

STATE AND PERSPECTIVES OF SCIENCE AND INNOVATION DEVELOPMENT IN THE REPUBLIC OF BELARUS

Organisation and management of research and development in the Republic of Belarus are carried out based on the programme and target method providing for the mutual binding of all links of the innovation process, i.e. scientific idea - scientific development - implementation in production - serial production.

In recent years, in the sphere of state management of science and innovations, the target orientation to solve national priority problems is strengthened. Priority directions of scientific and technical activity and basic and applied research in the Republic of Belarus for 2006-2010 are approved. Within this framework the lists of state scientific and technical programmes and state programmes of basic and applied scientific research for 2006-2010 are elaborated.

The measures taken by the leadership of the country allowed to achieve stability for such indicator as GDP research intensity calculated as the ratio of domestic R&D expenditures to GDP - about 0.7 per cent (0.69 per cent in 2005). At the same time Belarus maintains one of the leading places among CIS countries with regard to the relative level of expenditures on science.

Successive and sufficiently intensive five-year build-up of performed R&D contributed to the stabilization of GDP research intensity level in 2000-2005. At constant prices of 1995 its increment was 37.6 per cent. In recent quinquennium, the stability in funding scientific sphere has been reached - on the average, it was 1.7 per cent of the republican budget expenditures annually.

During 2001-2005 positive developments in the number of scientists were observed; personnel outflow from science sector slowed down. Average annual number of employees who performed research and development reduced only by 1.7 per cent (by 3.3 per cent during 1996-2000). In 2005, for the first time in recent decade, the number grew by 5.1 per cent. At the same time, the total number of R&D employees amounted to 30222 in 2005 as compared with 2001 and 2004 (32119 and 28750 persons respectively).

It should be considered important that labour remuneration in scientific sphere during recent five years has been equalized as compared with other sectors of the economy. In 2005 the average salary level in science sphere was by 33.9 per cent higher than the average level for the economy, and by 26.5 per cent higher than that in industry, which exceeds the 1990 values that accounted for 27.5 and 22.1 per cent respectively.

From the point of view of material incentives for young scientists, the staff policy in science sphere is greatly supported by the State. Since 2003, the tariff rate multiplying factors for scientists under 35 are determined from 1.3 to 1.5. In 2005 the postgraduates' and doctorants' scholarships grew twice. The scholarships of the President of the Republic of Belarus are granted to talented young scientists.

Alongside with the salary, preservation of tax preferences contributed to the development of the science sector. The share of privileges for major taxes and payments in the revenues of the consolidated budget was during the five years 0.72 per cent (2002) to 2.86 per cent (2003), and 0.85 per cent in 2005. In terms of absolute values, the privileges for stimulating scientific and technical activities, innovations and implementation of new technologies amounted to 300 to 500 and more bln. rubles within the five-year period (the biggest value refers to 2004 and amounts to 533.6 bln. rubles).

As a matter of fact, significant amounts of tax privileges reap additional financing of science sphere. This helped to increase sustainability of the performance of scientific organisations, strengthen the confidence of the staff as regards the preservation of working places and the perspective of active creative labour.

Stimulating measures stabilize not only the flows of research personnel within the country, but also the migration flows. Recently, migration outflow of scientists has notably reduced. Its annual rate is less than 0.1 per cent of total number of employees engaged in science sphere and tertiary education teaching staff. This value is significantly lower than the "brain drain" rate in Western Europe.

In compliance with the decisions of the President and the Government of the Republic of Belarus a *сортон* mechanism is being created for planning of training of the highest qualification scientific workers based on the government order for the implementation of state programmes and projects on the priority directions of scientific and scientific and technical activities. Implementation of the new system of training the highest qualification scientific workers would shortly allow to meet the demand for highly qualified professionals in the research-intensive sectors of Belarusian economy.

The Government order for training the highest qualification scientific personnel for different sectors of the economy is formed for 2006.

The Belarusian model of national innovation system continues to develop, in the framework of which required organizational and legal environment is established. They ensure the completeness of all stages of an innovation cycle beginning from the organisation and conducting of scientific research and development up to the practical implementation in production of new research-intensive products in all sectors of national economy of the country.

The regional innovation infrastructure has been developing. In 2005, 7 new projects of innovation infrastructure were created in addition to the existing ones. Innovation funds were established in 29 agencies aiming mainly at the development and production of new products. With the purpose of increasing effectiveness of using manpower capacity and material and financial resources in scientific and innovation activity, scientific and practical (technical) centres were established in Belarus, that, per se, are innovation centres ensuring continuous innovation process. Thus, 5 scientific and practical agrarian centres were set up within the system of the National Academy of Science (NAS) of Belarus, and 8 scientific and technical centres were established at the Ministry of industry of the Republic of Belarus.

Even today innovation activity contributes significantly to the economic development of the country. While technological innovation costs increased in 2002-2005: from 910.5 to 2362.1 bln. rubles (in 2.6 times), the shipped innovation output grew: from 1733.1 to 7003.6 bln. rubles (in 4.0 times), and in 2005 innovation products for 2.97 rubles were shipped for each ruble of innovation costs. In 2005, of total innovation output sold, 17 per cent were consumed in the country, 25.4 per cent were exported to the CIS markets, and 57.6 per cent were exported to non-CIS markets. Such distribution is a vivid evidence of the high level of competitiveness. Moreover, in recent years the share of innovation products sold outside CIS has consecutively increased, making 43.1 per cent in 2002, 50.5 per cent in 2004, and 57.6 per cent in 2005.

Organisational and legal foundations for the development of material and technical basis of science (MTB) have been established. As a result, a stable tendency of increasing the share of MTB financing of scientific organisations in total funds of the republican budget allocated to science has begun to show, growing: from 5.5 per cent in 2001 to 10.8 per cent in 2005. Since 2003 capital-labour ratio of scientific personnel rose: from 20.1 to 37.2 mln. rubles per person, and equipment with machinery and tools rose: from 7.4 to 13.4 mln. rubles

per person in 2005. During five recent years the amount of fixed assets used in research and development rose in 1.2 times at constant prices.

The Government programme for the development of material and technical basis of scientific organisations for 2006-2010 is drafted.

Effectiveness of R&D and innovation activity, on the one hand, depends, and on the other hand, stimulates international scientific and technical co-operation. The Republic of Belarus can be considered a leader as regards active external relations in science sphere. Only at the Government level agreements on scientific co-operation are concluded with more than 40 countries, and relationship is established with about 70 countries of the world. Vector direction of international co-operation is of a wide scope, including CIS and EU countries, USA, Japan, etc. In recent years the relationship with Asian countries, such as China, India, Republic of Korea, Viet Nam, has increased, including the co-operation with Iran, Iraq, Libya, and South African Republic on the directions of innovation activity and informatization. Interest of other countries in research-intensive technologies and products is shown by the exports changes of the enterprises of the Ministry of Industry. During five years the value of exports to Russia (in c.u.) has doubled, exports to other CIS countries have grown in 4.7 times, and to the non-CIS countries - more than twice.

External trade in advanced technologies brings to the country up to 55 thsd. c.u. per an exports contract. Exports of highly research-intensive laser and optical equipment annually amounts to more than 40 mln. c.u.

As far as the protection and use of intellectual property (IP) are concerned, organizational and methodical and government stimulating of the creation, legal protection and commercial use of national producers' IP is ensured.

In 2005, 955 patents for invention, 731 patents for utility models, 204 patents for industrial design, 1800 trademarks, 24 plant patents, 1 topography of integral circuit, 329 contracts, of which 162 licence agreements and 167 agreements on the cession of rights for the subjects of industrial property were recorded in the State register. Prepared and granted were 738 patents for invention, 549 patents for utility models, 115 patents for industrial design, 17 plant patents, 1460 trademark certificates, and 1 integral circuit topography certificate.

In 2005, 589 mln. rubles and 2.9 mln. c.u. were received in the form of patent fees and dues; 592 mln. rubles and 3.1 mln. C.u. were transferred to the budget.

In 2005, 48 government programmes for 2003-2005 were completed. The results of scientific research obtained in 2005 in the framework of state programmes of basic research (SPBR), state programmes of directed basic research (SPDBR), and state programmes of applied scientific research (SP ASR) are reflected in more than 11000 scientific publications (monographs, articles) and 450 industrial property protection documents that are the main information source on innovations. From 2003 to 2005 the programme executives published more than 31000 scientific papers (books, articles and reports) and received 1023 industrial property protection documents (patents, licences). Moreover, research results were published in the form of 16866 conference paper summaries, of which 6385 were published abroad.

During 2003-2005 programme executives defended more than 200 doctoral and 930 PhD theses. While performing SPBR, SPDBR, and SPAR tasks, 240 scientific theories of various degrees of generality were grounded; 2435 scientific regularities and laws discovered; about 1400 new research methods and techniques created. As a result of research (including those in the framework of other government programmes, economic agreements and contracts), designed and developed are over 330 new machines, equipment and devices, about 200 systems, complexes, ACSs, ADBs, CAD systems, and software, over 1200 new materials,

substances and instruments, over 350 technologies and 330 technological processes, 36 interstate standards, construction and other norms or amendments thereof; 93 state standards, norms, directives and other technical regulations of the Republic of Belarus regulating product and services requirements or amendments thereof; 249 technical standards or amendments thereof, 90 methodical documents approved by the acts of the republican bodies of state administration and organisations subordinate to the Government of the Republic of Belarus, or amendments thereof.

The SPBR, SPDBR, and SPAR performance in 2003-2005 shows that the results of these programmes became eventually the basis of modern national research-intensive productions, ensure the development of social and cultural spheres of the country. Nevertheless, the practice of using programme and target methods of the performance and financing of scientific research requires further improvement.

Introduction of new-type programmes, i.e. state complex target scientific and technical programmes (SCTSTP) combining state scientific and technical programmes and specific state programmes of basic and applied research for 2006-2010, coordinating nature of SCTSTP and their undivided management would allow in the course of their performance combining at the required level of the separate stages of the "research-development-production" cycle due to the continuous and purposeful use and transfer of new results of basic and applied research with the purpose of further experimental development and experimental-technological works, including production of newly introduced scientific and technical products.

The effectiveness of scientific and technical programme performance has increased. On the whole, in the recent five-year period the annual growth of funding of state scientific and technical programmes (SSTP) can be noticed: total financing of programmes grew in equivalent terms from 23.4 mln. c.u. in 2001 to 56.9 mln. C.u. in 2005, i.e. in 2.4 times; the share of budget financing of programmes fell from 61.6 per cent in 2001 to 49.1 per cent in 2005; sustainable growth in the number of newly developed machinery and patents granted was reached. In 2001 the number of new machinery objects was 158, and patents granted - 39; in 2005 these figures were 1283 and 214 respectively.

The total value of new products produced in the framework of implementation plans during 2001-2005 was more than 1.6 bln. c.u. Budget expenditures for the performance of corresponding SSTP [for the same period was 92.3 mln. c.u. per 1 ruble of R&D budget expenditures there were 17.8 rubles worth of new products.

At the republican unitary enterprise (RUE) "MAZ" the production of a number of new machinery models was designed and developed, including a new generation two-axle truck tractor MAZ 530905 with totalload-carrying capacity up to 22 tonnes fit for aH types of roads; a two-axle dump truck MAZ-457040 with totalload-carrying capacity up to 5 tonnes to be used in construction and agriculture; a bus line MAZ-171 to be used at airports; and an urban three-axle bus MAZ-107.

At the RUE "MTZ" developed were the models of multi-purpose row-crop tractors with engines of 80-100 h.p.; models of high-power tractors «Belarus 1223», «Belarus 1525», «Belarus 2022» with engines of 120-200 h.p., which sufficiently expanded the line of high-power tractors of 2,0-3,0 class.

At the production association "Gomselmash" the following types of machinery were designed: feed-harvesting complex KYK-800 "Polesye", multi-purpose power machine "Polesye-350"; mounted feed-harvesting complex with changeable adapters KNK-4500 "Polesye"; half-mounted six-row complex for sugar and fodder beet harvesting KSN-6-5.

The RUE «BeITEI» designed an adaptive system for the power equipment control of electric power plants, with tooling for different-type units. The system can sufficiently reduce

material costs and time for technological process ACS design and implementation as well as fuel consumption due to optimization of the equipment operating modes control, and increasing preparedness and equipment longevity.

«BelGIM» designed a standard machine for reproduction and measuring of impulse signal parameters, which would allow to solve the tasks of metrological provision of measuring facilities for impulse devices and oscillography for the whole republic. It would become a basis for further improvement of the development and production of modern measuring devices.

The Institute of Physics of NAS Belarus developed a multi-colour magnetic-laser therapeutic apparatus "Rodnik-1" representing a universal multi-functional apparatus of new generation designed using the most recent achievements of laser and optical fiber equipment, as well as medical practice. The apparatus is intended for the treatment of various diseases (tuberculosis, bronchial asthma, etc.) and provides the possibility of laser and magnetic laser effect according to all techniques accepted in medical practice.

Two models of Belarusian tramway (model 1M and model 743 tramway of high capacity and comfort corresponding to European standard) were designed at the communal unitary enterprise (CUE) "Belkommunmash". These transport facilities were not produced in the republic before and are import-replacing products.

Effective antitumour preparations were developed and implemented in production at the RUE "Belmedpreparaty", saving 1.5 mln. с.и. on imports replacing.

At the same time, in the sphere of scientific, scientific and technical and innovative activity there remain issues that, if unsolved, have a negative impact on the development of the national scientific and innovation capacity, i.e.:

- in completely developed systematic and clearly structured legal framework for the performance of all stages of innovative activity;
- limited solvent demand for advanced technologies and industrial innovations at the internal market;
- imperfect special financial mechanisms to support specific components of innovation infrastructure and innovation entrepreneurship;
- poor co-operation relations between scientific organisations, educational institutions and production enterprises;
- poorly developed modern forms of innovation management and commercialization of innovations;
- low innovation activity of leading industrial enterprises of the country;
- low information transparency of innovation sphere and, first of all, lack of information on new technologies and possible sales markets for a conceptually new (innovation) product.

These barriers of innovation development determine generally the major problem: *development rates of innovative activity and implementation of innovations do not meet modern requirements of the development of national economy and increase of competitiveness of Belarusian products.*

Major perspective tasks of Belarusian science for 2006-2010 in the framework of realization of priority directions of scientific and technical activity (formulated on the basis of the effective strategic and tactical documents of the President and the Government of the Republic of Belarus, such as National Strategy of Sustainable Socioeconomic Development of the Republic of Belarus for the period up to the year 2020, Complex Forecast of Scientific and Technical Progress of the Republic of Belarus for 2006-2025, Programme of Socioeconomic Development of the Republic of Belarus for 2006-2010, and decisions taken at the 3d All-Belarusian Public Assembly, other programme and forecasting documents):

"Resource- and energy-saving technologies for the output of competitive products"

- development and implementation at the leading industrial enterprises of the country (RUPE "BelAZ", RUE "MTZ", openjoint-stock company "Vityaz", etc.) of software and methodical and information environment supporting the life cycle of research-intensive products, i.e. heavy trucks, tractors, and audio and video equipment;
- ensuring annual output growth;
- designing of a new generation road train model of higher load capacity, development and implementation in production of a line of trailer and truck road trains of average tonnage, urban super low bus MAZ-203 of second generation, and other machinery;
- design and implementation in production of modern four- and six-cylinder diesel engines corresponding to the UNECE Regulations;
- establishing in Belarus of an optimum composition of grain and feed harvesters fleet;
- development and implementation in production of a self-propelled grain harvester modification KZS-1 OK, sugar beet harvesting unit, self-propelled feed harvesters for power machinery of 200 to 500 h.p.;
- development and remodeling of competitive machinery to be used in mining with the purpose to preserve and broaden sales markets;
- development and serial production of new technology, such as digital television apparatus, flat-face television apparatus to receive digital TV programmes, serial production of integrated circuits based on advanced technologies;
- development of digital apparatus of next generation, implementation in production of a modelline of hybrid and digital television apparatus, television apparatus of high image quality, and LCD-panel television apparatus;
- development, creation and implementation in production of lasers, laser devices and components, optical systems and technologies to be used in industry, defence, medicine, biology, agriculture, microelectronics, material processing, and metrology;
- development, creation and implementation in production of optoelectronic apparatus and devices mainly intended for defence needs;
- development of domestic technologies and equipment for processing substandard timber and household waste;
- environmentally safe management of municipal waste and its most effective economic recycling;
- development of a number of agricultural machines and equipment for cultivating major agricultural crops to meet the demand of the internal market; improvement of quality and competitiveness of domestic machinery; reducing of imports.

"New materials and new energy sources"

- sufficient diversification of produced competitive chemical products based on domestic raw materials, wastes and by-products by developing new and improvement of existing technologies, establishment of new processing lines and sites at the enterprises of the Republic of Belarus;
- establishment of high-tech productions flexible to market conditions and ensuring currency inflow as a result of expanding exports opportunities;
- development and implementation of technologies for the production of new types of diesel biofuel; breeding of new varieties of rape as a primary raw material and development of technologies ensuring efficient use of by-products obtained as a result of producing biofuel thereof;
- expanding the raw material base in the Republic of Belarus for potash and petrochemical industries, use of alternative and renewable energy sources;

- development and implementation of new energy saving environmentally appropriate technologies and equipment ensuring quality improvement and diversification of chemical products;
- utilization of waste, enhancement of reliability and safety of productions;
- creation of advanced building structures, materials, technologies and organizational-technical solutions ensuring reduction of energy intensity (by 30 per cent) and materials consumption (by 20 per cent) in construction, use, upgrading and reconstruction of buildings and structures, production of building materials and structures;
- designing of systems of automated control, diagnostics and monitoring of parameters of energy generating systems, power grids and equipment;
- establishment of prerequisites for faster implementation of a nuclear power plant in the energy system of the country, which would allow to save annually up to 4 bln. τ^3 of natural gas.

"Medicine and pharmacy"

- development of modern environmentally safe high technologies for obtaining pharmaceutical substances based on microbiological and chemical synthesis, matters of vegetable and animal origin, and creation on their basis of new competitive preparations;
- creation of modern technologies for the synthesis of pharmaceutical substances including high-purity aminoacids, obtaining on their basis of both original medicines and reproduced generics;
- development of modern medicine technologies of reconstructive surgery of joint pathology and vertebral surgery of injured spinal column;
- creation of import-replacing and currency-saving biotechnological means of etioprophyllaxis, diagnostics and treatment of relevant infectious diseases.

"Information and telecommunication technologies"

- development of standard solutions for up-to-date directions of informatization of the society, as well as creation of software and hardware for integrated factory control systems, integrated design automation systems, e-commerce, development of distance learning technologies, and software and hardware for public health;
- complex solution for functioning of the state system of information protection, creation of technologies and means of information protection to be used at the bodies of state administration, state enterprises and organisations of the republic, technical maintenance of protected information systems under development at the bodies of state administration.

"Technologies of production, processing and storage of agricultural output"

- development and implementation of a number of resource-saving and environmentally safe technologies of agricultural production based on the recovery of soil fertility; breeding and use of import-replacing plant varieties, fertilizers and animal breeds, creation of technological complexes and equipment for processing and storage of agricultural produce, development of new types of competitive food products and functional foodstuffs.

"Environment and rational nature management"

- increase of effectiveness of forestry complex performance in the republic and improvement of timber processing; growth of proceeds and budget revenues from timber sales;
- development and implementation of new technologies and equipment for industrial production, increase in competitiveness of forest products, energy saving and imports replacing, increase of the exports capacity of the industry;
- ensuring of advance development of research in the field environmental basis of sustainable development of the Republic of Belarus providing for the sanitation of human habitat, improvement of living conditions, and determining transfer to the rational nature management

based on the protection, assimilation and reproduction of nature and resource capacity of the country.

During 2006-2010, based on the developments completed in 2005 in the framework of SSTP and innovation projects, production of the following export-oriented products is envisaged: 136 items of machinery, equipment and instrumentation; 92 items of new materials, substances and tools; 9 automated systems and complexes; and 32 varieties of agricultural crops.

The indicated machinery projects include:

- tractors Belarus-925M and Belarus-1022,
- rock handlers BelAZ-5600 of load-carrying capacity 300-320 tonnes and BeLAZ-7516 of load-carrying capacity 135 tonnes;
- grain-fertilizer-grass seeder for straight sowing SPP-3,6;
- ventilating and drying plant ABC-300;
- baler PRL-150;
- drilling-milling-boring machine of GDN-900 model;
- vertical bracket-milling machine of FSS 350 CN model;
- NC surface-grinding machine of «Orsha-60120» model;
- high precision two-spindle turning machine;
- streetlights with high-pressure sodium lamps;
- antitumour preparations (Leicladin, Hydroxycarbamide, Fludarabel);
- varieties of agricultural crops (flax: "Fort" and "Lida", barley: "Vivat" and "Mayontak", rye: "Lota", "Biryuza" and "Iskra", wheat: "Zlata", "Poezia" and "Fantazia", etc.).

The total output (603 items of new technology) of below indicated import- replacing products is planned to reach 635.4 mln. c.u. by 2010. The most important of them are:

- modern buses of small class MAZ-256;
- buses to be used at airports MAZ-1 71 ;
- urban three-axle buses MAZ-1 07;
- high power tractor "Belarus" of 2,0-3,0 class with engine of 120-200 h.p. with increased technical, economical and operational specifications;
- tractors Belarus-1223; Belarus-1525; Belarus-2022;
- feed-harvesting complexes KVK-800 "Polesye";
- cutter units of grain- and feed-harvesting machinery manufactured with plastic deformation method;
- hot-water boilers with infrared burners and filtration combustion burners;
- resource- and energy-saving architectural and design systems of new generation improving consumer and operational specifications of construction projects;
- a number of new building materials, structures, technological equipment and tool set;
- new varieties of agricultural, vegetable, fruit and berry crops;
- technology of breeding a Belarusian pig hybrid to obtain commercial piglets with high meat yield, etc.

In the framework of new SSTP and innovation projects for 2006-2010 it is planned to set up 220 new productions for competitive output based on the newly developed technologies.

For the country as a whole, the following indicators will be achieved by 2010:

- the share of new products in total industrial output to grow from 10.4 per cent in 2005 to 19.0 per cent;
- the share of innovation active enterprises in total industrial enterprises to grow from 14.1 per cent in 2005 to 25.0 per cent;

- the share of certified products in total industrial output to grow up to no less than 70.0 per cent;
- depreciation rate of active industrial fixed assets to reduce from 69.5 per cent in 2005 to 57.5 per cent;
- total financing of science should grow in 2.5-3 times.

Ways of solving tasks set for science:

creation of innovation-favourable institutional and legal environment:

- forming of an innovation vertical and State Programme of Innovation Development of the Republic of Belarus for 2006-2010;
- elaboration of a system legislative base to set up technological economic environment favourable for innovation development (preparation of draft basic laws on innovation activity and revision of the law on the foundations of state scientific and technical policy);
- development of a multi-level system of protection and use of the results of intellectual activity (State Programme of Intellectual Property Protection, new version of the copyright and allied rights law);
- realization of the State Programme of Development of Material and Technical Basis of Science for 2006-2010;

reorganization of effective structural and functional units of the national innovation system (science sector, educational sphere, production complexes), increase of their integrity and effectiveness under market conditions:

- development of research sector in tertiary education oriented to solve scientific and technical tasks of the economy development;
- restoration of functioning of factory science projects under new conditions;

establishment of innovation infrastructure:

- creation and further development of technology transfer centres, innovation technological centres, technology parks, business incubators, training centres for innovation activity, etc.;
- development of global information system on innovations and monitoring (including national and regional centres of scientific and technical and business information, etc.);

development of innovation entrepreneurship:

- creation of competitive environment and favourable legal conditions for innovative small and medium businesses;
- involvement of small and medium businesses in target programmes and innovation projects;
- support to advanced growth of science and innovation activity in regions;

development of financial infrastructure:

- establishment of the special purpose fund to provide direct financial and other support to small enterprises of scientific and technical sphere;

- development of legal and organizational conditions for venture financing;

creation of motivational mechanism of innovation activity:

- fundamental transformation of the system of labour remuneration in budgetary research organisations;

- revision of the system of remuneration of all participants of innovation process;

establishment of the institutes of intellectual property use and protection, and the system of government support to commercialization of intellectual activity results:

- ensuring that state customers of scientific and technical products observe effectively the intellectual property rights of the Republic of Belarus;

training of personnel for innovation activity:

- creation of conditions for young researchers to realize their intellectual potential, primarily by improving the system of creative labour remuneration;

- ensuring most favourable conditions for training research personnel of highest qualification and establishment of scientific schools, scientific and production centres and other organizational forms for R&D priority areas;

establishment of national scientific and technical competitiveness centres that would become responsible/or the development of specific types of products and technologies, and provision thereof with modern equipment:

- transformation of the system of relations between scientific organisations and enterprises by creating large research and production associations and corporate cluster structures, establishing close interaction between enterprises and research organisations. The prototype of new effective corporate structures is a High- Tech Park that is currently under development;

- insuring coordination of state research programmes between each other and with state scientific and technical and target programmes taking into account the need to develop high--tech sectors of the economy as rapid growth points.

Solving of the tasks set for Belarusian science would allow to achieve growth of quantitative and qualitative indicators during current five-year period, and to ensure that the country's economy would core to the new level of competitiveness and expanding of exports of Belarusian products.

Combining of efforts by the participants of educational, scientific and technical, and innovation processes makes its possible to create an efficient Belarusian model of the national innovation system, which would ensure the required rates of scientific and technical progress and wide spread of knowledge.

On the materials of the following publications:

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