

INNOVATIVE DEVELOPMENT OF EDUCATION AND SCIENCE IN KAZAKHSTAN

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In a message to the President of Kazakhstan on January 27, 2012 noted that «the agrarian sector of Kazakhstan has great export potential and high potential for innovation. Need for food every year in the world will increase. We miss this opportunity can not». At the same time the Head of State Nursultan Nazarbayev has paid particular attention to the need to create an innovative system in the country, based on close cooperation between the state, business and science.

The importance of decision this problem is exacerbated formed gap between the positions of Kazakhstan in groups of indicators of the Global Competitiveness Index of the World Economic Forum (WEF). According to the Global Competitiveness Report 2010-2011 Kazakhstan in the composite ranking of the WEF takes 72 place, while the factor of «Innovation» - 116th place. This is largely due to the performance gap «Cooperation between universities and industry in research activities» - 119 position and level of education- 65.

Needs of the agricultural sector significantly exceed the investment project, designed in accordance with international norms and standards clearly define the risk of investment. Today, banks are willing to invest only in the comprehensive sound projects, and they are almost there, so as not institutionalized interactions in the triad of «science, education and production», based on the standards of project management.

These above-mentioned problems are the consequence of the lack of effective communication between the structures of education, science and industry, on the one hand, and potential investors - on the other. The key to solving them is the organization of interactions with the integration of the university in a business environment based on the standards of project management with the use of modern communications.

Our University has become a center of attraction for the association of interested parties, and has the leading position in the field of agricultural education and science in the country. Innovative achievements

of the university scientists have been universally recognized. During the work on the transformation of the university in research, we came to the conclusion that without the integration of the most important aspects of the overall progress is not achieved. Therefore, in the words of the President of Kazakhstan, we saw for ourselves the direct message and initiate the promotion of integration, a clear sense of goals and objectives. Using the new opportunities offered by the state in 2010, our university has begun to transform the National Research University. Today, we already have the status of the university-based innovation.

The scientific activity of the University seeks to develop competitive scientific and technological products in the field of agriculture and crop production, plant protection and quarantine, water, forest, fisheries, animal husbandry, veterinary science, mechanization, processing and storage of agricultural products, agricultural economy, the basis of industrial-innovative development of industries agriculture.

University scientists perform basic and applied research programs of the Ministry of Education and Science, the Ministry of Agriculture of the Republic of Kazakhstan and the World Bank more than 1 billion KZT and applied in production of more than 100 completed projects.

University was able to focus its resources and, in effect, became the core of education, science, innovation, rapid development of the agricultural sector, the real impact on the country's competitiveness in the industry. Applying international standards of project management and process approaches to the organization of the university, we have defined the mission, vision, objectives, aimed at implementing the strategy of the university. Identified five priorities, the main phase of development, introduced the definition – «Steps» and «Marks». All of these instruments are subject to realization of the goal of transformation.

Under the first priority «Intensive development of intangible assets» - a team of management transformation process is formed. Optimize the

organizational structure of the university, to enlarge the faculties and departments, a new department of strategic development of the functions of the office of project management.

Departments that are most ready for change, received the status of pilot ones, others attributed to pre-pilot and to a pre-pilot. The aim pursued by the pilot departments become innovative type that is to conduct fundamental and applied research, create additional sources of funding, to develop academic mobility, etc.

Pilot Department has re-evaluated their capabilities, develop a road map. These departments are using competency-based approach of modular training, diversify curricula and programs in line with the world trend of higher and postgraduate education, and improve Institute of advisors and mentors.

The university implemented rating system, differentiated pay and reserve formation of teaching staff.

Under the second priority Agricultural Research and Production Consortium acts which involved pilot departments in the real business projects.

To date, sought to build a pipeline of innovative projects, signed the agreement on the introduction of the first group of these developments with the SEC and the Office of Agriculture and animal husbandry, veterinary science, horticulture, fodder production to the tune of 135 million KZT. Funding will begin in the second quarter of this year.

We developed a new author's course «Preparation agribusiness environment to accept innovations in project management».

We can assist you in training to meet the current level of industrial-innovative development of the agricultural sector, organized counseling centers for businesses. We can conduct a "Farm Hour" for manufacturers to consider current problems of agricultural development to answer the burning questions and assist farmers in solving the problems in the on-line without discontinuing work.

The third priority is «dynamic entry into the international scientific and educational space». An initiative of the University with the support of partner universities and research centers in 70 countries have successfully developed the International Consortium for Research and Education, in which scientists of the University together with foreign colleagues are conducting research on global issues related to biological resources and environmental management. The International Seminar, which was held in

November last year at the university, held a video conference in the mode of on-line «Global class: Communication with partner institutions». Opening of the international centers of excellence of academic mobility «Center of Excellence» took place.

Only in 2011, the University of the National Budget allocated 150 thousand U.S. dollars for the implementation of the academic semester, undergraduates and doctoral students at a foreign partner institution. In the first semester of the current academic year, the university held classes 45 foreign scientists. The second half of another 60 invited scientists.

Regarding the fourth priority «Development of educational and scientific infrastructure» at the university is working related to the development of agricultural service yard thirty-one research laboratory and four innovation centers.

The centers should increase funding of research projects in 2011, compared with the previous year several times.

One of the important results of this activity is the first domestic harvester «Қазақстандық-1М» does not concede a global peer in technical characteristics.

Developed scientific and innovative infrastructure allows the university research globally. Thus, our scientists together with foreign colleagues are being developed by:

- Sensing soil structure using space technologies;
- The creation of new animal breeds and plant varieties to the applications of genetic engineering;
- Problems of reconstruction and rehabilitation of the Aral Sea and the other;
- Formation of effective market system - the basis of industrial-innovative development of the country agriculture.

Presence of over 150 innovative patents, more than 70 articles in journals with high impact factor included in the database Web of Sciences (Thomson Reuters), Scopus, Springerlink is recognition of the international level of our University researchers. Magazine titles speak for themselves: Molecular and Cell Biology, Journal of Physical Chemistry, Nucleic Acids Research, Journal of American Chemical Sciences and so on.

In turn, our scientists to provide free access to the world's information resources, with over 30-thousand journals recognized by the scientific community.

It should be noted that the creation of the Common Economic Space with Russia, Kazakhstan and Belarus, and the entry of Russia and Kazakhstan

to the WTO will open the domestic market of the Customs Union for the penetration of a wide variety of agricultural and food products, food products from third countries. It is no secret that these products often do not meet established standards. In this regard, especially important to assess the quality of imported agricultural products.

Therefore, the university established the Kazakhstan-Japanese innovation center. Laboratory of the Centre with modern equipment from world producers, quickly and reliably assess the quality of agricultural produce and products.

The scientific community has the opportunity to co-creation with our scientists with opportunities Kazakhstan-Japan and other innovation centers and laboratories.

Under the fifth priority «Formation motivated contingent of students» we provide training, tailored to the needs of agribusiness, food security and development of industrial science of Kazakhstan. University provides targeted training masters and doctoral PhD. For the second year is the best selection of students for admission to graduate school. Active Professional orientation and case competitions in all regions can attract a Minor Academy for university study in the most talented graduates.

This year, the transformation of the University entered its second phase. We identified nine major milestones of this phase, in the further development of strategic priorities.

We have developed and adopted the concept of an e-university, a fully electronic workflow runs. Work is underway to create an information service center enrolled in the «single window». This supports student to solve problems of teaching to the social and living.

Special course is designed to train university staff to transform the department in innovation-driven department.

Implementation of the task allow us to expand the integration of science and industry at the international level, to create conditions for the commercialization of intellectual property and technology, improve the competitiveness of human resources and to conduct fundamental and applied research at a higher level of quality.

Regions of the country have shown a serious interest in innovative developments of scientists of KazNAU:

- Creation of new agricultural technology;
- adaptive technologies of cultivation of promising

oil crops in crop rotation crop rotation to ensure the preservation and reproduction of soil fertility, increase productivity and yield of seeds in the south-east of Kazakhstan;

- Technology for integrated growth regulators and fertilizers for accelerated growth for planting berries;

- Biotechnology crustacean *Artemia* breeding in ponds for Feeders in growing larvae of valuable and threatened species of fish (sturgeon, salmon, carp, etc.) that contribute to increasing the range of food products and the saturation of the market with new products of fishery;

- Growing technology planting material of horticultural crops;

- The creation of new types and factory lines of domestic fat-tailed sheep, which at 4 months of age can have up to 20-22 kg clean mutton;

- Installation and drying technology of fruits, berries, vegetables and herbs from renewable energy sources, which creates an ideal temperature for drying and adequate air circulation due to thermal convection, significantly accelerating the drying time;

- Water saving irrigation technology of rice in rice system Kyzylorda region, providing favorable conditions for the formation of high-yield rice 60 quintals per hectare or more;

- Project Management for the effective use of assets of SEC;

- The formation of cooperation and integration of structures (clusters) in the agricultural sector.

For these and other innovative, environmentally friendly and resource-saving technologies made contracts to implement them into production. In order to create a unified information environment of the University and the consortium is working to develop a portal «AgroDamu» www.agrodamu.kz which will have the ability to search all the information from «A» to «Z» for representatives of agribusiness, science and education. Today is an important time savings and efficiency information, and specifically designed to partner enterprises Internet resources can not only quickly locate the area of scientific and educational services, and promote mutually beneficial projects of enterprises and universities and to keep «abreast» the world's most innovation and technology. In conclusion a mechanism for improving the integration of education, science and industry, can be regarded as one of the priorities, aimed at training highly qualified professionals that meet the needs of the market in the innovation economy.