been developed within the NCSA Project
30. Develop a regulation on National Cadastre of emissions and removals of greenhouse gases	Ministry of Environment		I	Draft regulation has been developed within the NCSA Project
31. Develop a set of national indices and methodology of determining them for the purposes of assessment, analysis and forecasting the state of GHG sinks.	Ministry of Environment, IPIPRE NAS Belarus, Institute of Experimental Botany NAS Belarus	State R&D Programme	I	There must be developed methodologies for monitoring the state of GHG sinks within the National Environmental Monitoring System. The monitoring data will be used for carrying out tasks related to the implementation of UNFCCC and other conventions.
32. Develop and coordinate with stakeholders recommendations on adjusting the existing fuel consumption statistics forms	Ministry of Environment, Ministry of Statistics, other stakeholders	State R&D Programme	I	The aim is to collect needed data on fuel consumption, balance at the beginning and end of the year, import, export, consumed amounts, as well as consumption by sector and by type of fuel

Measure	Responsible Agency	Type	Priority	Comments
33. Develop a methodology for determining fuel consumption in transport sector by state-owned and privately owned vehicles	Ministry of Environment	Sectoral plan	II	The aim is reduce uncertainty in calculations of emissions by energy sector
34. Develop recommendations and practical tools to introduce GHG emission indices into the statistics form 2-OS (air)	Ministry of Environment, Ministry of Statistics	Sectoral plans	I	
35. Train experts on making inventories of greenhouse gases by sector	Ministry of Environment, ministries and institutions concerned	Workshops, study tours, etc.	I	Can be a focal area within technical assistance programmes
36. Draw up a list of processes for which national emission coefficients are needed 37. Develop national coefficients for relevant processes	Ministry of environment Ministries, institutions	Sectoral programmes	I I I	
38. Do what is necessary to incorporate BY national coefficients of CO_2 uptake by wetlands into IPCC Guidelines	Ministry of Environment, IPIPRE NAS Belarus		II	Procedure to coordinate and approve national coefficients at the level of IPCC

Measure	Responsible Agency	Type	Priority	Comments
39. Develop a guidelines for the estimation of GHG emissions into the atmosphere from non-point (diffuse) sources	Ministry of Environment	State R&D Programme	II	Must contain overall methodology for the estimation as well as practical instruments to estimate emissions of greenhouse gases and their precursors. The use of the Guidelines will lay a foundation for including non-point (diffuse) sources of pollutants in the State Atmospheric Air Cadastre.
40. Develop methodological recommendations for the estimation of uncertainties in emission data by all sources and parameters registered in the Cadastre.	Ministry of Environment, State Standards Agency	Sectoral Plans	I	
42. Develop a national programme of environmental education and, awareness raising for the period 2005-2010	Ministry of Environment, Ministry of Education	State R&D Programme	I	

10. List of articles and areas of competence of UNFCCC and constraints that hinder the development of relevant capacity, that have been left outside the scope of the NCSA studies

One of the key areas of action under the UNFCCC is the monitoring of the climate. Implementing the articles of UNFCCC as concerns the development, regular updating, publishing and submitting to the Conference of the Parties of the national register of anthropogenic emissions from sources and sinks of the greenhouse gases that are not controlled by the Montreal Protocol, is not possible without getting reliable information on GHG emission sources and on the state of GHG sinks. The existing sectors within the NEMS are capable to fill some of the existing needs only provided that the available monitoring network has a more representative set of stations, clearer tasks set, and better methodologies to use. This primarily concerns the inventorying of GHG sinks, which will require both baseline information, and the outcomes of an integrated assessment of the status of ecosystems that are GHG sinks. Doing these tasks will help reduce uncertainty in evaluating total emissions and sinks of GHGs.

Reducing uncertainty as a result of a more careful GHG inventory within selected sectors, can be achieved thru improving local monitoring at sites that are significant GHG emission sources, and thru expanding the current list of monitored indicators, and conferring additional powers to territorial information-and-analysis local monitoring centres.

When deciding on the frequency of observations while performing those of NEMS tasks that are needed to implement obligations under UNFCCC it is needed to take into account deadlines by which Belarus is required to submit reports and other information to conferences of the Parties.

Thus the NEMS existing in Belarus now has some of the potential required to fulfill the obligations the country has under the Article 4.1 (g) of UNFCCC. Having met these requirements and having provided information and scientific backup for conducting GHG inventories would contribute to improving the structure and functionality of NEMS and a more efficient use of monitoring information.

There has not been made a deeper examination into the needs to improve the NEMS as a detailed enough analysis had been conducted while developing the Concept to optimize the National Environmental Monitoring System in 2003.

11. List and short description of documents (materials) developed during the National Capacity Self-Assessment for Global Environmental Management in Belarus Project

During the NCSA project there have been developed some useful legal documents, as well as obtained data that can serve the basis for improving available methodologies to estimate greenhouse gas sinks.

1. There has been developed the draft Instruction on the organization of information collection for inventories of emissions and sinks of greenhouse gases. The document sets out the responsibilities of the organizations involved in the process of collecting information, procedures, deadlines, and requirements as to what GHG emission and sink inventory information should contain.
2. There has been developed the draft Instruction on the procedure to develop and update the national GHG emission and sink register. The Instruction defines the procedure for developing and updating a greenhouse gas register, which is a set of systematized data on emissions from sources and sinks of all greenhouse gases that are not controlled by the Montreal Protocol on ozone-depleting substances to the Vienna Convention on the protection of the ozone layer.
3. Based on the analysis conducted within NCSA, national carbon dioxide absorption coefficients for forests (young stands 1 class, young stands 2 class, average-age stands, under-mature, mature and over-mature stands), bogs (low and high ones) and lakes have been developed and put forward.