

**NATIONAL STRATEGY FOR
SUSTAINABLE DEVELOPMENT
FOR THE PERIOD TO 2020
OF THE REPUBLIC OF BELARUS**

Key Provisions

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Introduction

The National Strategy for Sustainable Development of the Republic of Belarus covering the period to 2020 (NSDS-2020) is formulated pursuant to the Law of the Republic of Belarus “On State Forecasting and Socio-Economic Development Programs of the Republic of Belarus”.

For the first time, Belarusian NSDS was elaborated and approved by the Government in 1997 (NSDS-1997). It was predicated on the precepts and guidelines of “The Agenda 21” formulated by the UN Conference on Environment and Development (Rio de Janeiro, 1992). NSDS-2020 serves to take into consideration domestic and foreign developments and changes of recent years, as well as the essential policy documents adopted by Belarus, new international agreements, including the UN Millennium Declaration, adopted by the UN General Assembly on September 8, 2000, Political Declaration and Action Plan of the World Summit on Sustainable Development held in Johannesburg (September 2002), etc.

The key provisions of the current forecast plans and programs approved by the President or the Council of Ministers of Belarus have been further developed in the National Sustainable Development Strategy of the Republic of Belarus until 2020. These documents include: the Main Areas of Socio-Economic Development of Belarus until 2010, 2001-2005 Socio-Economic Development Program of Belarus, 2001–2020 Integrated Forecast of the Scientific and Technological Progress, 1998–2015 Industrial Complex Development Program of Belarus, Program of Economy Restructuring and Competitiveness Enhancement of Belarus, National Security Concept of Belarus as well as a number of other dedicated and sectoral programs.

NSDS-2020 primarily focuses on the peculiarities and patterns of the forecast period, follow-up to the “Agenda 21”, harmonization of social, economic and ecological development as equipollent and complementary elements in the “man-environment-economy” balanced system.

Structurally, the National Sustainable Development Strategy of Belarus follows the next logic. The first sections describe start-up conditions in Belarus in the context of global economic trends, define the key components (subsystems) of sustainable development models and imperatives (requirements) ensuring they work in concert, contain evaluation of national resources and socio-economic potential of the country. In the subsequent sections, this helped provide justification for strategic goals, stages and scenarios of moving toward sustainable development, determine key vectors and ways for the Belarusian economy to transit to sustainable development based on the cardinal triad “man – environment – economy”. Later the report expounds on the most important tools, financial, economic, social and political mechanisms of sustainable develop-

ment. The final chapter contains proposals on the establishment of a required monitoring system.

National Strategy for Sustainable Development for the Period to 2020 of the Republic of Belarus has been prepared by the Research Institute of Economy of the Ministry of Economy jointly with the Ministry of Environment, Ministry of Economy, Ministry of Foreign Affairs, Ministry of Industry, Ministry of Food and Agriculture, Ministry of Energy, Ministry of Transport, Ministry of Communication, Ministry of Construction and Architecture, Ministry of Health, Ministry of Education, Ministry of Labor and Social Protection, Ministry of Culture, Ministry of Housing, Ministry of Finances, Ministry of Justice, Committee of Science and Technology, Chernobyl Committee, Committee on Land Resources, regional executive committees and Minsk City Executive Committee, National Academy of Sciences of Belarus, Belarusian Research Center "Ecology", Central Research Institute of Integrated Use of Water Resources, Institute of Socio-Political Studies under the Presidential Administration of Belarus, as well as non-governmental organizations involved in the NSDS development under the UNDP/Belarus Ministry of Economy Project BYE 01/001 "Development and Internalization of National Sustainable Development Strategy within the Context of the Republic of Belarus".

Draft NSDS-2020 was considered and found of substantive value by the Presidium of the Council of Ministers of Belarus on March 23, 2004 (Protocol №12), approved by the National Sustainable Development Commission of Belarus on May 6, 2004 (Protocol №11/15PR).

1 Sustainable development model of Belarus

1.1. New global development trends and place of Belarus in the world

As we entered the 21st century, the human kind encountered an array of intricate problems caused, on the one hand, by collision of the society and nature and, on the other, by political, economic and cultural contradictions between the highly industrialized countries and the rest of the world.

Globalization takes most of the credit for the current transformation processes around the globe: it is an objective process of transforming individual economies from relatively isolated systems into the single world economy. Globalization builds upon the international labor division and economic, political and other relations arising out of that between states, enterprises and companies that bring national economies together and create the common world market with its infrastructure.

The basis of the new global economy are sectors of the 5th and 6th technological order heavily relying upon new knowledge and information. The services share in the GDP of the economically developed countries is estimated at 70–75%. The role of the state policy will be increasing, especially in selecting and supporting priority areas of science and technology.

These trends build the scenery for NSDS-2020 development, which should be taken into account in the identification of key areas and mechanisms of national sustainable development.

Belarus entered the 21st century with an open, export-oriented economy. Nearly 60% of the country's GDP is organically linked to the external marketplace leading to a high degree of national dependency upon global economic trends.

According to UNDP data¹, in 2002, Belarus ranked 62nd in terms of human development index (0.790) among 177 countries grouped with countries with middle human capacity development.

Major socio-economic indicators given in Table 1 indicate the place of Belarus in the world community, European Union and the Commonwealth of Independent States.

1.2. System modalities and principles of sustainable development

General system modalities include both external and internal aspects of sustainable development.

From a civilization perspective, sustainable development should be understood as globally manageable development of the entire world community for the

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¹ Доклад аб чалавечым развіцці 2004. Мн.: Тэхналогія, 2004.

Table 1

Place of Belarus in the world community²

	Unit of measurement	World community	European Union	CIS	Belarus
Share of Belarus:					
total area	%	0.15	0.9	0.94	
population	- " -	0.16	1.4	3.6	
Life expectancy:					
men	years	63.4 ³	75.3	62	62.8
women	- " -	67.7 ³	81.4	72	74.5
Natural growth per 1,000 residents	‰	15.7	2.8	-2.0	-4.9
Share of the unemployed, %	%		7.3	2.3	2.3
GDP per capita (PPP)	USD	7,410	25,532	5,155	7,620
Share in GDP:					
final consumption	%		78	65	80
gross savings	- " -		20.1	22	24
net export	- " -			13	-4
Commodity export per one resident	USD	946	5,948	507	747
Commodity import per one resident	USD	978	5,800	293	831
Production of staple commodities per capita:					
electrical energy	kW/h	2,448	6,621	4,472	2,514
ferrous metal rolls	Kg	140	419	277	146
TV sets, per 1,000 people	units	22.4		7.3	73
Refrigerators and freezers, per 1,000 people	units	11.4		11.1	83
animal oil	Kg	1.2		1.8	6.7
grain	Kg	342	537	617	517
meat, carcass weight	Kg	38.6	95.3	30	63
milk	Kg	80.8	319	230	485

² Comparative analysis covers either 2000 or 2001.

³ Reference book "Status of World Population". UNFPA, 1998.

purpose of conserving the biosphere and human existence and ensuring the continuity in its development. Only the world community as a whole can be sustainable, for biosphere and anthroposphere are an entity of the planet Earth.

General adherence of the world community to the concept of sustainable development, its acknowledgement in the “Agenda 21” and other UN instruments places a commitment on all states to assume “collective responsibility for the strengthening of interrelated and mutually supportive basics of sustainable development – economic development, social development and environmental protection – at local, national, regional and global levels” (Final documents of the World Summit on Sustainable Development, Johannesburg, September 2002). What is more, each country is to observe a number of principles, implement certain imperatives and take into account UN-set indicators on social sector, economy and ecology in their linkages.

This global imperative of sustainable development reflecting the Agenda 21 principles and recent global human development trends, forms, strategies and paradigms is converted into national strategies and imperatives of sustainable development depending on the place and role of a country in the world community and national specifics.

A national strategy is a long-term program of a step-by-step transition to sustainable development. It identifies specific areas of transformation and activities required to achieve the strategic goals, necessary resources and mechanisms, management and coordination arrangements at local, regional, national and international levels.

A set of values existing in a given society and state is instrumental in the formulation and implementation of a strategy. It creates a fundamental framework of

an ideological, political and socio-economic nature for all the aspects of life and sustainable development of people, family, society and state or internal system modalities. Among them, the following will play a dominating role in the formation of a future socio-political system, new economic order, affirmation of values and principles of sustainable development:

- formation and development of a unitary democratic social rule-of-law state;
- development of a modern civil society;
- formation of a socially-oriented market (mixed) economy system.

The Belarusian model of a socially-oriented market economy system, in its complete form, is a highly efficient economy with well-developed private enterprise and market infrastructure, efficacious government regulation stimulating entrepreneurs to expand and improve production, and employees – to work better.

It guarantees a high level of income for conscientious workers, decent social welfare for the disabled, elderly and physically challenged, it bases itself on the principles of constitutional guarantees of rights and liberties of the people, laissez faire and bona fide competition, choice of occupation and employment, equality of state and private ownership (guarantees that it will stay intact and be used for the boon of individuals and society), linking employee incomes to performance, building social partnership of the state, trade unions and entrepreneurs’ associations.

Given the experience of implementing NSDS-1997, Agenda 21, Final Documents of the World Summit in Johannesburg, the national strategy of Belarus builds upon the following **sustainable development principles:**

A national strategy is a long-term program of a step-by-step transition to sustainable development.

- the goal of any progress is man; the level of human development shows how mature a society, state, its socio-economic policy are;
- growing prosperity of the nation, poverty alleviation, alterations in consumption patterns;
- prioritized development of health care, education, science and culture – the cornerstones of the spiritual life of society, factors of lasting growth of people’s productive and creative activities, evolution of national economy;
- improvement of demographic situation, promotion of community sustainable development;
- transition to environmentally friendly, resource-saving, innovative type of economy;
- strengthening linkages between economy and ecology, building ecology-centered economic system and developing it within the economic capacity of ecosystems;
- wise nature use implying un wasteful consumption of renewable resources and minimization of consumption of non-renewable resources, wider use of secondary resources, safe waste disposal;
- development of international cooperation and social partnership for conserving, protecting and restoring ecosystems;
- bringing ecology into minds of people, system of education and morals in the context of new civilization values;
- leading role of the state in achieving the goals and objectives of sustainable development, improvement of management systems, political mechanisms of decision-making and implementation.

1.3. Principal components of sustainable development

“Agenda 21”, NSDS-1997 and NSDS Concept-2020 define a sustainable development model as a system of perfect relations in the triad “man – environment – economy” ensuring the balance of people-centered, economically efficient and environmentally friendly development of the country in order to meet the needs of present and future generations. The principal elements of sustainable development are social sector, economy and ecology, related activities and policy areas which ensure their steady and mutually supportive progress. Each of these elements derives from the basic principles of sustainable development and, at the same time, is not without distinctive operational features, objectives and imperatives of their own within the framework of integration and common policy of sustainable development.

1.3.1. Social and economic components and imperatives of sustainable development

An important factor ensuring sustainable development of the society is creating economic, social, cultural, legal and other conditions for the full development and socially positive lifestyle of an individual, as well as the implementation of the internationally recognized constitutional rights and freedoms of people. An active versatile man of harmony, in good physical health, with education and religious fulfillment fits the needs and principles of sustainable development of a modern society to a tee. Gradual economic and societal development, building a strong nation, social consolidation which is a prerequisite for the strengthening of democratic institutions and the civil society all

An important factor ensuring sustainable development of the society is creating economic, social, cultural, legal and other conditions for the full development and socially positive lifestyle of an individual, as well as the implementation of the internationally recognized constitutional rights and freedoms of people.

contribute to personality development and promotion of social interests.

The social aspect of a sustainable development strategy is based on the principles of unity and interplay of social sector, economy and environment. And it is important to provide social policy with a leading role in the society management system, identify the key areas and implementation techniques, and prioritize them based on the sustainable development objectives.

In social sector, the primary objective is to achieve scientifically grounded parameters of living standards, increase life expectancy, improve the living environment of people, develop their social activities, family planning, rationalization of personal consumption scales and patterns, providing equal access to education, medical assistance and health recovery; social protection of the elderly, physically challenged and other vulnerable target groups. It is envisaged that the environmental awareness of the population should be raised to mould a responsible attitude to the biosphere as a cornerstone of life, observe the laws by which it functions as well as restrictions and bans relating to and arising out of them. Thus, it is a model of effective economic practices, wise consumption and nature use, and healthy lifestyles that we seek to build.

Social imperative is therefore a need to develop and effectively utilize human capital, meet its needs in the fullest way possible.

Economic imperative is, in turn, about transforming the national economy into an effective, competitive, socially-oriented, resource-saving, energy-efficient and environmentally friendly system.

The most essential socio-economic parameters of sustainable development for the period to 2020 and a matter of top at-

tention (priorities) in light of the Plan of Implementation of the World Summit on Sustainable Development in Johannesburg are:

- sustainable livelihoods and quality of life;
- poverty alleviation;
- changes in consumption and production patterns;
- health care and improvement;
- improvement of demographic situation;
- counteracting crime in the life of society.

1.3.2. Ecological component and imperative

NSDS's ecological component represents a seminal constituent of the sustainable development triad "man – environment – economy". It comprises three aspects:

- environment per se, natural resources;
- the process of man/environment interaction;
- environmental policy supporting the ecological imperative in the interest of the society's full range of activities.

In moving toward a sustainable development model, the first aspect includes continual tracking and evaluation of the current condition and changes in environment's capacity, including the capacity of ecosystems used for economic purposes, to keep the anthropogenic pressure from exceeding maximum allowable levels.

The second aspect deals with the implementation of a set of activities designed to gradually reduce the human pressure on environment, create conditions for the environment's capacity to grow and

restore natural ecosystems of Belarus up to a level where the stability of environment, conservation of biodiversity and protection of human health will be guaranteed.

The third aspect synthesizes all system characteristics of the ecological component in general and is implemented in NSDS in the process of elaborating and carrying out ecological policy based on the ecological imperative – a requirement by which ecological concerns are to be mainstreamed into socio-economic development policies.

The ecological imperative includes the following requirements:

- at the center of attention there should be man who has the right to lead a healthy and fruitful life in harmony with the nature;
- equal opportunities for the development and conservation of environment for the present and future generations;
- environmental protection should become an integral part of the overall socio-economic process and cannot be considered in isolation from it;
- unlike in conventional nature conservation practices, the emphasis should be shifted to eco-awareness raising activities relating to economy, above all, to eliminate the causes, not effects, of negative technogenic impact;
- socio-economic development should be given a clear sense of direction toward the improvement of people's living standards within the allowable boundaries of ecosystems' economic capacity;
- bringing ecology into minds and world perceptions of people, their education systems.

The content and substance of the ecological imperative changes as a time function and depending on the progress toward set objectives, with a bias to transformation of economic-ecological relations (economic objectives take priority) into ecological-economic (ecological objectives take priority) and later also social-ecological relations of nature use (social and ecological objectives take priority).

1.3.3. Potential threats to sustainable development and threshold values of socio-economic and ecological security indicators

The Republic of Belarus is a small country with highly open economy and a large degree of dependency on external natural resources and energy. Large-scale transition processes determine a new stage in its development – an on-going complicated process of redesigning a decade-long economic system. This creates a series of internal and external threats, the vast majority of which are economy-driven and can be to a great extent addressed depending on the condition the Belarusian economy is in.

In terms of substance, socio-economic security of the country is a condition of social sector and economy and their institutions, which ensures the protection of national socio-economic interests against internal and external risks.

Internal threats are the most dangerous. Listed below are the key threats:

- inadequate legislation regulating economic relations and ineffectual mechanism of law implementation;
- underdevelopment of civil society institutions, inconsistent reforms and preservation of a large number

of direct controls in the hands of government agencies with no actual monitoring mechanism as to how they are applied;

- economic crime, accompanied by rising criminalization of economy, corruption, widespread concealment of profits and tax evasion;
- structural distortions of the economy we inherited from the past, aggravated by crisis in a number of vital industries;
- poor competitiveness of the national economy caused by obsolete technologies in most of the industries, high degree of energy and resource intensity, prohibitive production costs;
- investment downturn;
- deterioration of scientific and technological potential.

External socio-economic threats to sustainable development include:

- high dependency of Belarus on deliveries of mineral resources, many types of commodities, including of strategic use, some food products, and accessories;
- loss of traditional markets for military equipment and engineering industries;
- discriminatory measures adopted by foreign countries or their communities with regard to trade with Belarus, which are particularly strong in industrial export, technology and know-how transfer markets;
- domestic producers of goods and services (especially consumer goods) are pressed out of the market by foreign agents.

A special role in ensuring sustainable development of the country is attached to

energy security which has the following potential internal threats: unallowable (above the critical mark) depreciation of fixed assets at fuel-and-energy enterprises and energy consumers.

External threats to national energy security are: sharp oil market fluctuations; monodependency on energy imports; regional conflicts in the world; contingent situations arising out of breach of contract by foreign partners.

To prevent these risks from materializing, it is prudent to diversify imported resources by type of fuel and supplier based on the development of alternative energy supply schemes and increase in their strategic reserves; increase a share of domestic energy resources in the fuel-and-energy structure up to 30%; develop joint programs of collective security scale-up with the world community, first of all, with the countries supplying energy resources to Belarus.

Socio-economic security is closely related to **ecological security** – a prerequisite for sustainable development – which reflects how well human life and health and living environment are protected against possible harmful effects of economic and other activities, natural disasters and technological emergencies.

The current level of ecological security in Belarus is so far incompliant with sustainable development goals. Nature conservation activities undertaken in the country fail to bring the quality of environment to sought levels. Virtually all major towns and cities regularly report a variety of pollutants (formaldehyde, carbon oxide, nitrogen dioxide, phenol, ammonia, dust, etc.) exceeding maximum allowable concentrations by 2–3, and sometimes even 10+ times.

Concentrations of pollutants (oil products, nitrogen compounds, heavy metals, etc.) are occasionally found in sur-

face water exceeding the standards by 20 and more times. Groundwater of most of the shaft wells used for rural drinking water supply is not up to quality standards in terms of chemical and microbiological content.

High radioactive soil contamination is still very widespread. The problem of toxic waste piling up at industrial sites of large enterprises continues to be unresolved. Every year local technogenic accidents happen at different sites with massive pollutant discharges. Economic use of the land brings about soil erosion and degradation.

The primary objective of state policy in the field of ecological security is keeping it at a high level in the context of economic growth. This means reaching the following sub-objectives: firstly, prevention of a threat to human life and health as a result of environmental pollution; secondly, prevention of degradation of natural resources potential and gene pool, as well as the destruction of natural and cultural monuments; thirdly, prevention of accidents at risk sites; fourthly, minimization of socio-economic and ecological consequences in case of an emergency situation.

2. Strategic goals and objectives, stages of transition to sustainable development in Belarus

The current trends, global and national imperatives define the **strategic goal of sustainable development in Belarus as the dynamic improvement of public welfare, enrichment of culture and morals of people on the basis of intellectual and innovative development of economy, social sector and spirituality, conservation of environment for the present and future generations.**

The key sources of sustainable development should be: human capacity, scientific, production and innovation potential, natural resources, advantageous geographic location of the country, while the “high intellect – innovation – prosperity” constitute top priorities.

Transition to innovative development, system reforms in economy and society are the essential tasks of sustainable development in Belarus.

Figure 1 shows the top level of NSDS-2020 objective tree, key tasks and tools to implement them.

It will take a lengthy period of time comprising several stages of socio-economic development to achieve the ultimate goal of the national sustainable development strategy.

Stage one (until 2010). The objective of this stage is to further improve liv-

ing standards and quality of life based on the development and wise use of human capacity, enhancement of economy’s efficiency and competitiveness. Priority areas during this period are:

- human capacity development based on improved education, health care, housing construction and other services sectors;
- innovative development of the national economy;
- building export potential through increased competitiveness, technological retooling, application of science-intensive, resource-saving, environmentally friendly productions;
- boosting agro-industrial complex and social recovery of rural areas.

Stage two (2011–2020). The purpose of sustainable development is to bring harmony into relationships of the society and nature based on economic development that does not exceed the reproduction capacity of the biosphere and re-arrange priorities in human values from the material to the spiritual. It is at this stage that the groundwork of a new post-industrial information society will be laid, with a new technological basis designed to ensure a smooth transition to resource-saving production.

Strategic goal of sustainable development in Belarus as the dynamic improvement of public welfare, enrichment of culture and morals of people on the basis of intellectual and innovative development of economy, social sector and spirituality, conservation of environment for the present and future generations.

3. National resources and socio-economic capacity of sustainable development in Belarus

The role and place of a country in the world community, its natural resources, socio-economic capacity and opportunities to build it further are determinants of country's transition to sustainable development.

In terms of the total area (207,600 sq km), Belarus is 6th among the CIS states (following Russia, Kazakhstan, the Ukraine, Turkmenistan, Uzbekistan) and 13th in Europe. In Europe, Belarus is somewhat smaller than Great Britain and Romania, 2.2 times larger than Portugal and Hungary and nearly 5 times larger than Holland and Denmark.

In terms of population (9.9 million as of January 1, 2004), Belarus is 5th among the CIS states (following Russia, the Ukraine, Uzbekistan and Kazakhstan) and 14th in Europe (ahead of Austria, Bulgaria, Sweden).

Belarus boasts a combination of favorable factors and conditions that contribute to its movement toward sustainable development.

3.1. Economic-geographic and geopolitical position

Belarus enjoys a favorable economic-geographic location, placed at the heart of Europe and at the crossroads of important trade and communication systems between the industrially developed countries of Western Europe and parts of Eurasia rich in abundant natural resources.

Trans-European transport corridors

meet on the territory of Belarus supplemented by national and regional transport infrastructure which connects urban and rural settlements of the country and affords foreign trade opportunities.

Geopolitically, Belarus, member of the CIS, is situated between the largest CIS states (Russia in the east and north-east, the Ukraine in the south) and the EU states (Poland in the west and Lithuania and Latvia in the north-west).

Belarus intends to expand reciprocally beneficial cooperation with all the neighbors and other countries in the national interests, especially in addressing general regional socio-economic and ecological issues that are of importance when moving toward sustainable development.

3.2. Population and labor resources

Sustainability of a country's socio-economic development is determined by the number and quality of population, its labor potential, balance of skills and crafts and labor force demand, level of its competitiveness on the labor market.

As of early 2004, the population of the Republic of Belarus was 9,847,700. The current demographic situation is marked by natural loss of population caused by steadily declining birth rate and rising death rate, deterioration of age structure and, as a consequence, ageing of the nation. In-country migration flows mainly take a village-to-city course leading up to

Belarus boasts a combination of favorable factors and conditions that contribute to its movement toward sustainable development.

1.5% reduction in rural populations every year.

Demographics of Belarus are distinguished by low birth rate – 8.9 per mille (in European countries – 9–11) and high, untypical for the developed countries, mortality rate (14.6 and 10–11 per mille, respectively). As a result, the natural population loss (-5.6 per mille) is much greater than in Western European countries (0.1–0.7 per mille).

The population decline tendency is bound to prevail in a long-term perspective. The average annual population will be dropping from 9.9 million in 2003 to 9.5 million in 2010 and down to 9 million in 2020. Rural population will shrink most intensively because of further depopulation and outflow of people to the city. By 2020, urban population is also expected to decrease and positive migration gain will not ensure the replacement level.

In order to mitigate these adverse trends, demographic development should aim to improve health of people and reduce mortality rate, especially in working-age men. Special attention should be paid to creating a supportive family environment in which giving birth to and raising several children would be encouraged.

Labor force serves as a resource basis ensuring sustainable development. Belarus possesses substantial labor potential. The labor force strength reached 6.1 million people in 2002, or 61.6% of the country's population.

In the long term, labor potential will be influenced by able-bodied population growth until 2006 which will reduce drastically in the subsequent period. This will lead to an increase in labor force up to 6,193,000 in 2005 to be followed by a reverse trend – down to 6,064,000 in 2010 and 5,301,000 in 2020.

Efficient employment policy is expected to be established to improve edu-

cational and occupational level of employees and create real incentives for high-yield labor. Improvement of employment patterns by occupation, labor quality upgrades depending on the requirements to specific skills on the national and international labor market will be placed in tight focus of priority. A labor force competitiveness strategy presupposes tackling the issue of external labor migration, including such tasks as assisting Belarusian citizens in securing employment abroad, monitoring of foreign labor force, prevention of illegal labor migration, protection of the national labor market.

3.3. Natural resources potential

The availability of natural resources and their wise management and use in many respects determine the opportunities for sustainable development.

The supply of **water resources** in Belarus is relatively high. The available natural water resources are sufficient to meet water needs, present and future. The surface water resources amount to 57.9 km³ in an average year, including the ones generated within the country's borders – 34 km³. In high-water years, the total river runoff rises to 92.4 km³ and in low-water years it drops to 37.2 km³ a year. Annual renewable (natural) underground water resources are 15.9 km³, the annual underground water storage is 2.3 km³.

The strategic goal in the field of country's water conservation is to improve efficiency of water use and quality of water resources balanced by community needs and possible climate change. This goal is achievable through an integrated approach to tackling water-related organizational, legal, financial and economic problems.

Land resources. Land potential of Belarus is estimated as relatively high. In

recent years, some changes have taken place in the land structure. They are related to the restoration of land's natural and economic capacity, provision of plots of land to the citizenry, transfer of marginal agricultural land into care of forest enterprises, optimization of agricultural land use, allocation of construction sites, etc. In comparison with Western European countries, Belarus is distinguished by well-preserved forests and swamps. Besides, it has a higher supply of agricultural land per one resident, including arable land (0.92 and 0.56 ha, respectively) which is 1.5–2 times greater than in Europe. This trend is bound to remain in the future as well.

As a result of the accident at the Chernobyl Nuclear Power Plant, 1.3 million ha of agricultural land and 1.6 million ha of forested land were contaminated. 248,900 ha were regarded as radioactively hazardous land as of January 1, 2003.

By 2020, expectations are that the current trend of agricultural land reduction will continue as a result of re-designation of approximately 10% of agricultural land, continued land diversions for non-agricultural purposes and decreased land reclamation.

Mineral resources of Belarus form the basis for production development and are the keystone of economy's sustainable development. Belarusian depths have been found to contain over 4,000 mineral deposits.

Belarus annually produces 1.8 million tons of oil, 28 million tons of potassium salt, 1 million tons of rock-salt, 3.8 million tons of dolomite, 40,000 tons of sapropel, 700,000 tons of molding sand, 3.6 million m³ of building stones, 19 million m³ of building sand and sand-and-gravel materials, 3.4 million m³ of clay for making bricks and light-weight aggregates and 0.14 million tons of glass sand.

Despite the availability of oil, associ-

ated gas, peat and brown coal deposits, Belarus is unable to provide itself with sufficient fuel resources using the domestic sources. The oil production in the country is only 12–13% of what is needed and in the future this pattern is unlikely to change.

In the future, potential and explored reserves of mineral resources will enable the country to meet its needs in potassium and rock salt in full and support the required level of building materials.

The strategic objective of sustainable development in the field of mineral resources is to increase supply with domestically extracted mineral resources, ensure their wise use, minimize negative impact of extraction upon the environment and lower import dependency.

Forest resources. The Republic of Belarus is quite well-endowed with forest resources. Between the two most recent inventories (from January 1, 1994, until January 1, 2001), the total area covered by forest has increased by 6.9% to amount to 9.24 million ha. Forested land increased up to 37.8% practically reaching the optimal mark.

A stock of wood per capita is equal to 130.4 m³, which is 2.2 times greater than the European average.

However, there are a number of unresolved problems the Belarusian forestry is facing: the composition of forest is far from perfect in terms of tree varieties; areas covered by hard wood plantations are 1.5–2.0 times smaller than what they could be; there is a high percentage of soft wood; forest grows unevenly across the country.

The overall strategy for the conservation and sustainable use of forest resources in the country should be governed by the following principles:

- multipurpose, non-exhaustive and relatively even use of wood, secondary forest products (mushrooms,

berries, nuts, etc.) and other values of forest;

- conservation and strengthening of environment-forming, protective, sanitary and other natural values of the forest;
- reproduction, improvement of forest quality and composition, yield growth, protection and conservation of forest;
- sustainable use of forest land;
- conservation of forest gene pool, biological and landscape diversity.

In general, the condition of forest resources, their natural dynamics, implementation of proposed strategic activities guarantee that Belarus' needs in wood and non-wood forest products are fully met, ecological functions of the forest are conserved and enhanced, and the country's export potential on that front considerably increased.

Biodiversity of Belarus is of both great national and international value, because it supports global ecological balance and conservation of the biosphere's gene pool. Natural and socio-economic specifics of Belarus contribute to establishing and conserving a multitude of rare ecosystems, flora and fauna, which have disappeared or are endangered in Europe. Our country has managed to preserve considerable areas of natural landscapes that keep the most valuable genetic properties.

Specially protected areas (SPAs) play a key role in the conservation of biodiversity in Belarus. As of January 1, 2004, sanctuary areas of the country included the Berezinsky Biosphere Reserve (80,900 ha); 4 national parks – Belovezhskaya Pushcha (87,400 ha), Braslav Lakes (69.1), Prip'yatsky (82.3) and Narochansky (94,000 ha); 97 national reserves (841,300 ha) and 456 – local reserves (309,700 ha); 337 national and 572 local monuments of nature. With-

in the Chernobyl area, there is the Polesie Radiation Ecological Reserve, which performs specific functions and is not incorporated in the SPA network. The total size of specially protected areas is 1.7 million ha, or 8% of the country's area. By 2020, the SPA area is expected to increase up to 9–10% of the country's size.

3.4. Scientific, technological and innovative potential

The scientific and technological potential of Belarus, i.e. resources and conditions for research, development and innovation, is represented virtually in all the fields of economic activities – from production to management. Over 300 scientific organizations, universities, large production enterprises are engaged in research and development. They employ 30,700 people, including 18,500 researchers and 12,200 engineers and auxiliaries.

The bulk of R&D falls upon natural (mathematics, physics, chemistry, biology) and technical sciences; medicine and agriculture also hold a great potential in that respect. 13.9% of Belarusian industrial enterprises undertake an active innovative approach, the share of innovation in all products shipped is 9.3%, a share of high-technology products in commodity exports is 3.7%.

The goal of the national science and technology policy is to shift to innovative economic development, gradually improve competitiveness of domestic research and development products, speed up their application in the interest of man, economy and environment.

3.5. Information and communication technologies

Most of the countries pursue a development strategy of moving toward informa-

The goal of the national science and technology policy is to shift to innovative economic development...

tion society, which is technologically based on the modern information and communication infrastructure. Developing information and communication technologies (ICT) have revolutionized the nature of global relationships and possibilities for economic and social development. Transition to sustainable development largely depends on the ever expanding ICT integration into society and large-scale utilization of information resources. In this respect. It is of strategic importance for Belarus to prepare itself for the world of information.

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The primary objective of developing information processes and ICT sector further is to create a common information environment in the country as one of the stages involved in moving toward information society. The latter would ensure conditions for improved economic functioning, more efficient national and local governance, rights to free search, transfer and dissemination of information about economic and social development of society.

For achieving this goal, it is necessary to establish a national computer-assisted information system, build a common national information database and infrastructure allowing for computer-assisted interplay of systems at all levels with an access to global international information networks, as well as the rights of individuals and legal entities to have free access to open information within this system.

3.6. Production potential

A country's sustainable development heavily relies on the current production potential, its structure and quality. **Industry** is at the heart of production potential of Belarus. It accounts for 39.6% of fixed productive assets; 2,390 various enterprises employ 27.3% of the total population

employed in the economy and produce nearly 30% of the national gross domestic product.

However, technologies used in industry have grown obsolete and outdated. Most of the enterprises are predominantly equipped according to the 4th technological order, while the industrialized countries have moved to the 5–6th orders. Depreciation of fixed assets used in production has generally reached 80%, greatly exceeding the critical barrier.

A majority of industrial enterprises do not operate at full capacity. A high degree of obsolescence and depreciation of fixed assets used in production makes it difficult to utilize them by most of products items.

Below is the list of crucial tasks designed to improve the effective use of production potential:

- to expedite renewal process of fixed assets through application of advanced equipment, machinery and technologies, including of domestic origin;
- to develop and apply efficacious tools to bring investment into industry to expand enterprise capital base, bank loans, foreign investment;
- to consolidate resources in priority areas, above all, for the development of export-oriented and import-replacement productions;
- to develop and implement investment projects geared toward the production and release of market-competitive products;
- to undertake certification of products and production;
- to ease tax pressure applied to enterprises and take other regulation steps to activate industrial capital investment processes.

The production potential of the **agroindustrial complex** is made up of land, fixed assets and labor resources.

Agriculture uses 8,924,100 ha of agricultural land, including 5,558,200 ha of arable land (0.9 ha of agricultural land, of which 0.56 ha is arable, per capita). Approximately 29% of fixed assets, more than 11% of the total volume of gross added value and over 12% of those economically employed are in the farming sector.

Depreciation of fixed assets used in agriculture has reached 76–77%, in process industry – 70–75%. Only 18–20% of technologies measure up to world standards.

In strategic terms, sustainable development of the agroindustrial complex requires production intensification using newest technological advances, modernization of production facilities and tools, introduction of resource-saving, non-waste and environmentally friendly technologies.

To alleviate social concerns and improve demographic situation in rural areas, interventions directed toward housing improvement, transport development, settlement pattern optimization, creation of new jobs in small and medium-sized business and services sector, revival of traditional arts and crafts will be useful.

The Republic of Belarus has a well-developed **construction complex**. It is responsible for up to 6% of GDP and those employed in economy; it operates more than 4,000 building and maintenance organizations, over 1,400 companies and productions of building materials, 254 design and exploration bureaus.

To ensure sustainable development of the construction complex, it is necessary to introduce new technologies that keep material and energy intensity of building products low at all stages of the investment and construction process, en-

hancing its competitiveness and thus leading to industry retooling and retrofits.

Transport complex of the Republic of Belarus comprises automobile, railroad, air, internal water, pipeline and municipal electrical transport. Belarus has sufficiently well-developed transport and communication infrastructure (railroad and highways, air fields, river ports, pipelines). At the same time, the current state of the transport potential generally fails to meet the requirements for moving the country toward sustainable development.

Vehicles are very old and in compliance with European and world standards. This is the key obstacle reducing the efficiency of transport operations, reflecting upon its competitiveness and posing a serious threat to environment and traffic safety.

3.7. Social infrastructure

Sectors of social infrastructure play an important role in developing the socio-economic capacity of sustainable development in the Republic of Belarus. Against the backdrop of current socio-economic reforms, it was possible to preserve a relative stability of the social sector in the country, keeping its different areas under control, securing the constitutional rights of citizens to health care, access to education, solution of housing concerns.

The success of transition to sustainable development largely depends on the level of **education**. In Belarus, it is quite high – 99.6% of adult population (15 years and older). Education index as a constituent element of the human development index (HDI) is equal to 0.950 allowing Belarus to be in the lead of the CIS states (Russia – 0.93, the Ukraine – 0.93, Kazakhstan – 0.92, Uzbekistan – 0.91).

On the other hand, education system has a number of problems to be addressed

in the coming years: lack of computers in schools; application of information technologies in the teaching process and equipment procurement.

In order to successfully move toward sustainable development, it is equally important to retain the best practice and experience of the education system and to adjust it based on global trends in the area. To ensure sustainable development of education, an effective financing model will be required as well as the availability of multiple funding sources.

As a national resource, **culture** represents a combination of tangible and spiritual values, including the national language, historical and cultural heritage, traditions, folklore, vernacular arts and crafts, professional and amateur art, cultural and artistic education, establishments and staff, cultural relations between nations and states, material and financial support.

The state cultural policy is designed to preserve the national identity of Belarusian culture and traditions; revival, preservation and development of cultural legacy potential; accessibility of cultural values to the general public; protection of spiritual, intellectual and cultural values; integration into world's cultural system on equal terms with all the other participants of global cultural processes.

Health of the nation largely determines development and realization of human capital called upon to contribute to sustainable socio-economic development of our country. Therefore public health improvement and establishment of effective health care are on the priority list of the government.

Belarus has developed a network of treatment and prevention centers, national and regional qualified medical assistance centers, the range of health-related services offered to the public is constantly increasing.

In spite of all that, health status of the nation does not show stability and is characterized by increasing mortality and morbidity rates by the main groups of illnesses, especially, cardio-vascular and oncological, as well as a high level of accident-related injuries. The quick spread of socially dangerous diseases, such as drug abuse and HIV, and their high prevalence among younger population are particularly alarming.

The following is envisaged to address problems in health care: introduction of new funding procedure based on nationwide budgetary allotment standards per resident, improvement of management system, implementation of state and departmental health care development programs, higher responsibility of government agencies of all levels for the health of the population.

Physical education and sport in Belarus serve the single purpose of making the nation healthier and developing physically functional younger generation.

A comprehensive modernization of sports facilities is taking place in the country: modern sports facilities of world standard, stadiums, ice palaces, playgrounds and other athletic facilities are being built in the country which greatly contributes to the promotion of physical training and recreation, as well as athletic achievements of Belarus internationally.

Belarus possesses the substantial **tourism potential**. There are over 16,000 sites of cultural and natural heritage in the country, of which, however, only less than 10% are used for tourism purposes.

Belarus has a reputation at the world tourism market as a state with an ancient history, rich culture and diverse nature. Tourism marketing and promotion, both domestically and internationally, are very inadequate; real cooperation with foreign companies and international tourism or-

The state cultural policy is designed to preserve the national identity of Belarusian culture and traditions...

ganizations is non-existent. As a result, tourism rating of Belarus is low.

In-country tourism is extremely underdeveloped. Low purchasing power of people, rising traveling costs affect children, youth, non-organized and ecological tourism in a negative way. All of this dictates the need for state support of tourism and creation of the necessary tourism infrastructure.

A determining factor of a country's social sustainable development and public prosperity is **housing**. It is the core of the social infrastructure and a material basis for population reproduction. Housing conditions underlie family environment and are key to meeting family needs.

As of January 1, 2003, the amount of housing in the Republic of Belarus reached 216.6 million m² in total size (3,856,200 apartments and houses): in cities and urban villages, this indicator was equal to 138.8 million m², in rural areas – 77.8 million m².

The average housing supply as of this date was 21.9 m² of total space per capita: in urban communities – 19.7 m²/person and in rural communities – 27.2 m²/person. Compared to 1995, the supply of housing space increased by 2.2 m² per person. These indicators are basically within the growth parameters stipulated by NSDS-1997 and are greater than the similar indicators in most of the CIS states.

At the same time, housing amenities and comfort leave much more to be desired, especially in rural areas where these indicators are approximately 30% lower than in cities. House heat protection and planning concept are also in need of improvement.

In order to move to sustainable development, it is necessary to improve the conditions of **housing and communal services**, a sector which is responsible for

construction and maintenance of community engineering facilities, provision of fail-safe life-support services to the public (water supply, sewerage, gas, heat, power, household waste collection and disposal), other services relating to housing management, maintenance and repairs.

3.8. Potential of regions, settlement system and community infrastructure development

Transition to a sustainable development model in Belarus is made in the specific context of developing material environment of regional communities and territories. Such aspects of the material environment as the condition of production and social infrastructure, engineering systems, types and intensity of area use and protection, attitudes to the historical and cultural heritage can either foster sustainable development or hamper progress to it.

Historically, Belarus has a settlement pattern which reflects peculiarities of natural conditions, economic activities, socio-demographic, historical and cultural development of the state. The settlement system represents a network of residential communities connected by spatial, socio-economic and cultural links and subordinate to one another as if in a hierarchy. The system includes 213 urban communities and 24,100 rural communities.

Urban communities of the Republic of Belarus support 71% of the country's population. Nearly half of the population (46.4%) is concentrated in 14 big and large cities (over 100,000 residents) – national and regional centers, including in Minsk – 17%, 5 large cities (more than 250,000 residents) – 18.0% of the total population.

The population of rural communities is 29% of the total.

The population of big and large cities tends to increase. The primary source of urban population growth is migration, which does not only make up for natural loss of population, but also ensures population increase.

Spatial influence of big and large cities, as well as actively developing medium-sized towns (supporting towns of the national settlement system), natural resources of Belarus, already in use or to be used, determine the specific development of individual regions. In conformity with the State Integrated Spatial Organization Scheme of the Republic of Belarus, within the existing administrative and territorial division, 4 types of areas can be distinguished: urbanized, agricultural, natural and special (areas contaminated with radiation). Depending on the dominant function, every administrative district falls under one of the four headings.

Urbanized areas include Minsk Region and areas influenced by supporting towns of the national settlement system. Distinguishing features of urbanized areas are high concentration of urban population, urban functions, intensive agricultural production, high mobility of people related to their employment, social services, recreation, commuting from and to a place of residence.

The key factors fostering their sustainable development are:

- contribution of urbanized areas to socio-economic recovery of communities and territories they are comprised of;
- access to well-developed social infrastructure of a city for the people, including from rural areas: hospitals, universities, leisure development centers, community services;
- application of advanced agricultural technologies based on the scien-

tific and technological potential of the center-city;

- relatively developed suburban recreation industry;
- possibility to choose type of housing (urban, rural, summer house).

Barriers to sustainable development of urbanized areas include:

- poor quality of the environment, high pollution of surface water reservoirs, ground water, soil and air;
- high technogenic pressure on natural landscapes;
- ineffective use of inter-community areas, especially those accommodating transport infrastructure and engineering (roads, power lines, pipelines, treatment plants, dumping grounds, building materials mines, etc).

The dominance of land used for agricultural purposes and a large share of rural population are illustrative of agricultural areas. Their leading function is to produce and process agricultural commodities. The demographic potential of agricultural areas is continually declining due to a number of stubborn and long-standing factors: migration from village to city, low birth rate, high mortality, low life expectancy. By 2020, the rural population may decrease by 30%. The labor potential of rural areas is generally under the influence of factors hampering its development. Decreasing rural population and arable land expansion is to a large degree adjusted for by intensification of farming practices and their saturation with fixed assets. However, generally speaking, the potential of these areas has greatly diminished. The major factors contributing to sustainable development of rural areas are:

- relatively even and dense network of small urban communities provides for tighter “city-village” liaison and improved servicing of ru-

ral communities. A distance between small towns – centers of administrative districts – does not exceed 40 km, small town influence zone is about 20 km;

- high fertility of agricultural land in farming areas of western, south-western and central zones;
- wide diversity of natural and cultural landscapes;
- fine cultural traditions;
- relatively favorable ecological conditions for development.

The most relevant factors impeding sustainable development of rural areas and communities are as follows:

- critical shortages of labor force in the overwhelming majority of districts;
- inconsistent operations of enterprises, their low paying ability, rising unemployment, low investment activity;
- low potential of agricultural land in a number of northern and north-eastern areas;
- narrowed access to education, low quality of community services, limited medical services, lack of medical equipment;

- deteriorated maintenance of service establishments, houses and engineering infrastructure. There is a high portion (up to 80%) of depreciated housing space in rural areas;
- local roads are inadequately developed marring the “small town – village” liaison and, consequently, social services of rural communities and territories.

Natural areas consist of territories with predominant natural landscapes. Natural areas form large natural complexes and regions with a high tourism and recreation potential. Within them, reserves, sanctuaries and national parks are found. Regions with a high tourism and recreation potential possess unique features for the setup of health-improvement vacation, educational and ecological tourism, treatment at spas and resorts.

The most relevant factors contributing to sustainable development of natural areas are:

- unique natural landscapes, rich biodiversity;
- applied legal status of specially protected areas;
- rich medicinal resources (mineral waters, mud, clean forests, etc.);
- rich historical and cultural heritage.

4. Transition of Belarus toward sustainable development: essential avenues and directions

4.1. Social policy, development of human capacity and social sector

4.1.1. Essential directions of social policy, raising the quality of life and living standards

Man takes a central place in a sustainable socio-economic development model as a personality, consumer and producer of goods and services, source of new ideas and their main implementer.

The essential requirements for human capacity development are stability of the society, effective government social policy designed to create an enabling environment for decent livelihoods and unrestricted development of human beings. The social stability will be ensured by means of an effective government social policy.

The prime goal of social policy is to ensure sustained quality of life and living standards in the long-term and create conditions for human capacity development. And the government is to provide every able-bodied individual with such conditions, under which they will be able, through own work and enterprise, to provide for themselves and their families and fulfill social commitments to the fullest extent to the physically challenged, families with many children, the disabled and the poor, etc.

In order to achieve the key goal, the main areas of social policy are to be:

- creating conditions and opportunities for all employable citizens to gain a livelihood to meet their needs;
- ensuring sustainable population employment by retaining jobs at vital and promising enterprises, creating new jobs, including in the private sector of the economy,
- putting in place a flexible HR training and re-training system;
- ensuring growth of real incomes of the population;
- gradual increases in the level of salary as a key source of income and the prime incentive for employee's work;
- developing the middle class as a factor of the society's stabilization through considerable income growth and poverty reduction;
- raising the level of pension support;
- poverty reduction;
- improving social protection of the needy via a reinforced targeted support for the population, streamlined system of preferences and benefits, better social services, etc.

For the implementation of social policy targets, the long-term national strategy will aim to gradually raise the **income level of the population**, as a cardinal indicator of living standards. Public income and salary growth is considered as a factor of economic growth

Man takes a central place in a sustainable socio-economic development model as a personality, consumer and producer of goods and services, source of new ideas and their main implementer.

and expansion of internal consumer demand.

The areas of priority in the **salary** policy should be: drastic salary growth of employees as a key income-generating source and an important work incentive; improvement of work performance and economic efficiency in all sectors of economy; growing investment capacity of people; reduction of tax pressure applied to salary funds of all economic entities regardless of their form of ownership which will contribute to creating new jobs and legalizing shadow incomes of the population.

Poverty alleviation is the top priority of social policy. Minimizing the level of poverty is a matter of front-rank importance for sustainable development in the country. This task will be addressed through the combined effects of economic growth and the improvement of living standards, especially in the working population.

As the minimum and average salary and average per-capita income grow, a share of the population with income below the minimum subsistence budget is expected to be halved by 2015, which conforms to the Millennium Declaration Goals.

Pension support is an essential area of social policy. The national pension system has encountered a number of internal and external problems at this stage of development. Financial constraints and economic problems make it difficult to maintain adequate pension support and properly differentiate pensions according to career and employment merits.

It is a strategic objective of pension reform to create a multi-level system which would combine both allocation and savings mechanisms.

Social insurance is another important component contributing to raising

the quality of life of the population engaged in employment. It should be developed in such a way as to ensure public safeguards against social and professional risks related to loss of income, job or health, and to build an adequate economic basis to cover main social insurance risks.

In the field of **social protection**, the main targets are to ensure state support of the underprivileged and needy, raise the level of government minimum social safeguards and optimize relief plans.

In the forecast period, **social services** will be further developed as a type of targeted assistance and an integral part of the state social protection system. It is envisaged that a network of ambulatory (non-stationary) facilities should take development priority as the most cost-effective and adapted to the real needs of people. Provision of social services at home should also be further explored.

It will be also relevant to establish integrated community centers that would provide a full range of social services to senior citizens, the physically challenged, families, children and other population groups. This will be done in conformity with the approved social standards making services to all people who need them more accessible and of higher quality.

4.1.2. Education system improvement

Sustainable development of the Republic of Belarus largely depends on the level and quality of education, public knowledge of legal and ethical standards regulating the attitude of people toward the nature and society, and the ability to apply this knowledge in everyday life and professional activities, as well as on their capacity to grasp the essence of socio-economic transformations taking place in the country.

Poverty alleviation is the top priority of social policy.

In spite of complicated economic conditions, the government continually strives to increase the share of public expenditures on education using the resources available to it. In 2003, this share amounted to 6.6% of GDP (1990 – 4.3%, 2002 – 6.8%) which is comparable to world indicators (Sweden – 7.8%, France – 5.8%, Germany – 4.6%, Canada – 5.5%, Poland – 5% (according to UNESCO preliminary estimates). The education index was 0.950 placing the country in line with such countries as Switzerland, Poland, Latvia. In terms of this indicator, Belarus is in the lead of CIS member states (Russia, the Ukraine – 0.930, Kazakhstan – 0.920, Uzbekistan – 0.910).

A strategic goal on this front is to create a system of education that would meet the requirements of individuals, society and state, create conditions to develop it further and prepare new generations for life and work in the civil society with sustained people-centered market economy.

The following tasks need to be addressed to achieve this goal:

- create an enabling environment for meeting the needs of people in education, acquisition of profound and comprehensive knowledge, harmonious development of human personality and creativity;
- ensure access to free general secondary vocational and, on a competitive basis – secondary specialized and higher education, succession and continuity of education levels and stages, education democratization;
- raise the intellectual and cultural potential of the population through the improvement and optimization of the national education system;

- ensure integration of the national education system into the global education environment.

In this period, the leading development of education, its orientation toward needs and values of the future, post-industrial civilization becomes particularly important for Belarus. In this context, the substance and methods of teaching should be adjusted to develop creative qualities of individuals, their capacity to make decisions and take action independently, to continually replenish knowledge and improve professional competence.

4.1.3. Health improvement and health care development

Falling living standards and negative environmental changes have led to the deterioration of human health. Judging by the data provided by the experts of the World Health Organization (WHO), 49–53% of human health depends on the chosen life-style, 18-22% % on hereditary predisposition, 17-20% % on the environment status and only 8-10% % on health care development level. Consequently, the major factor influencing nation's health is a lifestyle.

A strategic goal **in the field of health improvement** is to establish a mechanism of government support and encouragement of healthy lifestyles, create strong demand for personal health and prerequisites for meeting this demand.

The following tasks need to be addressed to achieve this goal:

- develop a system of national priorities in civil relations allowing to create a mechanism of government support for healthy lifestyles of the population;
- develop personal moral responsibility of people for their own health and

A strategic goal on this front is to create a system of education that would meet the requirements of individuals, society and state...

that of other members of the community;

- improve physical and psychological welfare of the population;
- improve the quality of the environment;
- create health supportive conditions for the population at work;
- develop and implement a legal and economic mechanism that puts in place such social conditions under which people can realize their aspirations for positive changes in a lifestyle.

Special attention will be paid to the protection of reproductive health, establishment of family planning services, improvement of early diagnostics and treatment of diseases of reproductive system.

A strategic development goal in **health care** is to create an efficient health care system, reinforce its capacity to give every citizen access to quality medical assistance.

To achieve this goal, the following needs to be done:

- clearly defining the level of government health safeguards based on the state minimum social standards;
- financial planning based on budgetary health spending standards per capita as well as the standards of amount and cost of medical assistance;
- expansion of extra-budgetary sources of funding for the sector;
- restructuring of medical assistance and introduction of resource-saving technologies;
- improvement of public health management;
- better equipment for health facilities.

4.1.4. Development of national culture, spiritual and physical recovery

Transition to sustainable development has not only to do with balanced ecological and environmental needs, but also putting in place a whole new system of moral, spiritual, social and ethical values of the society, in large measure depending on the state of **culture**.

A strategic goal of national policy in the field of culture is to develop and effectively use the cultural potential of the country, ensuring succession in the development of the Belarusian culture while encouraging cultural innovations.

To have this goal achieved, the following targets need to be met:

- conservation and development of the cultural heritage, national identity of the Belarusian nation, expansion of the application scope of the Belarusian language;
- ensuring conditions for free cultural development and fulfillment of all social and ethnical minorities residing in Belarus;
- conditions for free creativity in place;
- sound morality of the society;
- access to cultural values for all social strata of the population;
- enforced role of cultural figures and facilities in addressing socio-economic objectives, developing the civil position and socially active personality;
- integration of the Belarusian economy in the global cultural network as an equal participant in global social and cultural processes.

The development of **physical education and sports** is one of the key areas

in physical and spiritual recovery of people, an important factor of healthy lifestyles and improvement of human capital.

Belarus, as a country of many athletic achievements, carries out goal-oriented, comprehensive policies to improve the efficiency of physical education and sports in all areas of human activities. New athletic facilities are being built in the country.

The main goal of the national physical education and sports system development is to make Belarusian people healthier and more physical.

Achieving this goal is impossible without accomplishing the following:

- increased level of physical and health improvement activities;
- motivating people to engage in physical exercises and sports, widening the scope of educational and awareness-raising activities to build healthy lifestyles;
- enhancement of the competitive ability of training first-class Belarusian athletes, high athletic achievements of Belarus on the international arena;
- development of international cooperation in physical education and sports.

The notion of healthy lifestyles should tenaciously permeate into the minds of Belarusian people. To this end, the national physical education and sports policy should be carried out in close cooperation of all legislative and executive bodies, sports organizations and mass media.

Picturesque landscapes, rich historical and cultural legacy provide an ideal environment for the development of **tourism** in Belarus. However, out of more than 16,000 potential tourist sites and fa-

cilities, less than 10% is being used for tourism purposes. A share of the cost of tourist services in the country's GDP is only 0.2%. At the same time, the world experience shows that tourism spending alone as a high-profit sector of the national economy constitutes 12% of the gross world product.

A strategic goal of tourism development in Belarus is to create a highly effective and competitive tourism complex mainstreamed into nature conservation and socio-cultural resources protection.

4.1.5. Housing development

Sustainable development strategy of the **housing sector** provides for comfortable, durable, cost-effective housing facilities that will be able to meet the housing needs of the present and future generations and seeks to create conditions making purchase of a house a reality for every segment of the population.

The housing policy's objectives are to improve the supply of housing, develop housing construction with the preferential use of extra-budgetary sources of funding and long-term loan schemes to purchase housing, further development of housing market and services, efficacious use of the existing housing space.

The housing structure should conform to the social and family structure of the population. The structure of housing construction should give priority to new residential houses with superior consumer qualities where conventional and alternative, low energy consumption amenities and improvements will co-exist and alternative sources of energy will be utilized. The renovation and modernization of the existing housing, especially in rural areas, should be guided by the same principles along with heat-insulation enhancement activities.

The notion of healthy lifestyles should tenaciously permeate into the minds of Belarusian people.

Sustainable development of the **housing and communal services** is determined by an effective and sustained engineering community infrastructure supporting the production and supply of vital services for the benefit of the population and industries, as well as other communal services relating to housing management, maintenance and repairs.

4.1.6. *Combating anti-social phenomena*

The Belarusian state and society are enthusiastically committed to fighting anti-social, sociopathic behavior through economic, social and cultural policy improvements, new national legislation and enhancement of the operational performance of law-enforcement agencies and public organizations. At the same time, in terms of concept and practical application, the country lacks a complete state policy for preventing and combating anti-social behavior. The national legislation, law enforcement and morality building practices are primarily focused on the application of criminal and other penalties, different interdictions and individual correctional work. Social prevention of the anti-social behavior is paid little attention to. The rights of victims of criminal and other offences are not adequately protected, rehabilitation system is underdeveloped and there is no specialized legislation. The prevention of drunkenness and alcohol abuse, drug and substance abuse, prostitution and vagrancy is inefficient. The policy of addressing antisocial behavior requires quality re-thinking and implementation of the scientifically grounded, active and efficient public control strategy.

The main goal of opposing anti-social behavior is to create economic, social, cultural, ethic and legal conditions for balanced development of an individual, match their lifestyles with the generally

recognized, positive legal and ethical rules and deprive crime of the culture medium.

The following activities are required for the implementation of goals and objectives on this front:

- to improve efficiency of government agencies and public organizations in the business of identifying and addressing the main economic, social, cultural and other causes and conditions fuelling anti-social behaviors;
- lessen income differences and social inequities, reduce poverty and misery, unemployment, vagrancy and homelessness, especially among children, youth, women and the underprivileged;
- increase ethical, legal, criminological and victimological education and awareness of the population, especially youth and at-risk social groups. Education, culture, health care facilities, mass media, non-governmental organizations and civil movements, as well as the ethical potential of families, religion, etc. should be widely utilized for these purposes.

4.2. *Development of the real sector of economy*

Further growth of the gross domestic product, development of inter-sectoral linkages and sectors of the economy are essential to sustainable development of the national economy and social solutions. In comparison with 2005, the following growth parameters are expected to be achieved in 2020: the gross domestic product will increase 2.0–2.3 times, capital investments – 2.4–2.7, industrial production – 1.6–1.7, agriculture – 1.6, services – 2.3–2.6. This will bring Belarus, in terms of GDP

The main goal of structural transformations in the industry is to produce competitive high-technology products based on the application of modern resource-saving and environmentally friendly technologies.

per capita, close to the EU countries, based on 2002 PPP, from 30% in 2002 to 60% in 2020 given the annual GDP growth rate of 2–3% in the EU.

In the forecast period, the economic pattern of the country will change, with the share of commodity production gradually dropping to 37–38% by 2020 and the share of services rising to 50–52%, accordingly. By the end of the forecast period, the GDP structure will require an increase in savings share up to 30–31% and investment share up to 26–27% versus 21–22% in 2005, respectively. Despite the diminishing share of consumptive use in the GDP mix, its volume growth will allow to consistently increase the level of consumption per capita.

Progressive changes in the sectoral makeup of national economy should be attained through reduction of the share and scope of energy and material-intensive productions, replacement of ineffective industries with new ones using high technologies and new materials. Development priority should be afforded to:

- informatization and software development;
- nanotechnology and nanomaterials;
- modernization of energy economy;
- biotechnology and genetics;
- science and services sector (education, health care, tourism, transport, etc.).

4.2.1. Industrial structural adjustment. Fuel-and-energy complex

Structural adjustment of the **industry** follows the guidelines of the 1998–2015 Industrial Complex Development Program of the Republic of Belarus stipulating priority development of science-

intensive and energy-efficient subsectors of the industry, export-oriented and import-replacement productions.

The main goal of structural transformations in the industry is to produce competitive high-technology products based on the application of modern resource-saving and environmentally friendly technologies.

Socially oriented industries and sectors will be supported through propping-up of demand internally and externally, including the use of protective import rates within the boundaries allowed by international rules, generally recognized techniques of non-tariff regulation (import certification, etc.).

In moving toward sustainable development in the industry, an effective use of the widest range of resources based on soft technologies is envisaged.

Development priority will be attached to science-intensive, export-oriented and import-replacement types of product, as well as consumer goods and commodities made from domestic raw materials (wood processing, pharmacy, etc.).

The primary development goal of the **fuel-and-energy complex** is to meet country's needs in fuel and energy resources in a reliable and safe way and use them on a sustainable basis.

Based on the ecological requirements and country's supply needs, priority development areas on this front are:

- to ensure energy security and reduce energy dependency of the Republic of Belarus through adjustment of the fuel-and-energy balance (increasing share of secondary energy resources, local fuels, alternative and renewable sources of energy), diversification of primary fuel-and-energy resources according to type and

supply source, building national stockpile of major carriers of energy dominating the energy balance (underground gas storage, oil and residual oil depots);

- to extend the use of electric power while retaining sustained primary energy resource consumption;
- to renovate and retrofit the existing capacities and replacement of retired ones using new technologies;
- to develop advanced oil processing technologies, increasing its depth and quality of oil products;
- to step up the volume of transit services – transit of oil and oil products, gas, electrical energy;
- to reduce the GDP energy intensity through energy efficiency potential at technological, structural and organizational level. It is envisaged that two-thirds of the energy intensity reduction will be attributed to the technological potential of energy saving and one-third – to structural and organizational transformations of the economy toward a larger share of sectors with small energy intensities;
- to mainstream the fuel-and-energy complex into environmental concerns in accordance with the sustainable development principles.

Operational improvements of the electrical energy sector will be achievable through capacity building, renovation and modernization of the existing power plants using gas turbines and steam-and-gas installations; construction of heat power plants fired by coal and wood fuel; hydroelectric stations; establishment of combined heat and power stations on the premises of plant boiler houses; phasing-out of the worn-out condensation units.

4.2.2. Transformations in development of the agroindustrial complex

The development objective of the agroindustrial complex in the long term is to develop efficient, competitive, sustainable and environmentally safe agroindustrial production that would be up to world standards and ensure food security of the country.

A task of primary importance at the initial stage (until 2010) is for the farming sector to improve economic efficiency and ensure economic growth.

To make this a reality, it is necessary to:

- promote in all possible ways research in priority areas and to apply them more actively in production practices;
- develop competitive advantages of the agroindustrial complex, chiefly derived from natural and climatic conditions (milk and meat cattle breeding, flax and potato growing, etc.);
- improve machinery and equipment used in agriculture, modernize it and thus move to utilizing high-performance, resource-saving technologies;
- effectively use production potential and resources;
- concentrate resources in priority areas and highly lucrative types of production;
- substantially increase yielding capacity of crops and producing ability of cattle;
- fine-tune pricing policy and eliminate price disparities;
- transform unprofitable agroindustrial companies into new market entities;

- create conditions conducive to effective work of both collective enterprises and private sector;
- implement dedicated programs targeting agriculture at the cost of the national budget;
- stimulate export.

Institutional changes in the agroindustrial complex designed to address the existing dissociation of producers and consolidate their economic interests will focus on the cooperation and integration of companies, producing, processing and selling agricultural produce, creation of specialized and multi-sectoral agroindustrial food entities, such as farming industrial groups, holdings, associations, which may include financial companies that can be established by associates themselves in a number of cases.

Development priority of the agriculture is to amplify production through modernization of machinery and tools, application of technological advances. It is necessary to move to new technologies capable of easing industrial impact on the environment. Integrated retooling of the agroindustrial complex with the new-generation machinery and equipment of superior performance will ensure considerable improvement of labour productivity and save material resources which will contribute to the preservation of biological equilibrium.

In order to reduce the anthropogenic pressure on the environment, agroindustrial intensification should be adaptive, biologically-oriented and lead to no conflicts between man and nature. To prevent soil pollution with ballast substances and make mineral fertilizers more economically efficient, it is necessary to shift to the production of integrated, agent-concentrated mineral fertilizers.

Since animal husbandry farms were

built in the 60–70's of the last century and their equipment and technology have grown worn-out and obsolete, they should be reconstructed and equipped with advanced, clean technologies.

Regional and spatial specialization and the distribution of agricultural production across the country should be in conformity with the current industrial, economic and natural potential. A transition to landscape-adaptive land cultivation is required to fully take into consideration regional and local soil and climate features.

The use of biotechnology should become one of the areas of scientific and technological progress to intensify agricultural production. Cattle plans call for new breeds, varieties, lines, hybrids and crosses of animals. A great deal of attention will be paid to genetic engineering biotechnologies to select new crop varieties. Intensive and adaptive high biotechnologies will allow for the safety of agricultural practices with regard to both the environment and end consumer.

New approaches to **rural social development** are planned. In strategic terms, villages are viewed not only as an agroindustrial area, but also as a social and territorial subsystem which performs a wide range of economy-related functions (demographic, cultural, recreational, nature conservation, etc.).

It is necessary to approximate the living conditions in villages to those in cities by their quality. Rural inhabitants should have access to the same house improvements and health care, education, trade and services facilities as urban residents.

To keep the natural environment well-conserved, it is necessary to move from the agroindustrial development concept to rural development concept. All branches and areas of production should be tightly linked to social infrastructure and

In order to reduce the anthropogenic pressure on the environment, agroindustrial intensification should be adaptive, biologically-oriented and lead to no conflicts between man and nature.

natural landscape development where agrocenosis will be part of biocenosis.

The implementation of the 2004–2008 Programme of Rural Socio-Economic Development and Rebirth, local sustainable development strategies (“Local Agendas 21”) in districts, small towns and villages will play a major role in addressing these problems.

The main development goal of **processing industry** is to ensure a more complete and reliable food supply of the population and sustainable patterns of consumption, export growth and enforcement of food safety.

4.2.3. Transport and communication: main development areas and parameters

For sustainable development in the field of transport, the following is needed: accelerated renewal and upgrading of the rolling stock, flexible tariff policy, increased volume of export and import freight, transit of cargo and passengers via Belarus, ensuring ecological and traffic safety.

The strategic goals of transport and communication development are formulated in programmatic documents of the Republic of Belarus covering the period 2001–2005, the Main Areas of Socio-Economic Development of the Republic of Belarus to 2010. They are basically to ensure dynamic development of transport and communication through effective use of the available resources, application of newest technological advances and bringing relations of the sector with nature in harmony.

To achieve those goals, fixed assets of transport and communication, especially conveyances need to be modernized, new advanced technologies need to be

developed and applied in carriage, repairs and maintenance of vehicles, transport and trade relations need to be strengthened with neighboring states and the respective legislation needs to be improved.

An integrated system of ecological measures will allow to bring transport to new safety levels, reduce its negative influence on the environment and ensure a new level of technological services involved in the transportation process.

In order to create a modern **communication** infrastructure in the country and ensure sustained and quality operations of the sector, the following tasks require addressing:

- use of new technologies;
- widening the range and improving quality of services;
- reduction of operational costs;
- development of broadcasting network (TV and radio).

4.2.4. Improvement of construction complex

The main goal of the construction complex is to fully meet the needs of people and economy in superior construction products that can successfully compete domestically and abroad. To achieve this goal, it is necessary: to create and apply resource-saving technologies and materials that ensure quality improvement, reduction of material and energy intensity and costs of construction; to step up the production of materials and items with better consumer properties, conforming to the requirements of new-generation construction; to expand export potential; to ensure protection and sustainable use of land, water and air.

In the near future, the construction complex should move to resource-saving production, developing a competitive

environment, finalizing the necessary regulatory frameworks, activating architecture and construction supervision, marketing and engineering, developing contracting bids and construction product certification for the purpose of increasing the quality of building services and materials, and bringing domestic producers to a higher level of competitiveness.

Improved quality of heat-insulating materials and upgrade of their thermo-physical parameters to the European level is planned to be achieved by means of modernizing the mineral wool industry and producing rigid lightweight heat-insulating items from domestic feedstock.

The following will contribute to sustainable development of the construction complex:

- creation of a solid infrastructure, first of all, construction of roads, utility lines, community service centers; improvement of areas adjacent to buildings and houses; expansion of green areas;
- development of a lease-based renewal of fixed assets used in production at construction enterprises; introduction of rental services of building machines and equipment for enterprises that need them occasionally;
- introduction of the quality certification system in accordance with the international standard ISO 9000 and environmental management system certification in accordance with ISO 14000;
- use of modern information technologies in the promotion and marketing of building services and materials via Internet, mass media, etc.;
- participation in international specialized exhibitions, demonstration

of construction achievements, organization of international trade shows in Belarus; developing a big store chain in Belarus, Russia and other countries selling building materials and goods.

4.2.5. *Development of services sector*

Services sector is a set of branches and sub-branches of the economy providing services to the public to meet their material, cultural and social needs as well as the infrastructure needs of production.

One of the laws of societal development is that services grow faster compared to material production and their economic functions broaden. In highly developed countries, the services make up a 60–70% share in the gross national product, in Belarus, it is 44.1% (2002-valid data). A share of services provided to people on a paying basis is only 10% of the total. New types of services, in particular, society informatization and telecommunications market develop very slowly. More than 90% of investment risks are not covered by insurance.

The services sector is intended to develop the essential factors contributing to economic growth, such as scientific knowledge, intangible accumulation, information technologies. Therefore, it is necessary to strive to ensure that by 2020 the volume of services grows 3.4–3.7 times versus 2000 and bring their GDP share to 50–52% by 2020.

Particular attention is to be paid to those services that foster the human factor in economy – development of efficient education, health care and insurance system as well as life improvement and leisure development services.

In order to eliminate differences in services development level in urban and

rural communities, measures should be taken, already at the initial stage, to support economically and administratively social amenities in villages where they play a key role in ensuring normal livelihoods. It is expedient to create regional dedicated funds to finance services development in areas with inadequate services infrastructure, equipment and technologies. The services industry and consumer market should be geared toward specific age and social groups.

Further increase of services export is anticipated. Belarus has every potential to step up exports of transport, information and computer services, international tourism and insurance.

To enhance the competitiveness of the services sector, efficient measures are required to draw investment and promote small enterprise in this area. A considerable portion of persons entering the labor market are expected to secure jobs in the services sector.

4.2.6. Application of modern soft technologies

The application of modern environmentally friendly technologies is a prime tool of sustainable development. Technologies that are used now are in large measure non-ecological, because the obsolescence and depreciation of fixed assets used in production has crossed the critical mark (70–80%). On this account, the use of new clean and soft technologies that preserve the natural environment is of importance for national security and a transition to sustainable development.

The urgent government support is needed in the following important sectors of the national economy and industries.

Fuel-and-energy complex. The key objective in the field of electrical and

heat energy production remains to reduce specific fuel consumption which would contribute to lessening of pollutant emissions and slowing down the degradation of the natural complex of Belarus. Steam-and-gas installations should take priority in the energy system to ensure effective plant renewal rate and air pollution reduction. Special attention should be paid to modern cost-effective technologies used for treating broad-range air-gas emissions. The newest automatic process control system should be used at all sources of generation on a mandatory basis.

The modernization of large **chemical productions** through reconstruction and retooling between 2003 and 2010 will enable the industry to substantially improve its technical and economic parameters, renew fixed assets, and reduce the environmental impact. Revolutionary technical and technological solutions should be applied in the production of polymer chemical materials.

In the **machine-building industry**, a wide use of new technologies, environmental monitoring and protection tools is envisaged to reduce the impact of harmful production, treatment facilities and technologies and waste disposal. The machine-tool industry is to learn the technology for making special tools and equipment of high strength, endurance, heat and chemical resistance, etc. In instrument-making, it is necessary to produce process automation instruments, including “smart” controls and sensors using nanotechnologies, remote and non-contact control by actuators and transport mechanisms, high-speed information processing.

Forest industry restructuring plans include the establishment, in the near future, of domestic production of wood-pulp based on environmentally friendly technologies, which would help improve

The application of modern environmentally friendly technologies is a prime tool of sustainable development.

the utilization of forest resources and materials and lay a resource foundation of the wood pulp-and-paper industry, which so far mostly uses imported pulp.

In the agroindustrial complex, to raise the overall efficiency and produce clean products, a wider use of biological and microbiological means of protection, subsurface tillage, permaculture principle, etc., should be put into practice. The development of effective biological protection means and tools, electrophysical seed disinfection, mechanical and electrical weed control is anticipated. Effective ways of minimizing and utilizing chemical agents in a non-waste manner will be searched for in seed piece and planting stock treatment.

In the housing and communal services, heat modernization and energy supply remain the number-one problem. Heat modernization of houses and public buildings, launched successfully in cities, will be continued with the use of cutting-edge domestic and foreign technology. Sanitary improvement and recycling of solid household wastes in cities are of major importance.

Belarus has its own intellectual potential to develop modern soft technologies, however international cooperation is very important because in that case the chances of all countries in environmental protection and nature conservation will have a much greater success rate.

The plan of implementation of the World Summit on Sustainable Development in Johannesburg provides for a transfer of ecologically clean, unpatented and publicly owned technologies by the developed countries. It is prudent for Belarus to take advantage of this opportunity by seeing to it that imported technologies meet social, cultural, economic and ecological interests and priorities of the country.

4.3. Wise environment management and nature conservation for future generations

Human activities have an increasing impact disrupting the coherence of ecosystems which perform a vital role in the best interests of our welfare and economy. Conservation of favorable environment and wise management of natural resources to satisfy the needs of the present and future generations is the top priority for NSDS-2020. Its implementation implies development and promotion of a proactive state environment policy based on the integration of economic, ecological and social development aspects.

4.3.1. Improved environment policy and better economic mechanism of nature use

The current environment policy promotes reduction of negative ecological effects and improvement of environmental quality through a consistent implementation of structural reformation of economy, technological upgrading of industries, including resource saving methods, environment friendly technologies, reduction of emissions and pollutants, waste management, conservation of biodiversity, and expansion of the SPA network.

The strategic goals of the environment policy of Belarus include: reestablishment of favorable environment; improvement of living conditions and health of citizens; and environmental security.

To attain these goals, a number of tasks need to be undertaken, for instance:

- mitigation of negative effects of the environment unfriendly economy, restoration of disturbed ecosystems;

- fostering of an efficient and sustainable environment management;
- environmental awareness raising which implies strong ties between the ecological, economic and social components of the national sustainable development;
- implementation of the main recommendations of the strategic environment impact assessment of programs, legal acts, and project decisions;
- equal access to natural resources for legal entities and natural persons;
- compliance with the obligations under the international agreements on nature conservation and environment management.

Special attention should be given to harmonization of society-nature relationship through environmentally sustainable development of economy. The economic control over environment management and nature conservation is expected to facilitate integration and coordination between various environment factors and economic stimuli – promotion of the most efficient ecological harm reduction measures, and introduction of economic barriers to environment unfriendly activities.

Improvement and implementation of the eco-economic mechanism of environment management requires the following measures:

- amendment of the nature conservation legislation;
- promotion of resource saving methods, indexation of rent according to the natural resources exploitation level, and calculation of ecological payments according to the level of inflicted environmental harm;

- implementation of the innovative mechanism of nature conservation and resource saving activities;
- establishment of the market of environmental services, technologies and equipment;
- development of economic instruments for promotion of environment friendly technologies and equipment through a system of differentiated crediting, and selection of the most cost-efficient environment friendly equipment;
- minimization of environmental risks during planning and implementation of economic activities;
- prioritized financing of state programs on wise environment management and nature conservation;
- recognition of environmental requirements during privatization of enterprises, and designation of a certain portion of the acquired resources for environmental compliance of the production.

Special attention should be given to harmonization of society-nature relationship through environmentally sustainable development of economy.

4.3.2. Conservation and wise management of natural resources

Belarus can foster sustainable development through integrated protection and wise management of all biosphere elements, and conservation of biological diversity.

The strategic objective of **air** protection is to make it environmentally safe for human activities. This objective can be accomplished through: improvement of legislation and introduction of new legal acts, development of the economic mechanism for air protection; systems of standardization and environmental pressure restrictions; development of the national transport infrastructure.

The geographical location of Belarus predetermined the dominance of western air currents, which makes the country one of the most polluted European states due to the cross-border air carryover. Belarus annually receives by air 180–190 thousand tons of airborne sulfur, 60–70 thousand tons of oxidized nitrogen, 150–170 thousand tons of reduced nitrogen, over 400 tons of lead, nearly 5 tons of mercury.

The following activities are required to reduce the cross-border pollution and own greenhouse gas emissions:

- further reduction in emissions of oxidized sulfur and nitrogen, as well as greenhouse gases, through a better fuel consumption structure and improved technological processes;
- establishment of a national system for assessment of emissions and sinks of greenhouse gases and their precursors;
- building the capacity of greenhouse gas sinks.

The consumption of ozone depleting substances can be further reduced through: implementation of relevant international agreements, introduction of safe substitutes, a network of recycling stations for collection, purification and reclamation of used ozone depleting substances to prevent their emission into the atmosphere.

Water resources. The strategic objective of conservation and wise management of water resources is to provide people with sufficient amounts of sanitarly clean water without disturbing the hydrological, biological and chemical functions of water ecosystems.

According to the Water Pollution Index (WPI), most of the rivers and lakes in Belarus (60%) are classified as moderately polluted (3rd category), and about 10% fall into the “polluted” category (4th class).

The quality of potable water is a serious problem, especially for rural areas, where people tend to use shallow wells. 40-50% of water wells in Belarus are below the current standards. 30% of the checked groundwater sources failed the chemical test, and 6% were microbiologically unsafe according to the existing sanitary norms. Many groundwater wells (14%) have no high-security water protection zones, and about 80% of public water utilities are insufficiently equipped with purification installations (e.g. deironing or ozonizing filters).

In accordance with the socioeconomic development program until 2020, the following major tasks need to be fulfilled in order to improve the present-day situation: prevent surface water pollution by effluents, snow and rain run-offs from urbanized and agricultural territories, and by hazardous substances transported from neighboring countries; increase capacities of water treatment facilities and enhance their purification efficiency; reduce health risks by supplying clean potable water.

Land resources. Aside from improved land ownership relations and optimized agricultural land practices, a more efficient land use and soil conservation, as a strategic objective of the State Land Policy, can be achieved through the following very important activities: reclamation of radioactively contaminated lands, protection of soils from water and wind erosion, conservation of drained lands, especially drained peatlands, forestation of unproductive agricultural lands, reclamation of degraded lands, prevention of heavy metal pollution, wise management of fertile lands, reduction of excessive recreational, technical and other anthropogenic pressures.

Mineral resources. The strategic objective of conservation and wise management of mineral resources is to ensure their efficient use, and reduce adverse en-

environmental effects of mining and utilization of mineral resources.

We need to create and introduce much more advanced methods of mine-field development, including new physical and chemical technologies, borehole technologies, underground leaching, etc.

Forests. Wise forestry is an essential element for sustainable development of the country.

Up to 400 thousand tons of pollutants precipitate annually on the Belarusian forests, which invariably leads to their degradation. The Chernobyl catastrophe is responsible for radioactive contamination of 25% of forested areas in Belarus.

Belarusian forests are also fire-prone – the usual 2-3 thousand forest fires a year often cover vast territories of up to 20 thousand hectares.

Sustainable forestry implies:

- maintained sustainability of forest ecosystems;
- conservation and environmental isolation of radioactively contaminated forests;
- conservation and enhancement of biodiversity in forest ecosystems;
- conservation and enhancement of protective functions of the forests;
- improvement of sustainable forestry policy instruments.

With the advance of science, the **biological diversity** of Belarus might turn into the most important resource essential for both national and European development. Its conservation requires favorable conditions for sustainable natural existence of ecosystems. Such conditions can be established through reduction of adverse effects of agriculture, forestry, industrial development, transportation, urban and rural construction, drainage activities, poaching, recreational activities, etc.

The main objective of biodiversity conservation is to ensure wise use, reproduction and protection of animal and plant species, their genetic and biological diversity, and restoration of natural ecosystems while maintaining the regional and global environmental balance and reproductive capacities of the biosphere.

4.3.3. Safe application of biotechnologies and biological safety

Aside from conventional biotechnologies (leavening, malting, fermenting, pickling, wine making, distilling, etc.), Belarus also widely uses various biotechnologies for medicine and agriculture. Now, Belarus produces antimicrobial, antiviral, anti-inflammatory, antineoplastic, antileukemic medications; amino acids, vitamins, enzymes, hormones, nucleic components, vaccines, blood substitutes, diagnostics, and over 300 other items. Belarus satisfies its agricultural needs with the production of various fodder additives, veterinary vaccines, plant and animal growth regulators, insecticides, antibacterial, antifungal, and antiviral broad-spectrum biological agents.

The Government of Belarus recognizes the exceptional importance of biotechnologies for sustainable development. The following state sci-tech programs have been developed: “Infections and Medical Biotechnologies”, “Industrial Biotechnology”, the State Program of Fundamental Research “Development of Scientific Rationale for Biotechnological Processes”, etc. The Belarus-Russia Union encouraged a joint scientific program “Development of Next Generation Biologically Safe Medications of High Performance (Belrostrangen)”. Aside from purely scientific research, the State Program “Development and Application of Genetically Engineered Biotechnologies for Agriculture and Medicine

(Genetic Engineering)” provides a range of organizational and personnel-training activities specifically designed to expedite the development of this advanced science.

Important steps have been taken for the safe use of genetic biotechnologies. For instance, the recently established National Biosafety Coordination Center performs comprehensive monitoring over the development of these technologies, a concept of the state genetic engineering safety control is in place, a bill “On Genetic Engineering Safety” has been elaborated along with a range of other relevant legal acts. In May 2002 Belarus joined the Cartagena Biosafety Protocol of the Convention on Biological Diversity, which should greatly facilitate its activities in this field.

In terms of sustainable development, the main goal of Belarus in the area of environment friendly use of biotechnologies is, on the one hand, to create conditions which would maximize acquired benefits from modern biotechnological achievements and promote the development of genetic engineering as one of the scientific priorities, and, on the other hand, to guarantee total safety during implementation of genetic engineering activities, introduction of new biotechnologies, and consumption of the resultant products.

The state-run assessment of safety of genetically engineered organisms is of top priority now. This task can be successfully tackled by the National Academy of Sciences of Belarus, which has a great number of highly qualified personnel capable of performing an adequate risk assessment for potential environmental or human health side-effects of genetic engineering.

We also need to raise public awareness about the comparable advantages of modern biotechnologies, related risks and their prevention.

In terms of international coopera-

tion in the area of environment friendly use of biotechnologies, of special importance is compliance with the obligations assumed by Belarus under the Cartagena Protocol on Biosafety.

4.3.4. Safer use of toxic chemicals

The developed chemical industry of Belarus and the need to further develop other industries that require various chemicals for their work, including highly toxic agents, emphasize the urgency to strike a balance between the expanding application of chemical agents and reduction of related biorisks.

About 250 thousand employees work in direct contact with chemical agents. 35-40% of workplaces do not meet safety requirements, which leads to acute professional poisoning and chronic diseases caused by toxic exposure.

Efficient chemical safety measures have been taken over the past few years. Special requirements for transportation of toxic chemicals and operation of potentially hazardous industrial facilities have been officially legitimized along with the certification of dangerous chemical facilities. In compliance with the international requirements, the chemicals produced in Belarus receive safety passports. Many ongoing activities are devoted to modernization of the chemical industry. Pesticides and highly toxic chemical agents are subject to mandatory registration. The State System of Emergency Prevention and Management is currently in place and fully operational.

Efficient use of chemicals implies a much more effective and safer application of chemical agents in industries, agriculture, and at home; prevention of chemical contamination and its negative effects on human health and environment.

4.3.5. Reclamation and detoxification of industrial and municipal waste

The annually increasing rate of waste accumulation exceeds the modern technological and economic capacities of waste management. Belarus prefers to relocate its waste, which invariably leads to its accumulation at dumpsites that currently occupy nearly 3 thousand hectares. As of now, over 40% of landfills have exhausted their operational capacities, which calls for their prompt replacement or expansion.

The main objective of waste management is to reduce (stabilize) the adverse environmental risks, and prevent any negative health effects.

The problem of waste accumulation can be addressed through the following activities:

- replacement of the existing technologies by low/non-waste technologies;
- adoption of the rule of manufacturer's responsibility for the end-products throughout their whole life cycle;
- elaboration and implementation of waste accumulation norms;
- promotion of the on-site waste recycling practice.

Better waste reclamation requires:

- development and implementation of cost effective and environment friendly waste management technologies;
- introduction of separate waste collection, and creation of required conditions for waste storage, preparation and reclamation;
- construction of centralized facilities for environment friendly recycling

of large volumes of conventional industrial waste;

- installation of small-sized local waste management facilities, including disposal units to handle small quantities of periodically generated industrial waste.

Environment friendly waste detoxification requires:

- development and implementation of waste processing technologies for safe waste disposal and detoxification;
- construction of dedicated waste disposal sites guaranteeing secure isolation of hazardous waste from the environment;
- development of environment friendly and cost effective zoning schemes for waste disposal sites;
- continuous environmental monitoring in the vicinity of waste disposal and storage sites, and immediate reaction in case of detected contamination;
- reclamation of old waste disposal sites with subsequent environmental monitoring of the area.

A special point should be made of toxic waste – expired pesticides and polychlorinated biphenyl (PCB) in particular, which are in the list of permanent organic pollutants (POP).

An environmentally safe cross-border waste transfer calls for the development of a national transboundary movements control mechanism based on the requirements of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.

Of great importance is the problem of municipal solid waste (MSW) which includes consumption wastes and the refuse generated as a result of human economic

activities in residential areas. MSW is a major source for secondary raw materials – pulp, polymeric wastes, glass, textiles. The past decade was characterized by a continuous increase of MSW accumulation rate, which in 2002 constituted 2.5 million tons. The level of MSW recycling is quite low, and about 90% of it is routinely dumped on landfills.

Only consumption wastes with extracted secondary resources can be subject to disposal at sanitary landfills. The life span of MSW landfills can be extended with the use of compacted and milled refuse.

Successful implementation of the state policy on waste management depends first of all on integration of environmental issues, including the problems of generation, accumulation and utilization of industrial and municipal waste, into the processes of decision making, forecasting, and development of socioeconomic development programs; development of such integration procedures; development of waste management systems for industrial enterprises in accordance with the ISO 14,000; new feasibility studies for existing sanitary landfills and reconsideration of waste disposal rates; establishment of a state system for waste management.

**4.3.6. Protection of people and territories from natural and technological disasters.
Ecological security for defense facilities**

Successful emergency management and protection of people and territories from their consequences require:

- development and implementation of targeted and sci-tech emergency prevention programs;

- guarantee of sustainable operation of enterprises and social facilities during peacetime or wartime emergencies;
- emergency response training for people;
- recognition of public rights and duties during emergencies, and social security for people who participated in emergency relief activities;
- preventive monitoring to protect people and territories from the consequences of emergencies, openness of information;
- international cooperation in the field of emergency prevention and management.

Environmental security for defense facilities can be ensured through:

- observance of the national environmental legislation and conditions of international agreements;
- elaboration of the Armed Forces Environmental Security Act which would enforce an environmental passport system for military areas and facilities, development of an environmental monitoring system, integration of a special environment course into the military personnel training;
- development of the priority list of activities to ensure environmental security for the Armed Forces of the Republic of Belarus;
- strengthened environment management system in the Armed Forces to ensure their environmental security;
- elaboration of pertinent legal documentation to ensure environmental security for routine military activities.

4.3.7. Development of disadvantaged areas. Mitigation of consequences of the Chernobyl Nuclear Power Plant accident

Among the disadvantaged areas of Belarus are: depressed areas, Soligorsk industrial district, Novopolotsk industrial hub, Belarusian Polesie Region, Belarusian Lake District, border areas, Minsk Capital Territory, and the most disadvantaged region of them all – the officially recognized environmental disaster area affected by the Chernobyl NPP accident.

Development strategies are determined according to the nature of the problem.

Depressed areas are characterized by underdeveloped industrial and social infrastructure, small single-industry towns with high unemployment rate. They require substantial investments into their economy, that is why it is necessary to identify an optimum method for their development based on the existing capacities and needs of the areas and their neighboring districts. The relevant investment and innovation activities can be intensified through the creation of regional agencies, councils, and foundations, exercising an integrated and well-balanced approach to the regional development.

Industrial areas, which include the Soligorsk industrial district and the Novopolotsk industrial hub, are characterized by a high level of anthropogenic pressure. Thus, the main task here is to tighten the environmental control over the activities of industrial and transport companies and enterprises, modernize and restructure major industries in full compliance with the strict environmental requirements.

The prospects of **border areas** – the regions bordering on Poland, Baltic

States, Ukraine, and Russia – are determined by their geopolitical advantages based on the expansion of free trade zones, promotion of Euroregions “Neman”, “Boug”, and the future “Dnieper” Euroregion, free economic zones, and active involvement in joint projects on regulation and control over the protected natural areas located on those territories. The socioeconomic cooperation should also be encouraged.

Special development and management regime areas – the Belarusian Polesie Region and the Belarusian Lake District – require expansion of their recreational capacities and the SPA status.

The main objective of the **Minsk Capital Territory** development is to convert Minsk into a modern European city, a center of international relations with highly developed international communications, providing high level of residence comfort and security. The ongoing activities in this area conduce to the balanced approach to economic, social and environmental development in order to maximize the use of available and potential resources in the best interests of people.

The most important and challenging task for the regional sustainable development strategy is the mitigation of consequences of the Chernobyl tragedy. The sustainable development strategy for **radioactively contaminated areas** should be focused on the need to improve living conditions of the people through integrated environmental, radiological and socioeconomic rehabilitation of the affected areas. This approach requires:

- alleviation of poverty and unemployment, enhancement of incomes, rationalization of social security for the affected population through restoration of economies in the contaminated areas, promo-

Promotion of efficient international cooperation in the field of radiation safety, and humanitarian aid for affected population are still important for Belarus.

- tion of investment activities, creation of favorable conditions for the development of small and medium-sized farms and businesses;
- improvement of everyday social and cultural living conditions in the affected locales (especially in rural areas), perpetuation of the local historical and cultural heritage;
- radiological monitoring over land, water, forest and mineral resources, conservation of natural ecosystems;
- introduction of new information technologies which would maximize monitoring efficiency and public access to information about radiological situation, recommended economic activities, and the industrial and domestic rules of behavior under the constant effect of small doses of radiation;
- gradual restoration of economic capacities of the affected areas, where of special importance is the revitalization of forestry and agriculture complete with radiologically safe working conditions to produce “clean” marketable and competitive goods;
- fundamental and applied scientific research about reduction of radiation effect on the human organism and natural ecosystems;
- amendment of the legal framework regulating the issues of social security for victimized population and development of the affected areas.

The mechanism of implementation of the state and regional mitigation policies implies the development of the State Mid-Term Program of Mitigation of Consequences of the Chernobyl NPP Accident, programs of socioeconomic rehabilitation and development of affected administrative districts, joint mitigation programs

and projects within the framework of cross-border cooperation between Belarus, the Ukraine, Russia, and international organizations. To increase the working efficiency of legal entities, Belarus needs to introduce preferential taxation terms for them.

Promotion of efficient international cooperation in the field of radiation safety, and humanitarian aid for affected population are still important for Belarus.

4.3.8. Harmonization of the national environmental legislation with international agreements and legal acts

Belarus joined a great number of important UN conventions and protocols on environment, European agreements and CIS accords. We also signed bilateral documents with the neighboring countries on conservation and wise management of the border-zone natural resources and habitats. The Republic of Belarus signed and ratified the following international conventions:

- Convention on Long-Range Transboundary Air Pollution;
- Vienna Convention for the Protection of the Ozone Layer, Montreal Protocol on Substances That Deplete the Ozone Layer, and London Amendment to the Montreal Protocol;
- Convention on Biological Diversity;
- Convention on International Trade in Endangered Species of Wild Fauna and Flora;
- Convention on Migratory Species of Wild Animals;
- United Nations Convention to Combat Desertification;

- United Nations Framework Convention on Climate Change;
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal;
- Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters;
- Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitats.

In full compliance with the norms and principles of international environmental laws and obligations, Belarus adopted new versions of its national laws: “On Public Sanitary and Epidemiological Welfare” (2000), “On Waste Management” (2000), “On State Environmental Assessment” (2000), “On Environment Protection” (2002), “On Air Protection” (1997), Water Code of the Republic of Belarus (1998), Land Code of the Republic of Belarus (1999); and some new laws: “On Public Radiation Safety” (1998), “On Protection of People and Territories From Natural and Technological Disasters” (1998), “On Drinking Water Supply” (1999), “On Specially Protected Areas and Sites” (2000), “On Hydrometeorology” (1999), “On In-

dustrial Safety of Hazardous Industrial Facilities” (2001), “On Ozone Layer Protection” (2001), “On Flora” (2003), and a considerable number of various bylaws. The country enjoys a well developed legal system of flexible environmental licensing; environmental assessment; norms for pollutant emissions (effluents); and environmental certification.

As long as many types of human activities lead to transboundary consequences, one of the indispensable preconditions for sustainable development is to harmonize national normative, legal and, especially, technical acts with the norms and principles of international agreements and standards.

This goal can be achieved through:

- advocacy of national interests of the Republic of Belarus via active involvement in global and regional environmental solutions;
- greater integration of Belarus into the “Environment for Europe” process;
- promotion of foreign investments for environmental programs and priority projects on wise environment management and nature conservation.

5. Important tools and financial mechanisms of sustainable development

5.1. Fiscal, monetary and pricing policy

The key objectives of the **fiscal policy** are to ensure financial and social stability, create macroeconomic conditions for sustainable economic growth and improved living standards in the context of ecological concerns.

To achieve these objectives, further tax reform is needed, where putting in place a tax system conducive to economic activities is one of the priority tasks. It is also necessary to improve the efficiency of budgetary expenditures as the total amount of resources re-distributed by the state is being reduced; to have balanced and deficit-free budget; to create an effective state financial management system. It is important to create legal frameworks and equal taxation conditions for all economic entities operating in the Republic of Belarus and the Russian Federation.

During the tax reform, a higher fiscal value should be attached to taxes relating to the use of natural resources and environmental protection, as well as property taxes that will form the basis of local budgets. In the overall structure of tax revenues, where VAT and excises duties make up the largest share, direct income and sales taxes levied on legal entities and individuals should increase in value.

In parallel with the reduction of economy's tax burden, it is envisaged that the amount of resources re-distributed by the state will decrease from 47.4% of GDP

in 2002 to 44% of GDP in 2010 and 42–43% in 2020. The revenues of the consolidated budget (exclusive of the Social Security Fund) will amount to 33.8, 30–31 and 29–30% of GDP, respectively.

The social orientation of the budget will become stronger guaranteeing the public protection in the fields of employment, education, health care, culture, pension support, targeted assistance to low-income strata of the society.

Environmental protection objectives call for a set of nature conservation measures, research and development in energy efficiency and resource saving, as well as development of ecological monitoring. A significant area of budget spending is the construction of sites related to rehabilitation and recovery interventions in the Chernobyl-affected areas. A broader involvement of the private capital is envisaged in the financing of conservation and resource-saving activities.

Listed below are the most important measures of the fiscal policy in the area of nature protection meant to promote sustainable development:

- based on the world experience, search for new methodological approaches to the formation of ecological fees that will be able to ensure adequate assessment of natural resources potential and its efficient under the current circumstances;
- revision of sites and increase in the rates of fees collected for the use of

natural resources, pollutant emissions and effluent and waste disposal;

- re-distribution of earnings from resource fees and their partial credit to budgetary ecological funds;
- limitation of direct and indirect subsidies of nature-intensive and environmentally unsafe economic practices.

In the forecast period, **the monetary policy** should serve to achieve the general strategic goals of sustainable development through introducing stability of the national monetary unit, higher reliability and liquidity of the banking system, effective and secure functioning of the system of payments.

To address these issues, a set of steps is necessary, where the most important ones are:

- reduction of inflation rate through gradual tightening of the monetary policy. It should follow a smooth trajectory linked to the rate of efficiency and competitiveness of enterprises belonging to the real sector of the economy. An approach such as this will allow to minimize costs and negative effects of the transition period while maintaining a high level of employment, industrial capacities and social protection of the population;
- control of the nominal exchange rate in such a way as to ensure that the market exchange rate could secure acceptable levels of price competitiveness of domestically-produced goods and commodities both at the internal and external market, eliminate imbalance in foreign trade and stimulate rapid economic growth;
- efficiency improvement of accumulation of free financial resources and

their subsequent investment in the real sector;

- network expansion of banks, organized according to subject and territory, and non-banking credit institutions specializing in stock exchange activities and constituting a funding source for pension, insurance and investment funds;
- attraction of foreign investment into the banking system contributing to resources expansion of banks and their equity capital growth.

The implementation of a set of monetary and crediting activities will ensure financial stability at the macroeconomic level and attainment of parameters and scope typical of the monetary systems of the economically developed countries.

The strategic goal of the state **pricing policy** is to reach and maintain a balanced level of prices in home and foreign trade. The scope of pricing regulation should gradually narrow down as goods and commodities fill the market and the competitive market environment is put in place.

In foreign trade policy, the main emphasis is to be laid on improved and better quality of export products, re-orienting producers to complex science-intensive production, quality, not price competition, thereby ensuring an increase in the export average price.

5.2. Facilitating market and other institutional transformations in economy

The Republic of Belarus has created conditions for the formation of market institutions (commercial banks, stock exchange, etc.). The development of market relations, however, is hampered by controversies, inconsistencies and general disunity of

economic and administrative tools and mechanisms.

The strategic goal of institutional transformations in the Republic of Belarus is to create a system of institutions necessary to develop the market economy and able to address the issues of raising the living standards, production modernization, preservation of both productive potential of the natural complex, and integrity and security of the country.

Ownership plays a decisive role in the system of institutional market changes. Ownership transformations aim to create a plural socially oriented market economy, support private initiative and enterprise, promote investment processes and, ultimately, to establish sustained prerequisites for rapid growth and improved economic efficacy.

The key principles in the area of ownership relations should be: expansion of privatization tools and instruments; differentiated approach to privatization depending on the liquidity of enterprises; privatization decision-making based on the scrupulous analysis of long-term business plans submitted by potential investors; learning from the lessons of world privatization; combination of long-term and short-term interests of the state and enterprise staff; setup of the state control and supervision authority at all stages of the preparation for and conduct of denationalization and privatization, honoring commitments undertaken by new owners.

Long-term regional privatization plans will need to be developed and approved in all administrative and territorial entities of the country to ensure a clear and sustained ownership reform.

Entrepreneurship is an important factor of socio-economic development, since it promotes creativity and initiative, creates new jobs and enables individual self-actualization. The expansion of small

and medium-sized business forms the middle class – the cornerstone of stability in the society.

5.3. Resource-saving technologies and environmentally safe productions: research and innovation

The availability of scientific and technological achievements, research and innovation potential that can lead to progressive changes in technology and production, energy and material use are an important precondition of resource-saving advancement in the Republic of Belarus.

National, sectoral and regional scientific and technological programs and projects lay the scientific foundation for addressing these issues.

All research and development activities and investment projects, present and planned, can be classified into four large sections covering the key inter-sectoral issues:

reduction of resource and import intensity of the industrial production:

- resource saving (energy carriers, feedstock and materials) in technological processes and units (“Resource-saving”); development of domestic materials and accessories capable of replacing the imported ones (“Import Replacement”);
- development and adaptation of recycling technologies (“Recycling”);
- development of alternative energy practices and management of secondary energy resources;

enhancement of competitive ability of industrial export-oriented products:

- microelectronics, optics, vacuum technology and equipment;

The strategic goal of institutional transformations in the Republic of Belarus is to create a system of institutions necessary to develop the market economy and able to address the issues of raising the living standards.

- information and communication, instruments and meters;
- micro- and nanotechnologies;
- transport engineering;
- new technologies and means of material processing into commodities;
- new structural and functional materials (composite and intellectual materials), small-tonnage chemical products;
- technical defense means;

efficacy improvement and output growth of competitive food and agricultural technical products:

- new and improved resource-saving technologies and agricultural processing equipment;
- improvement of tillage and harvesting machinery;
- new fertilizers, biological and chemical plant protection;
- new varieties and resource-saving crop cultivation technologies;

scientific and technological support for local feedstock and resources, environmental and health protection:

- development of local resources (geology and extraction);
- new treatment methods, medical materials, equipment and items;
- new technologies and technical facilities for environmental protection, prevention and elimination of consequences of emergencies and accidents.

The improvement of organizational and economic conditions contributing to addressing the resource-saving and efficiency issues, require a balanced national innovation system and incentives to apply innovations in practice, including concerted preferences and guarantees in the

areas of customs, taxing, depreciation, credit and finances.

5.4. Programs and mechanisms of production modernization, enterprise restructuring

Sustainable economic growth of the country will be ensured and maintained through modernization and restructuring of the real sector, technological and organizational renewal of industries to adapt them to internal and external specifics of the market economy.

Sustainable economic growth of the national **industrial complex** should be based on high-technology, competitive and environmentally compatible production in conformity with world standards through active radical transformation of the existing scientific, technological and industrial potential.

The main areas of industrial modernization include: microelectronics research and development, computer-aided designing; creation of telecommunications technologies, artificial intelligence systems, integrated microelectronics-based information technologies; expanded production of medical equipment, technical diagnostics systems and tools; ultrasound treatment technological process for the synthesis of new materials. More active research will be undertaken in the field of nanotechnologies to create new micro- and optoelectronics materials, high-integration, -speed, -reliability, radiation and heat resistance devices. A production of sorption materials is envisaged to accommodate the needs of various sectors of the national economy as well as the development and use of energy-non-intensive, soft technologies for making pharmaceutical substances and biotechnologies from local resources.

To modernize the **agroindustrial complex**, it is necessary to develop sectoral retooling programs, program “Energy Saving”, finalize the programs “Fertility”, “Selection and Seed Breeding of Agricultural Crops”.

For animal husbandry development, during the period until 2020, the key provisions of the National Livestock Breeding Program (1997–2005) will be instrumental. In addition to it, it is necessary to elaborate a comprehensive program “Feed Production” that would link the volume of livestock product production with the development of sustainable fodder supplies.

In the processing industry, production modernization and restructuring are expected to lead to increased output of competitive, import-replacing and export products, for which purpose a dedicated program will be necessary with the prolongation of the existing ones.

The improvement of the **construction complex** should be achieved primarily through the implementation of the current long-term sectoral programs, of which the most important ones are: Main Development Areas of the Construction’s Material and Technical Basis in the Republic of Belarus for the Period 1998–2015, Program of Action of the Ministry of Construction and Architecture for the Implementation of the Long-Term Investment Policy to 2015, Program of Fixed Assets Renewal and Retooling at Construction and Specialized Organizations under the Ministry of Construction and Architecture, State Science and Technology Program “To Create and Adopt New Materials, Energy-Saving Technologies and Resource-Saving Housing Structures Reducing Resource and Energy Consumption During Housing Construction and Use”, Program of National Construction Legislation Development.

The modernization and retooling of technological processes at **transport and communication** enterprises should be effectuated first of all through application of science-intensive, resource and energy-saving, ecologically friendly technologies.

Transport and communication modernization plans should provide for:

- creation of integrated speed transport infrastructure;
- development and use of clean transport technologies;
- development of global information networks.

Production modernization and restructuring programs should be developed on a competition basis and subsequently financed from multiple sources, such as the national and local budgets, innovation funds of relevant ministries and enterprises.

5.5. Investment and structural policy

The strategic goal of the investment and structural policy of Belarus is to attract investment, channel it into socio-economic priority areas and address ecological issues, as well as to develop a capital export policy through the use of competitive advantages of other countries by creating multinational companies, financial and industrial groups and other horizontal (cluster) structures.

At the first stage (2006–2010), the investment policy will build upon the National Program of Investment Attraction into the Economy of the Republic of Belarus to 2010 and in accordance with state investment programs, SME foreign investment raising projects and in the context of investment projects and programs implemented by international funds and organizations.

The strategic goal of the investment and structural policy of Belarus is to attract investment, channel it into socio-economic priority areas and address ecological issues, as well as to develop a capital export policy...

During this period, steps should be taken to enable a high level of investments that would make it possible to modernize and restructure national industry, put into operation new equipment using cutting-edge technologies, enhance the competitiveness of domestic goods and economy in general.

In order to facilitate investment flow into economy, further liberalization of foreign economic activities is necessary as well as the creation of mechanisms to insure investments against economic and political risks.

Investment opportunities of enterprises will be further extended via a new depreciation policy by which fixed assets used in production will be written off at a faster rate.

It is necessary to ensure that public investment contributions further increase in size.

At the second stage (2011–2020), the structural policy calls for investment demand stimulation, so that enterprises could implement their projects through the involvement of domestic machinery and equipment manufacturers in the investment process.

The implementation of dedicated state programs is an essential tool of the structural policy. They should be funded on the basis of new approaches with the bias toward extra-budgetary sources.

During this period, state investment activities should concentrate on infrastructure development financing: roads, airports, modern telecommunication system which will serve as an additional incentive for private capital investment.

An important field of the national investment policy is to create new industries of the 5–6th technological order in priority sectors of the economy, including in small and medium-sized business, which

will contribute to creating a competitive environment.

5.6. Regional sustainable development programs

A transition of the Republic of Belarus to sustainable development in large measure depends on the active involvement of country regions in this process. In discharging their specific functions, local and regional authorities should contribute in their own way to sustainable development and improvement of the life quality of their residents. They are responsible for social development and governance on the territories under their control based on sustainable development principles. Thus, local administration plays a pivotal role in synthesizing all opinions and translating them into specific targets and programs, including into local sustainable development strategies (Local Agendas 21).

The purpose of these programs is to substantiate the transition of the Minsk City and Regions to sustainable development based on effective involvement and inputs of the regions in the entire implementation process. Region-specific NSDS planning in Belarus should be made within the framework of existing state forecasting and socio-economic development programs (as separate short-term, mid-term and long-term forecast) as well as in the form of individual program documents aimed at addressing the full gamut of social, economic, ecological problems or individual, most urgent developments in a specific area.

Issues addressed in each region should to a large extent match the national sustainable development objectives. Therefore socio-economic development goals and objectives should be formulated from region to region in due consideration

An important field of the national investment policy is to create new industries of the 5–6th technological order in priority sectors of the economy, including in small and medium-sized business, which will contribute to creating a competitive environment.

of the national regional economic policy priorities of Belarus. A priority task is to enhance the integration of socio-economic development of the regions considering their specialization in the national division of labor and increase efficiency of interregional and foreign economic relations.

The program should define ways and means of economic policy in the interest of sustainable development (economic security and institutional transformations, fiscal, monetary, crediting and price regulation, etc).

In order to achieve the objectives and targets of regional sustainable socio-economic development and implement regional programs, it is necessary to provide for a set of interlinked measures and activities, economic mechanisms that would help address key issues, ensure concerted action of all stakeholders (including business and public organizations) involved in the implementation of each specific program.

5.7. Activation of foreign economic policy and international cooperation

Deeper integration of Belarus into the world community presents a strategic goal.

The progress of Belarus toward sustainable development will decisively depend on the country's ability to expand contacts with the outside world. This is because the country's core industries and services sector are oriented toward the external market and there is substantial dependency of Belarus on imported raw materials.

Deeper integration of Belarus into the world community presents a strategic goal. Foreign trade policy builds upon international rules and democratic standards, observance of international agreements, multi-directionalism and liberalization of foreign trade relations.

The primary objective of the Belarusian foreign economic policy is to effectively participate in the international labor division using competitive advantages of the country to raise the quality of life of its population through application of technological advances, dynamic development of economy and social sector while preserving the reproduction capacity of the country's natural complex as part of the Earth's biosphere in the interest of the present and future generations.

Accession of Belarus to the World Trade Organization (WTO) will facilitate country's integration into the world economy. It should not, however, be done at any cost, but rather through careful consideration of the national economic interests. This will enable Belarus to develop trade with other countries on a lasting and sustained basis, promote and protect national interests in relations with trade partners based on the internationally recognized legal platform and established traditions. WTO membership will create additional export, import and market opportunities for Belarusian goods, help improve the investment climate, bring investment in competitive, export-oriented branches of the Belarusian economy, reduce the cost of credits.

At the same time, WTO membership will limit the freedom of the state in the use of foreign economic regulations that have proven effective at this stage, especially import restrictions, strengthen the presence of foreign commodity producers on the internal market which will affect Belarusian enterprises, especially agricultural ones.

In accordance with the principle of multi-directionalism pursued by Belarus in international cooperation, the following priorities have been identified:

- deeper cooperation with integration entities, such as the Common-

wealth of Independent States, within the framework of the Union State of the Republic of Belarus and the Russian Federation, Eurasian Economic Community (EurAsEC) and the creation of the Single Economic Environment within the Regional Integration Organization (RIO);

- inclusion of Belarus as an equal, sovereign and independent state, into the European integration process due to the EU enlargement;
- more active economic ties with South-East Asia, Middle East, Africa and Latin America.

The European Union is currently the second largest trade partner of Belarus after Russia: in 2003, the EU share in the trade turnover was 18.9%, the share of CIS countries was 50.6%. The EU is the major creditor of the Belarusian economy and one of the key sources of hard currency and high technologies for the country. The home and foreign economic policy of Belarus with regard to the EU should serve to fulfill a task of paramount consequence, namely creating favorable conditions for the promotion of Belarusian products on the EU markets and materializing national competitive advantages.

On this account, Belarus should adopt the following strategic measures in its foreign trade with the EU:

- clear regional export orientation and economic benefits from foreign trade;
- export diversification on the EU marketplace;
- adoption of WTO principles and mechanisms in foreign trade of Belarus, using protectionist measures in accordance with the international practice;
- improvement of legal frameworks for the attraction and effective use of foreign and domestic invest-

ments to increase the export competitiveness.

To build stronger relations with the European Union, it is necessary to act to effectively incorporate the Belarusian economy in Europe's international economic, financial, scientific, ecological structures, further this cooperation and develop interregional economic links. Belarus should take an active part in the multilateral political and economic dialog within the Organization for Security and Cooperation in Europe, European Patent Organization, European Conference of Transport Ministers and other international and regional organizations.

Belarus should cooperate more enthusiastically in commerce with its neighboring states that have recently joined the European Union for reasons of geographic propinquity and appealing transboundary cooperation prospects.

The expansion of external trade with South-East Asia countries, particularly with rapidly developing China and India, also holds promise.

For the purpose of implementing its foreign trade policy while being part of the global drive toward sustainable development, Belarus is envisaged to strengthen rapport with all players of international social, ecological and economic cooperation: participation in UN human development programs (UNDP), United Nations Environmental Programme (UNEP) and cooperation with the Global Environment Facility (GEF).

To expand foreign economic activities, Belarus will need to participate more actively in international economic and financial organizations: International Monetary Fund, World Bank, Organization for Economic Cooperation and Development (OECD), United Nations Industrial Development Organization (UNIDO), UN Conference on Multinational Corporations and

Belarus is envisaged to strengthen rapport with all players of international social, ecological and economic cooperation.

Investment. Cooperation with international organizations of that stature will allow for expertise transfer in the field of foreign trade, necessary for Belarus to expedite trade liberalization and secure a niche on the world market.

The formation of financial industrial groups (FIGs) and multinational corporations (MNCs) is a good way to integrate the Belarusian economy into the world economy, because they bring social, ecological and economic advances into practice.

The creation and development of free economic zones (FEZ) is one of the areas of sustainable development in the Republic of Belarus. Their activities should be improved based on investment policy priorities, creation of accelerated growth points with the aid of foreign investments, promotion of export and import-replacement productions, application of modern technologies and new methods of economy. FEZ creation and operations are associated with the liberalization and recovery of foreign commerce, market model of development, favorable conditions for economic growth of the country's regions, new jobs and acceleration of technological change.

To broaden international cooperation, it is advisable that Belarus creates specialized innovation centers (technoparks, technopolises, service areas) helping to

attract external resources and effectively integrates them with national enterprises. To do this, it is necessary to develop legislation regulating how they are created and managed.

It is anticipated that transboundary cooperation will be further expanded to develop trade, scientific, technological and nature conservation activities at an inter-regional level. Geographic proximity, opportunities for similar or complementary industries, integrated approach in tackling environmental issues and transit opportunities determine the need to develop various forms of border cooperation between the Republic of Belarus, Russian Federation and the Ukraine (Gomel, Chernigov and Bryansk Regions). To ensure a high rate of return from border free trade, legislation needs to be developed to regulate the process of their organizational and infrastructure changes.

The development of international cooperation within Euroregions will enable the country to quickly respond to any border issues, create flexible companies aided by foreign investment to improve infrastructure, establish border trade, tourism, broaden cooperation in cultural, social and economic fields. One of the promising ways to improve FEZ efficiency is by creating within them different functional subzones: e.g. free international trade, free finances, trust and management, ecology.

*...Belarus creates
specialized innovation
centers (technoparks,
technopolises, service areas).*

6. Socio-political sustainable development mechanisms

6.1. Increased government role in promoting sustainable development

Only the effective government in dialogue with private business and developed civil society can effect transition to sustainable development by virtue of their ability to create modern leverages to influence economy, politics, social and cultural sectors and execute deep structural changes.

6.1.1. Economic management system development

An effective system of state administration is instrumental in ensuring sustainable development of the country. This system should have such qualities as good coordination between various authorities, organizational flexibility, functionally optimized management structure of different levels and in general, cost-effectiveness.

The improvement of the government is a continual process which reflects and guides socio-economic transformations in the country. This work should be carried out based on clear priorities and in sync with a process of transition toward market economy and sustainable development.

To achieve sustainable development goals, Belarus needs to reinforce the role of the state in the country's priority development areas. The aim of effective state administration should be in implementing policies and strategies within which

specific targets in the fields of market transformation, anti-crisis control, structural and technological adjustment, the quality of life improvement, efficient integration into the world economy will be agreed and harmonized. The state administration should develop a rapid transformation strategy and acquire a clear people-centered focus.

6.1.2. Spatial planning and governance improvement in regions and communities

Transition of the Republic of Belarus toward sustainable development and development of the socially-oriented market economy require improvements in the population settlement system, favorable conditions for development of towns and cities regardless of status, urban settlement reform.

Spatial planning becomes a very important tool in the implementation of sustainable development goals, because, in essence, it brings together social, economic and ecological policies, integrates individual sectoral efforts to achieve economic efficiency, social equity and ecological security of a given area.

A new spatial planning policy should take into consideration the following:

- effective use of socio-economic, scientific, technological, cultural and urban planning capacities of big and large cities while implement-

Only the effective government in dialogue with private business and developed civil society can effect transition to sustainable development...

ing active environment improvement measures;

- preferred development of middle-sized towns to relieve the burden of problems facing big and large cities;
- creating socio-economic conditions for the development of small towns as sources of services for nearby rural communities;
- equal development opportunities for rural communities of all types based on a diversity of agricultural production practices.

The settlement system should develop to meet strategic socio-economic objectives and facilitate country's transition to sustainable development. When identifying development prospects of urban and rural communities and their adjacent areas, the sustainable use of local resources should be taken into consideration.

Regional policy implementation includes legal, economic and financial tools aimed at ensuring regional sustainable development – development and implementation of Local Agendas 21, subsidies, loans provided by national government bodies to the problem regions in order to create additional opportunities for economic growth, support favorable environmental status and involve local people in this process.

6.1.3. Mechanism for integrating environmental concerns in decision-making process. Environmental expert review of innovation and investment projects

In order to move to sustainable development, improvements should be made to the mechanism for integrating environ-

mental issues and concerns in all-level government decision-making. Therefore it is necessary to:

- improve the regulatory frameworks stipulating the full use of mechanisms that take into consideration environmental matters;
- environmentalize state policy in the field of cost-effective regulation (tax, credit, investment policies) contributing to sustainable use of natural resources and environmental protection;
- provide rationale for macroeconomic development indicators in the context of environmental protection and wise use of natural resources;
- environmentalize economic practices within institutional and structural changes while ensuring high competitiveness of the national economy and the wide spread of ecologically-biased management;
- take into account environmental factors in foreign trade policy, including in the implementation of joint projects;
- improve efficiency of financial resources allocated for environmental protection through the involvement of government bodies, business and public in project implementation;
- apply comprehensive environmental expert review in project and investment activities.

To establish an efficient legal basis, the following steps are required during the first stage:

- to amend the Law on Environmental Protection by adding provisions on strategic environmental assessment (SEA) for which purpose it is

necessary to develop SEA approaches and guidelines with regard to draft legislative acts, socio-economic development forecasts and programs, draft international agreements and other types of documents liable to have environmental impact, directly or indirectly;

- to develop appropriate court and administrative procedures concerning more severe penalties for environmental offenses and meaningful compensation to victims of environmental pollution.

An important tool in sustainable use of natural resources is providing monetary and tax policy with the environmental focus.

To integrate environmental concerns in decision-making, **environmental expert review** of innovation and investment projects is the order of the day. Legislation in the area of environmental impact assessment and environmental expert review should be brought in alignment with the Convention on Environmental Impact Assessment in a Transboundary Context and Aarhus Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters.

Project implementation should ensure business operations in keeping with the precepts of ecological security, health and environmental protection in the interests of enterprise employees, consumers and population in general, both now living and generations to come.

In addition to state environmental expert review, public environmental expert review should be organized by all means. This will help implement the principle of free public access to ecological information and the right to participate in management decision-making related to environmental impact.

6.2. Development of socio-political relations

6.2.1. Advancement of democracy and civil society. Empowerment of NGOs, working class, trade unions, business and science for promotion of sustainable development

The national adoption of the sustainable development model requires mature civil society, market economy, the rule of law, and the commitment of state, society and business to joint efforts based on the principles of transparency, partnership and ownership.

First of all, this endeavor implies extensive development of all the democratic institutions, norms and procedures in the spirit of the Universal Declaration on Democracy adopted by the Inter-Parliamentary Union in 1997, which defines democracy as a universally recognized ideal based on common values shared by peoples throughout the world community irrespective of cultural, political, social and economic differences. Democracy, as a political system providing people with the right to choose effective, honest, open and accountable government, is premised on two principles: inclusiveness and accountability. Everyone is entitled to participation in the governmental decision making, access to information about governmental activities, and justice through impartial administrative and judicial mechanisms.

One of the primary goals for NSDS-2020 is to create conditions allowing every individual, social group and organization to participate in the governmental decision making, receive all information about the results of implemented decisions, assess their impact on the civil society

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structures and sociopolitical institutions. At the same time, it is necessary to maximize the involvement of nongovernmental organizations (NGOs), working class, trade unions, business and science during implementation of the sustainable development strategy.

Enhancement of the role of NGOs as public partners of governmental organizations requires continuation of the development of official procedures and instruments, which would ensure real involvement of NGOs at all the levels of NSDS implementation: starting from policy development and decision making until actual implementation based on the principle of shared responsibility.

Trade unions are the official representatives of working class interests in Belarus. Trade unions are an integral element of any democratic society that aspires to fulfill the principle of social justice. The trade union activities facilitate discharge of many socially important values: distributive justice, encouragement of partnership spirit, preservation of civil peace, stability and public security.

The country enjoys a well-developed legal framework regulating all the main aspects of social partnership relations: execution of collective contracts (agreements), adjudication of collective labor claims. Special tripartite agencies facilitate consultations between governmental organizations, employers associations, and trade unions.

Trade unions need to strengthen their position both in their traditional activities (work relief, protection of jobs, advocacy of individual and collective labor rights), and in fostering new approaches to the market system relations. The available capacities of trade unions, as the most popular social institute, should be used for public environmental education and sustainable development aware-

ness-raising. Trade unions should be involved in creation of new jobs, privatization and restructuring of enterprises in the context of social and environmental factors of sustainable development. At the same time, we should use more intensively the mechanisms of public control, and ensure the involvement of trade unions in elaboration of legal acts on protection of labor and environment.

In order to ensure sustainable development, the collective contacts and agreements need to be enhanced in the section on labor protection, prevention of industrial injuries and occupational diseases, protection and modernization of workplaces.

Business and science play an important role in the socioeconomic development, elaboration of long-term strategies, and promotion of innovative way for country development.

The key role in development and implementation of the sustainable development strategy should be played by the newly established National Innovation System of Belarus, scientifically rational programs of socially-oriented environment-friendly resource-saving sustainable development with the assessment of national ecosystems, advancement of the scientific, informational, technological and innovation policy, elaboration of new philosophical, sociological and economic subjects fostering new environmental attitude, healthy lifestyle ethics, understanding of one's role and place in the world and nature.

According to the long-term goals of the Science Development Concept of Belarus, the scientific community is expected to:

- provide scientific support for the development of productive forces in their transition toward post-industrial information society;

- conserve and strengthen intellectual capacity of the society;
- solve important social problems for the country's development;
- improve environmental situation and the national health care system;
- ensure better security for individual citizens, society and the state.

In order to ensure a more active involvement of *business community* in the sustainable development process, it is necessary to:

- create a favorable business environment and market instruments together with government agencies and NGOs;
- discourage consumerism in relation to environment, prevent the environment unfriendly development of productive forces and sacrificing of nature for bigger profits;
- establish together with trade unions and government agencies bilateral and tripartite commissions at the national, regional, subsidiary and local levels in order to properly consider the issues of occupational safety, health care and sustainable development;
- promote application of advanced scientific and technical achievements for development and implementation of environment friendly technologies;
- increase resource efficiency, promote recycling technologies, and reduce the aggregate waste output;
- encourage enhancement of environment friendliness for industries;
- cooperate with workers and trade unions to regularly raise their awareness and improve their skills in terms of sustainable development, participate in the development and

implementation of public environmental education programs;

- step up the research and development activities in the field of environment friendly technologies and better resource management systems in close cooperation with scientists and scientific institutions;
- foster responsible and ethically justified management of industries and processes with due consideration of the issues of health, safety and environmental sustainability.

6.2.2. Empowerment of key population groups: women, children and youth

Greater empowerment of key population groups should be achieved within measures supportive of sustainable development and observance of human rights and freedoms. According to age, gender and other features, these groups occupy special social niches in the country and are presented with new opportunities for self-actualization, social, political, public activities and employment as transformations take place around.

In moving toward sustainable development, **the situation of women** should be placed in particular focus. The most critical problems women are faced with include: excessive workload at work and home; low representation in government bodies; employment under unfavorable working conditions; rising number of single-parent families; unemployment, lowering social status during subsequent employment of the unemployed women; health deterioration; spread of asocial behavior (alcohol and drug abuse, prostitution); domestic violence escalation.

Further social empowerment of women, especially in employment, de-

depends not only on changing their situation, but that of men as well (implementation of paternity right and full participation in raising children, increased life expectancy, reduced working-age death rate). This strategy is underpinned by the internationally recognized rules formulated among other sources in the Millennium Declaration. The United Nations included the guarantee of equal rights and opportunities for men and women in fundamental development values of the 21st century.

The main aim of state policy in this field is to put in place conditions that would enable the fullest possible realization of personal potential of women and men in all areas of activities in order to ensure sustainable development of the society, control of gender-based discrimination and women empowerment.

Sustainable development will also benefit from taking into account **the interests of children**, who make up 22% of the total population.

Owing to the 1995-2002 National Child Protection Action Plan and the Presidential Program “Children of Belarus”, considerable progress has been made in addressing many of the urgent problems on this front. Child protection legislation that takes into account the current socio-economic conditions has been developed. Government support of families raising children is being improved. A system of service and care providers for families and children has been established and continues to develop at a rapid pace. There is increasing family-type care for children deprived of parental care. The rights of adopted children, including in cases of inter-country adoption, have become better protected. Major changes have taken place in addressing the protection of rights and interests of special-needs children and their integration. Infant death rate is on a

steady decline. Pediatric care has been preserved, a system of new health care facilities – perinatal centers – has been put in place. Legal and organizational measures have been adopted to improve prevention, mass immunization and stop the spread of socially dangerous diseases.

State policy in child protection aims to create an enabling environment for full development of children - physical, intellectual and moral – raise the quality of their life, protect their rights and interests.

Progress toward sustainable development will be greater if **the role of youth** is increased. This is the most capable and active part of the society. Molding resilient young generation is one of the major factors contributing to sustainable development of the state and society. Youth accepts special responsibility for the preservation and development of the country, continuity of historical and cultural heritage.

Several negative trends have become more evident among young people recently. Youth health worsens, there are more and more handicapped young people and growing unwillingness to serve in the army. The scope and prevalence of AIDS, tuberculosis, sexually transmitted diseases among youth increase. The age structure of the HIV carries has a prevalent share of young people (under 30) – 83.3%, where young people aged under 20 make up 16.0%. The situation is aggravated by increasing substance abuse and juvenile delinquency.

The goal of state youth policy is to create legal, economic and organizational conditions for the development of youth's social, intellectual, cultural and economic capacity and develop public added-value interests and needs in them. This policy should base itself on the priority of youth interests and needs in the societal life and social support of young people as beginners in value system development, employment and family matters.

State policy should cover the following key areas with regard to youth: education, employment, health care and healthy lifestyles, leisure development, housing, social support of young families.

6.2.3. Regional and local sustainable development initiatives

The Plan of Implementation of the World Summit on Sustainable Development (Johannesburg, September 2002) reaffirms the resolve of the world community to continue promotion and strengthening of sustainable development councils at both national and local level, and to empower local authorities and other stakeholders to implement the Agenda 21.

The creation of economic, social and ecological groundwork for sustainable development of the country is impossible without the involvement of local communities called for to look for ways and means to ensure sustainable development in specific areas, urban and rural communities. There are only four local sustainable development initiatives in Belarus (Local Agendas 21): projects in Turov, Minsk, Vileika and Dzerzhinsk.

A number of non-governmental organizations, civil initiatives and projects have mounted educational and awareness-raising campaigns into Local Agenda 21 planning and implementation. They include NGO “Ecodom”, Belarusian Subsidiary of the NGO “International Academy of Ecology”, Foundations of the Implementation of Ideas, UNDP Project “Development and Internalization of National Sustainable Development Strategy within the Context of the Republic of Belarus”.

In view of the above, one of the primary objectives of the National Sustainable Development Strategy of Belarus for the period until 2020 is to create organi-

zational, legal, financial and other stimulants of regional and local initiatives aimed at establishing economic, social and ecological frameworks for sustainable development of regional and local communities of Belarus, searching actively for internal resources to address related tasks and ensuring effective support of these initiatives at a national and international level.

To achieve these objectives at different stages of NSDS-2020, several important tasks will need to be resolved to ensure the improvement of the existing state administration and local self-government system and further democratize the entire Belarusian society.

The purpose of regional and local initiatives is to meet social and economic needs of people in respective areas while conserving and improving the environment and other living conditions.

Local Agenda 21 initiatives and other similar activities should originate with local authorities, non-governmental organizations, economic entities, associations of house owners, individuals, who will independently define a range of problems, tools and timeframe of implementation taking into account local needs, socio-economic, natural, ecological and other specifics and modalities largely influencing sustainable development status in given areas and regions.

The national government bodies of Belarus are to strengthen and improve cooperation with international organizations on a continuous basis – UNDP, HABITAT, UNEP, World Bank, EBRD, etc., as well as with the European Union and those governments that have attained recent spectacular successes in state support of regional and local initiatives, in particular, in the conduct of Local Agenda 21 campaigns (Germany, Sweden, Great Britain, Denmark, etc.).

The national government bodies of Belarus are to strengthen and improve cooperation with international organizations on a continuous basis – UNDP, HABITAT, UNEP, World Bank, EBRD, etc., as well as with the European Union in the conduct of Local Agenda 21 campaigns.

Carrying out the national mission, regional authorities and local governments should take into fullest account the specific features of their territories and capitalize on the opportunities and conditions available to their specific region, town and community. A matter of prime importance is to create solid economic groundwork to improve living conditions of the population living on a specific territory.

6.3. Ecological education, training, public information support

Ecological education and raising public awareness about ecological issues play a decisive role in ecological security and building conditions conducive to the country's transition toward sustainable development.

A positive outcome of the previous period is that the society and government bodies realized the need of continuous ecological education which is reflected in the Environmental Education Concept and the National Program of Environmental Education Improvement.

Pursuant to Article 75 of the Law of Belarus "On Environmental Protection", the system of continuous public ecological education and awareness building includes the pre-school, primary, secondary, vocational, secondary specialized, higher and post-graduation education, as well as the re-training and qualification upgrade level. Extensive experience in ecological education of schoolchildren has been gained by out-of-school educational facilities coordinated by the National Ecological Children and Youth Center. In the school education system, ecological awareness needs are addressed through the inclusion of integrated material about nature, society and man in the content of

school subjects; selection of topics and chapters among natural science subjects that dwell upon certain aspects of ecological education; creation of dedicated ecological classes and environmentally biased academic educational facilities. At a secondary specialized education level, there are recently introduced subjects "Basic Environmental Protection" and "Basic Industrial Ecology" as well as other dedicated subjects on nature conservation. At a vocational school level, environmental protection and sustainable nature use and management are covered by dedicated subjects and courses as separate topics.

A number of higher educational facilities have established departments of ecology and nature conservation and provide professional training in the following areas: bioecology, agroecology, ageoecology, environmental protection and sustainable use of natural resources, radioecology, health ecology, environmental management and industrial audit. Mandatory ecological courses have been introduced in all institutes and universities of the country.

Recently, they have commenced to develop the 2006–2010 National Multi-Level Integrated Ecological Education Program designed to improve the learnt experience and lessons and increase ecological awareness of the population. Considerable methodological efforts are being applied by the National Courses of Re-Training of Ecological Professionals to improve the environmental skills and knowledge upgrade system on the premises of the Belarusian Research Center ECOLOGY.

Ecological education improvement is also supplemented by awareness raising activities undertaken by mass media, museums, zoos, botanical gardens, libraries, non-governmental ecological organizations, etc.

Due to lack of sufficient ecological knowledge, a considerable portion of the Belarusian population still doesn't fully realize how closely human activities and the status of environment are linked. The legislation in the field of ecological education and public information is in need of improvement.

To address these complicated tasks, all citizens of Belarus should gain more knowledge in environmental protection and fully realize the complex interaction within the triad "man – environment – economy".

The goal of ecological education and awareness-raising is to create conditions for all citizens to acquire ecological knowledge, develop ecological view of the world which would include cultural and ethical rules and principles redounding to sustainable development of the country. The Republic of Belarus needs to complete its system of continuous ecological education and awareness-raising which should cover all levels of the national education system: **pre-school, primary, secondary, vocational, secondary specialized, higher and post-graduation.**

Public information is an important element that complements ecological education. The country has taken early steps to build the public information system intended to improve the efficiency of nature use and environmental protection management. The Republic of Belarus ratified the Aarhus Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters.

The establishment of the Public Coordinating Ecological Council under the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus has been a milestone in the development of democratic environmental decision making. The Council comprises rep-

resentatives of many non-governmental organizations and associations. On the other hand, there are still quite a number of problems in this area requiring solutions. Therefore, in the field of information support it is necessary to:

- extend the scope of ecological information in mass media, especially television and radio;
- in accordance with the Aarhus Convention, to ensure public access to ecological information and public participation in decision making at regional and local levels;
- create ecological education and information network, with affiliates opened in all districts and regions;
- improve legal and organizational frameworks for public awareness increase, develop procedures for the direct public involvement in decision making affecting their constitutional rights, including the right to favorable environment;
- take steps to ensure free access to complete and reliable environmental information and create a network of eco-info points.

In the field of **international ecological cooperation:**

- broaden participation of the Republic of Belarus in international public ecological education projects;
- encourage research in ecological education and public awareness-raising through joint projects with foreign partners;
- develop international cooperation in the field of training scientists and teachers.

The Ministry of Education of the Republic of Belarus should be the coordinating authority for all activities in the field of ecological education, awareness-raising and training at all levels.

Public information is an important element that complements ecological education. The Republic of Belarus ratified the Aarhus Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters.

7. *Creating sustainable development monitoring system*

Sustainable development monitoring is a system for tracking parameters of sustainable socio-economic development and state of environment and forecasting their changes under the influence of natural and man-made causes. It includes government bodies, non-governmental organizations, respective regulatory frameworks and information support. The purpose of creating such a system is to monitor to what extent 2020 NSDS indicators have been achieved (social sector, economy and ecology) and promptly develop decision-making proposals in case some of the targets have been unmet.

There are many benchmarks against which to assess NSDS targets, but only the most important of them – those that describe the key relations of sustainable development processes – should be used as indicators.

Sustainable development indicators differ at a global, national, regional, local, sectoral, enterprise and community level.

The following principles should underlie the system of indicators:

- the system should show the top level of sustainable development objective tree;
- hierarchy of indicators;
- compatibility of key indicators with international sustainable development indicators;
- compatibility of the selected indi-

cators with data collection and processing system used in state statistical data recording;

- predominant inclusion of indicators at macro- and mesolevel into the system;
- a relatively small number of indicators sufficient for a comprehensive analysis of the major sustainable development processes and monitoring.

The system of indicators should comprise general indicators and indicators that reflect principles and processes of sustainable development in the key areas of the “man – environment – economy” system. General indicators describe sustainable development processes in their entirety and linkages in all areas on the whole. They are quantifiable and comparable, make it possible to compare similar processes in different countries and are, additionally, supplemented and specified by indicators that characterize main components of sustainable development system.

The following can be used as general indicators:

- integrated sustainable development indicator based on the human development index (HDI);
- gross domestic product per capita;
- level of anthropogenic pressure on the environment.

According to the UN methodology, HDI integrates at a national level only the key sustainable development processes in the social sector (life expectancy, education level) and economy (GDP per capita), but does not cover ecology enough. Therefore, an environmental index called “Volume of pollutant emissions per GDP unit” has been included in HDI calculations to determine sustainable development integrated indicator. This aggregate indicator should include emissions of pollutants in the air and water and can be brought to a common dimension given toxic grades and comprise trans-border carryover of harmful substances.

Calculations of the environmental index are made according to the same formula used by other HDI elements⁴:

$$I_{eco} = \frac{X_{act} - X_{min}}{X_{max} - X_{min}},$$

where X – indicator value.

In the context of Belarus, in 2000 I_{eco} was 0.224.

$$\frac{1,279 - 0,478}{4,05 - 0,478} = \frac{0,801}{3,572} = 0,224,$$

where 1,279 – GDP volume per 1 kg of pollutant emissions (USD) in Belarus;

0,478 – minimum value, where the highest value is 37.5 tons of emissions per resident;

4,05 – maximum value (countries with the lowest pollutant emissions volume have 0.3 tons per resident).

Life expectancy, education, GDP per capita and ecological indexes are added together and the total is divided by 4 (given the equivalence of social, economic

and ecological areas, their weights should be equal).

GDP per capita shows the level of country’s socio-economic development. It is calculated in the national currency and USD at the purchasing power parity to allow comparisons with other countries.

The anthropogenic pressure level shows the impact of economic activities on the ecosystem and is calculated as the quotient obtained when total consumption of all types of fuel-and-energy resources is divided by 1 sq. km of the area.

For the purposes of monitoring and conformance, the system of indicators should be built as a hierarchy with the following characteristics: threshold value (there is no going below that value, otherwise irreversible processes might emerge and the system will be subjected to destruction; actual indicator value; indicator grade (weight) showing the extent to which an indicator influences the integrated indicator (usually it is a ratio set by experts or elasticity ratio of the target and integrated indicators); government authority or non-governmental organization responsible for indicator control. In the construction of the monitoring system, these macroeconomic indicators should be supplemented with key sustainable development components.

Information subsystem underpinned by sustainable development indicators should build upon the available methods of data collection and processing used in state statistical reporting. This subsystem attaches an important role to experts who decide, each in their own field, on sustain-

⁴ Since the indicator “Volume of pollutant emissions per GDP unit” is in inverse proportion to HDI (the lower is the volume of emissions per GDP unit, the higher should be the indicator value), the numerator and denominator in the formula should change over and calculations should be made in terms of GDP volume (USD) per 1 kg of pollutant emissions.

able development indicators, set their minimum and maximum threshold values, allowable range of changes.

Apart from the information subsystem, the monitoring system should consist of organizational, legal and methodological support subsystems, which determine monitoring organizational

structures, the procedure of submission and processing of primary data, analysis methods and techniques, including international comparisons, as well as development of proposals to respective government agencies responsible for NSDS implementation in the event some of the targets have been unmet.

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