

**STATE PROGRAMME OF DEVELOPMENT OF EDUCATION AND SCIENCE OF THE
REPUBLIC OF KAZAKHSTAN FOR 2016-2019**

The name of the Programme	State programme of development of education and science of the Republic of Kazakhstan for 2016-2019 (hereinafter - the Programme)
The basis for the development	The decree of the President of the Republic of Kazakhstan of 1 February 2010 No.922 "On Strategic Development Plan of Kazakhstan till 2020"; Message from the President of the Republic of Kazakhstan N.Nazarbayev to the people of Kazakhstan of November 11, 2014 "Nurly Zhol - path to future"; the Message of the President of the Republic of Kazakhstan N.Nazarbayev to the people of Kazakhstan from November 30, 2015 "Kazakhstan in the new global reality: growth, reform, and development"; the plan of the nation's "100 specific steps: the modern state for all"
The public authority responsible for the development of the Programme	The Ministry of Education and Science of the Republic of Kazakhstan (further ó MES RK)
State bodies responsible for implementing the Programme	The Ministry of Education and Science of the Republic of Kazakhstan, the Ministry of Agriculture of the Republic of Kazakhstan, the Ministry of Health and Social Development of the Republic of Kazakhstan, the Ministry of Investments and Development of Republic of Kazakhstan, the Ministry of Finance of the Republic of Kazakhstan, the Ministry of Culture and Sports, the Ministry of National Economy of the Republic of Kazakhstan, Ministry of Internal Affairs of the Republic of Kazakhstan, Akimats of Astana and Almaty cities and regions
The purpose of the	To improve the competitiveness of education, human capital development for sustainable economic growth.

Programme

The objective of the Programme	Socio-economic integration of young people through the creation of conditions for technical and professional education; providing sectors of the economy with competitive specialists with higher and postgraduate education, integration of education, science and innovation; ensuring a real contribution of science for accelerated diversification and sustainable development of the national economy
The objectives of the Programme	Strengthening the spiritual and moral values of the patriotic national idea "Mangilik El" and the culture of a healthy lifestyle; providing quality training of competitive staff; modernization of the content of higher and postgraduate education in the context of global trends; creation of conditions for commercializing the research results and technologies; the involvement of young people studying in higher education institutions (hereinafter - University), strengthening of spiritual and moral values of National Patriotic ideas of "Mangilik El" and the culture of healthy lifestyles; improvement in the management and monitoring of the development of higher and postgraduate education; increasing the contribution of science in the development of the national economy; strengthening of the scientific potential and academic status; the modernization of infrastructure of science; improvements in the management and monitoring of the development of science
Deadlines	2016-2019
Target indicators	<p>The proportion of graduates employed in the first year after graduation by 2017 - 75%, in 2020 - 80%; number of Kazakhstani universities featured in the top -701+ rating trained under the state educational order, employed in the first year after graduation on specialty, by 2017 - 85%, in 2019 - 90%; number of Kazakhstani universities listed in the ratings of QS-WUR in 2017, 10 in 2019 and 12;</p> <p>The funding of development activities from the overall funding of science in 2017 ó 19,2%, in 2019 ó 22,3% the proportion of commercialized projects in the total amount of applied scientific research in 2017 ó a 7.8%, in 2019 ó 8.5%.</p>
Sources and amount of funding	Funding for the Programme from the Republican budget amounted to 344.4 billion KZT.

1. Analysis of the current situation

Education is one of the three main subjective factors of human development ranking development programme of the United Nations (hereinafter - UNDP). In 2015, Kazakhstan joined the

group of countries with a high level of development, taking 56th place among the 188 economies in the world.

Nine universities listed in the rankings of QS 2015.

In 2013 Kazakhstan took 27th place among 170 countries in the Global Youth Development Index. International experts note a positive trend in employment and participation of youth in political life of the country.

2016 is marked by Kazakhstan's ratification of the Convention against discrimination in education and the Convention on the rights of persons with disabilities. All the provisions of the conventions identified in the legislation, including the Law of the Republic of Kazakhstan "On education".

Higher and postgraduate education

An effective indicator of innovation economy marked trends of development of University research. Integration of universities and business structures is increasing. The IMD ranking in the top leading countries where higher education meets the needs of the economy includes Sweden, Singapore, Denmark, Canada, Finland. Kazakhstan takes 44th place among 60 countries.

Development project of research universities is being implemented. China's investment in research universities has increased the competitiveness of higher education. The priority of higher and postgraduate education of Kazakhstan designated the trinity of education, science and production. The process of institutional reform of the national higher school has initiated. The first research university - Kazakh National Research Technical University named after K.Satpayev was established. Here was formed a pool of leading scientists in the country, carrying out fundamental and applied research and education studies. There are 16 offices of commercialization, Technopark 3 and 4 of the business incubator. The flagship of global education and scientific discoveries became the autonomous organization of education "Nazarbayev University" (hereinafter - NU). In 2015, the University passed a significant milestone. 594 young highly qualified specialists graduated (446 bachelors and 148 masters).

Higher education in Kazakhstan are represented by 125 universities (2013-2014 academic year - 132 units, 2014-2015 school year - 127 units), including 9 national, 31 state, 13 non-civil, 1 autonomous organization of education, 1 international, 16 corporatized, 54 private. The number of students in HEIs in the 2015-2016 school year - 455 101 people (2013 - 606,1 thousand people, 2014 - 506,4 thousand people), including 425 700 bachelors, 27 400 masters and 2001 PhD students.

The number of academic staff - 40 844 (2013 - 41 635, 2014 - 40 320). Training is carried out taking into account the social order. 11 universities identified as basic to the training of highly qualified personnel for the successful implementation of projects of the State Programme of Industrial and Innovative Development (hereinafter - the SPIID). Professional competencies are formed in the framework of educational programmes designed in accordance with the Dublin descriptors and the wishes of employers.

The continuation of the educational programmes of three-tier model of higher and postgraduate education are ensured. Academic freedom of universities in determining the content of educational programmes in undergraduate studies increased to 55%, master's - 70%, doctoral - 90%. The ratio of number of grants for postgraduate studies to the grants for undergraduate studies corresponds to the global structure of University staff (1:5).

On the basis of the National system of qualifications compatible with the European 70 professional standards of training specialists developed with higher and postgraduate education. In 2015 institutional accreditation was passed in the accreditation agencies of Kazakhstan by 72 universities, national specialized accreditation passed by 55 universities. A gradual transition has initiated from the state certification to public and professional accreditation. In 2011-2015 4913 students of Kazakhstani universities were trained in leading universities of the world.

100 staff of the universities did course training in management at Nazarbayev University with an internship in the UK, Japan, the USA and Singapore. Research and teaching personnel increase the level of professional competence in 30 countries around the world through the Bolashak programme. The number of publications with high impact factor of academic and science staff of universities have double increased in comparison with 2011. However, the degrees of the academic staff of universities are still low and amounts to 50.4%. Only 2% of their total number has a PhD degree. The scientific potential of universities is used inefficiently. Interdepartmental barriers, inadequate funding, absence of economic incentives for the private sector impeded the successful integration of education, science and production. The institutional forms of support for innovative structures are not fully developed. The proportion of scientific research is more than ten times lower than in developed countries. Universities commercialize only 0.1% funded research and development. According to government statistics, at the beginning of 2015 the number of young people (14-29 years old) was 4511,5 thousand people or 25% of the total population of the country. There are more than 1000 youth non-governmental organizations. 115 colleges have the bodies of youth self-government.

Science

In 2015, the project of science in Kazakhstan and the World Bank "Technology Commercialization" successfully completed. 65 scientific projects implemented. 6 licensing agreements signed.

R & D is performed by 392 research organizations, including 245 research institutions.

They employ more than 25 thousand research staff.

The national scientists have access to global information resources. Licenses and agreements signed with major foreign companies and publishers of Thomson Reuters, Springer, Elsevier.

In 2015, the number of publications in top ranking journals of the world amounted to 1995, of which only in Scopus (Elsevier) - 976, Web of Core Collection (Thomson Reuters) - 327 and at the same time in both databases - 692.

The proportion of scientists has increased 1.5 times under the age of 35 years. Significant incentives for scientists became State prize in science and technology, 6 nominal prizes of the MES, the state scientific scholarship (50 for young and 25 for outstanding scientists).

Thus, the analysis of action in the sphere of education and science defines the following:

1. Strengths:

- 1) translation of the experience of NIS and Nazarbayev University;
- 2) improving the positions in international rankings of education quality;
- 3) extension of academic freedom of universities;
- 4) increasing the University research in innovation projects;
- 5) increasing the publication activity of the academic staff and researchers;

6) development of the intellectual cluster at Nazarbayev University and Park of innovative technologies.

2. Weaknesses:

- 1) low status of teacher and scholar;
- 2) lack of legislative regulations of evaluation of professional qualifications by employers;
- 3) insufficient development of inclusive education;
- 4) poor quality of teacher training;
- 5) shortage of personnel specializing in commercialization;
- 6) regional disparities of innovative structures of universities;
- 7) imbalance between the low patent activity and high publication activity of the academic staff of universities;
- 8) unattractiveness of higher and postgraduate education for foreign citizens;
- 9) low level of management in education and science;
- 10) low level of participation of employers in developing the content of educational programmes;
- 11) poor material and technical base of organizations of education and science;
- 12) bureaucratic and inflexible system of control in education and science.

3. Opportunities for the state:

- 1) improving the competitiveness of education and science in Kazakhstan;
- 2) improving the quality of human capital;
- 3) ensuring social and legal guarantees of children's life quality;
- 4) investment support of education and science with international organizations and employers;
- 5) new efficient management methods in education and science;
- 6) accessibility, attractiveness, quality and openness of education and science;
- 7) improving indicators in international rankings;

4. Threats:

- 1) lack of funding;
- 2) more attractive conditions for scientists working abroad;
- 3) low level of desire for self-education and professional growth among teachers;
- 4) delays in commissioning educational facilities;
- 5) lack of coordination of subcontractors during the implementation of the Programme.

4. Purpose, objectives, target indicators and indicators of results of the Programme

Main objective: to increase the competitiveness of education and science, to develop the human capital for sustainable growth of the economy.

4.1. Program objective: to ensure sectors of the economy competitive specialists with higher and postgraduate education, integration of education, science and innovation.

#	Indicator	Unit	Source of information	2015	2017	2019	Responsible executors
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Higher and post-graduate education

The proportion of graduates enrolled in the state educational order, employed in the first year after graduation with a degree in	%	Administrative data of the MES RK	83	85	90	MES RK, MHSD RK, MCS RK, higher education institutions, local executive bodies
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2	Number of universities in Kazakhstan in the ranking of QS-WUR	Unit	Official information of QS WUR				MES RK, MHSD RK, MCS RK, Centre of Bologna Process and Academic Mobility, higher education institutions
	TOP 200			0	0	2	
	TOP 300			1	2	2	
	TOP 500			1	2	3	
	TOP 701+			7	7	9	

Achieving the objectives will be measured by the following indicators:

1. Providing quality training of competitive staff _____

#	Indicators	Unit	Source of information	2015	2017	2019	Responsible executor
1	The ratio of the state educational order for training staff with higher and postgraduate education: Master's degree and Doctorate; Bachelor's degree	%	Administrative data of MES RK	28 72	29 71	30 70	MES RK
2	The proportion of international students in higher education, including students on a commercial basis	%	Administrative data of MES RK	2,5	3	5	MES RK, MHSD RK, MCS RK, higher education institution.
3	The proportion of higher education institutions that have created a level playing field and barrier-free access for teaching students with special educational needs	%	Administrative data of MES RK	12	25	100	MES RK, higher education institution.

2. Modernization of the content of higher and postgraduate education in the context of global trends

#	Indicator	Unit	Source of information	2015	2017	2019	Responsible executors
1	The proportion of educational programs developed using industry frameworks and professional standards	%	Administrative data of MES RK	17	25	45	Higher education institutions, MES RK, MHSD RK, MCS RK
2	Number of new educational programs, including those developed under SPIID together with foreign experts	.	Administrative data of MES RK	24	48	72	MES RK, MID RK, Higher education institutions
3	The proportion of educational programs of state universities that have passed the international accreditation in the agencies that are full members of the international European network of quality assurance and entered in the register of authorized body in the field of education	%	Administrative data of MES RK	30	40	50	MES RK, Higher education institutions

3. Creating the conditions for the commercialization of research and technology

#	Indicators	Unit	Source of information	2015	2017	2019	Responsible executors
1	The share of income from innovation and research activities of the gross income of SPIID universities	%	Administrative data of MES RK	8	10	15	Higher education institutions, MES RK
2	The proportion of civilian universities who created commercialization offices, industrial parks, business incubators	%	Administrative data of MES RK	13	15	30	Higher education institutions, MES RK

4. Involvement of youth studying in universities in strengthening the spiritual moral values of the Nationwide patriotic ideas "Mangilik El" and the culture of healthy lifestyles

#	Indicators	Unit	Source of information	2015	2017	2019	Responsible executors
1	The proportion of university students involved in socially useful activity	%	Administrative data of MES RK	17	25	45	Higher education institutions
2	The proportion of higher education institutions participating in the National Student League	%	Administrative data of MES RK	22,5	45	72	Higher education institutions

5. Improving the management and monitoring of the development of higher and postgraduate education

#	Indicators	Unit	Source of information	2015	2017	2019	Responsible executors
1	The proportion of higher education institutions, in which operate the corporate governance bodies (supervisory boards, boards of trustees and boards of directors), of the total number of higher education institutions	%	Administrative data of MES RK	72	80	95	MES RK, Higher education institutions
2	The proportion of civilian universities, introducing the experience of Nazarbayev University	%	Administrative data of MES RK	22	36	50	MES RK, Higher education institutions

4.5. Programme goals: to provide real scientific contribution to accelerated diversification and sustainable development of the economy.

Target indicators: _____

#	Indicators	Unit	Source of information	2015	2017	2019	Responsible executors
Science							
1	The proportion of the costs of development activities in total R & D funding	%	Reporting information of the MES RK	19,1	21,2	22,3	MES RK
2	The proportion of commercialized projects in total amount of applied research projects	%	Reporting information of the MES RK	16,7	17,5	20	MES RK

To achieve this goal it is necessary to solve the following tasks:

1. Increasing the contribution of science to the development of the national economy _____

#	Indicators	Unit	Source of information	2015	2017	2019	Responsible executors
1	The proportion of business expenditure in total R & D costs	%	Reporting information of the MES RK	21,8	23	25	Scientific organisations, higher educational institutions, MES RK
2	The growth of national patents of the total number of national patents in 2014 (1,574 units)	%	Reporting information of the MES RK	0	5	10	Scientific organisations, higher educational institutions, MES RK

2. Strengthening research capacity and academic status

#	Indicators	Unit	Source of information	2015	2017	2019	Responsible executors
1	Growth of researchers of the total number of researchers in 2014 (18 930 people)	%	Reporting information of the MES RK	3,4	10,2	18	Scientific organisations, higher educational institutions, MES RK
2	The growth of publications in international journals of the total number of publications in 2014 (2,784 units) (according to Thomson Reuters)	%	Reporting information of the MES RK	0	12	20	Scientific organisations, higher educational institutions, MES RK

3	The level of citation-based publications on Web of Science Core Collection (Thomson Reuters) of the total number of publications for the year 2014 (1245 units)	%	Official data of Thomson Reuters	25	35	50	Scientific organisations, higher educational institutions, MES RK
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3. Modernization of the infrastructure of science

#	Indicators	Unit	Source of information	2015	2017	2019	Responsible executors
1	The number of promotional units in higher education institutions and research institutes	.	Reporting information of the MES RK	43	76	109	MES RK, higher education institutions, research institutes
2	Updating coefficient of scientific equipment of the state universities and research institutes	%	Reporting information of the MES RK	10	12	15	MES RK, higher education institutions, research institutes

4. Improving the management and monitoring

#	Indicators	Unit	Source of information	2015	2017	2019	Responsible executors
1	The proportion of high-efficiency and average efficiency projects in the total amount of applied research (projects)	%	Reporting information of the MES RK	59,9	69,9	75	Research organisations, higher education institutions, MES RK, MHSD RK

2	The increase of efficiency of activity of scientific organizations in accordance with the rating of scientific and technological activities of scientific organizations and scientists	%	Reporting information of the MES RK	5	7	10	Research organisations, higher education institutions, MES RK
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Higher and postgraduate education

Objectives: to ensure sectors of the economy competitive specialists with higher and postgraduate education, integration of education, science and innovation.

Target indicators:

- 1) the percentage of graduates who completed education under the state educational order, employed in the first year after graduation on specialty;
- 2) the number of Kazakhstani universities listed in the QS-WUR rankings

	2017	2019
TOP-200	0	2
TOP-300	2	2
TOP -500	2	3
TOP -701+	7	9

Objectives:

1. To ensure quality training of competitive specialists. The training of highly qualified personnel and the development of innovative activities in 11 basic schools provide for the placement of state educational order in the specialized master's degree tailored to the needs of priority areas and enterprises of the SPIID, the creation of a modern educational environment as a means of introduction of innovative learning technologies and the development of new practice-oriented educational programmes with foreign partner universities and laboratories with modern equipment, which will be supported through mechanisms of public-private partnerships and leasing.

In 11 basic schools will operate 48 new laboratories in priority directions of the SPIID, equipped with modern equipment.

Together with foreign partners and employers will be developed educational programmes in the priority sectors of the SPIID in accordance with the sectoral qualification framework and professional standards.

The academic staff of 11 basic universities will undergo training and internship in priority directions of industrial and innovative development of the country, including at the enterprises of the SPIID. In the future, the experience base of HEIs training personnel for enterprises of the SPIID will be circulated to all other national universities.

From 2016 the universities will:

- 1) develop educational programmes in cooperation with leading foreign partners universities;
- 2) conduct on a competitive basis scientific research in priority sectors of the economy to create technological and intensive enterprises;
- 3) cooperate with partner universities and foreign scientific centres.

In order to determine employer satisfaction with readiness of graduates to work in SPIID 2017 will be conducted case studies (surveys, questionnaires, interviews etc.).

In the amount of the state educational order for staff training the proportion of master's and doctoral programmes will increase, including Nazarbayev University. In order to provide updated educational programmes of secondary education state educational order for pedagogical specialties will be increased for the training of teachers in master's degree.

The mechanism for the admission and training at the undergraduate, graduate and doctoral studies will improve with market regulation of the state educational order in the universities regardless of their form of ownership. From 2017 the issue of transition to credit-capita funding of higher education will be worked out with the development of proposals for the financing of the state educational order, taking into account the volume of mined academic credit with the involvement of employers.

Admission to the master's and doctoral studies will be carried out in the presence of experience of practical work for graduate - at least 1 year, non-doctorate - at least 3 years, based on the certificates of IELTS, TOEFL, DELF, DALF, TestDaF, DSD II (2018), with the provision of the right to choose a higher educational institution for the applicant (from 2019), as well as to strengthen the requirements to the level of the scientific components of postgraduate programmes (from 2017). Training in doctoral studies in 2017 will be implemented in partnership between the state and employers.

For employment of the graduates trained under the state educational order, each year the roadmap will be developed jointly with the Ministries of Health and Social Development, Culture and Sports, Agriculture, and local executive bodies (LEB). This implies coordinating the activities of interested public and LEB in ensuring places of employment for graduates, including in rural areas, tailored to the needs of the labour market.

The issue on labour rent of Nazarbayev University graduates on the territory of the Republic of Kazakhstan will be worked out. Important elements of this task will be developing a model of competitiveness of national universities (from 2016), improvement of the rules of enrolment for foreign citizens on a paid basis (2017), further development of academic mobility, including incoming students, as well as the development and implementation of educational programmes in English (2016-2019), holding regular forums of higher education jointly with foreign countries and partner universities. Work will continue on the creation of equal opportunities and barrier-free access for students with special educational needs (ramps, lifts, elevators, as well as providing informational and library resources, and others). It also provides for the further extension of e-learning technologies, open massive online courses, the development of special educational programmes and teaching materials and retraining of the academic staff of universities to work with students with special educational needs.

By 2020 the proportion of universities that created equal opportunities and disability access for students in this category will be 100%. In 2017-2018, there will be a unified information system of education and science by attracting investments from extrabudgetary resources, including PPP mechanisms.

1. To upgrade the content of higher and postgraduate education in the context of global trends. By 2019, 45% of educational programmes of higher and postgraduate education will be based on qualifying competencies, professional standards. In bachelor degree programmes will be includea a new discipline, reflecting the innovative

technologies of production and providing qualifications that are demanded in the labour market. The educational programme will have practice-oriented character and inculcation of managerial skills. In order to train personnel for innovation economy in the content of educational programmes of a bachelor degree will be implemented entrepreneurship education, which involves the inclusion of disciplines (modules), which gives entrepreneurial competence of students. There will be organized courses of improvement of professional skills to develop entrepreneurial skills and entrepreneurial thinking.

From 2017 will be developed in cooperation with employers a mechanism of independent certification of specialists with higher education. Till 2019 also issues will be worked out on independent certification of the academic staff and the maintenance requirements of delivery of students of pedagogical specialties TOEFL, IELTS, DELF, DALF, TestDaF, DSD II. The training will keep going in Nazarbayev University in accordance with international standards. The structure of higher and postgraduate education will be given in accordance with the International standard classification of education, UNESCO 2013:

- 1) 6th level (ISCED level 6) - bachelor's or equivalent;
- 2) 7th level (ISCED level 7) - graduate and equivalent;
- 3) 8th level (ISCED level 8) - doctorate and equivalent.

At the postgraduate level under the experience of international practices post-doctoral programme will be implemented aimed at developing the scientific careers of scientists in the country.

The universities will keep working on international accreditation of educational programmes in local or foreign agencies that are full members of the international European networks for quality assurance of education and entered in the register of the authorized body in the field of education.

Realization of the Kazakhstan higher school will be provided as a full-fledged participant of the European higher education compulsory, recommended and facultative parameters of Bologna process, priority directions of development of higher education, including further implementation of credit system of education according to the type of ECTS, the academic and credit mobility, as well as the involvement of students in shaping educational programmes. The academic mobility will keep developing, including incoming to Kazakh universities. By 2020, the proportion of international students in higher education, including those studying on a commercial basis, will reach 5%. Improving the quality and competitiveness of domestic programmes will be ensured through the expansion of double-diploma education of Kazakhstani universities in cooperation with leading foreign partner universities.

From 2017 will be made a full transition of state attestation of higher education institutions to accreditation. It provides for the establishment of an effective system of quality assurance, including internal quality assurance and external quality assurance. There will be developed mechanisms to evaluate internal quality assurance and increase the responsibility of universities for their effective functioning.

As part of the expansion of academic autonomy will be increased elective in the bachelor up to 75% in the master degree up to 85%, in doctoral studies - up to 95%. It provides for the independence of universities in the development of educational programmes, including on the cycle of general subjects, the development of integrated modules or programmes of disciplines. In the framework of personnel training for enterprises of the SPIID educational programmes, including English, will be developed base universities in accordance with sectoral qualification frameworks and occupational standards in cooperation with foreign partner universities and employers.

2. To create conditions for the commercialization of research results and technologies. There will be a mechanism of commercialization of scientific projects of universities under the grant financing, PPP.

In order to increase accountability in KPI evaluation (in English - Key Performance Indicators) the Rector will take into account the presence of innovative structures at the University. On the basis of international experience in universities will be implemented through student government, students will be actively engaged in academic and research activities, will increase their role in the collegial bodies of University management. An action plan will be developed for 2016-2020 for the gradual modernization of sports halls in educational institutions, sports facilities equipment, including in the framework of PPP, the implementation of measures for the development of students' leagues in mass sports. It will increase the role of sports clubs of universities in the cultivation of a healthy lifestyle among students. The role of sports clubs of universities will be increased in the cultivation of a healthy lifestyle among students.

Measures will be taken to develop students' culture of nutrition, including by promoting balanced healthy diet and ensure their consumption of natural and fresh products.

4. To improve the management and monitoring of the development of higher and postgraduate education.

The implementation of measures to increase the number of HEIs with corporate governance principles (or the Supervisory Boards, Boards of Directors), the involvement of foreign experts in the top management of universities, passing the leadership of all civilian universities regardless of their form of ownership training courses on modern management in higher education, including through extra budgetary funds.

The principle of openness and public accountability will be introduced which will be realized through annual reports of rectors to the public. Assessing the activity of the rectors will be through key performance indicators KPI.

Measures will be provided to increase the responsibility of universities, including the social, to the company for the quality of education. Assessment methodology of cost-effectiveness, effectiveness of universities in terms of autonomy will be developed. Will be the technique of estimating costs and effectiveness, the performance of universities in terms of autonomy. Phased implementation of experience of Nazarbayev University will continue in matters of academic and administrative autonomy in higher education institutions. Universities that adopt the experience of the Nazarbayev University, in 2016 will develop the road map. The administration and faculty will be trained to work in terms of academic and managerial self-sufficiency through relevant training courses, including extra budgetary funds. In 2017 the basic higher educational institutions training personnel for industrial innovative development programme will be granted autonomy on the basis of specific development programs (corporate, academic, and financial policy).

The principles of corporate governance will be introduced through a phased expansion of academic, administrative and financial autonomy of universities, and developed the formation mechanism of the endowment Fund universities. Issues will be worked out piecemeal granting academic freedom to the universities in the first place, which has passed the international accreditation. The universities will transform into non-profit organizations, providing for the establishment of corporate governance bodies. Issues will be worked out by creating a non-profit joint stock companies with 100% state participation based on state and national universities. Proposals will be developed for the transformation of private higher education institutions in other legal forms. The transition to the

new legal form will also include the creation of Supervisory boards, endowment funds, annual public reporting and audit of financial activities. After changing the legal form of the universities will be developed the provision of financial autonomy with the introduction of a transparent accounting. All stakeholders will be conducted an information campaign on the transition to a new organizational legal form starting from 2016.

From 2017, annual grants will be allocated for the preparatory department in the universities to increase the level of language training. From 2017 to 2020 under the state educational order will be accepted specialized master (500 people) and BA (900 grant) to teach in English. Also 500 teachers and faculty will be trained under the Bolashak programme. Further measures will be taken to improve the staff qualifications in language courses, distance learning of English, adapting foreign textbooks and teaching materials in English for high schools, etc. By 2021 will be achieved knowledge of the bachelors of the English language at the C2 level. In a subsequent study of relevant disciplines in a masterø will be primarily in English.

The science

Objectives: In order to ensure the real contribution of science for the accelerated diversification and sustainable development of the economy.

Target indicators:

- 1) share of the costs of development activities in the total amount of R & D funding;
- 2) the proportion of commercialized projects in total amount of applied research projects.

Tasks:

1. Increase the contribution of science to the development of the national economy.

Increasing the share of funding by private enterprise of research, development and implementation works

By 2019, 90% of research projects administered by the MES RK, will be implemented only on the co-financing.

Implementation of the World Bank project "Promoting productive innovation."

Cycle consolidation of technology commercialization to promote the development of start-up companies through the provision of grants for research groups, consortia of industrial sector and social innovation, the formation of venture capital funds, the development of brokerage activities, the creation of offices abroad accelerating technological and capacity-building for technology transfer offices.

Setting requirements for mandatory obtaining patents in the course of research work.

Creating commercialization offices at 11 basic universities offering the personnel training considering the needs of priority areas and enterprises of GPIID.

The development of international partnerships of scientific and technical ties with foreign countries on the basis of agreements on scientific and technical cooperation, including through PPP.

Increased participation of Kazakhstani scientists in international research projects, including the International Science and Technology Centre, Horizon 2020, etc.

Strengthening research capacity and academic status.

1. In order to improve the capacity of qualified scientific personnel will be:

- 1) introduced normative legal basis for the research universities in accordance with the Law of the Republic of Kazakhstan "On Science";

2) made changes in the regulatory legal acts in the sphere of education and science for improving the targeted training of PhDs for industrial research organisations;

3) introduced mechanisms for the use of the scientific potential and material and technical base of scientific research institutes and research centres to improve the quality of training PhD students and undergraduates in the leading national universities;

4) permanently involved the production engineers, young professionals, graduate and doctoral students in research projects.

In order to provide conditions for the commercialization of scientific and (or) scientific and technical activities will be created promotional units in business structures.

The work on encouraging the publication of Kazakhstani scientists in international journals with high impact factor by using various mechanisms will be continued, including the provision of access to international databases of scientific and technical information.

It is necessary to intensify the work on the inclusion of Kazakhstani scientific journals in international databases of scientific and technical information.

The productivity of the work of the scientist will be assessed by Hirsch index (h-index), based on the number of publications and citations of these publications.

1. Modernization of the infrastructure of science.

To carry out joint research projects and development work, as well as their further commercialization as a basis for the formation of knowledge-based economy two innovative clusters will be implemented "Astana Business Campus" of Nazarbayev University and "Innovative Technologies Park":

Also for the development of innovation, the transfer of advanced technologies and the implementation of specific research and production projects in the innovation cluster "Innovative Technologies Park" will be involved the leading research centres and universities both in Kazakhstan and foreign countries.

For the purpose of unification of international and Kazakh companies, high-tech small and medium enterprises, venture capital funds, scientists, businessmen, financiers and students to generate innovation and enhance the competitiveness of Kazakhstani business in "Astana Business Campus" of Nazarbayev University will be located research centres and laboratories.

During the implementation of the "Promoting productive innovation" of the World Bank project will set up an office of technology commercialization, innovation observatory.

Modernization of research and innovation structure of research institutes and universities, international accreditation of academic laboratories will be carried out in accordance with the GLP standards.

1. Improving the management and monitoring of the development of science.

In order to improve asset management an efficient system will be created to control research organizations under the MES RK, including through the implementation of corporate governance principles.

The practice of public reports of heads of research organisations will be restored.

Innovative consortia will be developed among research institutes, design and engineering offices, engineering profile laboratories, aimed at long-term joint work to ensure quality services.

As part of the integration of science and education will be carried out optimization and restructuring of research institutions, including through PPP.

The monitoring system of implementation progress and impact assessment will be improved carried out by scientific, scientific and technical and innovative projects and programmes.

The system-rated research activity of scientific organizations and scientists will be implemented, a method of evaluating the performance of heads of scientific organisations will be developed.