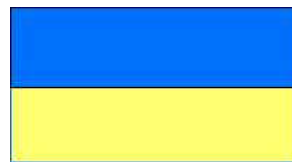




**Republic of  
Belarus**



**Russian  
Federation**



**Ukraine**

## **Dnipro Basin Strategic Action Programme and Implementation Mechanisms**



**Kyiv, Ukraine 2004**



IAEA



**UNDP-GEF**

This project is the result of the collaborative efforts of many people – professionals and experts that contributed their new ideas, suggested improvements, both in shape and substance, produced the final draft of the SAP document, including tables and graphics, committed to seek endorsement and approval of the SAP by the respective governments of the three riparian countries and, last but not least, undertook to disseminate this document among wide stakeholder circles within the Dnipro Basin.

The list below identifies many of the people who participated in the SAP preparation process. Much to our regret, this list is far from being exhaustive – a great number of other people have been actively involved in the SAP process, including managers from key ministries and agencies, scientists, mass media, non-governmental organizations, nature users concerned about the state of environment, students and their teachers.

On behalf of the UNDP-GEF Dnipro Basin Environment Programme, we would like to express our thanks and pay honour to all these people for their efforts dedicated to the conservation and rehabilitation of the Dnipro – the great Slavic river.

We extend our special thanks to:

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## **1. Introduction**

Progressive degradation of the Dnipro Basin ecosystem became apparent by the early 1990s, especially in the middle and lower reaches of the Dnipro River. This critical situation is the direct consequence of large-scale industrialization, uneven development of heavy and chemical industries, and unsustainable resource uses and practices that completely disregard environmental values and priorities. The scale of changes that have occurred in the natural ecosystems of the Basin is so great that many of them cannot be reversed. The effect of these changes on the habitats and living conditions of the human population has been no less dramatic.

Most of the consequences of environmental degradation in the Dnipro Basin are transboundary for its riparian countries, and global in the context of their impact on the Black Sea and beyond, thus affecting the ecosystem and climate of the whole European region.

Having become aware of this, the riparian countries of the Dnipro Basin have committed themselves to taking decisive action to protect and restore the Basin ecosystem.

In 1995, the Ministers of Environment from the Republic of Belarus, Russian Federation, and Ukraine signed the Memorandum on Cooperation for the Dnipro Basin Rehabilitation expressing their intention to work together and pool their resources. On the basis of this document, financial support and technical assistance was sought from the Global Environment Facility (GEF) for the development of the international programme for environmental rehabilitation of the Dnipro Basin.

Strategic Action Programme (SAP) for the Dnipro Basin and the mechanisms for its implementation were developed within the framework of the UNDP-GEF Dnipro Environment Programme ('the Programme' hereinafter). This Programme was approved by the GEF Council and launched in December 1999 in order to provide financial support and technical assistance to the Republic of Belarus, Russian Federation, and Ukraine. Total GEF contribution was 7 million USD, with co-financing provided from the following sources:

Source	Contribution
International Development Research Centre (IDRC), Canada	1,675,000 USD
UNDP	980,000 USD
Republic of Belarus	300,000 USD
Russian Federation	100,000 USD
Ukraine	4,200,000 USD

***Altogether, the total Programme budget was 14,255,000 USD.***

The implementation of the Programme is the result of the joint effort of three riparian countries (Republic of Belarus, Russian Federation, and Ukraine), assisted by international executing agencies, including UNIDO (United Nations Industrial Development Organisation), IDRC (International Development Research Centre, Canada), IAEA (International Atomic Energy Agency), and UNEP (United Nations Environment Programme).

The Strategic Action Programme (SAP) is a policy document, negotiated and endorsed by three riparian countries, to be implemented at the highest level of executive power. It defines the priority areas for action to resolve the most urgent issues identified in the Transboundary Diagnostic Analysis (TDA).

The overall objective of the SAP implementation is to ensure the Dnipro's environmental rehabilitation and achieve improvements in the state of environment and natural ecosystems, both in the region and beyond (i.e. in the Black Sea Basin). To achieve this objective, a number of tasks have to be resolved. These are:

- to ensure sustainable socio-economic development in the region and integrated management/protection of the environment;
- to remedy the serious environmental effects of pollution and habitat deterioration in the Dnipro Basin;
- to ensure sustainable use of its natural resources; and
- to protect biodiversity in the Basin.

The process of preparation of the Strategic Action Programme (SAP) involved the following steps:

- establishing and ensuring sustainable operation of national and international bodies for transboundary management of the Dnipro Basin, and international coordinating mechanisms, to involve and encourage the active participation of various stakeholder groups and NGO's;
- preparation of the Transboundary Diagnostic Analysis (TDA) that involved identification of key environmental issues, assessment of their significance and scale, completion of causal chain analysis to identify root causes of environmental degradation in the Basin;
- identification and evaluation of the Hot Spots, and analysis of their environmental and economic characteristics, followed by formulation of priority projects, constituting the Priority Investment Portfolio;
- preparation of the Regional Strategy for Protection and Conservation of Biological and Landscape Diversity, which forms an integral part of the overall environmental rehabilitation strategy for the Basin;
- preparation of the State of the Dnipro's Environment Report, establishing a baseline for measuring the progress of environmental rehabilitation;
- formulation and endorsement of the Strategic Action Programme (SAP), and adoption of the National Action Plans (NAPs).

The Dnipro Basin SAP has been prepared in accordance with the GEF procedure for conducting Transboundary Diagnostic Analyses and Strategic Action Programmes (Laurence Mee, Notes<sup>1</sup> on a Proposed Scheme of Best Practice, see also Annex 1).

The SAP defines the long-term Ecological Quality Objectives (LTEQOs), agreed among the three participating countries, and short-term steps for achieving them. These steps comprise a set of coherent, logical and complementary actions that constitute a programmatic tool for achieving the specified objectives. In the process of detailed elaboration of these options, special focus was placed on the financial resources, legislative and institutional improvements required to ensure the implementation of priority actions, planned over 5, 10 and 15 years.

National Action Plans (NAPs), prepared by the three riparian countries of the Basin, form an integral part of the Dnipro Basin SAP. The NAPs identify a suite of measures in the field of environment protection and sustainable use natural resources that need to be taken in order to effectively address strategic transboundary issues and the most urgent environmental issues at the national level.

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<sup>1</sup> These notes were prepared by Prof. Laurence Mee on the basis of discussions at the GEF TDA/SAP Course Design and Development Session (DACUM) held at the Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations from 15 to 19 July 2002.

The SAP provides a strategic vision statement of the acceptable level of environmental rehabilitation that can be achieved through the joint effort of the three riparian countries.

During the 5<sup>th</sup> Pan-European Conference “Environment for Europe”, held on 22-24 May, 2003 in Kyiv, the Ministerial Declaration on Cooperation for Environmental Rehabilitation of the Dnipro Basin was signed by the three riparian countries. In this Declaration, the Ministers of the Environment expressed their “willingness and preparedness to develop the international agreement that will provide a common framework for ensuring the sustainability of international cooperation between the riparian countries of the Dnipro Basin, and establishing the common principles, objectives, tasks and obligations of the parties in the field of environmental rehabilitation of the Dnipro Basin”. Thus, the trilateral agreement and SAP should provide a legal and policy framework for further international cooperation on protection and rehabilitation of the environment in the Dnipro Basin.

***In order to ensure that a consistent approach is applied to address the environmental rehabilitation issues in the Dnipro Basin, the riparian countries developed and agreed the SAP endorsement procedure through the signing of the Agreement on Cooperation in the Field of Management and Protection of the Dnipro Basin between the Council of Ministers of the Republic of Belarus, the Cabinet of Ministers of the Russian Federation, and the Cabinet of Ministers of Ukraine. The SAP constitutes an integral part of (Annex to) this Agreement, and shall not be read and construed otherwise.***

By endorsing this document, the Republic of Belarus, Russian Federation, and Ukraine voluntarily commit themselves to take concrete actions identified in the SAP in order to achieve the specified objectives. To meet this international commitment, the riparian countries should take joint and agreed actions to ensure protection of the environment in the Dnipro Basin, sustainable use of natural resources, conservation of biological diversity and reduction of adverse anthropogenic impact on the Dnipro Basin, and beyond (i.e. on the Black Sea).

## **2 Transboundary Diagnostic Analysis**

### **2.1 Physical and Geographical Characteristics**

The Dnipro Basin is a diverse economic region of environmental and socio-economic importance. Not only does it contain natural resources of social value (e.g. water, land and forest resources) but it is also a valuable asset for various economic developments, medium and small businesses. It sustains major urban centres, and a large number of small and medium-size towns (see the Dnipro Basin Passport in Annex 2).

The Dnipro River extends into the territories of three Eastern European countries, the Russian Federation, the Republic of Belarus and Ukraine. It is the third largest European transboundary watercourse after the Danube and the Volga, draining a basin of 511,000 km<sup>2</sup>, and the fourth longest river in Europe (2,200 km), next to the Ural, the Volga and the Danube. 19.8% of the Dnipro Basin is within the territory of the Russian Federation, 22.9% in the Republic of Belarus, and 57.3% is in Ukraine (Figure 2.1).

The river system of the Dnipro Basin has been regulated with a large number of reservoirs, channels, conduits, ponds, dams and locks/gates. Overall, 564 reservoirs have been constructed in the Basin with a total area of 775.6 km<sup>2</sup> and a capacity of 46.2 km<sup>3</sup>. The flow of the Middle and Lower Dnipro (from the Pripyat River inflow to the town of Kakhovka) is regulated by a chain of huge reservoirs (the Kyiv, Kremenchug, Dniprodzerzhinsk, Dniprovsky and Kakhovka

reservoirs – the latter, along with the Kremenchug reservoir, are among the largest water reservoirs in the world). Very little of the natural river channel remains, being restricted to a short length downstream of Dniprodzerzhinsk.

The total projected groundwater resource available in the Basin is approximately 24 km<sup>3</sup>, with over 13 km<sup>3</sup> being hydraulically isolated from the surface water flow.

The land resource of the Dnipro Basin has been intensively used for a number of different purposes. Three fifths of the Basin area have lost their original natural landscape features as a result of highly intensive land use. About 50% of the Basin area is occupied by agricultural land.



**Figure 2.1** Map of the Dnipro Basin

Forests occupy about 33.8% of the total Basin area, being mainly concentrated in the upper part of the basin and less dominant in the lower where forest cover is limited to relatively small artificial plantations and wind break strips surrounding agricultural fields.

The mineral resource base of the upper part of the Basin (within the Russian Federation) is rather scarce and limited to relatively small deposits of low-grade coal, peat, and locally used construction materials. At the same time, the rich and diverse mineral resource base in the Belorussian and Ukrainian parts of the Dnipro Basin have driven the large-scale development of mining and processing industries that dominate these economies.

Large-scale land drainage schemes, covering about 4.5-5 million ha of the Basin territory, have contributed dramatically to the environmental degradation. Massive drainage works, along with extensive peat extraction activities, have ravaged surrounding areas. As a result, the total area of devastated and dried-up land in the Polesie region has reached about 6 million ha. The impact of drainage activities on water resources has been no less dramatic, leading to major alterations of the hydrographic network, changes in the morphometric characteristics of water bodies and their catchments, modification of flow regime, and a fall in the water table of 1.0-1.5 m. Every year, about 1,500,000 tonnes of mineral substances and up to 700,000 of aggressive soluble organic compounds enter the Dnipro River with surface runoff from drained land, and this pollution load is further carried with river flow into the Black Sea. The rate of drying-up is so great that it can lead to progressive expansion of devastated spots to the extent where they merge and form vast degraded zones possessing the features of semi-desert.. Clearly, this represents a threat of a major transboundary/regional disaster for the whole of Central Europe.

The Dnipro Basin is a unique Eastern European ecosystem sustaining a rich biological diversity. There are more than 35 nature reserves and protected areas in the Dnipro Basin that enjoy the national status and occupy only about 1.6% (8,100 km<sup>2</sup>) of the catchment's area. Clearly, the existing nature reserve capacity is not adequate to ensure full protection and conservation of plant and animal species, both native and migratory ones.

## ***2.2 Socio-Economic Characteristics***

In relation to Eastern Europe as a whole, the Dnipro River Basin has a medium population density. The estimated population of the Basin at the beginning of 2001 was about 32.4 million, broken down by country as follows: 3.6 million within the Russian Federation; 6.3 million within the Republic of Belarus; and 22.2 million people within Ukraine. The level of urbanization is high, with about 69% of the Dnipro Basin population living in urban areas, characterised by intensive industrial activity, excessive exploitation of natural resources, and heavy anthropogenic load on the environment.

***The average population density*** in the Dnipro Basin is 63 people/km<sup>2</sup>, increasing in the downstream direction from 35.6 and 53 people/km<sup>2</sup> in the Russian and Belorussian parts of the Basin, respectively, to 76 people/km<sup>2</sup> in the Ukrainian part of the Basin.

The following major trends in ***demographic situation*** have emerged over the last decade, being characteristic for each riparian country and the Dnipro Basin as a whole:

- A decline in the total number of population and fall in birth rate;
- An increase in the urban population and reduction in the rural population.

***Economic development*** in the region has followed a highly specific pattern, featuring high industrial density and concentration of heavily polluting chemical and metallurgical industries, and large agricultural complexes.

The collapse of production activity in the early 1990s and dramatic reduction of per capita GDP values have resulted in the deterioration of living conditions in all three countries. Following a



long period of systemic socio-economic crisis, the economic situation has stabilised and started to manifest certain signs of growth since 2000, leading to a gradual improvement of living standards in the Basin. The following table presents some economic data for the riparian countries of the Dnipro Basin.

**Economic growth rates in the Dnipro Basin countries in 1999 and 2002**

Dnipro Basin country	The rate of growth (% to the previous year)					
	GDP		Production			
			Industrial		Agricultural	
	1999	2002	1999	2002	1999	2002
Republic of Belarus	103.4 <sup>2</sup>	104.7	110.3	105.9	91.7	101.8
Russian Federation	106.4	103.8	116.0	104.3	93.9	102.2
Ukraine	98.8	104.8	104	107	100.3	102.1

The growth rates have been particularly high in the following sectors: the building material industry, food processing industry, light industry, and ferrous metallurgical and petrochemical industries. Small and medium-size businesses have started to play an increasingly important role in the regional economy.

## ***2.3 Priority Transboundary Issues of the Basin***

Twenty two GIWA issues from five major concern areas were assessed in order to determine their relevance and transboundary nature in the context of the Dnipro Basin. Using the GIWA methodology, the following suite of criteria was defined and used for the prioritisation of these transboundary issues:

- Transboundary nature of an issue.
- Scale of impacts of an issue on the Dnipro Basin and Black Sea ecosystems.
- Scale of impacts of an issue on economic activities, the environment and human health.
- Relevance of an issue from the perspective of national priorities reflected in existing national policies and action plans on environmental rehabilitation and biodiversity conservation in the Dnipro Basin.
- Scope of the systemic relationship with other environmental issues and economic sectors.
- Expected multiple benefits that might be achieved by addressing an issue.
- Lack of perceived progress in addressing/solving an issue at the national level.

As a result of this analysis, 12 major transboundary issues were identified in the Dnipro Basin. These are listed below in order of priority:

- 1) Chemical pollution;
- 2) Modification/loss of ecosystems or ecotones and decreased viability of biological resources due to contamination and diseases;
- 3) Modification of the hydrological regime of surface waters;
- 4) Eutrophication;
- 5) Pollution by radio nuclides;
- 6) Flooding events and elevated groundwater levels;
- 7) Solid waste;
- 8) Accidental spills and releases;
- 9) Microbiological pollution;
- 10) Changes in the water table;

<sup>2</sup> Statistical Yearbook of the Belarus Republic. 2003. The Ministry of Statistic and Analysis of Belarus Republic  
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and Mechanisms for its Implementation***

- 11) Suspended solids;
- 12) Impact on biological and genetic diversity.

Of these 12 transboundary issues, identified and examined in the TDA, the following six issues were considered as a priority:

- i. Chemical pollution;
- ii. Modification/loss of ecosystems or ecotones and decreased viability of biological resources due to contamination and diseases;
- iii. Modification of the hydrological regime;
- iv. Eutrophication;
- v. Flooding events and elevated groundwater levels;
- vi. Pollution by radio nuclides.

Based on the results of the Transboundary Diagnostic Analysis, the proposed options were formulated to resolve these six priority transboundary issues.

In addition, a baseline assessment of the state of the transboundary sections of the Dnipro Basin, completed as part of the TDA process, provided a basis for the justification of the long-term ecological quality objectives for the Dnipro Basin.

## ***2.4 Immediate Causes of Transboundary Issues***

The immediate causes of these transboundary issues are closely linked to the resource uses and practices in the following sectors of the economy: industry (including power energy, mining industry, metallurgy, and chemical industry), agriculture, transport, fisheries, and urbanisation. They can be also attributed to the consequences of the Chernobyl accident.

### ***Issue: Chemical pollution:***

- Operational discharge of liquid and gaseous effluents including cooling waters;
- Emissions from storage of chemical products;
- Emissions from storage of solid waste;
- Emissions from storage of liquid wastes;
- Emissions from transport;
- Runoff;
- Growth in the production of waste.

### ***Issue: Modification/loss of ecosystems or ecotones and decreased viability of biological resources due to contamination and disease:***

- Modification or loss of aquatic habitats;
- Changes in land use;
- Introduced species;
- Changes in the sediment transport regime.

In addition, the following transboundary issues contribute to this issue:

- Modification of the hydrological regime;
- Flooding events and elevated groundwater levels;
- Chemical pollution;
- Radionuclide pollution;
- Eutrophication.

***Issue: Modification of the hydrological regime of surface waters:***

- Flow regulation, including required releases from the Dnipro reservoirs;
- Flow diversions between the river basins or within the basin;
- Flow abstraction for domestic and industrial purposes;
- Land drainage activities;
- Flow abstraction for irrigation;
- Returns/runoff of water;
- Flow diversion for aquaculture;
- Peat extraction activities.

***Issue: Eutrophication:***

- Operational discharge of liquid and gaseous effluents including cooling waters;
- Runoff;
- Emissions from storage of liquid wastes;
- Emissions from storage of solid waste;
- Emissions from transport;
- Inputs of water-soluble compounds from drained areas.

***Issue: Flooding events and elevated groundwater levels:***

- Modification of the hydrological regime;
- Runoff from land surfaces;
- Elevated groundwater and surface water levels;
- Discharges of water.

***Issue: Radionuclide pollution:***

- Atmospheric and aquatic releases of radio nuclides during the Chornobyl accident;
- Secondary releases as a result of the Chornobyl accident;
- Point and diffuse discharges of mining process waters and tailing wastes from disposal sites at uranium mines and ore-enrichment plants;
- Emissions/discharges from radioactive waste disposal sites and ionising radiation sources;
- Emissions and discharges from NPP's.

## ***2.5 Underlying Sectoral Causes of Transboundary Issues***

The table below illustrates the contribution of the various sectors to the identified transboundary issues.

The sectoral causes contributing to the transboundary issues are:

- Limited capital investment;
- Lack of incentives to introduce improved operational practices
- Lack of incentives to introduce improved resource- and energy-saving technologies;
- Ineffective environmental/economic regulation instruments for the sustainable management of nature uses and pollution control;
- Inadequate level of staff training;
- Inadequate implementation of environmental monitoring;
- Inadequate enforcement and control of compliance with environmental legislation/regulations.

**Prioritised list of sectors contributing to transboundary issues (1 denotes highest priority, 6 lowest priority)**

No.	Major environmental issues of the Basin	Priority sectors						
		Industry	Agriculture	Fisheries/aquaculture	Municipal service sector	Transport	Energy	Consequences of the Chornobyl accident
1	Chemical pollution	1	2	6	3	4	5	-
2	Modification/loss of ecosystems and ecotones, and decreased viability of biological resources	5	1	3	4	6	2	-
3	Modification of the hydrological regime	5	2	6	4	3 <sup>3</sup>	1 <sup>4</sup>	-
4	Eutrophication	3	1	4	2	6	5	-
5	Pollution by radionuclides	2 <sup>5</sup>	-	-	-	-	3	1
6	Flooding events and elevated groundwater levels	2 <sup>4</sup>	1	-	3	4	-	-

## **2.6 Root Causes of Transboundary Environmental Issues**

Transboundary environmental issues in the Dnipro Basin, listed in the previous section, are driven by three root causes:

### **I Historical unsustainable development**

The existing state of the Dnipro Basin ecosystem is ultimately the legacy of large-scale unsustainable development in the decades prior to transition to a market economy. This includes the concentration, scale and siting of industrial and agricultural complexes in the Basin. The extensive use of natural resources with little regard for ecosystem function has led to major, and in some instances, irreversible changes in the terrestrial and aquatic ecosystems within the Basin.

### **II The systemic socio-economic crisis during the transition to a market economy**

<sup>3</sup> Water transport

<sup>4</sup> Hydropower energy

<sup>5</sup> Mining industry

The transition from a centrally planned to a market guided economy has been accompanied by a sharp decline in standards of living, widened income inequalities and a deterioration in health conditions. The uncertainty of the conditions in which the economic transition is taking place, including the institutional environment and the weak state of law enforcement have; (a) hampered the progress of economic reform; (b) limited the development of market mechanisms; and (c) led to an economy based on immediate profits that gives little emphasis to environmental issues.

### **III Prevailing attitudes which undervalue the environment**

The lack of past attention to the value of the natural environment (as a provider of goods and services and for its intrinsic value) have led to a poor current state of awareness of the consequences of environmental degradation in government and civil society and a limited degree of motivation for environmental protection.

## **3 Strategy for Environmental Rehabilitation of the Dnipro Basin**

### **3.1 Long-Term Objectives**

The Declaration of the UN Conference on the Environment and Sustainable Development (Rio de Janeiro, 1992), further developed and supported by the international community during the Johannesburg meeting in 2002, defined the notion of *sustainable development* and its three guiding principles:

- Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature;
- Environmental protection constitutes an integral part of the development process and cannot be considered in isolation from it;
- The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

Six priority transboundary environmental issues and their root causes, identified in the TDA, can be resolved in a stepwise manner if the above principles are complied with.

Each riparian country of the Dnipro Basin has developed a National Sustainable Development Concept (Doctrine), and incorporated the above guiding principles into the national environmental policy. Pursuant to their identified priorities, the riparian countries of the Dnipro Basin define their socio-economic development strategies in full concordance with the following objectives:

- Ensuring the sustainable nature use and implementation of adequate environment protection programmes at the Basin level,
- Ensuring environment quality that is safe for human health,
- Conservation of biological and landscape diversity.

#### **I Sustainable Nature Use and Environment Protection in the Dnipro Basin**

The sustainable nature use and environment protection in the Dnipro Basin shall be ensured through the establishment of an effective legal and institutional framework, including:

- The provision of improved legislative/regulatory and institutional mechanisms that are adequate and appropriate for ensuring the sustainable use of natural resources and protection of the environment at the national level;
- The establishment of an institutional framework for the international management of the Basin, including an adequate legislative framework for multi- and bilateral cooperation, and enhanced cooperation with the international donor agencies in the field of environmental rehabilitation of the Dnipro Basin;
- The provision of a legal and institutional framework for encouraging and promoting public participation in the decision-making process at the national and international level;
- The harmonisation of environmental legislation of the riparian countries of the Dnipro Basin with that of the EU.

## **II Environment Quality that is Safe for Human Health**

Over the past decade of economic recession, there has been a continuous reduction in emissions/discharges of pollutants and application of agrochemicals. However, this has not led to any significant, or at least comparable, improvement in the state of environment.

The history of intensive economic activities has had a profound effect on the environment in the Dnipro Basin. The scale of this effect is so great that some areas of the Basin have completely lost their assimilative capacity.

In all the riparian countries of the Dnipro Basin, the levels of many pollutants in various media have exceeded mandatory limits. The expected growth of production output in all sectors of the economy will exacerbate the environmental situation, leading to a further deterioration of living conditions and a continued decline in the human population, unless the precautionary approach is taken to implement actions to protect and conserve the environment.

The Dnipro Basin SAP defines the mechanisms and specific actions designed to ensure the environmental rehabilitation of the Dnipro Basin and an improvement of environmental quality to a level that is safe for human health and biological diversity.

## **III Conservation of biological and landscape diversity**

The history of intensive exploitation of natural resources in the Dnipro Basin has led to a progressive degradation of natural ecosystems and habitats. This has resulted in a reduction or loss of habitats, changes in population structure, a disintegrated ecological network, the loss of species (both plant and animal) and a decline in population numbers.

The Dnipro Basin Biodiversity Conservation Strategy is seen as an integral part of the overall regional strategy designed to promote and advance the transition towards the principles of sustainable development, and a means for resolving transboundary issues of global and regional significance. It defines a suite of specific actions to be taken to maintain essential processes occurring in the Basin ecosystem, create favourable living conditions for the human population and conserve and restore the amenity value of the Basin environment.

A detailed description of the ***Long-Term Ecological Quality Objectives (LTEQOs), the shorter-term operational objectives devised to ensure progress towards these LTEQOs, and specific***

*actions needed to be taken to facilitate the operational objectives* is provided in the following sections of this document.

In order to formulate options for achieving the objectives set by the SAP that are fully in line with national policy priorities, the riparian countries of the Dnipro Basin have:

- used the following timescale: 5-10-15 years;
- ranked the actions in terms of their priority: High, Medium, Low;
- estimated the cost of implementation of these actions.

### ***3.2 Steps to be Taken to Ensure the Environmental Rehabilitation of the Dnipro Basin***

Each LTEQOs identified in this Programme involves a number of tasks and a series of logical and interrelated steps to be taken to attain it.

In order to measure progress towards each of the agreed LTEQO, success indicators have been identified that refer to a change in the environment quality.

#### **I Sustainable Nature Use and Environment Protection in the Dnipro Basin**

Sustainable nature use and environment protection in the Dnipro Basin shall be ensured through the establishment of effective legal and institutional mechanisms.

The steps to attain this objective are set out below:

- Step 1.1 The provision of improved legislative/regulatory and institutional mechanisms that are adequate and appropriate for ensuring the sustainable use of natural resources and protection of the environment at the national level;*
- Step 1.2 The establishment of an institutional framework for the international management of the Basin, including an adequate legislative framework for multi- and bilateral cooperation, and enhanced cooperation with the international donor agencies in the field of environmental rehabilitation of the Dnipro Basin;*
- Step 1.3 The provision of a legal and institutional framework for encouraging and promoting public participation in the decision-making process at the national and international level;*
- Step 1.4 The harmonisation of environmental legislation of the riparian countries of the Dnipro Basin with that of the EU.*

The following actions need to be taken to facilitate the implementation of these steps:

- The enhancement of environmental legislation and regulations and their integration into the sustainable development concept. Priority: High. Term of implementation: 5-10-15 years.
- Ensuring compliance with the requirements of environmental legislation and regulations at all levels of state governance. Priority: High. Term of implementation: 5-10-15 years.

- Strengthening the legislative and regulatory framework for water resource management on a catchment's basis. Priority: High. Term of implementation: 5-10-15 years.
- Pursue an economically viable and environmentally sound tariff policy in setting charges for natural resource use and environmental pollution. Priority: High. Term of implementation: 5-10-15 years.
- The signing and ratification of the Agreement on Cooperation on Management and Protection of the Dnipro Basin . Priority: High. Term of implementation: 2 years.
- Establish and ensure the sustainable operation of the International Dnipro Basin Commission. Priority: High. Term of implementation: 5-10-15 years.
- Ensure sustainable operation of the International Dnipro Basin Council. Priority: High. Term of implementation: 5-10-15 years.
- Implementation of the Transboundary Monitoring Programme. Priority: High. Term of implementation: 5-10-15 years.
- Ensuring the exchange of environmental information on the basis of the agreed information exchange procedure. Term of implementation: 5-10-15 years.
- Jointly develop and implement the environmental action programmes. Priority: High. Implementation term: 5-10-15 years.
- Increasing the level of responsibility and accountability of local authorities and the public for the ecological status of the Basin. Priority: High. Term of implementation: 5-10-15 years.
- Encouraging the active participation of the public in the legislative process; introducing and promoting the practice of independent review of draft laws; encouraging the active involvement of the public in the preparation and implementation of environmental programmes. Priority: High. Term of implementation: 5-10-15 years.
- Harmonisation of legislation relating to prevention of chemical, nutrient and radionuclide pollution in line with the EU approaches. Priority: High. Term of implementation: 5-10-15 years.

***Success Indicators to Measure the Progress towards the LTEQO:***

- Integration of the basin management principle into environmental legislation.
- An effective mix of economic and administrative instruments for nature use management.
- Ratification of the multilateral Agreement by the riparian countries of the Dnipro Basin.
- The establishment of a permanent trilateral executive authority for the management of the Dnipro Basin based on the provisions of the Agreement.
- Sustainable operation of the International Dnipro Basin Council.
- Availability of objective monitoring information on the ecological status of transboundary sections of the Basin, and efficient exchange of environmental information on the basis of the agreed information exchange procedure.
- Sustainable cross-border cooperation on environmental issues, based on the existing bilateral agreements signed between the riparian countries of the Dnipro Basin.

Cost estimates for these actions are reflected in Table 3.2.1.



**Table 3.2.1. Sustainable Nature Use and Environment Protection in the Dnipro Basin**

- Step 1.1 The provision of improved legislative/regulatory and institutional mechanisms that are adequate and appropriate for ensuring the sustainable use of natural resources and protection of the environment at the national level;*
- Step 1.2 The establishment of an institutional framework for the international management of the Basin, including an adequate legislative framework for multi- and bilateral cooperation;*
- Step 1.3 The provision of a legal and institutional framework for encouraging and promoting public participation in the decision-making process;*
- Step 1.4 The harmonisation of environmental legislation of the riparian countries of the Dnipro Basin with that of the EU.*

Activity	Priority	Time required to achieve implementation	Financing requirement (million US \$)			Expected results	Uncertainties
			RB	RF	UA		
The enhancement of environmental legislation and regulations on the basis of a scientifically sound rationale, and their integration into the sustainable development concept	1	5-10-15 years	1.1	0.51	1.2	The principles of sustainable development incorporated in the provisions of national laws, and their implementation mechanisms established by relevant by-laws	Instability of existing economic management framework, contradictions at the sectoral level, lack of experience in the multilateral cooperation on a catchment basis
The enhancement of the legislative and regulatory framework for water resource management on a catchment basis through the provision of a scientifically sound rationale	1	5-10-15 years	1	0.24	4.26	Water resource management on a catchment basis is incorporated into the state governance system of the riparian countries	Contradictions at the sectoral level, lack of understanding at the local level with regard to the basin management concept
Ensuring compliance with the requirements of environmental legislation and regulations at all levels of state governance	1	5-10-15 years	44.1	0	5	Effective regulatory and public control	Lack of incentives and low wages of inspectorate staff. Inadequate technical capacity of regulatory authorities. Inadequate legislative framework limits the public control

***Agreement on cooperation in the field of use and protection of the Dnipro basin***

***Annex 1***

Activity	Priority	Time required to achieve implementation	Financing requirement (million US \$)			Expected results	Uncertainties
			RB	RF	UA		
Pursue an economically viable and environmentally sound tariff policy in setting charges for natural resource use and environmental pollution	1	5-10-15 years	0.75	0.15	0.52	Gradual increase in the environmental fee rates to achieve the EU level	Environmental actions are considered a low priority in the context of overall budget planning and financing the cost of socio-economic development programmes
The preparation and signing of the Agreement on Cooperation in the Field of Management and Protection of the Dnipro Basin	1	1 year	0.04	0.04	0.07	The Agreement signed	Instability of existing governance system
Establish and ensure the sustainable operation of the International Dnipro Basin Commission	1	5-10-15 years	0.1375	0.1375	0.27	The Commission established and meet regularly	Instability of existing governance system
Ensure the sustainable operation of the International Dnipro Basin Council	1	5-10-15 years	0.12	0.12	0.18	The Council meet regularly	Instability of existing governance system
Implementation of the Transboundary Monitoring Programme	1	5-10-15 years	0.9	0.9	1.3	The riparian countries of the Basin receive the environmental monitoring data on the state of environment in the transboundary sections of the Dnipro Basin on a regular basis	Contradictions at the sectoral level, lack of training capacity and practical experience in the transboundary monitoring, inadequate coordination at the international level
Ensuring the exchange of environmental information on the basis of the operational procedure, agreed for the International Environmental Data Base	1	5-10-15 years	0.2015	0.2015	0.397	The riparian countries publish information on the state of environment in the Basin at the relevant web-pages on a regular basis	Lack of adequate financing to cover recurrent and capital expenditures associated with the Data Base operation. Lack of progress in establishing the international and national structures responsible for the maintenance and operation of the Data Base
Jointly prepare the Report on the State of Environment in the Dnipro Basin	1	Every five years	0.02	0.02	0.04	The report is published every five years	Lack of coordination at the international level

***Strategic Action Programme for the Dnipro Basin and Mechanisms for its Implementation***

Activity	Priority	Time required to achieve implementation	Financing requirement (million US \$)			Expected results	Uncertainties
			RB	RF	UA		
Jointly prepare and implement the environmental action programmes	1	5-10-15 years	1.05	1.05	2.05	Action programmes on the protection of population and territories against harmful impact of waters at the international, national and regional level	Contradictions at the sectoral level, lack of coordination at the international level
Increasing the level of responsibility and accountability of local authorities and the public for the ecological status of the Basin	1	5-10-15 years	3.25	3.34	5.4	Environmental Action Plans at the municipality level adopted and implemented by local authorities	Inadequate level of environmental education among the public and local authorities
Strengthening the capacity for environmental education and awareness raising among various stakeholder groups with the active involvement of non-governmental organisations	1	5-10-15 years	5.4	5.4	9.1	Organisation of summer EcoCamps, preparation and publication of educational materials for target audiences; instituting awards for the best publications, TV and radio programmes on environmental issues; dissemination of the up-to-date information and educational materials in the educational institutions, instituting awards for the best teachers and students in environmental sciences, support for the school-based environmental monitoring network	Lack of support from the local authorities and public. Inadequate level of methodological support
Encouraging the active participation of the public in the legislative process; introducing and promoting the practice of independent review of draft laws; encouraging the active involvement of the public in the preparation and implementation of	1	5-10-15 years	9.1	9	14.4	The monitoring of the SAP implementation is undertaken by the NGO network, the sustainable NGO resource centres, the sustainable operation of the International Dnipro River NGO Network, the small grants programmes available to support	Lack of motivation in the governments. Lacking or inadequate financing

Activity	Priority	Time required to achieve implementation	Financing requirement (million US \$)			Expected results	Uncertainties
			RB	RF	UA		
environmental programmes						environmental NGOs	
Harmonisation of legislation relating to prevention of chemical, nutrient and radionuclide pollution in line with the EU approaches	1	5-10-15 years	0.3	0.3	0.36	A set of laws and regulations relating to the approximation of environmental legislation	Contradictions at the sectoral level, lack of coordination at the international level

## **II Environment Quality that is Safe for Human Health**

The steps to attain this objective are set out below:

***Step 2.1: Ensure safe water consumption and use in the Dnipro Basin***

***Step 2.2: Achieve a reduction in anthropogenic load for a range of priority chemical substances***

***Step 2.3: Adjust the level of anthropogenic load to take account of the assimilative capacity of the Basin***

***Step 2.4: Minimise the threat of the adverse impact of radioactive pollution on human health and the environment.***

***Step 2.5: Ensure safe living conditions in the areas affected by flooding events and elevated groundwater levels.***

The following actions need to be taken to facilitate the implementation of these steps:

- Strengthening the capacity for water use management. Priority: Medium. Term of implementation: 5-10-15 years.
- Improving the technologies for municipal wastewater treatment, storm water treatment, and sludge management. Priority: High. Term of implementation: 10 years.
- Reduce the impact of pollution hot spots on the transboundary sections of the Dnipro Basin (see Annex 3). Priority: High. Term of implementation: 5-10-15 years.
- Strengthening the capacity for industrial and municipal waste management. High. Term of implementation: 5-10-15 years.
- Introduction of an enhanced groundwater/surface water monitoring regime in the Basin, and improved exchange of monitoring information at the national level. Priority: High. Term of implementation: 5-10-15 years.
- Strengthening the capacity for early warning and response to the extreme pollution events affecting surface waters. Priority: High. Term of implementation: 5-10-15 years.
- Introduce a systematic approach to pollution control and prevention in the industrial sector (integrated preventative approach), implement environmental management systems in combination with Best Available Techniques (BATs). Priority: High. Term of implementation: 5-10-15 years.
- Introduce improved and environmentally sound agricultural practices. Ensure improved control over pesticide application in agriculture. Priority: Medium. Term of implementation: 5-10-15 years.
- Establish and maintain water-protective zones and riparian strips to protect water bodies. Priority: High. Term of implementation: 5-10-15 years.

- Implement remedial actions in the areas affected as a result of the Chornobyl accident. Priority: High. Term of implementation: 5 years.

***Success Indicators to Measure the Progress towards the LTEQO:***

- Increased proportion of population with access to good quality drinking water in quantities that are adequate to meet the essential needs.
- Reduction in chemical and radioactive pollution load of anthropogenic origin, affecting the air, water, and soil.
- Provision of access to reliable monitoring information on environmental quality for state governance bodies and the public.
- Reduction in pollution load from diffuse sources.
- Reduction in damage caused by the harmful effect of waters.
- Reduction in diffuse discharges of radionuclides from the areas affected as a result of the Chornobyl accident.

Cost estimates for these actions are provided in Table 3.2.2.

**Table 3.2.2. Steps to be Taken to Attain the LTEQO: Environment Quality that is Safe for Human Health**

**Step 2.1:** *Ensure safe water consumption and use in the Dnipro Basin*

**Step 2.2:** *Achieve a reduction in anthropogenic load for a range of priority chemical substances*

**Step 2.3:** *Adjust the level of anthropogenic load to take account of the assimilative capacity of the Basin*

**Step 2.4:** *Minimise the threat of the adverse impact of radioactive pollution on human health and the environment*

**Step 2.5:** *Ensure safe living conditions in the areas affected by flooding events and elevated groundwater levels*

Activity	Priority	Time Required to Achieve Implementation	Financing Requirement (million US \$)			Expected Results	Uncertainties
			RB	RF	UA		
Strengthening the capacity for water use management, including:	1	5-10-15 years	156.9	99.7	526	Upgrade, expansion and/or construction of water supply systems, wastewater treatment facilities, and/or flood-control structures	Inadequate financing
?) Improvement of water supply	1	6-10-15 years	69.2	40	198		
?) Improvement of wastewater collection and treatment	1	7-10-15 years	85	56.4	299.6		
?) Prevention of harmful effects of waters	1	8-10-15 years	2.7	3.3	28.4		
Improving the technologies for municipal wastewater treatment, storm water treatment, and sludge management	2	5-10-15 years	6.4	56	35	Achieving compliance with wastewater treatment standards	Weak economic incentives, economic volatile economic situation
Reduce the impact of pollution Hot Spots on the transboundary sections of the Dnipro Basin	1	5-10-15 years	45.2	20.4	105.2	The impact of Hot Spots reduced to an acceptable level	Inadequate financing, lack of economic incentives
Strengthening the capacity for industrial and municipal waste management	1	5-10 years	21	7.2	27	Minimised risk of groundwater pollution	Weak economic incentives, volatile economic situation, gross non-compliance with environmental legislation
Introduction of an enhanced groundwater/surface water monitoring regime in the Basin, and improved exchange of monitoring information at the national level	1	5-10-15 years	3.5	2.5	6.5	Optimised water monitoring system	Lack of coordination at the sectoral level, instability of environmental agencies and institutions

Activity	Priority	Time Required to Achieve Implementation	Financing Requirement (million US \$)			Expected Results	Uncertainties
			RB	RF	UA		
Strengthening the capacity for early warning and response to extreme pollution events affecting the surface waters	1	5-10-15 years	0.25	0	0.5	Early warning and response system established in the Basin	Lack of coordination at the sectoral level, instability of environmental agencies and institutions
Introduce a systematic approach to pollution control and prevention in the industrial sector (integrated preventative approach), implement environmental management systems in combination with Best Available Techniques (BATs)	1	5-10-15 years	12	21	22.7	All these principles are integrated into the legal and regulatory framework of the riparian countries, and relevant laws/regulations prepared	Instability of environmental agencies and institutions, inadequate involvement in environmental action at the sectoral level
Introduce improved and environmentally sound agricultural practices. Ensure improved control over pesticide application in agriculture	2	5-10-15 years	22.5	10.4	12	A set of regulations and guidelines	Lack of economic incentives
Establish and maintain water-protective zones and riparian strips to protect water bodies	1	5-10-15 years	2.3	11.2	14	Continuous network of water protective zones and riparian strips	Weaknesses in legislative framework. Inadequate control of compliance with environmental laws and regulations
Implement remedial actions in the areas affected as a result of the Chernobyl accident	1	5 years	6.05	0.3	13.3	Eliminated or minimised release of radioactive substances	Lack of investment, volatile economic situation



### **III Conservation of Biological and Landscape Diversity**

The steps to attain this objective are set out below:

- Step 2.1: Ensure the stable ecological state of water bodies, river floodplains, and riparian ecosystems*
- Step 2.2: Ensure the conservation and restoration of wetlands that constitute an integral part of the European ecological network*
- Step 2.3: Achieve and maintain an optimal pattern of nature reserves and agricultural landscapes*
- Step 2.4: Achieve and maintain an optimal forest cover that ensures the sustainability of the Dnipro Basin ecosystems and takes account of their specific zonal features*
- Step 2.5. Ensure the stable ecological state of meadows and steppes*
- Step 2.6: Create and maintain favourable conditions for the reproduction of native, endemic, and migratory fish species.*
- Step 2.7. Achieve and maintain the optimal network of nature reserves and ecological corridors*

The following actions need to be taken to facilitate the implementation of these steps:

- The establishment of ecological coherent network on the basis of protected areas, protective forests, wetlands and river floodplains that ensures the conservation and spatial interrelationship between typical and rare components of the environment. Priority: High. Term of implementation: 5-10-15 years.
- Compile and maintain the inventory of the most valuable biodiversity conservation areas and carry out an assessment of biodiversity in the Dnipro Basin. Priority: Medium. Term of implementation: 5 years.
- Develop and implement an interstate basinwide programme of actions on the expansion of forests. Priority: Medium. Term of implementation: 5 years.
- Restore closed peat extraction sites and inefficiently used drained areas with peat soil to convert them into wetland areas. Priority: High. Term of implementation: 5–10–15 years.
- Environmental rehabilitation of floodplain landscapes. Priority: High. Term of implementation: 10-15 years.
- Expand the network of protected areas that provide breeding grounds for fish and invertebrate species. Priority: Medium. Term of implementation: 5-10 years.
- Achieve the optimal ratio between the arable land and protected areas to take account of specific features of each soil/climatic zone. Priority: Low. Term of implementation: 5-10-15 years.

- Withdraw from agricultural use about 3.5 million ha of arable land where it has low productivity or is affected and/or degraded by erosion processes, and restore it to its original condition in the following proportion: 1.5 million ha of forest; 1.0 million ha of meadow; 0.5 million ha of steppe; and 0.5 million ha of wetland. Priority: Medium. Term of implementation: 10-15 years.
- Compile the Dnipro Basin Red Data Book. Priority: Medium. Term of implementation: 5 years.

***Success Indicators to Measure the Progress towards the LTEQO:***

1. Increase in:
  - forest cover,
  - area of restored wetlands,
  - number and area of protected sites,
  - number and area of water protection zones,
  - number and area of protective riparian strips,
  - abundance of native and endemic fish species,
2. Reduction in the number of endangered species.

Cost estimates for these actions are provided in Table 3.2.3.

**Table 3.2.3. Steps to be Taken to Attain the LTEQO: Conservation of Biological and Landscape Diversity**

- Step 3.1: Ensure the stable ecological state of water bodies, river floodplains, and riparian ecosystems*  
*Step 3.2: Ensure the conservation and restoration of wetlands that constitute an integral part of the European ecological network*  
*Step 3.3: Achieve and maintain an optimal pattern of nature reserves and agricultural landscapes*  
*Step 3.4: Achieve and maintain an optimal forest cover that ensures the sustainability of the Dnipro Basin ecosystems and takes account of their specific zonal features*  
*Step 3.5: Ensure the stable ecological state of meadows and steppes*  
*Step 3.6: Create and maintain favourable conditions for the reproduction of native, endemic, and migratory fish species*  
*Step 3.7: Achieve and maintain the optimal network of nature reserves and ecological corridors*

Activity	Priority	Time required to Achieve Implementation	Financing Requirement (million US \$)			Expected Results	Uncertainties
			RB	RF	UA		
The establishment of ecological coherent network on the basis of protected areas, protective forests, wetlands and river floodplains, that ensures the conservation and spatial interrelationship between typical and rare components of the environment	1	5-10-15 years	1.6	2.4	10	Conservation of biological and landscape diversity	Instability of existing economic management framework, volatile economic situation
Restore closed peat extraction sites and inefficiently used drained areas with peat soil to convert them into wetland areas	1	5-10-15 years	6.8	6.3	5.1	Restored habitats; stabilised water regime; reduced rate of eutrophication; minimized risk of fire; reduced emissions of carbon dioxide; improved climatic conditions	Instability of existing economic management framework, weaknesses in legislative framework
Compile and maintain the inventory of the most valuable biodiversity conservation areas and carry out an assessment of biodiversity in the Dnipro Basin	2	5 years	0.5	4.8	1.6	The inventory of the most valuable areas and assessment of biodiversity in the Dnipro Basin	Inadequate scientific rationale. Volatile economic situation, lack of investment
Develop and implement an interstate basinwide programme of actions on the expansion of forests	2	5 years	1.7	9.2	51.8	Increased area of protected forests. Restored oak forests and alder plantations	Inadequate financing

***Agreement on cooperation in the field of use and protection of the Dnipro basin***

***Annex 1***

Activity	Priority	Time required to Achieve Implementation	Financing Requirement (million US \$)			Expected Results	Uncertainties
			RB	RF	UA		
Environmental rehabilitation of floodplain landscapes	1	5-10-15 years	0	0.3	0.1	Restored functions of the previously disturbed floodplain ecosystems	Volatile economic situation, lack of investment and sound scientific rationale
Expand the network of protected areas that provide breeding grounds for fish and invertebrate species	2	5-10 years	0.5	2.9	1.6	The interstate network of protected areas that provide reproduction grounds for fish and invertebrate species	Weaknesses in legislative framework, volatile economic situation, lack of investment and coordination at the sectoral level
Achieve the optimal ratio between the arable land and protected areas to take account of specific features of each soil/climatic zone	3	5-10-15 years	5.2	2.6	33.3	The optimal ratio between arable land and protected territories achieved and maintained	Volatile economic situation, lack of investment and incentives for environmental action
Withdraw from agricultural use about 3.5 million ha of arable land where it has low productivity or is affected and/or degraded by erosion processes, and restore it to its original condition in the following proportion: 1.5 million ha of forest; 1.0 million ha of meadow; 0.5 million ha of steppe; and 0.5 million ha of wetland	2	5-10-15 years	30.3	26.1	67.9	Environmental rehabilitation of degraded areas; absence of degraded areas, about 3.5 million ha withdrawn from agricultural use	Volatile economic situation, lack of investment
The enhancement of national legislative framework of biodiversity conservation	1	5-10-15 years	2.65	0.05	0.7	A set of laws and regulations	Lack of sound scientific rationale. Volatile economic situation, lack of investment
Compile the Dnipro Basin Red Data Book	2	5-10-15 years	0.05	0.05	0.1	Publication of the Dnipro Basin Red Data Book	Lack of sound scientific rationale. Volatile economic situation, lack of investment

## **4 Legal and Institutional Framework of the SAP Implementation**

The legal and institutional framework of the SAP implementation is based on:

- Current international and national laws/regulations, and existing institutional arrangements for nature use management in the riparian countries of the Dnipro Basin;
- Legislative/regulatory documents and institutional arrangements formulated within the framework of the Agreement on Cooperation on Management and Protection of the Dnipro Basin (hereinafter referred to as the Agreement), which is seen as the major instrument designed to facilitate the successful implementation of this SAP.

### **4.1 Legal Framework**

**Existing legal framework:** The riparian countries of the Dnipro Basin are parties to a number of global and regional UN Conventions that define the approaches towards (see Annex 2):

- Ensuring sustainable nature use and environment protection in the Dnipro Basin;
- Achieving environment quality that is safe for human health;
- Ensuring conservation and protection of biological and landscape diversity

To facilitate the fulfilment of their international obligations, the riparian countries of the Dnipro Basin have developed and are implementing the relevant bilateral agreements (see Annex 2).

In order to provide an adequate framework for the implementation of provisions set forth in the global/regional UN Conventions and relevant bilateral agreements, the riparian countries of the Dnipro Basin will draft and adopt appropriate national by-laws and regulations.

During the 5<sup>th</sup> Pan-European Conference “Environment for Europe”, held on 22-24 May, 2003 in Kyiv, the Ministerial Declaration on Cooperation for Environmental Rehabilitation of the Dnipro Basin was signed by the riparian countries of the Dnipro Basin. In this Declaration, the Ministers of Environment expressed their “willingness and preparedness to develop the international agreement that will provide a common framework for ensuring the sustainability of international cooperation between the riparian countries of the Dnipro Basin, and establishing the common principles, objectives, tasks and obligations of the parties in the field of environmental rehabilitation of the Dnipro Basin”.

The National Action Plans (NAPs), to be endorsed by the relevant by-laws adopted by the Governments of the riparian countries of the Dnipro Basin, represent the major tool that shall facilitate the implementation of the SAP.

**Proposed options for improving the legal framework:** Taking into account international experience and best practice in the management of international freshwater resources, the riparian countries of the Dnipro Basin have committed themselves to take the necessary action in order to establish an adequate legal framework for managing the Dnipro Basin on a multilateral basis. This in itself represents an unprecedented step forward in developing their international cooperation. This would provide a comprehensive and integrated framework for the riparian countries to address and resolve the transboundary environmental issues existing in the Dnipro Basin, and improve the efficiency of their joint effort in fulfilling and implementing their international obligations at the global and regional level.

A practical step towards a regional policy is the development, endorsement and approval of the Agreement on Cooperation on the Management and Protection of the Dnipro Basin by the respective Governments of the riparian countries of the Dnipro Basin. The present SAP document constitutes an integral part of this Agreement.

In order to ensure the sustainable implementation of the SAP, the parties to this Agreement shall implement the Transboundary Monitoring Programme (TMP) and facilitate the international exchange of environmental information in accordance with the agreed Rules and Procedure of the Interstate Dnipro Basin Environmental Data Base. These provisions of the Agreement shall be implemented at the national level.

## **4.2 Institutional Framework**

**Existing institutional arrangements:** With the assistance and help of the UNDP-GEF Dnipro Basin Environment Programme, the riparian countries have established the following structures:

- The International Dnipro Basin Council;
- The International Dnipro Basin Thematic Centres, comprising the international working groups of experts; and
- The International Non-Governmental Organisation Forum, whose activities are supported by the International Dnipro River NGO Network.

These international structures operate on the basis of their respective Statutes, approved by the relevant International Management Bodies set up under the UNDP-GEF Dnipro Basin Environment Programme, including the Steering, the Joint and the three National Programme Management Committees with the Programme Management Unit providing overall coordination.

In order to facilitate the implementation of the Helsinki Convention (1992) and ensuing bilateral commitments, the riparian countries of the Dnipro Basin signed the Agreements on Use and Protection of Transboundary Water Bodies, and set up the Bilateral Government Committees that play an important role in strengthening cross-border cooperation.

### **Proposed options for improving the institutional framework:**

Key provisions of the Agreement relating to the proposed institutional arrangements include:

- The Conference of the Parties as a supreme body for managing the Basin;
- The establishment of the International Dnipro Basin Commission, to exercise executive and administrative functions;
- The provision of a legal framework and ensuring the sustainable operation of the International Dnipro Basin Council, International Dnipro Basin Thematic Centres, and NGO Forum.
- The coordinated operation of the International Dnipro Basin Commission and Bilateral Government Commissions on Use and Protection of Transboundary Water Bodies.

The riparian countries of the Dnipro Basin consider it necessary to make a formal request to the Global Environmental Facility to provide support and assistance to the sustainable operation of the following structures in the transition period preceding the signing of the Agreement:

- The Steering, Joint and three National Management Committees whose role will be to guide the implementation of the SAP/NAPs;
- The Programme Management Unit, to provide international coordination and monitor the SAP/NAP implementation;
- Technical offices, to be set up in order to provide technical and organizational support to the National Programme Management Committees.

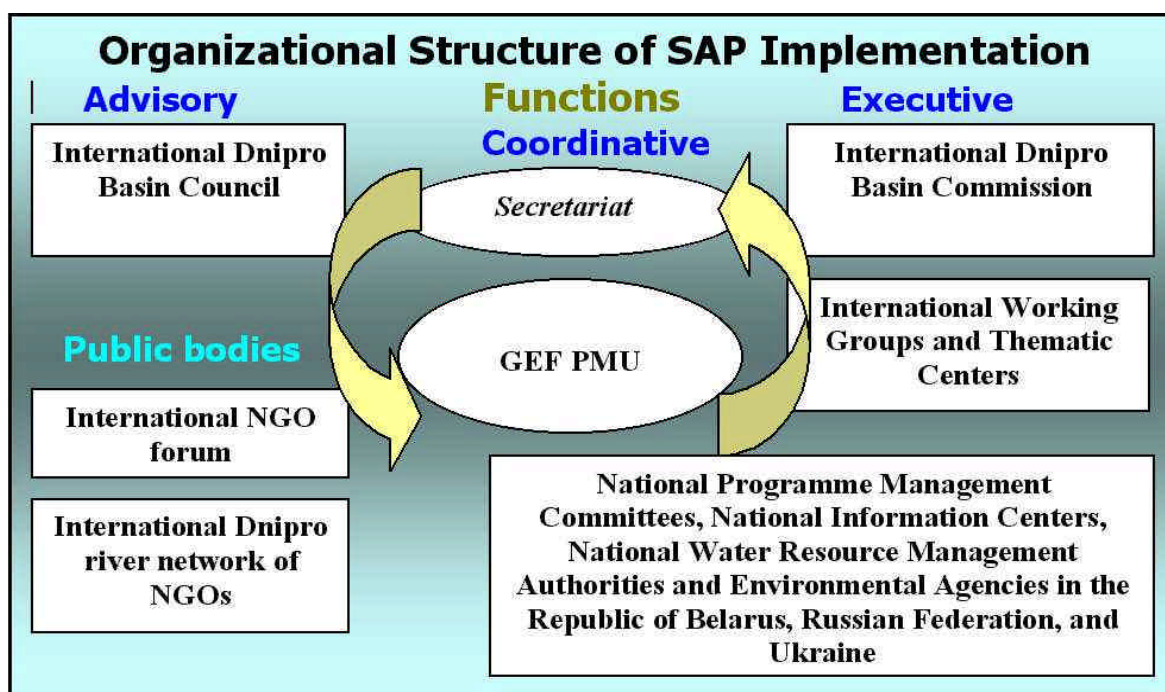
It is imperative that the existing legal and institutional arrangements should be strengthened in order to:

- implement the SAP in line with the sustainable development concepts adopted by the riparian countries of the Dnipro Basin;
- ensure the sustainable and environmentally sound use and protection of the Basin's water resources in the interests of current and future generations and national economies;
- ensure the conservation of ecosystems; and
- minimise/prevent adverse transboundary impacts.

In order to strengthen and coordinate regional cooperation, the riparian countries and international partners should:

- be guided by this SAP and governed by the national environmental laws and global/regional UN Conventions, ratified by the Republic of Belarus, Russian Federation and Ukraine, relating to transboundary pollution, both air and water, and the conservation of biological diversity;
- cooperate closely in order to develop, sign and ratify the Convention on Cooperation in the Field of Sustainable Management and Protection of the Dnipro River Basin (the 'Dnipro Convention' hereinafter).

***Institutional Framework of the SAP Implementation***



### ***4.3 Public Participation***

The SAP provides for a sufficient level of consultation and dissemination of information, and encourages the active involvement of the public in the decision-making process through, *inter alia*, the participation of representatives of citizen groups in the International Dnipro Basin Council and support of the International Dnipro River NGO Network.

The public and non-governmental organizations will be an important part of the process of environmental rehabilitation of the Dnipro Basin at the ***international, national, and local levels***.

1. ***International level*** focuses on coordination of actions across the whole Dnipro Basin, and is represented by the International NGO Forum, supported by the International Dnipro River NGO Network.
2. ***National level*** covers the process of enhancing the legislative framework and strengthening the institutional capacity for wider stakeholder involvement in the monitoring and public control of the SAP/NAP implementation.
3. ***Local level***, where the active involvement of the public will be a prerequisite to the successful implementation of practical environmental actions.

The active involvement of the public in the implementation of the SAP on Environmental Rehabilitation of the Dnipro Basin will be encouraged through (Table 3.2.1):

- The enhancement of national legal systems in order to support public initiatives and ensure the active and effective participation of non-governmental organizations in the implementation of the Dnipro Basin Rehabilitation Programme;
- The acknowledgement and consideration of the interests of the public, as a matter of priority, in the process of formulation and implementation of local environmental action plans;
- Support for the International Dnipro River NGO Network and active involvement of its representatives in the management decision-making process;
- The monitoring of the SAP implementation by the public;
- Dissemination of information on the state of the Dnipro Basin and participation of the NGOs in this process;
- The integration of environmental considerations into educational programmes adopted in the riparian countries, and active involvement of the NGOs in the promotion of the integrated basin management approach.

## **5 Financing the SAP**

### ***5.1 Investment Needs and Estimate of Costs Associated with the SAP Implementation***

The total investment cost of financing the implementation of actions required to achieve the LTEQOs identified in the Dnipro Basin SAP is estimated at 1,676.6 million US dollars. This amount can be broken down by LTEQO as follows: 8% for actions on ensuring the sustainable use of nature resources and environment protection, 75.5% for actions on ensuring the environment quality that is safe for human health, and 16.5% for actions on ensuring the conservation and protection of biological and landscape diversity.

Long-Term Objectives	Required investment	
	Million USD	% of the total sum
LTEQO 1	133.4	8
LTEQO 2	1267	75.5
LTEQO 3	276.2	16.5
Total	1,676.6	



In the light of the national priorities and the scale of the actions identified in the SAP, the total investment can be broken down by country as follows:

Country	Total investment	% of the total sum
Republic of Belarus	392.9 million USD	23.4
Russian Federation	304.8 million USD	18.2
Ukraine	978.9 million USD	58.4
Total for the Basin	1,676.6 million USD	

These outline estimates are indicative only, attempting to reflect the costs that need to be financed by the riparian countries in order to ensure the implementation of basinwide and national actions identified in the SAP. These values are based on the cost data provided in the National Action Plans of the Republic of Belarus, Russian Federation, and Ukraine, and take full account of cost estimates made from the perspective of the long-term objectives of this SAP.

Summaries of the financial needs, broken down by SAP component and priority, are shown in **Tables 3.2.1, 3.2.2 and 3.2.3.**

## ***5.2 Existing Financing Arrangements***

### ***5.2.1 National Sources of Finance***

National legislation for the Republic of Belarus, Russian Federation, and Ukraine specifies a range of potential budgetary and non-budgetary sources which can be used to finance environmental investments. The budgetary sources include government contributions from the state (federal), Oblast (RF Constituent) and local budget, and reserves accumulated by the specialized Environment Protection Funds. The non-budgetary sources include the internal reserves accumulated by enterprises, private sector finance, and donations made by citizens.

The capacity for mobilising funding from national sources for major projects similar in scale to the SAP largely depends on the current state of the national economies and their strategic priorities. Total environmental expenditures constitute about 1% of GDP in the Republic of Belarus and Russian Federation, and about 1.95% of GDP in Ukraine. The 2000 GDP values for the three riparian countries are shown below in billions of US dollars:

Country	GDP
Republic of Belarus	22.0
Russian Federation	341.6
Ukraine	32.6

About 80% of the annual environmental expenditure is used to maintain the existing level of environmental protection/management. The remaining 20% is invested in fixed assets, including the construction/upgrade of new and existing environmental facilities, and the implementation of restoration/rehabilitation measures.

In all three countries of the Dnipro Basin, the environmental expenditure pattern is dominated by water protection expenditures, while funding allocated for land protection/restoration actions is kept at a minimum. This is illustrated by the Table below (2000 data).

Country	Water protection, %	Land restoration, %
Republic of Belarus	53	15

Russian Federation	37	16
Ukraine	66	3

The major sources of investment and their respective contributions are shown in the Table below (%).

Source of investment	Republic of Belarus	Russian Federation	Ukraine
State (federal) budget	21	4	1.3
Regional (Oblast) and local budgets	43	18	0.3
Internal reserves held by industries	10	74	97.9
Environmental funds	26	4	(*)

(\*) – Environmental funds are the component of respective budgets

## 5.2.2 International Sources of Finance

The international cooperation policy of the riparian countries of the Dnipro Basin, particularly with regard to environmental protection, focuses on the following key components:

- Cooperation with the international agencies, including the United Nations Environment Programme (UNEP), United Nations Economic Commission for Europe (UNECE), United Nations Development Programme (UNDP), United Nations Industrial Development Organisation (UNIDO), International Atomic Energy Agency (IAEA), Global Environmental Facility (GEF), World Bank, European Bank for Reconstruction and Development (EBRD), EU TACIS Programme, Interstate Environmental Council (IEC), and other bodies established to support the implementation of international environmental conventions and relevant protocols.
- Bilateral cooperation between the riparian countries of the Dnipro Basin.

Key areas for international cooperation on the management of water resources and rehabilitation of the Dnipro Basin include:

- Strengthening the cooperation and coordination between the riparian countries of the Dnipro Basin (Republic of Belarus, Russian Federation, and Ukraine);
- Mobilising technical and financial assistance from bilateral and multilateral funding sources;
- Attracting external investments to finance the cost of national, regional and local environmental programmes.

Many developed countries provide valuable support for implementing environmental improvements in the Dnipro Basin. These include, without limitation, UK, Germany, Denmark, Canada, Netherlands, USA, Finland, Sweden, Switzerland, and Japan.

Total estimated contribution of international agencies to the implementation of environmental actions in the riparian countries of the Dnipro Basin over the last three years is summarised in the Table below:

Country	Contribution, million USD
Republic of Belarus	12,000,000
Russian Federation	11,000,000
Ukraine	65,000,000
<b>Total for the Basin</b>	<b>88,000,000</b>

### **5.3 Strengthening the Financing Arrangements**

Strengthening the financing arrangements is only possible in the broader context of national environmental policy. This should be based on economic incentives that encourage the active involvement of nature users in the implementation of environmental actions, including the actions identified in this SAP. At the same time, it is important to maintain a balanced mix of administrative and economic instruments for managing the nature uses.

New institutional arrangements have started to take shape in the process of transition to the market economy. They have been driven by a major change in the relationships between the state and private sector. As a result of large-scale privatisation, the management and operation of essential municipal services have been progressively taken over by the private sector in the course of large-scale privatisation. As a result, the role of direct command-and-control tools is also being reduced in response to policies that encourage political decentralisation and institutional reform. However, environmental values and considerations are still low in the agenda of businesses and industries. This problem is complicated by severe budget constraints, and the shortage of funds for financing the cost of required environmental actions is seen as a principal barrier to improvement.

The strengthening of Public-Private Partnership arrangements designed to encourage the active involvement of governance bodies, business community and civil society is seen as a potential option for improving the existing situation.

Emphasis should be placed on the reform of the environmental tax system. This should be based on the 'polluter pays' principle, translated into appropriate economic incentives for a reduction in the environmental impact of human activities. As part of this reform, the system of pollution fees should also be revised to ensure a greater level of cost recovery, simplicity and transparency. It is also important to enhance the system of fees charged for nature resource uses, in order to ensure the financial sustainability of environmental programmes and systems for nature resource use and management.

Financial sustainability of the SAP can be ensured through the introduction of new specific economic instruments designed to encourage environmental investments.

### **5.4 Financing the Incremental Costs**

*Additional funding* required to strengthen the financial sustainability and ensure the prompt and adequate provision of funding for priority environmental actions identified in the SAP/NAPs, may be secured by the Dnipro basin countries in the form of external investments, loans, grants, and other technical assistance arrangements.

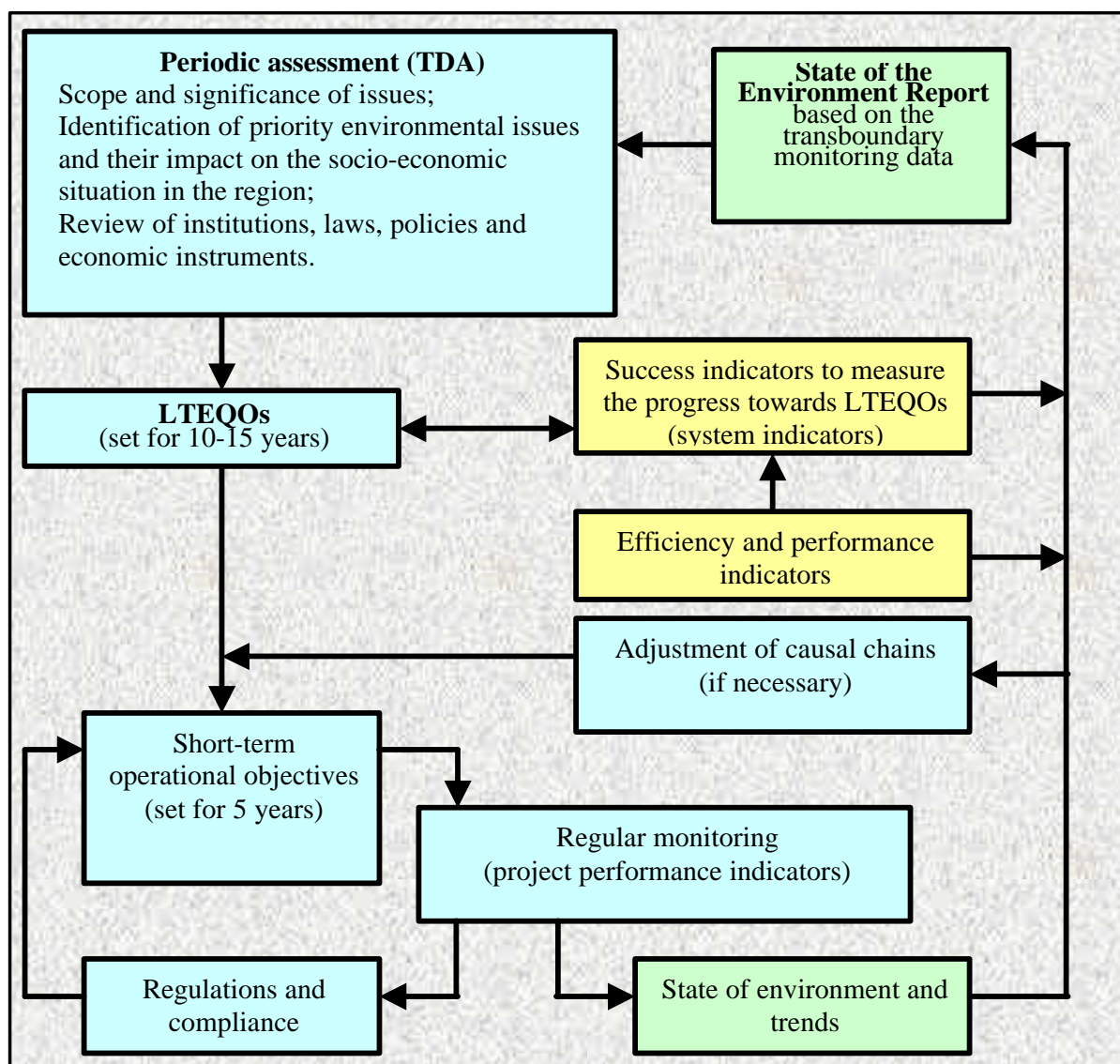
Over the long term, the financing capacity of the riparian countries of the Dnipro Basin is based on the forecasts of the main indicators of socio-economic development. In addition, it is determined by the national target of the Russian Federation to double its GDP over the next 10 years. Thus, the Republic of Belarus will be able to cover 80-85%, the Russian Federation 100% and Ukraine 80% of their investment needs associated with the SAP implementation from their respective national sources. The estimate for the Russian Federation does not exclude the importance of external investments (including donor funding) for the SAP/NAP implementation, provided that the terms and conditions of such investments are attractive (the external sources could provide up to 10-20% of the total required amount of investment). Incremental costs for Republic of Belarus and Ukraine could be provided in accordance with the principles of equity

sharing with external and internal investors participating in attractive bilateral terms and conditions too. Thus, the required amount of incremental costs could be as follows:

Country	Incremental costs	
	Million USD	% to the total amount
Republic of Belarus	58.9 - 78.6	15 - 20
Russian Federation	30.5 - 61	10 – 20 %
Ukraine	195.8	20
Total for the Basin	285.2 – 335.4	

## 6 Arrangements for Monitoring the Implementation of the SAP

Provision of adequate arrangements for monitoring and assessment is a key to ensuring the successful implementation of the SAP. The international and national structures responsible for managing the nature uses and environment protection actions will play a major role in the SAP monitoring (see Section 4).



These bodies have been established through the Ministry of Natural Resources and Environment Protection of the Republic of Belarus, Ministry of Natural Resources of the Russian Federation, and Ministry of Environment Protection of Ukraine, in close cooperation with other ministries and agencies, interested operating agencies and non-governmental organisations from various areas of the Dnipro Basin (Annex 4).

These governmental bodies are responsible for the formulation and implementation of national environmental policies, and coordination of national environmental monitoring efforts. They will undertake monitoring and control of the SAP/NAP implementation on the basis of relevant performance indicators (see table below).

**List of Performance Indicators to be Used for the Monitoring of the SAP Implementation**

No	Indicator	Organisation Responsible for Monitoring		
		RB	RF	Ukraine
1	2	3	4	5
<b>Success Indicators to Measure Progress towards LTEQO 1</b>	<b><i>Additional Indicators (see Section 3.2 – I for Main Indicators)</i></b>			
	The enhanced legal framework and increased level of responsibility of local self-governance authorities for the ecological state of water protective zones and riparian strips	1-3,7,11 <sup>6</sup>	1,2,3	1,2,3,4
	The provision of legally defined mechanism for control of invasions of alien species	1-4	1,3	1,3,4
	The integration of ‘polluter pays’ principle into the legislative framework, to ensure that the cost of mitigating/preventing damages to the environment is covered by users who benefit from activities affecting the state of natural environment	1-3,6,9	1,2,3	1,3,10,12
	The number of drafted and adopted laws/regulations relating to the harmonisation of environmental legislation with that of the EU	1-3	1,3	1,3
	Successful examples of introduction/application of ‘green’ technologies and best practices in the industrial and agricultural sectors, demonstrating the economic benefits of environmental improvements	2,3,9,11	3,4,5,6	3,5,6
	Investments (in million USD) in the upgrade, expansion, and/or modernisation of wastewater treatment facilities	3,5,8,9,11	1,2,3	1,3,11,12
	State funds (in million USD), allocated and released for the performance environmental monitoring and regulatory inspection functions	2,3,3.1,5,11	1,2,3,7,8	1,2,3,12
	Availability of effective pollution controls at the industry and catchment level	2,3,3.1,7,8	3,7,8	3,10,12
	Availability of effective tools for monitoring of invasions and introductions of alien species	3,4	3,8	3,4
	Number of the state environmental reviews conducted with the participation of the public	2,3,11	1,3	1,3,12
	The enhancement of methodological framework for regulating the impacts on the environment	2,3,5,6,7	1,3	1,3
	The development and introduction of economic mechanisms that encourage transition towards the BAT-based approach to setting wastewater discharge limits	2,3,5	1,3	1,2,3
	Availability of regional and local programmes of action on the protection of water resources	2,3,6,7	1,3,4,5,8	1,3
	The enhancement of radiological monitoring of environment	1,2,3,5,9	3,7	3,7,8,12
	The development of a legally defined performance security mechanism for dangerous sites/facilities in order to insure against the risk of potential accidents	1,2,3,5,5.1	1,3,5,6	1,3,8

<sup>6</sup> Ordinal number of the Organization indicated in the Annex 4 to the document “Strategic Action Programme for the Dnipro Basin and the Mechanisms for its Implementation”

	The establishment of safety control service for hydro engineering facilities	2,3,5.1	3,5	12
	The provision of incentives and mechanisms that encourage separate collection of solid municipal waste	2,3,11	3	1,3
	The provision of insurance arrangements for environmental risks	2,3	1,3	1,3
1	2	3	4	5
	The introduction of realistic and achievable target indicators, based on the existing environmental standards and water quality categories; and provision of monitoring mechanisms	2,3	1,3	1,3,4,12
	Building the capacity for environmental education and awareness raising of the public	2,3,11	3	1,3,4
Success Indicators to Measure Progress towards LTEOO 2	<b>Additional Indicators (see Section 3.2 – II for Main Indicators)</b>			
	Road network density	10	3,6	9
	Dredging works	3	3,6	3,12
	Sand and gravel extraction	3	3	3,10,12
	Mineral resource extraction (quarries etc.)	3	3	3,10
	Additional flow due to wastewater discharges from industries	3	3,7	3,12
	Groundwater abstraction	3	3,7	3,10,12
	Changes in vegetation cover	3,6,9,10	3,4	3,13,14
	Changes in water level	3,3.1	3	3,12
	Changes in channel processes	3,3.1	3	3,12
	Flow diversion for irrigation	3,9,11	3,4	3,6,12
	Flow diversion for industrial and municipal needs	3,8,11	3	3,5,12
	Level of water reuse and recycling	3	3	3,12
	Nutrient load	3,3.1	3,7	3,12
	Organic load	3,3.1	3,7,8	3,12
	Chemical pollution load on the basin area	3,3.1,5	3,7	3,12
	Presence of phosphates, nitrogen compounds, and pesticides in soil at the elevated concentrations	3,3.1	3,7	3,6,12
	Presence of storage ponds for liquid waste generated by chemical industries	3,3.1,5	3,7	3,5,6
	Presence of industries specialized in extraction and processing of radioactive materials	3,5	3,5	3,5,8
	Presence of storage sites for expired pesticides	3,9,5	3,4,8	3,6
	Availability and adequacy of wastewater treatment capacity at the sources of pollution	3	3	3,5,12
	Volume of contaminated wastewater discharges from animal-breeding farms and diffuse pollution sources	3,9	3,7	3,6,7,11
	Volume of insufficiently treated and untreated wastewater discharges from municipal utilities, food processing industries, hospitals etc.	3,5,9	3	3,12
	Volume of wastewater discharges	3,3.1	3	3,12

1	2	3	4	5
<i>Success Indicators to Measure Progress towards LTEQO 2</i>	Pollution load carried with storm water and surface runoff from urban areas and agricultural land, accidental spills and releases of wastewater, etc.	3,3,1,5	3,7	3,6,12
	Industrial and municipal solid waste generation, including hazardous waste (total and by sector)	3,5,11	3,7	1,3,5,6,7,11
	Flow diversion	2,3	1,3,7	1,3,12
	Area of shallow-water sections in the Dnipro reservoirs	-	-	3,12
	Area of drained and irrigated land	2,3,6,9	1,3,4	6,12
	Area of reclaimed land	2,3,6,10	3,4	12
	Livestock	9	4	6
	Industrial waste landfills	5,8	3,7	3,5
	Suspended solid load from point and diffuse pollution sources	3,3,1	3,7	3,12
	Application of chemical fertilisers and pesticides	3,9	3,4,7	3,6,12
	Invasion of alien species, number of alien species, density and biomass of alien species, relative density and biomass of alien species, % of density/biomass of a respective community; rate of expansion of alien species per unit area over a given decade; documented evidence of impact on the environment	3,4,7	3,8	3,4
	Chemical pollution load carried with wastewater discharges	3,5,11	3,7	3,12
	Flow regulation rate	3	3	3,12
	Level of treatment provided to contaminated effluents (total and by sector)	3,3,1	3	3,12
	Level of development of centralized water supply and wastewater collection service in the human settlements (residential housing sector)	3,5	1,3	3,5,11
	Transboundary transport of nutrients	3,3,1	3,7	3,12
	Transboundary transport of suspended solids	3,3,1	3,7	3,12
	Transboundary pollution load	3,3,1	3,7	3,12
	Transboundary transport of radionuclides	3,3,1,5	3,7	3,8,12
	Population relying on groundwater sources	3,8,10,11	3,4	3,4,10
	Number of illegal dumps	3,11	3,8	3
	Area of eroded land	3,10	3,4	6



1	2	3	4	5
<b>LTEQO</b>	<b><i>Additional Indicators (see Section 3.2 – III for Main Indicators)</i></b>			
	Reduction in nutrient concentrations in water	3.1	7	3,12
	Visible algal blooms (Chlorophyll-like pigment concentration units (mg/m <sup>3</sup> ) over time (given year/decade) and location (lat/long,) polygon; satellite imaging data)	3,3.1	7	3,12
<b>- 3 ?</b>	Decrease in number of fish kills (fish kills recorded in the Basin)	3,4,7	3,7,8	3,6
	Decrease in number of land subsidence craters	3.1	3	3,10
	Long-term changes in the monthly average flow discharges (mean monthly discharge m3 per second; total volume discharged per month (m3 per month/ hydrological year)	3,3.1	3,7	3,12
	Conservation of hydrographic network in the Basin	3,10	3,7	3,12
	Conservation of natural stream flow hydrograph	3,10	3,7	3,12
	Changes in maximum and minimum monthly average stream flows at various water availability	3,3.1	3,7	3,12
	Decrease in the rate of floodplain modification due to cultivation and grazing, estimated loss of floodplain area (%)	3,10,11	3,4	3,6
	Increase in vegetation cover	3,6,10	3,7	3,13,14
	Transparency changes (Secchi disk data)	3.1	7	3,12
	Stable groundwater quality in the locations of solid waste disposal sites	3.1	4,7,8	3,10
	Reduction in concentrations of suspended solids in water	3.1	7	3
	Pathogens in water (e.g. E-coli and faecal streptococci) present at or below mandatory limits	7	8	4
	Decrease in concentrations of solid waste degradation products and dust particles in the air samples	7	8	4
	Decrease in number and duration of periods of intensive algal blooms with documented environmental/ human effects (frequency (number/year); intensity (biomass/abundance); duration (days); extension (m2); causative species (species)	3,4,11	3,7,8	3,4
	Decrease in area of flooded land and extent of flooding/underflooding events	3,10,11	3,7	3,12
	Presence of radionuclide pollution spots in the catchment area	3,5	3,7,8	3,8,12
	Reduction in radionuclide concentrations in water, bottom sediments and biota	3,5,7	3,7,8	3,8
	Absence of increases in radiation level	3,5,5.1	3,5,7	3,8,12
	Reduction in concentrations of aromatic hydrocarbons in water, sediment and biota due to anthropogenic activities	3,5,7	3,7,8	3,4
	Reduction in concentrations of halogenated PTS in water, sediments and biota due to human activity	3,5,7	3,7,8	3,4

1	2	3	4	5
<i>LTEQO 3</i>	Absence of oil products in water due to human activities	3,3.1,11	3,7	,3,4
	Metals in water, bottom sediments and biota present at or below mandatory limits	3,3.1,7	3,7,8	3,4
	No reduction in base flow	3,3.1	3,7	3,12
	Improved state of landscapes and natural systems, and increased area of protected territories	3,4	3,7	3,10
	Reduced number of accidents, affected areas, accidental spills	3,5	3,7	3,12
	No reports of fish that do not reach WHO public health standards	7,9	3,7,8	4
	Number/proportion of taxa in IUCN threat categories (number of taxa in IUCN threat categories; proportion of taxa in IUCN threat categories; change in taxa number in IUCN threat categories per given decade)	4	3	3,10

The Agreement provides the legal framework for international coordination of the SAP implementation process, and enables the development of an appropriate trilateral legislative/regulatory system, including regional organisational arrangements for monitoring and control.

Monitoring and assessment of the implementation of the SAP for the Dnipro Basin is based on a system of key indicators, consistent with a suite of indicators adopted by the European Environment Agency for Eastern European, Caucasian, and Central Asian countries.

The sustainability of the implementation of the SAP is significantly linked with the application of other mechanisms and outputs produced within the framework of the UNDP-GEF Dnipro Basin Environment Programme, which include, *inter alia*:

- Transboundary Monitoring Programme,
- Regional Strategy for the Conservation of Biological and Landscape Diversity.
- International System for Exchange of Environmental Information and the supporting Environmental Data Base;
- Report on the State of Environment in the Dnipro Basin;
- Mechanisms designed to ensure the involvement of the public in the monitoring of the SAP implementation.

***The Transboundary Monitoring Programme*** has been developed to address the information needs of the interstate basin management system set up in the Dnipro Basin. This includes action planning and assessment needs and the provision of information support to the national agencies responsible for the implementation of the SAP and NAPs.

Key users of information produced by the Transboundary Monitoring Programme include:

- The international basin management system;
- National governmental bodies with responsibilities in the field of water resource protection and management;
- Relevant ministries and agencies (and their regional bodies), involved in the SAP/NAP implementation;
- Research institutions that are responsible for the scientific component of the SAP/NAP process (and the Transboundary Monitoring Programme itself), non-governmental organisations, citizen groups, and water users.

The overall transboundary monitoring strategy adopted for the Dnipro Basin requires that the Transboundary Monitoring Programme should be aligned along the following two axes:

- The assessment of the effectiveness of the SAP/NAPs using information generated with the help of tools employed in monitoring and assessment of water quality in the transboundary sections of the Basin;
- The monitoring of transboundary pollution loads for a range of priority pollutants that contribute significantly to transboundary impacts in the Basin.

***The Regional Strategy for the Conservation of Biological and Landscape Diversity*** pursues the following objectives:

- Consolidation of the national efforts of the Republic of Belarus, Russian Federation, and Ukraine in the field of conservation and restoration of biological and landscape diversity in the Dnipro River Basin;

- Identification of root causes and consequences of reduced biodiversity; and setting the long-term environmental quality targets with regard to biodiversity;
- Development of strategic actions designed to achieve these targets within the specified timescale.
- Ensuring that the international commitments, ensuing from the international conventions on conservation of biological and landscape diversity, signed and/or ratified and/or acceded by the Republic of Belarus, Russian Federation, and Ukraine, are met by these countries.

***An International System for the Exchange of Environmental Information and the supporting Environmental Data Base*** have been established to:

- facilitate the mutual exchange of information between the parties (on the basis of the Protocol for the International Exchange of Information between the Riparian Countries of the Dnipro Basin);
- support coordinated decision-making on issues relating to the SAP/NAP implementation;
- communicate the results of the SAP/NAP implementation to the wider public.

***The Report on the State of Environment in the Dnipro Basin*** provides the detailed picture of the ecological status of the Dnipro Basin prior to the SAP/NAP implementation, and as such will be used as a baseline for evaluation of progress and success of the SAP/NAP.

***The involvement of the public in monitoring and control of the SAP implementation*** is ensured through the provision and strengthening of the arrangements designed to support independent environmental monitoring activities undertaken by the local self-governance bodies and environmental NGOs.

***Arrangements for reporting and monitoring the SAP implementation***

The riparian countries of the Dnipro Basin will produce the SAP/NAP progress report on an annual basis. National reports on the State of the Environment in the Dnipro Basin, to be presented every five years, will be prepared and produced by the Regional Thematic Centres. Based on these reports, and in accordance with the concept and structure approved by the three countries, the Regional Report will be prepared, to cover the following issues:

- trends in the state of environment, defined on the basis of the suite of indicators (see Section 3 and table above);
- the existing legislative and regulatory framework, and the status of compliance;

This Report will provide a basis for regular review of the TDA, revision of the LTEQOs, and subsequent adjustment of corrective actions identified in the SAP.

The riparian countries of the Dnipro Basin shall exchange information on the following issues:

- trends in the quality of the environment in the Dnipro Basin, emerging from the analysis of the transboundary monitoring data (in accordance with the approved data exchange protocol);
- changes in the legal, regulatory, and institutional arrangements, relating to the SAP implementation.

The parties shall review and discuss the progress of the SAP implementation, and relevant adjustments will be made where necessary. ***If and when the need arises, the riparian countries of the Dnipro Basin will initiate the preparation of new versions of the TDA and SAP/NAPs.***

***Dissemination of the SAP document***

The final version of the SAP document will be published in the three national languages of the Dnipro Basin (i.e. Belorussian, Russian, and Ukrainian) and in English. It will be widely distributed in the three countries of the Dnipro Basin for detailed review and to enable the active involvement of the public in the SAP implementation process. The English version of the SAP document will be circulated amongst all of the international agencies involved in the Dnipro Environment Programme. In addition, it will be distributed to international organisations that are interested in the projects and actions identified in the SAP and NAPs.

The electronic version of the SAP document will be made available in Russian and English on the UNDP-GEF Dnipro Basin Environment Programme web page: <http://www.dnipro-gef.net/>

## **Annexes:**

**Annex 1. The GEF approaches to the Dnipro Basin SAP preparation**

**Annex 2. The Dnipro Basin Passport**

**Annex 3. The Priority Investments Portfolio.**

**Annex 4. Institutional framework of the SAP implementation.**